

**Resolution Copper Project and Land Exchange  
Environmental Impact Statement**

USDA Forest Service  
Tonto National Forest  
Arizona

December 10, 2018

---

# **Process Memorandum to File**

## **Cumulative Effects Analysis**

This document is deliberative and is prepared by the third-party contractor in compliance with the National Environmental Policy Act and other laws, regulations, and policies to document ongoing process and analysis steps. This document does not take the place of any Line Officer's decision space related to this project.

**Prepared by:  
SWCA Environmental Consultants**

## Revision History

- December 10, 2018. Initial draft created, to support administrative Draft EIS.
- March 13, 2019. Revisions to support administrative Draft EIS.
- May 1, 2019. Additional revisions to better correspond to the approximately 65 CE analysis worksheets.
- August 1, 2019. Updated process memorandum for Draft EIS.

## Purpose of Process Memorandum

The analysis of cumulative effects is required under Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA). However, the regulations themselves offer little practical guidance on conducting analysis:

40 CFR 1508.7. Cumulative impact.

“Cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 CFR 1508.25. Scope.

“Scope” consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement. The scope of an individual statement may depend on its relationships to other statements (§§1502.20 and 1508.28). To determine the scope of environmental impact statements, agencies shall consider three types of actions, three types of alternatives, and three types of impacts. They include:

(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

The actual analysis of cumulative effects has evolved over time, and the most comprehensive guidance available from CEQ dates from 1997, titled “Considering Cumulative Effects under the National Environmental Policy Act” (CEQ 1997).

The purpose of this process memorandum is to provide a detailed description of the analysis of cumulative effects for the Resolution Copper Project and Land Exchange environmental impact statement (EIS). This process memorandum addresses:

- Approach for defining past and present actions in the EIS
- Recap of the process used to identify valid reasonably foreseeable future actions (RFFAs)
- Summary of spatial analysis areas and temporal analysis time frames, by resource
- Method for screening of RFFAs and analysis of impacts, by resource

## Approach for Defining Past and Present Actions

Cumulative effects consist of the following components:

- Effects from the proposed action (or alternative), including any connected actions,
- Effects from past actions,
- Effects from present actions, and
- Effects from RFFAs

Past and present action contribute to the existing condition of the affected environment in the project area. In the EIS, past and present actions are discussed under the “Affected Environment” heading in each resource section of Chapter 3. Pertinent past and present actions may also be part of ongoing trends; these have also been identified under the “Affected Environment” heading in each resource section of Chapter 3.

The impacts discussed under the proposed action and alternatives in the “Environmental Consequences” heading in each resource section of Chapter 3 represent the impacts of the proposed action or alternatives imposed on the affected environment. As such, the discussed impacts represent a combination of past, present, and proposed actions.

The “Cumulative Effects” heading in each resource section of Chapter 3 then describes the effects of any RFFAs when considered in combination with the past, present, and proposed impacts as described in the “Environmental Consequences” section.

## Recap of Process to Identify Valid RFFAs

A full list of all potential RFFAs identified by the NEPA team or brought forward to the U.S. Forest Service through scoping outreach is captured in a separate process memorandum.<sup>1</sup> The process to compile the initial list consisted of the following steps:

- July 26, 2018. Initial RFFA list was prepared by NEPA team, incorporating any RFFAs identified during scoping or suggested from any source during the NEPA process.
- September 24, 2018. The initial RFFA list was updated to incorporate suggestions provided by the Forest Service, Bureau of Land Management (BLM), and Resolution Copper Mining, LLC (Resolution Copper), after review of the initial list.
- October 17, 2018. The RFFA list was updated to incorporate suggestions provided by cooperating agencies after review of the September list. Additional suggestions were provided by the U.S. Army Corps of Engineers, Arizona Game and Fish Department (AGFD), BLM, and Pinal County.

The process memorandum containing the initial list of RFFAs is an active document, and for that reason additional potentially foreseeable actions are periodically examined and added to the list. By design, the RFFA process memorandum serves as a screening tool; any RFFAs added to the list is assessed against the following three conditions:

- **Does the action overlap spatially with the project?** Yes or No. Note that this assessment for the RFFA process memorandum is a rough screen only. A more detailed assessment of overlap may be triggered when the spatial analysis areas differ among resources. These details are documented in the RFFA worksheets that form Attachment 1 of this cumulative effects process memorandum.

---

<sup>1</sup> See “Process Memorandum – DRAFT Determination of Reasonably Foreseeable Actions Considered in Cumulative Effects Analysis,” October 17, 2018. Note that this process memorandum is intended to be periodically updated; date of most current version may vary.

- **Does the action overlap temporally with the project?** Yes or No. Similarly, the assessment for the RFFA process memorandum is a rough screen only, and the detailed assessment by resource is documented in the RFFA worksheets that form Attachment 1 of this cumulative effects analysis process memorandum.
- **Is the action “reasonably foreseeable”?** According to Forest Service Handbook 1909.15 and 36 Code of Federal Regulations (CFR) 220.3, RFFAs are “those Federal or non-Federal activities not yet undertaken, for which there are existing decisions, funding, or identified proposals. Identified proposals for Forest Service actions are described in 220.4(a)(1).” In addition, the BLM NEPA Handbook H-1790-1 and 40 CFR 1508.7 state included reasonably foreseeable future actions “cannot be limited to those that are approved or funded.”

Put simply, some indication needs to exist that a proposed activity could actually occur, and with enough detail to allow an evaluation of impacts. In general, any proposed project that lacks public notice, including details of the intended action, is considered speculative. Speculative actions are not reasonably foreseeable and do not provide resource specialists with enough information to be able to conduct a valid cumulative effects analysis.

The screening process for determining the list of potential RFFAs is not meant to be overly restrictive, but it does set a reasonable standard for determining if enough information exists now to conduct a meaningful cumulative effects analysis following CEQ guidance (CEQ 1997: 3).

## Summary of Spatial Analysis Areas and Temporal Analysis Time Frames

Spatial analysis areas used for the cumulative effects analysis are summarized below for each resource. Note that the spatial analysis areas below are specific to identifying cumulative effects and are not necessarily the same as the analysis areas found in Chapter 3 of the Draft EIS. An example is wildlife. Since wildlife moves across the landscape, impacts to wildlife that occur beyond the analysis area for direct and indirect impacts may still be felt in combination with project impacts.

The temporal analysis time frame is basically the same for all resources, encompassing construction, operations, and closure activities.<sup>2</sup> However, the effects of some resource impacts would persist over longer periods of time after closure has occurred. These are indicated in the table below.

Resource	Spatial Analysis Area for Cumulative Effects Analysis	Temporal Analysis Time Frame
Geology, Minerals, and Subsidence	The potential for activation of faults extends beyond the project footprint to the general region, as do the geologic changes (subsidence) that affect regional hydrology. The cumulative effects analysis area for mineral resources extends throughout the Copper Triangle area, defined for this analysis as Maricopa, Gila, and Pinal Counties.	Construction, operations, closure. Long-term geologic changes would involve the post-closure time period as well.

<sup>2</sup> The estimated overall life of the mine is 51 to 56 years and would consist of three overlapping phases: (1) construction (mine year 1 through 9), (2) operations (mine year 6 through 46) , and (3) closure (starting in mine year 46 and lasting 5 to 10 years). The term “mine year” is defined as 1 year after the final ROD has been signed and the final GPO has been approved by the Forest Service.

<b>Resource</b>	<b>Spatial Analysis Area for Cumulative Effects Analysis</b>	<b>Temporal Analysis Time Frame</b>
Soils and Vegetation	The loss of soil and vegetation in the project footprint contributes to the characteristics of the greater watershed, as do the changes in landscape-scale habitat blocks. The cumulative effects analysis area for soils and vegetation includes all watersheds impacted by ground disturbance, and the larger landscape of the Arizona transition zone (an ecoregion that roughly extends from the Mogollon Rim/Colorado Plateau to the desert valleys).	Construction, operations, closure.  Long-term recovery of vegetation would involve the post-closure time period as well.
Noise and Vibration	The direct and indirect effects of noise and vibration were determined to be limited to 1 mile from the project area. The cumulative effects analysis area for noise and vibration extends an additional mile, to allow for overlap of the direct/indirect effects from any RFFAs.	Construction, operations, closure.
Transportation and Access	The direct and indirect effects of transportation changes are analyzed for the roads adjacent to the mine and the regional transportation routes. The cumulative effects analysis area for transportation is identical, as traffic from other projects would potentially travel these same routes.	Construction, operations, closure.
Air Quality	The modeling analysis area used to assess direct and indirect impacts to air quality encompassed an area up to 100 kilometers from the project. This area is much greater than the area where impacts were modeled to occur (all air quality standards were met at the project fence line), and is sufficiently large to encompass other emission sources that could combine with the project emissions to impact air quality. The cumulative effects analysis area for air quality is identical to the model analysis area.	Construction, operations, closure.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Two separate modeling areas were used to assess direct and indirect impacts to groundwater resources and groundwater-dependent ecosystems: a large model area centered on the block-cave zone and encompassing much of the upper Queen Creek watershed, the Superior basin, and Oak Flat (where dewatering would occur), and the East Salt River valley (where the mine water supply would be pumped). Both model areas are sufficiently large to encompass other water users that could combine with the project effects and impact groundwater resources. The cumulative effects analysis area for groundwater quantity is identical to the two groundwater model analysis areas.	Construction, operations, closure.  Long-term changes in the hydrologic framework caused by the block-cave, and the long time frames needed for water levels to equilibrate in both model areas would involve the post-closure time period as well.

Resource	Spatial Analysis Area for Cumulative Effects Analysis	Temporal Analysis Time Frame
Water: Groundwater and Surface Water Quality	The effects on surface water quality generally would be confined to the watersheds within which the project is located. In most cases, the point at which groundwater quality impacts would merge with impacts from other projects is where groundwater is expressed at the surface, specifically Queen Creek (Alternatives 2, 3, and 4) and the Gila River (Alternatives 5 and 6). The cumulative effects analysis area for groundwater and surface water quality consists of the watersheds for upper Queen Creek (headwaters to Whitlow Ranch Dam), Dripping Spring Wash, Donnelly Wash, and the Gila River between Dripping Spring Wash to the Ashurst-Hayden Diversion Dam near Florence.	Construction, operations, closure.  Long-term changes in surface water quality due to the potential for runoff from reclaimed facilities, the long travel times involved with groundwater impacts, and the long time frames over which seepage would continue to drain from the tailings facilities, would involve the post-closure time period as well.
Water: Surface Water Quantity	The effects on surface water quantity are confined to the watersheds within which the project is located. The cumulative effects analysis area for surface water quantity is the same as that used for groundwater and surface water quality.	Construction, operations, closure.  Long-term changes in the characteristics of the watershed due to the subsidence crater and the tailings storage facility would involve the post-closure period as well.
Wildlife	As with the vegetation effects, the loss of habitat in the project footprint contributes to changes in landscape-scale habitat blocks. The cumulative effects analysis area for wildlife consists of the larger landscape of the Arizona transition zone (an ecoregion that roughly extends from the Mogollon Rim/Colorado Plateau to the desert valleys).	Construction, operations, closure.  Long-term recovery of habitat would involve the post-closure time period as well.
Recreation	The direct and indirect analysis area for recreation includes the project footprint and Management Area (MA) 2F of the Globe Ranger District of the Tonto National Forest; Passages 15, 16, and 17 of the Arizona National Scenic Trail (Arizona Trail); and Game Management Units (GMUs) 24A, 24B, and 37B. The cumulative effects analysis area for recreation consists of these same areas, as changes in recreation caused by other projects would affect the same general area.	Construction, operations, closure.  Long-term changes in the landscape and recreation opportunities would involve the post-closure time period as well.

<b>Resource</b>	<b>Spatial Analysis Area for Cumulative Effects Analysis</b>	<b>Temporal Analysis Time Frame</b>
Public Health & Safety: Tailings and Pipeline Safety	The direct and indirect analysis area for tailings and pipeline safety includes all downstream areas that could be affected in the event of a partial or complete failure of the tailings embankment. The cumulative effects analysis area for tailings and pipeline safety would match that of surface water quantity, as the risks of other large tailings facilities would generally follow similar flow patterns.	Construction, operations, closure.  Long-term risk of failure for closed tailings facilities would involve the post-closure time period as well. Risk of pipeline failure ends at closure, when the pipelines are no longer in use.
Public Health & Safety: Fuels and Fire Management	The direct and indirect analysis area for fuels and fire management includes all lands where mine-related activities would increase fuel accumulations due to subsidence or increase the risk of inadvertent, human-caused fire ignitions. The cumulative effects analysis area for fuels and fire management is identical, as it is these areas where additional risks could occur.	Construction, operations, closure.  Long-term changes in fuel load caused by vegetation changes would involve the post-closure period as well.
Public Health & Safety: Hazardous Materials	The direct and indirect analysis area for hazardous materials includes the project footprint and transportation routes to these areas. The cumulative effects analysis area is identical, as the potential for impacts from hazardous materials from other projects would largely follow the same transportation routes.	Construction, operations, closure
Scenic Resources	The direct and indirect analysis area for scenic resources consists of buffers of varying distance around project components, with a maximum of 6 miles for the tailings storage facilities. The 6-mile visual resource analysis buffer was chosen based upon the location of sensitive viewing locations, regional topography, and the potential for viewing the proposed tailings facilities in the regional landscape. Based upon Forest Service and BLM methodologies, background viewing distance ranges from 4 to 15 miles; using a viewshed analysis technique, 6 miles was determined to represent potential background views of the proposed tailings facilities from sensitive viewing locations. The cumulative effects analysis area for scenic resources is identical, as it would be these same areas from which other projects would be visible.	Construction, operations, closure.  The long-term change to the landscape caused by the subsidence crater and tailings storage facility would involve the post-closure period as well.
Cultural Resources	The direct and indirect analysis areas for cultural resources is identical to the area of potential effects (APE) which has been determined through Section 106 consultation. The cumulative effects analysis area for cultural resources is identical, as it would be these same areas in which cultural resources would occur that could be affected by other projects.	Construction, operations, closure



<b>Resource</b>	<b>Spatial Analysis Area for Cumulative Effects Analysis</b>	<b>Temporal Analysis Time Frame</b>
Socioeconomics	The direct and indirect analysis area for socioeconomic effects is the three-county area (Maricopa, Pinal, Gila). The cumulative effects analysis area for socioeconomic effects is identical, as the economic changes caused by other projects would affect these same towns, economies, and public services.	Construction, operations, closure
Tribal Values and Concerns	The direct and indirect analysis area for tribal values and concerns is identical to the cultural resource analysis area. However, the effects on tribes can extend over much larger areas, and projects can impact tribal values independent of proximity. The cumulative effects analysis area for tribal concerns and values is considered to be the ancestral homelands of the affected tribes, which is assumed to be the southwestern United States.	Construction, operations, closure.  The long-term change to the landscape would involve the post-closure period as well.
Environmental Justice	Due to the project's large scale, the direct and indirect analysis area for environmental justice 1) is the state of Arizona, which was the geographic area used as the reference area, and 2) included specific analysis of the following municipal areas and communities, each of which is distinguished as having a minority and/or low-income population meaningfully greater than the reference area: San Carlos Apache Reservation, Pinal County (Town of Superior, Town of Winkelman, Queen Valley Census Designated Place [CDP]); Gila County (Town of Miami, City of Globe, San Carlos, Top-of-the-World CDP, Town of Hayden); Graham County (Town of Bylas, Town of Peridot); and Maricopa County. The cumulative effects analysis area for environmental justice is identical, as the effects of other projects would occur in these same communities.	Construction, operations, closure
Land Use: Livestock and Grazing	The cumulative effects analysis area for livestock and grazing encompasses the same grazing allotments as those used for the direct and indirect analysis area, as any effects on livestock from other projects would be felt within these same allotments.	Construction, operations, closure  The long-term changes to vegetation and loss of access to public lands would involve the post-closure period as well.

## Screening of RFFAs and Analysis of Cumulative Effects

Attachment 1 contains those RFFAs found through initial screening to be reasonably foreseeable and with overlap in space and time with at least one resource. Worksheets were developed for each RFFA that describe the known details of the future action/activity and its potential effects; and a rationale for which specific resources should have a corresponding cumulative effects disclosure in the EIS.

The following table identifies which RFFAs should be analyzed for cumulative impacts for each resource evaluated in the EIS. It is a summary based on the worksheets found in Attachment 1 of this process memorandum.

<b>EIS Resource Section</b>	<b>RFFAs Considered in Cumulative Effects Analysis</b>
Geology, Minerals, and Subsidence	<ul style="list-style-type: none"> <li>• Florence Copper In-Situ Mining Project</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> </ul>
Soils and Vegetation	<ul style="list-style-type: none"> <li>• ADOT Vegetation Treatment</li> <li>• AGFD Wildlife Water Catchment Improvement Projects</li> <li>• APS Herbicide Use within Authorized Power Line ROWs on NFS lands</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Superior to Silver King 115-kV Relocation Project</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Noise and Vibration	<ul style="list-style-type: none"> <li>• ADOT Vegetation Treatment</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Transportation and Access	<ul style="list-style-type: none"> <li>• ADOT Vegetation Treatment</li> <li>• Copper King Exploratory Drilling/Superior West Exploration</li> <li>• Imerys Perlite Mine</li> <li>• LEN Range Improvements</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Tonto National Forest Plan Amendment</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• ADOT Vegetation Treatment</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>

<b>EIS Resource Section</b>	<b>RFFAs Considered in Cumulative Effects Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	<ul style="list-style-type: none"> <li>• ASLD Superstition Vistas Development Projects</li> <li>• Future Assured Water Supplies</li> <li>• Imerys Perlite Mine</li> <li>• LEN Range Improvements</li> <li>• Millsite Rangeland Improvements</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Town of Florence Development Projects</li> </ul>
Water: Groundwater and Surface Water Quality	<ul style="list-style-type: none"> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> </ul>
Water: Surface Water Quantity	<ul style="list-style-type: none"> <li>• LEN Range Improvements</li> <li>• Millsite Rangeland Improvements</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>• AGFD Wildlife Water Catchment Improvement Projects</li> <li>• ADOT Vegetation Treatment</li> <li>• APS Herbicide Use within Authorized Power Line ROWs on NFS lands</li> <li>• Bighorn Sheep Capture and Relocation</li> <li>• Government Springs Pipeline Project</li> <li>• LEN Range Improvements</li> <li>• Millsite Rangeland Improvements</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>

<b>EIS Resource Section</b>	<b>RFFAs Considered in Cumulative Effects Analysis</b>
Recreation	<ul style="list-style-type: none"> <li>• ADOT Vegetation Treatment</li> <li>• Bighorn Sheep Capture and Relocation</li> <li>• Central Arizona Project (CAP) Trail Plan</li> <li>• Copper King Exploratory Drilling/Superior West Exploration</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Recreation Special Use Permits</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Tonto National Forest Plan Amendment</li> <li>• Tonto National Forest Travel Management Plan</li> <li>• Wild and Scenic River Eligibility Study</li> </ul>
Public Health & Safety: Tailings and Pipeline Safety	<ul style="list-style-type: none"> <li>• APS Herbicide Use within Authorized Power Line ROWs on NFS lands</li> <li>• ASARCO Mine, including the Hayden Concentrator and Smelter, and Superfund Site</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> </ul>
Public Health & Safety: Fuels and Fire Management	<ul style="list-style-type: none"> <li>• Ripsey Wash Tailings Project</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Public Health & Safety: Hazardous Materials	<ul style="list-style-type: none"> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> </ul>
Scenic Resources	<ul style="list-style-type: none"> <li>• ADOT Vegetation Treatment</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Superior to Silver King 115-kV Relocation Project</li> <li>• Tonto National Forest Plan Amendment</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Socioeconomics	<ul style="list-style-type: none"> <li>• Florence Copper In-Situ Mining Project</li> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>

<b>EIS Resource Section</b>	<b>RFFAs Considered in Cumulative Effects Analysis</b>
Tribal Values and Concerns	<ul style="list-style-type: none"> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> <li>• Silver Bar Mining Regional Landfill and Cottonwood Canyon Road</li> <li>• Tonto National Forest Plan Amendment</li> <li>• Tonto National Forest Travel Management Plan</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>• Pinto Valley Mine Expansion</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> </ul>
Land Use: Livestock and Grazing	<ul style="list-style-type: none"> <li>• APS Herbicide Use within Authorized ROWs on TNF lands</li> <li>• Grazing Allotment Permit Renewals</li> <li>• LEN Range Improvements</li> <li>• Millsite Rangeland Improvements</li> <li>• Ray Land Exchange and Proposed Plan Amendment</li> <li>• Ripsey Wash Tailings Project</li> </ul>

## Literature Cited

Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects Under the National Environmental Policy Act, January 1997.

**Attachment 1 – Worksheets for RFFAs, Including  
Project Detail and Rationale for Resources to Be Analyzed**

## ***Abel-Moody 230 kV Construction***

### Overview of RFFA

In 2008 SRP identified a need for 2,500 MW of new summer peaking and intermediate generation in order to meet electricity demands. This additional infrastructure would support SRP's developing southeast service area, including Queen Creek, Gilbert, southeast Mesa and nearby unincorporated communities in their needs for current and future electricity demand.

On December 15, 2009, the Arizona Corporation Commission voted unanimously to confirm the Certificate of Environmental Compatibility for the Abel-Moody 230kV line.

### Temporal overlap with Resolution Project

Originally planned to complete construction in 2021, however the project was put on hold in 2008 during the recession. The project would resume as warranted by forecasted energy needs.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall Conclusion:** This project has been put on hold with no updates since 2009. As such, there is insufficient spatial information at this time to evaluate potential cumulative effects.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

<http://www.pinalenergyprojects.org/projectsoverview.aspx>

<https://srpnet.com/electric/transmission/projects/abelmoody/abelmoody.aspx>



## ***A-Diamond Allotment, Grazing Lease Renewals***

### Overview of RFFA

The A-Diamond Grazing Allotment is approximately 22,389 acres including 6,580 acres of lands administered by the Bureau of Land Management (BLM) Tucson Field Office, 15,039 acres of lands administered by the Arizona State Land Department (ASLD), and 770 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The A Diamond Allotment is located about 1.2 miles south of Highway 177 and about 11.5 miles east of the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

#### ***BLM***

The A-Diamond allotment is an active grazing allotment that has 301 cattle authorized for year-round use on the BLM portions of the allotment and is authorized for 696 AUMs (BLM Allotment Number AZ06120). This use was authorized on March 1, 2015 and is authorized until March 1, 2025. An inspection of the allotment in 2000 determined that it was in good condition and stable (United States Fish and Wildlife Service [USFWS] 2003). Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements.

This evaluation assumes that grazing will continue to occur on the BLM portions of this allotment and that the EA written for the lease renewal will allow for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. It is anticipated that no new roads or other facilities would be constructed under the grazing lease.

#### ***ASLD***

The A-Diamond allotment is an active grazing allotment that is authorized for approximately 955 AUMs and is leased to G&H Land & Cattle Company (Lease 5-3391). For the purposes of this evaluation, we have assumed that the ASLD would continue to renew the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### ***Private Ownership***

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the A-Diamond Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

United States Fish and Wildlife Service. 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Available at: [https://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/00029\\_Middle\\_Gila\\_River.pdf](https://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/00029_Middle_Gila_River.pdf). Accessed April 2019.

## ***ADOT Potential Transportation Infrastructure Improvement Projects***

### Overview of RFFA

Potential upcoming transportation projects include, but are not limited to:

- US 60 between Florence Junction and Globe
- SR 79 between Florence Junction and Oracle
- SR 177 between Superior and Winkelman/Kearny
- SR 77 between Globe and Winkelman/Kearny

These projects will include various roadway preservation and improvement efforts, including pavement replacement, bridge rehabilitation or replacement, sidewalk and other pedestrian access improvements/replacements, roadway widening, drainage improvements and/or replacements, additional or replacement signage and pavement markings, and installation of new or replacement roadway lighting.

Each of these projects will have the effect of temporarily reducing traffic flow in specific project areas through lane restrictions and closures, reduced traffic speeds, and other measures that would last until project completion. The overall result of these projects should, however, be generally improved traffic conditions and extended roadway life.

None of the proposed ADOT projects is expected to have any substantial or long-term environmental impact. This is because such routine roadway infrastructure improvement actions

- are nearly always limited to areas that are already disturbed;
- adverse environmental effects (such as generation of dust or noise or light) typically occur only for the duration of construction; and
- ADOT construction management practices tend to limit adverse effects on surrounding vegetation, soils, and waters.

### Temporal overlap with Resolution Project

Various times throughout the life of the Resolution Mine project (~50 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** While these and other ADOT road projects may overlap in space and time with effects of the Resolution Mine and other human activities within the larger cumulative assessment analysis area, no substantial or lasting environmental impacts are anticipated.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Arizona Department of Transportation. 2018. *2019-2023: Five-Year Transportation Facilities Construction Program*. June 18. Available: <https://www.azdot.gov/docs/default-source/planning/five-year-program-fy2019-2023.pdf?sfvrsn=10>. Accessed: March 2019.

## ***ADOT Vegetation Treatment***

### Overview of RFFA

ADOT plans to conduct annual treatment programs using EPA-approved herbicides to contain, control, or eradicate noxious, invasive, and native plant species that pose safety hazards or threaten native plant communities on road easements and NFS lands up to 200 feet beyond road easement on the Tonto National Forest.

### Temporal overlap with Resolution Project

It can be reasonably assumed that ADOT will continue to conduct vegetation treatments along U.S. 60 on the Tonto National Forest during the expected life of the Resolution Copper Mine (50 to 55 years) for safety reasons.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA as identified in <i>Final Environmental Assessment: Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations</i> (USDA 2016) does not measurably impact this resource.
Soils and Vegetation	Contributes to cumulative effects; sufficient information exists to analyze. This RFFA may measurably impact this resource (USDA 2016).
Noise and Vibration	Contributes to cumulative effects; sufficient information exists to analyze. This RFFA may measurably impact this resource (USDA 2016).
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. This RFFA may measurably impact this resource (USDA 2016).
Air Quality	Contributes to cumulative effects; sufficient information exists to analyze. This RFFA may measurably impact this resource (USDA 2016).
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).

<b>Resource</b>	<b>Rationale for Analysis</b>
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. Herbicide application could have short- and long-term, indirect, minor adverse impacts and short- and long- term, direct, negligible adverse impacts on the Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, narrow-headed gartersnake, and the northern Mexican gartersnake and their respective habitats.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. This RFFA may measurably impact this resource (USDA 2016).
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Tailings safety is not applicable to vegetation treatment for noxious weeds.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Scenic Resources	Contributes to cumulative effects; sufficient information exists to analyze. This RFFA may measurably impact this resource (USDA 2016).
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).

Source:

United States Department of Agriculture (USDA). Forest Service Southwestern Region. January 2016. Final Environmental Assessment: Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations. Available at: <https://portal.azoah.com/oedf/documents/17-001-WQAB/SCAT-13-Final%20EA.BaselineProject.2016.BATES.pdf>. Accessed March 2019.

## ***AGFD Wildlife Water Catchment Improvement Projects***

### Overview of RFFA

The individual catchment projects below are part of a larger, longer-term cooperative effort between the Tonto National Forest and Arizona Game and Fish Department to improve wildlife habitat throughout the Tonto, and specifically to benefit mule deer populations (although access to water provided by the catchments would also benefit elk, javelina, Gambel's quail, and other species).

Each catchment array (including water storage tanks, a large "apron" to gather and direct precipitation to the storage tanks, drinking trough, and fencing) would disturb no more than 0.5 acre.

- Currie Wood (AGFD ID# 69), NEPA complete, Tonto National Forest, Globe Ranger District, Scheduled for construction in February 2019; north of TSF Alts 2/3 and 4
- Silver King (AGFD ID#70), NEPA complete, Tonto National Forest, Globe Ranger District, Materials funded. Within footprint of Alternative 4 tailings storage facility (TSF); project on hold due to proposed Resolution Copper Mine project.
- Gonzales Pass (AGFD ID#71), NEPA complete, Tonto National Forest, Mesa Ranger District, not funded yet, south of Alternatives 2/3 TSF.
- Cactus Patch (AGFD ID#989), NEPA complete, AGFD internal compliance in process, funding has been applied for through the AGFD - HPC and pending funding decision at Jan. 2019 HPC meeting - in vicinity of Peg Leg tailings corridor west alternative.

### Temporal overlap with Resolution Project

No specific information is provided as to proposed construction schedule, although it is assumed each catchment could be constructed in 2-3 weeks or less. Each catchment is anticipated to have a functional life of approximately 35 years.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource.
Soils and Vegetation	Contributes to cumulative effects; sufficient information exists to analyze. The proposed projects would each disturb approximately 0.5 acre of soils and vegetation.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Construction would result in short-term noise and some vibrations at each location, but no long-term effects on noise or vibration.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource.



<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed projects would each disturb approximately 0.5 acre, which would have a negligible effect on area waters.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed projects would each disturb approximately 0.5 acre, which would have a negligible effect on area waters.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed projects would each disturb approximately 0.5 acre, which would have a negligible effect on area waters.
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. Small-scale water improvement projects for wildlife would only have beneficial effects on area wildlife.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource, except perhaps to benefit wildlife such as elk and deer and thereby prove beneficial to hunters, photographers, and other wildlife enthusiasts.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Tailings safety is not applicable to these types of water catchment projects.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed projects would each disturb approximately 0.5 acre, which would have a negligible effect on area fuel loads or wildfire risk.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Hazardous materials are not applicable to these types of water catchment projects.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed projects would each disturb approximately 0.5 acre, and are designed to be only minimally alter existing landscapes.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Each project would be sited to avoid any effect on existing cultural resources.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. These types of water catchment projects would have no effect on this resource.

Resource	Rationale for Analysis
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Small-scale water improvement projects for wildlife would have no measurable effect on this resource, except perhaps to provide another drinking water source on the landscape and thus potentially reduce competition from wildlife drinking from livestock tanks.

Source:

U.S. Forest Service, Tonto National Forest. 2016. "Arizona Game and Fish Department's Wildlife Water Catchments Project on the Tonto National Forest." Available: <https://www.fs.usda.gov/project/?project=49276>. May 10. Accessed: March 2019.

## ***APS Herbicide Use within Authorized Power Line Rights-of-Way on National Forest System Lands in Arizona***

### Overview of RFFA

Arizona Public Service Company (APS) has proposed to include Forest Service approved herbicides as a method of vegetation management, in addition to existing vegetation treatment methods, on existing APS transmission Rights-of-Way (ROWs). The existing transmission ROWs are within five National Forests: Apache-Sitgreaves, Coconino, Kaibab, Prescott, and Tonto National Forests. The Forest Service must decide whether to allow this herbicide use. If approved, the use of herbicides as well as currently authorized treatments would become part of the APS Integrated Vegetation Management (IVM) approach.

Environmental resource impacts are expected to be minimal. An Environmental Assessment published in December 2018 found no significant impacts would result from the Proposed Action for the following reasons: 1) None of the environmental effects presented in the EA are considered significant; 2) the Proposed Action promotes overall public safety; 3) Project activities would not significantly affect lands with unique characteristics; 4) there are no highly controversial effects to the human environment; 5) the effects associated with the Proposed Action are recognized, familiar, and acceptable; 6) the Proposed Action would not result in any minor, moderate, or major contribution to cumulative impacts; 7) the project would not have an adverse effect on cultural or historical resources; 8) the Proposed Action would result in minor adverse impacts to endangered or threatened species; and 9) implementation of the Proposed Action does not violate any known federal, state, or local law or requirement imposed for the protection for the environment.

### Temporal overlap with Resolution Project

Undetermined.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Herbicide use would not have any impact on geology or claims and would not result in subsidence.
Soils and Vegetation	<p>Contributes to cumulative effects; sufficient information exists to analyze. Limited disturbance to soils and biological soil crusts would occur during the cycle of manual/mechanical and herbicide treatments. The amount of soil loss or erosion, or changes in soil characteristics would be minor and localized. The IVM approach would reduce the intensity of future mechanical and manual treatments, subsequently reducing potential impacts to soils.</p> <p>The project would have short-term, direct and indirect, moderate adverse impacts and long-term, direct and indirect, moderate beneficial impacts to general vegetation. Plant communities would benefit from the use of herbicides by decreased the growth, seed production, and competitiveness of target plants.</p>
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise from herbicide use for vegetation management would be exceedingly minimal.

<b>Resource</b>	<b>Rationale for Analysis</b>
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No impacts to current traffic conditions are expected to occur as a result of this project.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Herbicide use as proposed for this project would not have impacts to air quality.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. No groundwater would be used in the application of herbicides.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The Proposed Action would not include the application of herbicides to surface waters, therefore, no direct impacts to surface quality are expected, although indirect effects have low likelihood to occur as a result of runoff, leaching, or drift. Potential indirect adverse impacts to groundwater would not be detectable.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. No surface water would be used in the application of herbicides.
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. The project would have short- and long-term, indirect, minor adverse impacts and short- and long-term, direct, negligible adverse impacts on the Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, narrow-headed gartersnake, and northern Mexican gartersnake and their respective habitats.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Treatments in developed recreation sites would be limited to time periods when facilities are closed or during periods of low human use.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this proposed project.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects; sufficient information exists to analyze. The Proposed Action would have short- and long-term, direct and indirect, moderate, beneficial impacts. The use of herbicides would prevent and reduce fuel build-up that would result from rapid, dense re-growth and sprouting of undesired vegetation that is cut-back in the ROW.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Herbicide use will comply with Forest Service direction in FSM 2100, Chapter 2150 – Pesticide-Use Management and Coordination. An operational and spill plan will be prepared in advance of treatment and an emergency cleanup kit will be present onsite during treatments.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project area is previously disturbed and managed land.

Resource	Rationale for Analysis
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The Forest Service has conducted consultations with affected tribes on this project and the proposed action would have no adverse effects on cultural resources.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Herbicide use would not impact socioeconomic conditions within the project area.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. The project would not have an adverse effect on tribal values.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Herbicide use will not have any impact on communities with potential environmental justice populations.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. The project would result in short-term, direct and indirect, moderate adverse impacts and long-term, direct and indirect, moderate beneficial impacts on rangeland health within the study area. Restoration efforts and reduction in frequency and intensity of vegetation maintenance disturbances would counterbalance the effects of previous disturbance by limiting the disruption of reestablishing vegetation and promoting site stability.

Source:

U.S. Forest Service. (2018). *Environmental Assessment and Finding of No Significant Impact for Herbicide Use within Authorized Power Line Rights-of-Way on National Forest System Lands in Arizona*. Phoenix: U.S. Forest Service; Southwestern Region; Apache-Sitgreaves, Coconino, Kaibab, Prescott, and Tonto National Forests. December. Accessed online at: [https://www.fs.usda.gov/nfs/11558/www/nepa/100308\\_FSPLT3\\_4506258.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/100308_FSPLT3_4506258.pdf)

## ***ASARCO Mine, including the Hayden Concentrator and Smelter, and Superfund Site.***

### Overview of RFFA

The Ray Operations consists of a 250,000 ton/day open-pit mine with a 30,000 ton/day concentrator, a 103 million pound/year solvent extraction-electrowinning operation, and associated maintenance, warehouse, and administrative facilities. Cathode copper produced in the solvent extraction and electrowinning operation is shipped to outside customers and to the Asarco Amarillo Copper Refinery.

A local railroad, Copper Basin Railway, transports ore from the mine to the Hayden concentrator, concentrate from the Ray concentrator to the smelter, and sulfuric acid from the smelter to the leaching facilities.

The ASARCO Hayden Plant Superfund site is located 100 miles southeast of Phoenix and consists of the towns of Hayden and Winkelman and nearby industrial areas, including the ASARCO smelter, concentrator, former Kennecott smelter and all associated tailings facilities in the area surrounding the confluence of the Gila and San Pedro Rivers. Site investigation and sampling work are ongoing and will be used to develop the cleanup approach for the area. The site is not listed on the National Priorities List (NPL), but is considered to be a NPL-caliber site and is being address through the Superfund Alternatives Approach.

### Temporal overlap with Resolution Project

Currently operational through 2044.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Except for the Ripsey Wash tailings facility which is analyzed as a separate RFFA, no specific information was found that suggests these operations from these facilities would change in the nature of impacts, magnitude of impacts, or location of impacts. Therefore, future operation is assumed to continue in a manner similar to past and present operations.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	The Superfund site is undergoing its second phase of investigation work, which would include soil investigations in non-residential areas.  Analysis not required for Ray Mine; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present noise and vibration conditions are representative of the operation of Ray Mine, no changes are expected.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present transportation conditions include the operation of Ray Mine, no changes are expected.

Resource	Rationale for Analysis
Air Quality	<p>The Superfund site is undergoing its second phase of investigation work, which would include air quality sampling in non-residential areas. These investigations will determine the nature and extent of contamination and then used to develop additional cleanup options.</p> <p>Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present air quality conditions are representative of the operation of Ray Mine, no changes are expected.</p>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; since 1994, ASARCO has held valid APP permits with ADEQ and will continue to do so through remainder of operation and closure.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; since 1994, ASARCO has held valid APP permits with ADEQ and will continue to do so through remainder of operation and closure.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; since 1994, ASARCO has held valid APP permits with ADEQ and will continue to do so through remainder of operation and closure.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; the Ray Mine has been in operation for many years and is an area of previous disturbance.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; the Ray Mine has been in operation for many years and is an area of previous disturbance.
Public Health & Safety: Tailings Safety	Contributes to cumulative effects; sufficient information exists to analyze. Note that the newly approved tailings facility is analyzed for cumulative effects in the context of the Resolution Mine in a separate RFFA and worksheet ("Ripsey Wash Tailings Project"). However, the existing facilities described under this RFFA involve tailings facilities in the vicinity of the Gila River and these are appropriate for analysis for cumulative effects.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present fuels and fire management conditions are representative of the operation of Ray Mine, no changes are expected.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present hazardous materials conditions are representative of the operation of Ray Mine, no changes are expected.

<b>Resource</b>	<b>Rationale for Analysis</b>
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; the Ray Mine is an existing mine and is an area of previous disturbance.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present cultural resources conditions are representative of the operation of Ray Mine, no changes are expected.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present socioeconomic conditions are representative of the operation of Ray Mine, no changes are expected.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present tribal values conditions are representative of the operation of Ray Mine, no changes are expected.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; present conditions are representative of the operation of Ray Mine, no additional impacts to environmental justice communities are expected.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion; the Ray mine is currently operational and grazing does not occur within the project area.

Source:

Ray Mine APP Permit Draft.



## ***ASLD Superstition Vistas Development Projects***

### Overview of RFFA

According to the *Town of Florence 2020 General Plan*, “The Arizona State Land Department, with the help of the East Valley Partnership and other regional stakeholders, is currently developing a specific area plan for the Superstition Vistas area, a 275-square-mile area of vacant desert. Current estimates indicate one million or more people could live in this area. The Morrison Institute wrote a document entitled *The Treasure of the Superstitions*, which introduces a number of different planning scenarios for this area.”

The Superstition Vistas.org website states that they “are now beginning a visioning process to make sure that this land sets an example for sustainability and economic prosperity for the region.” The organization and its partners have developed a number of conceptual development scenarios (available for viewing on the website) but have not proceeded to any more concrete design plans. The most recent of the “News & Updates” posted to the organization website is dated January 16, 2012.

### Temporal overlap with Resolution Project

Unknown. Development of any or all of these projects depends on numerous factors, including public demand for new housing and commercial facilities in the area as well as necessary roads, bridges, and water and electrical and other infrastructure and services; favorable market conditions; municipal government approval of planning and individual development designs; and innumerable other factors. It is considered too speculative to estimate if, when, or to what extent development may occur in these areas.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** At this time, there is insufficient information to analyze potential development in this area or the possible scale of environmental impacts or cumulative effects related to the Resolution Mine project. Any individual developments within the East Valley area that have plans specific enough to indicate where impacts would occur and the type and magnitude of those impacts would be considered as separate RFFAs.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Soils and Vegetation	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Noise and Vibration	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Transportation	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Air Quality	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects, but insufficient information exists to analyze. However, while insufficient information exists for specific development related to this RFFA, note that the overall use of water resources and development in the East Salt River Valley is assessed for cumulative effects.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater and Surface Water Quality	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Water: Surface Water Quantity	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Wildlife	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Recreation	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Public Health & Safety: Tailings Safety	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Public Health & Safety: Hazardous Materials	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Scenic Resources	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Cultural Resources	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Socioeconomics	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Tribal Concerns and Values	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Environmental Justice	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.

Source:

Superstition Vistas. 2019. Organization website. Available: <http://www.superstition-vistas.org>. Accessed: March 2019.

Town of Florence. 2019. *Town of Florence 2020 General Plan*. Available: <http://www.florenceaz.gov/wp-content/uploads/documents/Community%20Development/2020%20General%20Plan/Florence%2020%20General%20Plan.pdf>. Accessed: March 2019.

## ***Arizona National Scenic Trail (AZNST) Comprehensive Plan***

### Overview of RFFA

The Southwestern Regional Office of the Forest Service (Region 3), in coordination with the Tonto National Forest and other Forests in Arizona, is leading development of an Arizona National Scenic Trail Comprehensive Plan and accompanying National Environmental Policy Act (NEPA) Environmental Assessment (EA).

The Comprehensive Plan will develop administrative and management goals, objectives, and practices for the AZNST and management corridor. This planning-level document would not implement or authorize any specific project or activity, but rather provide an overall vision and basis for future management.

While the plan is a planning-level document, several specific potential projects are envisioned and have been publicly identified. One connecting trail from the AZNST within the Tonto National Forest would be the Legends of Superior Trail (LOST), providing access to the community of Superior historic area. In addition, a re-route of the AZNST is planned that would avoid impacts from a highway realignment.

### Temporal overall with Resolution project

The Forest Service states that the Comprehensive Plan will guide AZNST management for approximately 15-20 years, beginning in the winter of 2019-2020 (this is assumed to be the time frame when a formal decision on the Plan will be announced) (USDA 2017a).

### Rationale for analysis as cumulative effect in EIS, by resource

Rationale for each resource is based on Comprehensive Plan Public Scoping Document (USDA 2017b).

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. No disturbance to geological resources is foreseen.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The Plan identifies areas of unstable soils and plans to restore the trail and trail corridor where there are existing trail erosion and drainage problems and impacts.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. This is a Planning level-document; therefore, no additional noise would be associated with the Plan.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No disturbance to local or regional roadways would occur.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no generation of emissions associated with the implementation of the Plan.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Guidance to protect hydrology within in the Plan would consult with management plans (municipal, county/state, federal).

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Guidance to protect hydrology within in the Plan would consult with management plans (municipal, county/state, federal).
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The Arizona Trail corridor is sustainable with no major soil erosion, water drainage, or water quality concerns caused by the use and management of the trail or other land uses within the corridor.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Sections of the Arizona Trail may be relocated for purposes of special-status species and/or critical habitat protection only when other mitigation alternatives are found to be not possible, as determined through NEPA analyses
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Users of the AZNST in this portion of the state may have an improved trail experience with the implementation of this Plan.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in the proposed plan.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. No fire risk is foreseen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. No hazardous material risk is foreseen.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Users of the AZNST in this portion of the state may have an improved scenic experience with the implementation of this Plan.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Trail corridors would be managed to include the identification of significant cultural resources to be preserved.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Socioeconomics would be affected minimally from increased recreational users and construction.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Cultural landscapes would be identified by the tribes, communities and preservation partners and significant visual qualities of tribal cultural property would be protected.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to environmental justice communities in the area.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no changes to livestock or grazing in the area as a result of the Plan's implementation.

Source:

Tonto National Forest. 2019. "Schedule of Proposed Actions (SOPA) – 01/01/2019 to 03/31/2019." Available: <https://www.fs.usda.gov/project/?project=49896&exp=detail>. Accessed: March 2019.

United States Forest Service (USFS). 2017a. *Arizona National Scenic Trail Comprehensive Plan Public Engagement Summary - Scoping Phase, 2017*. Available at: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd567374.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd567374.pdf). Accessed January 2019.

USFS. 2017b. *Planning for the Future of the Arizona National Scenic Trail: Arizona National Scenic Trail Comprehensive Plan: Public Scoping Document*. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/104401\\_FSPLT3\\_4047026.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/104401_FSPLT3_4047026.pdf). Accessed January 2019.

## ***Arizona National Scenic Trail Teacup Segment Realignment***

### Overview of RFFA

Realignment of approximately 5.4 miles of trail segment across Bureau of Land Management (BLM)- and Arizona State Land Department (ASLD)-managed lands. While the land which the trail traverses is publicly owned and administered by either the BLM or ASLD, the right-of-way for the Arizona National Scenic Trail (AZNST) in this area is managed by Pinal County.

Pinal County, in cooperation with the BLM and ASLD, intends to relocate 2.41 miles of trail on BLM land to put greater distance between the trail and a livestock watering source, while 2.92 miles of trail on ASLD lands would be realigned to move it off an existing two-track road, and thereby eliminate potential future interactions between motorized and non-motorized users on the same segment of trail.

### Temporal overlap with Resolution Project

The realignment of these trail segments occurred in late 2018 and early 2019. Thus, there would be no temporal overlap between these actions and the Resolution Mine project.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. No disturbance to geological resources is foreseen.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no additional net disturbance to soils or vegetation because the new alignment would replace the disturbed areas in the previous routing of the trail. The previous areas of trail would be allowed to return to natural condition.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. No meaningful levels of noise or vibration would be associated with new trail construction.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No disturbance to local or regional roadways would occur.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no generation of emissions associated with new trail construction, which is performed using hand tools
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to groundwater or surface water sources.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to groundwater or surface water sources.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to groundwater or surface water sources.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. No meaningful disturbance to wildlife or habitat is foreseen. Trail realignment will be located so as to avoid critical habitat and other sensitive wildlife areas (e.g., nesting areas).
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Users of the AZNST in this portion of the state may have an improved trail experience using the new alignments.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to public health and safety are likely.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. No increased fire risk is foreseen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no use of hazardous materials associated with this proposed action.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Users of the AZNST in this portion of the state may have an improved scenic experience using the new alignments of the trail.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The revised trail routing will be located so as to avoid disturbance to archaeological and cultural sites and resources.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. No change to local socioeconomic conditions is foreseen.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects from the trail realignment on tribal values are foreseen.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to environmental justice communities in the area.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no changes to livestock or grazing in the area as a result of the trail relocation.

Source:

Taylor, Kent A. 2018. "Proposed Arizona Trail Realignment – Teacup Ranch Area Amendment." Letter from the Director of the Pinal County Open Space and Trails Department to William Meyer of Haydon Combe Ranch, Florence, AZ. September.

United States Forest Service (USFS). 2017. *Planning for the Future of the Arizona National Scenic Trail: Arizona National Scenic Trail Comprehensive Plan: Public Scoping Document*. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/104401\\_FSPLT3\\_4047026.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/104401_FSPLT3_4047026.pdf). Accessed January 2019.



## ***Battle Axe Grazing Allotment – Grazing Lease Renewals***

### Overview of RFFA

The Battle Axe Allotment is approximately 20,275 acres of land including 14,821 acres of land administered by the Bureau of Land Management (BLM) Tucson Field Office, 3,270 acres of land administered by the Arizona State Land Department (ASLD), 1,615 acres of private land, and 569 acres of land administered by the US Forest Service (USFS) - Tonto National Forest. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Battle Axe Allotment is located about 7 miles south of US 60 and the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

### *BLM*

The BLM administers 14,821 acres of land in the Battle Axe Allotment (BLM allotment AZ060509), and grazing lease information indicates 210 head of cattle, totaling 1,562 AUM's, are permitted on BLM lands within the allotment. The existing lease will expire in February 2027. Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA), reauthorizing grazing within the allotment and any proposed rangeland improvements. There is no current EA, however, this evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the allotment, and that the grazing lease for these activities will be renewed when it expires.

### *ASLD*

The grazing lease for state lands in this allotment is held by Wade Leuck who leases about 3,270 acres over multiple parcels from ASLD. The lease (KE-5-102690) allows grazing for up to 425 Animal Unit Months (AUMs). Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

### *Private Ownership*

Approximately 1,615 acres of private land exists within the Battle Axe Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### *USFS*

There are approximately 569 acres of the Battle Axe Allotment, which are managed by the Tonto National Forest. No USFS grazing allotment information or supporting NEPA documentation for this allotment were retrievable from the Tonto National Forest's website. However, for the purposes of this evaluation, we have assumed that the USFS does permit grazing and minor range improvements, and that grazing practices include a similar AUM per fractional area as the BLM, e.g. about 60 AUM. This evaluation assumes that, like BLM, the USFS grazing lease renewal will require an EA be completed when the current lease expires.

### Temporal overlap with Resolution Project

The exact timing for all grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Battle Axe Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

USDA Forest Service, Tonto National Forest. 2019. Projects list for current major projects and project archives. Available at: <https://www.fs.usda.gov/wps/portal/fsinternet/cs/projects/tonto/landmanagement/projects?archive=1&sortby=1>. Accessed April 22, 2019>

\_\_\_\_\_. 2019. Tonto National Forest GIS Data; Rangeland. Available at: <https://www.fs.usda.gov/detail/r3/landmanagement/gis/?cid=stelprdb5209307>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Bighorn Sheep Capture and Relocation***

### Overview of RFFA

This project involves the proposed capture of bighorn sheep from 37B Mineral Mountains and relocation to Region 5. Capture from GMU 24B sheep populations in Superstitions may also be included, as would be use of helicopters in five wilderness areas within the Tonto National Forest (Four Peaks, Hellsgate, Mazatzal, Salt River Canyon, and Superstition). A preliminary Environmental Assessment (EA) for this project was completed in 2014 (see page 3 below). The Forest is currently in the process of developing a revised EA that will address public concerns expressed in response to the preliminary EA.

### Temporal overlap with Resolution Project

Estimated implementation date is November 2019.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep will not have an impact on mineral resources or geology and does not result in subsidence.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep is not expected to have an impact on soils or vegetation resources within the project area.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Presence of helicopters would result in additional noise, but these effects would only be minor short-term effects and would be planned during periods of low use.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep is not expected to have an impact on road traffic or transportation within the project area.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep is not expected to have an impact on air quality.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. The capture and relocation will not impact groundwater resources.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep will not have an impact on groundwater or surface water quality.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep will not have a measurable impact on surface water quantity.

Resource	Rationale for Analysis
Wildlife	<p>Contributes to cumulative effects; sufficient information exists to analyze. Notable endangered, threatened, candidate, and proposed ESA species within the project area that were analyzed in detail include: Mexican spotted owl, Morafka's desert tortoise, bald eagle, and golden eagle. Primary impacts to wildlife would occur as a result of helicopter use, if determined that these wildlife species are sensitive noise receptors within the flight paths of the helicopters.</p> <p>Helicopter operations would have a minor short-term adverse impact on the natural quality of the affected areas, however overall there would be positive impacts to natural quality as bighorn sheep translocation would help reduce a population of bighorn sheep to reduce likelihood of an epizootic event.</p>
Recreation	<p>Contributes to cumulative effects; sufficient information exists to analyze. Recreation experiences would be affected by helicopter sightings and noise near landing sites throughout the life of the project. Helicopter use would be scheduled for weekdays when recreation use is lowest. Arizona Game and Fish also plan to avoid high use areas within wilderness areas.</p>
Public Health & Safety: Tailings Safety	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this project.</p>
Public Health & Safety: Fuels and Fire Management	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep will not have an impact on fuels and fire management.</p>
Public Health & Safety: Hazardous Materials	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. No hazardous materials are involved in this project.</p>
Scenic Resources	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Visual presence of helicopters could disrupt a solitude or primitive wilderness experience, but these effects would only be minor short-term effects and would be planned during periods of low use. Trailheads would be signed notifying visitors of possible disruptions.</p>
Cultural Resources	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The Tonto Apache Tribe, White Mountain Apache Tribe, and Hopi Tribe indicate that the proposed project would not have an impact on the tribes' historic properties and/or traditional cultural properties. If project planning and implementation resulted in the discovery of human remains and/or funerary objects, the tribes have requested that such remains and/or objects be treated with respect and accordingly until remains are repatriated to the affiliated tribe.</p>
Socioeconomics	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Bighorn sheep are considered part of the values that contribute to wilderness recreation. Enhancing populations of bighorn sheep in areas of previous habitation would have beneficial, but minor, socioeconomic impacts to their consumptive and non-consumptive use value.</p>

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. The Tonto Apache Tribe, White Mountain Apache Tribe, and Hopi Tribe indicate that the proposed project would not have an impact on the tribes' historic properties and/or traditional cultural properties. Arizona Game and Fish has been requested to notify the tribes of any proposed flight dates and paths to ensure the Tribe has enough time to determine whether any disruption to ongoing hunts on tribal lands would occur. If there are conflicts, Game and Fish has been requested to consider alternative flight paths.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep does not impact any environmental justice communities.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Translocation of bighorn sheep would not have a measurable impact on grazing.

Source:

USDA Forest Service. 2014. *Preliminary Environmental Assessment for Authorization of Helicopter Landings in Wilderness, Tonto National Forest, Gila, Maricopa, Pinal, and Yavapai Counties, Arizona*. Southwestern Region. August.

## ***Central Arizona Project (CAP) Trail Plan***

### Overview of RFFA

Recreational trail planned to be constructed alongside the Central Arizona Project (CAP) canal in Pinal County.

According to the Pinal County Open Space and Trails Master Plan (2007), “As part of the planning effort for the CAP canal, [the Bureau of Reclamation] BOR committed itself to maintaining a 20-foot recreation corridor on the right side of the canal (facing downstream). The intent of the CAP is to include a 10-foot-wide paved, non-motorized path. Pinal County has over 53 miles of CAP canal that is also used as a connection to the Maricopa County Regional Trail System.”

The Pinal County *Master Plan for the Pinal County Segment of the Central Arizona Project CAP National Recreation Trail* (2015), the approved CAP trail within Pinal County would be located adjacent to the CAP canal from the south county line south of Redrock to the north county line adjacent to the City of Apache Junction. Notable features would include:

- Multi-use non-motorized trail opportunities.
- Linking ongoing CAP trail projects in Pima County and Maricopa County.
- Potential linkages to multiple cities in Pinal County.
- Potential linkages to State Parks and future County Regional Parks.
- Potential link to the conceptual Sun Corridor Trail a multi-use, non-motorized trail from the border with Mexico to Clark County, Nevada.

### Temporal overlap with Resolution Project

Construction of segments of the trail have already begun, but in the phased approach called for in the Master Plan it will take “many years” to complete all segments throughout Pinal County.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. Construction impacts would be short-term and minimal and no adverse effects on area noise and vibration are anticipated.

<b>Resource</b>	<b>Rationale for Analysis</b>
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. Construction impacts would be short-term and minimal and no adverse effects on area transportation are anticipated.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. Construction impacts would be short-term and minimal and no adverse effects on area air quality are anticipated.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. The effect to this resource would be an increase in recreational opportunities – a beneficial effect.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No adverse effects on public health and safety are anticipated.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No adverse effects on public health and safety are anticipated.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No adverse effects on public health and safety are anticipated.



Resource	Rationale for Analysis
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. No measurable effects on area socioeconomics are anticipated.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No effects to this resource are anticipated.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Nearly the entire distance of the CAP trail in Pinal County will be constructed within already disturbed areas directly adjacent to or near the CAP canal. No adverse effects on area livestock or grazing patterns are anticipated.

Source:

Pinal County. 2007. *Final Open Space and Trails Master Plan*. October. Available: <http://www.pinalcountyz.gov/OpenSpaceTrails/Documents/FINAL%20Open%20Space%20and%20Trails%20Master%20Plan.pdf>. Accessed: March 2019.

Pinal County. 2015. *Master Plan for the Pinal County Segment of the Central Arizona Project CAP National Recreation Trail*. November. Available: <http://www.pinalcountyz.gov/OpenSpaceTrails/Pages/CAPRecTrail.aspx>. Accessed: March 2019.

## ***Carlota Eder South Mine Operations***

### Overview of RFFA

According to the website CopperArea.com, “Carlota Copper Company (Carlota), owner/operator of the Carlota Mine, located approximately 10 miles west of Globe-Miami, Arizona, will start mining a small satellite copper oxide deposit, known as Eder South, on Carlota’s patented claims. The mine will consist of a small open pit (approx. 8.9ha/22ac), one main haul road and several support roads.

The project began around the time frame of May 15, 2018. Mining of the Eder South deposit will continue for approximately three years. Mining will consist of blasting and hauling of ore with 4-150T haul trucks to the existing lined heap leach pad for copper recovery.”

### Temporal overlap with Resolution Project

Available information indicates this relatively small-scale oxide ore recovery and heap leach mining operation at the Carlota Mine will conclude before the Resolution Mine becomes active.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Although geographically within relatively close proximity to the proposed Resolution Mine, no temporal overlap with Resolution operations and no meaningful cumulative effects are anticipated.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

CopperArea.com. 2018. "Carlota Copper to Begin Satellite Mining Operation." Available: <http://www.copperarea.com/pages/carlota-copper-begin-satellite-mining-operation/>. May 16. Accessed: March 2019.

## ***Carlota Mine Leaching Operations, Closure, and Reclamation***

### Overview of RFFA

The Carlota Mine area, located on an approximately 3,050-acre site west of the town of Miami, Arizona, and adjacent to the Pinto Valley Mine, has been periodically mined since the early 1900s. Approximately 1,428 acres of the project area is located within National Forest System (Tonto National Forest) lands; the remainder is privately owned.

Currently, the Carlota Mine is engaged in a heap leach operation of the remaining metals-bearing rock stockpiles along with post-mine reclamation and revegetation. Active open-pit mining of the area ceased in 2014. The present model of operation assumes stable on-site SX/EW production of copper cathode plates from leach operations until 2020 or soon thereafter, whenever it is determined that further heap leaching of rock stockpiles ceases to be economically viable. The property will then enter into a full-scale closure and reclamation phase.

The Carlota property, which is owned by the Poland-based mining firm KGHM, is pursuing a unique repurposing of the main waste rock stockpile area in coordination with brownfields solar developer Brightfields Development Inc. The plan, which was granted a special use permit from the Forest Service in February 2016, is to utilize 48 acres of the main stockpile area for a solar array that is expected to generate approximately 25 million kWh of electricity annually, or enough to supply electricity to approximately 2,370 homes per year. Existing transmission lines, a substation, and other facilities that provided electrical power for previous mine operations will be repurposed for the transmission of electricity generated by the new solar array.

### Temporal overlap with Resolution Project

Active mine operations ceased in 2014. Closure-related and reclamation/revegetation and monitoring work was planned to span 5-10 years. There is no temporal overlap with Resolution Mine life.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Though heavily disturbed by past open-pit mining and related earth-moving activities, the area post-closure is not anticipated to be subject to future disturbance. No subsidence or other ground movement is likely to occur.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No new surface disturbance is anticipated.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. No mine-related noises or vibrations are expected post-closure.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to local or regional transportation networks is expected post-closure.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to air quality are expected post-closure.

Resource	Rationale for Analysis
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. KGHM maintains that the Carlota Mine is a “zero-discharge facility,” meaning that no waters that have had contact with mine tailings, waste rock, the pit area, or other facilities are allowed to be released or otherwise flow off-site, but instead are maintained on-site by groundwater cutoff walls, berms, pumps, and other control features. Furthermore, KGHM has, to date, been in compliance with its EPA-issued NPDES permit and with its ADEQ-issued Aquifer Protection Permit. KGHM conducts a Wellfield Mitigation Program to offset potential flow reductions in Haunted Canyon and Pinto Creek caused by groundwater pumping.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. KGHM maintains that the Carlota Mine is a “zero-discharge facility,” meaning that no waters that have had contact with mine tailings, waste rock, or other facilities are allowed to be released or otherwise flow off-site, but instead are maintained on-site by groundwater cutoff walls, berms, pumps, and other control features. Furthermore, KGHM has, to date, been in compliance with its EPA-issued NPDES permit and with its ADEQ-issued Aquifer Protection Permit.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. KGHM maintains that the Carlota Mine is a “zero-discharge facility,” meaning that no waters that have had contact with mine tailings, waste rock, or other facilities are allowed to be released or otherwise flow off-site, but instead are maintained on-site by groundwater cutoff walls, berms, pumps, and other control features. Furthermore, KGHM has, to date, been in compliance with its EPA-issued NPDES permit, ADEQ-issued Aquifer Protection Permit, and with stipulations of the Corps of Engineers-issued Clean Water Act Section 404 permit.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. No current or future disturbances to wildlife or wildlife habitat are anticipated.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No changes to current or future recreational use patterns in the area are foreseen as a result of activities at the Carlota Mine.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Existing tailings storage facilities at the mine would not be expanded or otherwise altered.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. No increased wildfire risk is foreseen as a result of mine closure, reclamation, and development of the proposed solar array.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. No increase use or transport of hazardous materials would occur as a result of mine closure and reclamation.

<b>Resource</b>	<b>Rationale for Analysis</b>
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed 48-acre solar array atop the main waste rock stockpile at the Carlota Mine will result in minimal perceived visual changes to the existing landscape, particularly given the many decades of previous and ongoing mine-related surface alterations in the general vicinity of Globe-Miami (e.g., Carlota and past, present, and future mine development at the Pinto Valley Mine).
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. No future disturbances to cultural resources at the Carlota facility are anticipated.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Major reductions in staffing at Carlota have already occurred, following the cessation of active open-pit mining operations in 2014. The construction and operation of the proposed solar array at the site, as well as site reclamation and revegetation activities, would have beneficial but minimal socioeconomic effects on the local economy.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. No future disturbances to cultural or tribal resources are anticipated.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. No changes to current environmental justice conditions are foreseen.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. No grazing is currently allowed at the Carlota property and there are no plans for future livestock use of the site.

Source:

KGHM. 2019. Company website: "Carlota." Available at: <https://kgm.com/en/our-business/mining-and-enrichment/carlota>. Accessed February 2019.

Mining Engineering Magazine. 2016. "KGHM's Carlota Solar Project Receives Special Use Permit from US Forest Service." Available at: [http://me.smenet.org/docs/Publications/ME/Issue/Web\\_Only\\_July.pdf](http://me.smenet.org/docs/Publications/ME/Issue/Web_Only_July.pdf). Accessed February 2019.

U.S. Environmental Protection Agency, Region IX. 2002. "Amended Record of Decision/Finding of No Significant Impact - Final Environmental Impact Statement, U.S. Forest Service and Supplemental Environmental Assessment, U.S. Army Corps of Engineers - Carlota Copper Project." February 27. Available at: <https://archive.epa.gov/region9/water/archive/web/pdf/carlotarod0202.pdf>. Accessed February 2019.

## ***Copper King Exploratory Drilling/Superior West Exploration***

### Overview of RFFA

This project combines the environmental review of two mineral exploration projects proposed by Bronco Creek Exploration, Copper King and Superior West. While Bronco Creek Exploration is the mining claimant, the exploration would be funded and bonded by Kennecott Exploration Company (part of the Rio Tinto Group), who would be the operator of record for both Plans of Operations. The combined projects result in a total of 106 unique drill site locations identified, of which the proponent would be authorized to select up to 43 to be drilled over a 10-year period. Use of existing roads and helicopter to access drill sites.

### Temporal overlap with Resolution Project

The proposed project is likely to be implemented within the expected life of Resolution mine project (50 to 55 years). The project would last no longer than 10 years (USDA 2018a).

### Rationale for analysis as cumulative effect in EIS, by resource

All rationale for resource analysis used the Plan of Operations information for the two mineral exploration projects (USDA 2018b, 2018c).

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Sites that are located on basin fill or post-mineral volcanics will be drilled until bedrock is reached, and then a diamond core rig will be utilized to complete the drill hole to the total depth, not to exceed 7,500'. The depth to bedrock is unconstrained, and will vary from site to site. These drill holes are not in the same location as the Resolution deposit.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Where possible the proposed well sites were selected in pre-existing disturbed areas that are mostly open, flat, and need relatively little prep to utilize the site. These drill holes are not in the same location as Resolution activities.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise from the mining operations would be exceedingly minimal, consisting primarily of highly localized sounds of pump operations and some employee-related traffic to and from site. Helicopter use is envisioned but noise would be short lived and transitory.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. The proposed projects have identified a number of minor road repairs that will need to be completed in order to safely transport the drill equipment and crews to the proposed drill sites. Both projects would have overland travel which don't incorporate new roads; disturbance would be temporary and reclaimed.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. De minimis air emissions from this project.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Water will be utilized as a drilling medium and for dust control. Estimated water use for 18 6,500' holes should not exceed 14.36 acre-feet. It is expected that the actual water consumption will be much lower due to water recycling and varying requirements for water per foot drilled. This volume is not a substantial addition to the water removed from the area by Resolution for dewatering.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Stockpiles of topsoil and excavated materials will be protected from surface runoff and erosion during times of precipitation. No groundwater monitoring will be necessary.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Drilling waters and muds will be contained at each drill pad by a sump, and all equipment and waste will be removed at the close of operations.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Proposed drill sites will all be surveyed for wildlife habitats by independent biologist to ensure there is no encroach upon any sensitive habitats. The safety of wildlife or their habitats will not be jeopardized since all operational activities will be limited to small areas carefully selected to avoid riparian and aquatic habitats, will create minimal disturbance, and will be completed within a short time frame.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. Recreation activities such as OHV and hunting occur within the general project area. The Arizona National Scenic Trail is within the vicinity as well. There is the potential for helicopter flights to impact recreational users on the trail, however the flights would only be temporary.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this proposed mining operation.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. All equipment and petroleum product containers will be removed at the close of operations.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. All waste materials generated through the operations will be collected and disposed of at the landfill at the close of operations. Equipment utilizing hazardous substances will be placed on thick puncture resistant plastic sheeting with environmental hydrocarbon absorbent pads on top to prevent any potential leaks from contaminating the ground.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. This operation will have little short-term impact and no long-term impact on the scenic value of the area.



<b>Resource</b>	<b>Rationale for Analysis</b>
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed drill site will all be surveyed for historic and archaeological values to ensure there is no damage to such sites.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is temporary in nature and the number of jobs created by the proposed project would be temporary and minimal. Therefore, an analysis of the socioeconomic impacts of the proposed project is not warranted.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed drill site will all be surveyed for historic and archaeological values to ensure there is no damage to such sites.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. No environmental justice communities are present in the project area or vicinity.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. While there are grazing allotments and uses present near the project area, impacts are not expected. Sumps will be fenced and include ramps to exclude cattle or allow them to escape should they get in.

Source:

U.S. Forest Service, Tonto National Forest. 2018a. Copper King and Superior West Mineral Exploration Projects. Available at: <https://www.fs.usda.gov/project/?project=54119&exp=detail>. Accessed March 2019.

U.S. Forest Service, Tonto National Forest 2018b. Plan of Operations for the Copper King Exploratory Drilling Project. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/109427\\_FSPLT3\\_4319855.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/109427_FSPLT3_4319855.pdf). Accessed March 2019.

U.S. Forest Service, Tonto National Forest. 2018c. Plan of Operations for the Superior West Exploratory Drilling Project. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/109427\\_FSPLT3\\_4319858.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/109427_FSPLT3_4319858.pdf), Accessed March 2019.

## ***Copper Springs***

### Overview of RFFA

The Copper Springs project was an exploration drilling project in the Globe-Miami mining district designed to test identified geologic target while achieving minimal surface disturbance. Copper Springs proposed exploration drilling at six sites near Globe and was completed in 2018.

### Temporal overlap with Resolution Project

The proposed project had a Decision Memo (USDA 2017) released in December 2017 and would be implemented in January 2018 (USDA 2018). Based on the Decision Memo, all activities associated with this project would be completed within one year. The proposed project has not appeared on the Schedule of Proposed Actions since (USFS 2019), therefore, it is assumed this project is complete.

The proposed project has concluded long before the Resolution Mine, if approved, becomes operational (estimated to occur in 2026 or 2027).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** There will be no temporal overlap between this project and operation of the Resolution Mine. Therefore, consideration of the impacts of this project as an RFFA as it relates to the Resolution mine project is not warranted.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

United States Department of Agriculture (USDA) Tonto National Forest Globe Ranger District. 2017. Decision Memo for the Copper Springs Project. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/89072\\_FSPLT3\\_4108680.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/89072_FSPLT3_4108680.pdf). Accessed March 2019.

USDA. 2018. Schedule of Proposed Actions April 2018 to June 2018. Available at: <https://www.fs.fed.us/sopa/components/reports/sopa-110312-2018-04.html>. Accessed March 2019.

United States Forest Service (USFS). 2019. Forest Service Schedule of Proposed Actions for the Tonto National Forest. Available at: <https://www.fs.fed.us/sopa/forest-level.php?110312>. Accessed March 2019.

## ***Dagger, Poison Spring, Black Mesa, and A-Cross Grazing Allotment Management Plans***

### Overview of RFFA

The following information is taken from the Tonto National Forest “Schedule of Proposed Actions (SOPA)” website for the above-referenced project.

#### **Location**

Tonto Basin Ranger District

#### **Expected Analysis Type**

Environmental Assessment

#### **Special Authority**

Grazing, Rescissions Act of 1995

#### **Lead Management Unit**

Tonto Basin Ranger District

#### **Notice and Comment Regulation**

218 (2013) Non-HFRA [Healthy Forests Restoration Act of 2003]

#### **Project Purpose**

Grazing management; authorize grazing on the Dagger, Poison Spring, Black Mesa, and A-Cross Grazing Allotments.

#### **Project Activity**

Grazing allotment management; Grazing authorizations

#### **Current Status**

On Hold

### Temporal overlap with Resolution Project

A notice of initiation was published in May 2018, but the project has been on hold since that date. It is not known when the project may recommence, but presumably the grazing reauthorizations would need to be in place with the next 3 years or so.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** The Tonto National Forest intends to reauthorize grazing on these four existing allotments under an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), indicating the Forest anticipates no substantial environmental effects on this or any other resource or use. In addition, range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Tonto National Forest. 2019. "Schedule of Proposed Actions (SOPA) – 01/01/2019 to 03/31/2019." Available: <https://www.fs.usda.gov/project/?project=49896&exp=detail>. Accessed: March 2019.

## ***Desert Sunset Red Hills Quarry – BLM Mineral Material Sale***

### Overview of RFFA

Decorative rock quarry owned and operated by Red Hills Mining LLC. The Desert Sunset pit operation is located near Donnelly Wash approximately 5 miles southwest of the old Cochran townsite on the southern bank of the Gila River in Pinal County. The quarry location may necessitate a rerouting of the proposed western alignment of the pipeline corridor to/from the Peg Leg alternative tailings storage facility, if Peg Leg (Alternatives 5) is ultimately selected by the Forest Service, in cooperation with the BLM, as the agency-preferred EIS alternative.

Arizona Department of Transportation (ADOT) records show that an ADOT-approved Environmental Assessment (EA), including a cultural consultation process, was completed for the Desert Sunset mining operations at this location on July 7, 2004. This analysis interprets the fact that ADOT approved the EA and green-lighted the Desert Sunset mining operation as meaning that agency foresaw no substantial adverse environmental effects resulting from continued operation of the quarry.

### Temporal overlap with Resolution Project

According to Daniel Moore, Geologist with the BLM Tucson Field Office, “The Desert Sunset - Red Hills Quarry contracts expire in July 2019. This is an excavate/crush/screen/haul operation on 105 acres, in operation since at least 2002. I expect the operator will request new contracts for additional tonnage. This quarry is on state surface, federal minerals. I have no estimate for when this quarry will close.”

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** The relatively small size of the Desert Sunset mine (105 acres), coupled with the fact ADOT conducted environmental analyses at the pit and found no significant environmental effects, is interpreted as meaning that continued operation of the quarry will not contribute significant cumulative impacts in the context of the Resolution Mine project.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Personal Communication with Daniel Moore, Geologist, BLM Tucson Field Office, regarding Desert Sunset Red Hills mining operations and potential timeline to site closure. Via email. February 11, 2019.

Arizona Department of Transportation (ADOT). 2013. "Material Sources Which Have Previously Completed the ADOT Environmental Analysis Process." Available: [https://www.azdot.gov/docs/default-source/construction-group/material\\_sources\\_contractor\\_furnished\\_list\\_of\\_cleared\\_ms.pdf?sfvrsn=2](https://www.azdot.gov/docs/default-source/construction-group/material_sources_contractor_furnished_list_of_cleared_ms.pdf?sfvrsn=2). Accessed: March 2013.



## ***Devil's Canyon Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Devil's Canyon Grazing Allotment is approximately 26,605 acres including 18,700 acres of lands administered by the United State Forest Service (USFS), 7,002 acres of lands administered by the Arizona State Land Department (ASLD), and 903 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The allotment is approximately 2.5 miles east of the Town of Superior and 12.5 miles west of the City of Globe. *Note: all acreages are approximate.*

#### *USFS*

The Devil's Canyon allotment is an active grazing allotment that has 303 adult livestock (authorized for year round use) and 54 yearling livestock (authorized from January 1 to May 31) on USFS portions of the allotment. This use was authorized on January 12, 2015 and is authorized until March 1, 2025 for Integrity Land and Cattle LLC. The USFS portions of the allotment are authorized for approximately 1,104 AUMs. A 2017 inspection of the USFS portions of the allotment determined that the allotment was in stable condition with no evidence of soil movement or loss. No invasive species were observed during the inspection. Under the National Environmental Policy Act (NEPA) USFS's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements.

This evaluation assumes that grazing will continue to occur on the USFS portions of this allotment and that the EA will allow for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. It is anticipated that no new roads or other facilities would be constructed under the grazing lease.

#### *ASLD*

For the purposes of this evaluation, we have assumed that the ASLD grazing lease within the Devil's Canyon Allotment is active and would include renewal of the lease. The ASLD portions of the allotment are authorized for approximately 1,104 AUMs. The lease holder is Integrity Land and Cattle LLC (Lease 5-1411). It is assumed that the lease renewal would include renewal of the lease for a term of up to 10 years and would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### *Private Ownership*

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

USDA Forest Service, Tonto National Forest. 2019. Projects list for current major projects and project archives. Available at: <https://www.fs.usda.gov/wps/portal/fsinternet/cs/projects/tonto/landmanagement/projects?archive=1&sortby=1>. Accessed April 22, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Drought Contingency Plan – Arizona***

### Overview of RFFA

The Drought Contingency Plan (DCP) is a set of recently approved agreements between seven western states that are dependent on water from the Colorado River system, including from Lake Mead and Lake Powell. These seven states are divided into an Upper Basin group (Colorado, New Mexico, Utah, and Wyoming) and a Lower Basin group (California, Nevada, and Arizona). A separate, companion agreement to the DCP has been reached between the U.S. government and Mexico. In each state, numerous public and private stakeholder groups have also been participants in the DCP agreements; in Arizona alone nearly 40 stakeholder groups have been involved.

The DCP is essentially a follow-on water management plan to the earlier Seven States' Agreement that went into effect in 2007, which itself was an outgrowth of earlier Colorado River water rights and allocation management plans between the same seven states, dating back to the "Colorado River Compact" of 1922.

Negotiations on the DCP began in earnest in 2015 in response to long-term drought conditions in the southwestern U.S., which had led to Lake Mead and Lake Powell recording some of the lowest water levels ever recorded at those locations due to significant decreases in annual precipitation and runoff rates region-wide. Drought conditions were forecast to continue for some years to come, even for as long as another decade or longer.

The DCP aims to set targets for voluntary reductions in water use as well as greater conservation efforts by participant states to avoid even more dire water availability conditions throughout the Colorado River Basin. A primary larger purpose of the plan is to establish prudent water use reductions throughout the participating states during forecast region-wide extended drought conditions while the states (and stakeholder groups in each state) work to establish even more effective long-term water management standards.

### Temporal overlap with Resolution Project

Although an important reasonably foreseeable future action, the DCP is statutorily set to expire in December 2026. A new water management plan for the seven Colorado River basin states and Mexico will replace it, but work on this new plan has not yet begun.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** It is unlikely that any of the provisions of the DCP will be in effect when (or if) the Resolution Mine becomes operational, which is not likely to occur before 2026-2027. No information exists as to what any new water management plan that will replace it will entail. This analysis therefore presumes no cumulative effects can be established between the Resolution Mine project and the DCP.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Central Arizona Project. 2019. *Arizona Discussion on Lower Basin Drought Contingency Plan*. Available: <https://www.cap-az.com/departments/planning/colorado-river-programs/az-dcp-discussion>. Accessed: April 2019.

Central Arizona Project. 2019. *Lower Colorado Drought Contingency Plan: Arizona Implementation Fact Sheet*. Available: <https://www.cap-az.com/documents/departments/planning/colorado-river-programs/CAP-DCP-Fact-Sheet-2019.pdf>. Accessed: April 2019.

## ***Ellsworth Desert Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Ellsworth Desert Grazing Allotment is approximately 29,546 acres including 840 acres of lands administered by the Bureau of Land Management (BLM), 26,125 acres of lands administered by the Arizona State Land Department (ASLD), and 2,582 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. This allotment is adjacent to the Florence Military Reservation and is 3.3 miles east of San Tan Valley. *Note: all acreages are approximate.*

#### ***BLM***

For the purposes of this evaluation, we have assumed that the BLM grazing lease within the Ellsworth Desert Allotment (840 acres) is active and would include renewal of the lease. However, no publicly available information is available for the BLM portions of the Ellsworth Desert allotment. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease. Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements.

#### ***ASLD***

For the purposes of this evaluation, we have assumed that the ASLD grazing lease within the Ellsworth Desert Allotment (26,125 acres) is active and would include renewal of the lease. Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. The ASLD portions of the allotment are authorized for approximately 2,250 AUMs and is leased to Ellsworth Land and Livestock Inc. (Lease 5-1568). It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### ***Private Ownership***

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands (2,582 acres) would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona



## ***Florence Copper In-Situ Mining Project***

### Overview of RFFA

In situ Copper Recovery facility near Florence. The Production Test Facility was constructed in 2017. This includes 24 wells: four injection wells, nine recovery wells, and 11 groundwater monitoring-related wells. The test facility will test whether the full proposed full production facility will be a safe and permittable venture. Solvent Extraction and Electrowinning Plan is next phase.

Environmental resource impacts are expected to be very minimal because 1) in situ leaching operation would involve no earthmoving aside from site surface clearing/blading and development of injection, recovery, and monitoring wells, 2) there would be no blasting, no shafts or adits, no waste rock stockpiles, and no tailings impoundment, 3) on-site processing of leached ore solution would be limited to industry standard solvent extraction/electro-winning (SX/EW) process, 4) resulting copper plates would be trucked off-site for any further refining and for distribution to market, and 5) project site consists mainly of privately owned, previously disturbed agricultural lands.

Considerable attention has been paid to the potential for the Florence Copper in-situ mining project to impact the aquifer. Regardless of the technical analysis of potential groundwater impacts, the in-situ leach area is beyond the boundaries of any of the Resolution water analysis areas and there would be no overlap of impacts.

### Temporal overlap with Resolution Project

Full life of mine, according to company fact sheets, will be approximately 25 years, including 2 years core facilities construction, 1- or 2-year test run of production test wells, ~20 years of commercial/operational life, and 1-2 years of site closure and reclamation.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects; sufficient information exists to analyze. In situ leaching would remove mineral resources from the area.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Area of mine consists mainly of previously disturbed agricultural land.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise from the mining operations would be exceedingly minimal, consisting primarily of highly localized sounds of pump operations and some employee-related traffic to and from site.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Traffic associated with a renewed mining operation would be minimal and limited to northwest Florence area—not regional.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. De minimis air emissions from this project.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Company claims in court filings and elsewhere that in-situ leaching and copper leachate recovery will take place well below and segregated from the local aquifer that provides potable water to the Town of Florence and others, and would have no impact to local water supplies or surface waters. This project does not overlap with groundwater resources analysis area for the Resolution EIS.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. All stormwater in contact with facilities would be retained on site and not discharged downstream. This project does not overlap with groundwater resources analysis area for the Resolution EIS.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. For de minimis reasons. Flat agricultural-type land area: stormwater runoff is highly unlikely and/or easily controlled
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Previously disturbed agricultural land with no known listed or sensitive species.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Previously disturbed agricultural land with no history of recreational use.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this proposed mining operation.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. In situ leaching operation; no increased fire risk is foreseen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Leaching solutions of 99.5 % water and 0.5% acid would be isolated from the upper aquifer and are not considered a public health risk. No other hazmat issues are anticipated. There has been local public controversy over transportation of sulfuric acid into Florence to use in in-situ leaching. Traffic associated with a renewed mining operation would be minimal and limited to northwest Florence area—not regional.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project area is primarily flat, previously disturbed agricultural land.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project area consists primarily of previously disturbed agricultural land of no known cultural or archaeological significance.

Resource	Rationale for Analysis
Socioeconomics	<p>Contributes to cumulative effects; sufficient information exists to analyze. Beneficial socioeconomic effects to the Town and Florence and nearby areas are expected. According to company fact sheet:</p> <p>“-The project is projected to produce an average of 55 million pounds annually for the first six years and 85 million pounds annually for 14 years.</p> <ul style="list-style-type: none"> <li>- The project is estimated to create \$3.4 billion in economic uplift for the State of Arizona, and \$2.1 billion will remain in Pinal County.</li> <li>- Florence Copper is expected to generate \$468 million in state revenues and royalties. Approximately \$68.5 million will directly accrue to the Town of Florence, and \$33.5 million will accrue to Pinal County.</li> <li>- The operation will create and support an annual average of 796 direct and indirect jobs in Arizona. 480 of those jobs will be in Pinal County.”</li> </ul>
Tribal Concerns and Values	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Project area consists primarily of previously disturbed agricultural land of no known cultural or archaeological significance.</p>
Environmental Justice	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. No environmental justice communities are present in the project area or vicinity.</p>
Land Use: Livestock and Grazing	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. General project area was previously used as cropland; there are no grazing allotments or grazing uses present.</p>

Source:

Florence Copper company website. Available: <https://www.florencecopper.com/> Accessed January 28, 2019.

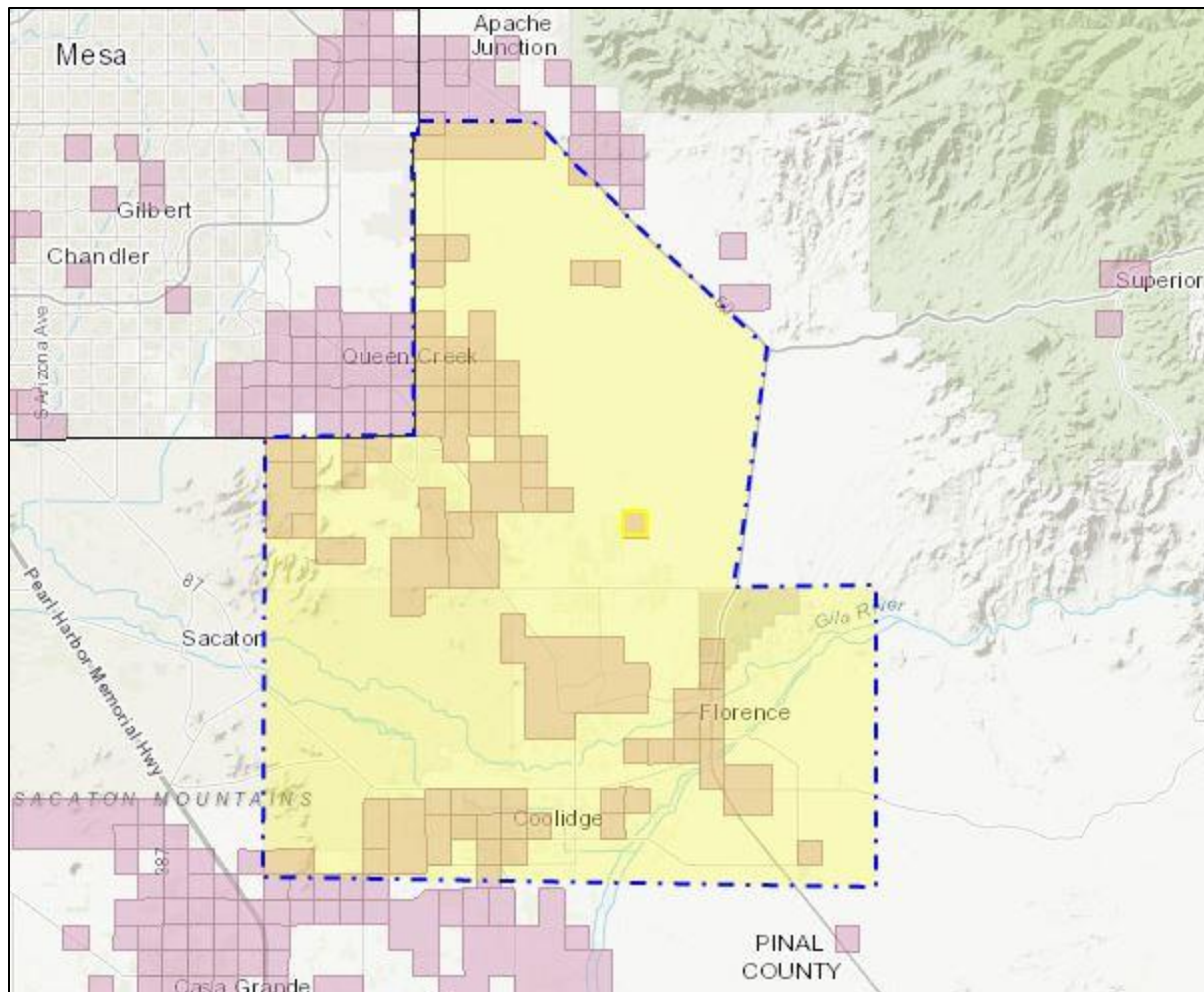
## ***Future Assured Water Supplies***

### Overview of RFFA

The ADWR Assured and Adequate Water Supply programs were created to address the problem of limited groundwater supplies in Arizona. Both the Assured and Adequate Water Supply programs evaluate the availability of a 100-year water supply considering current and committed demand, as well as growth projections. The Assured Water Supply Program operates within Arizona's five Active Management Areas (AMAs). It is designed to sustain the state's economic health by preserving groundwater resources and promoting long-term water supply planning. AMAs are those areas of the state where significant groundwater depletion has occurred historically and include portions of Maricopa, Pinal, Pima, Santa Cruz and Yavapai counties.

Availability of water in the future will influence the growth of housing developments in the east valley in areas such as Florence, where there are already a series of master planned communities considered within Florence's 2020 General Plan, and the Superstition Vistas area, as master planned communities must demonstrate assured water supplies prior to recording plats or selling parcels. ADWR will need to consider the needs of those who already hold assured water supply analyses or certificates before it can issue new ones to the above-mentioned proposed housing developments.

The area analyzed for assured water supplies incorporates Pinal County south of U.S. 60 through the Town of Florence and is represented by the yellow shaded polygon in the image below. The attached table provides a list of all 239 entities that presently hold assured water supply analyses or certificates as well as their water demands.



#### Temporal overlap with Resolution Project

The 100-year assured water supplies listed below are valid throughout and beyond the life of the proposed Resolution Copper Mine.

#### Rationale for analysis as cumulative effect in EIS, by resource

Resource	Rationale for Analysis
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.

<b>Resource</b>	<b>Rationale for Analysis</b>
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects; sufficient information exists to analyze. Note that this RFFA is combined with the overall use of water resources and development in the East Salt River Valley, which are assessed together for cumulative effects.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on groundwater quantity.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. This action focuses on the future availability of groundwater.

Source:

Arizona Department of Water Resources. 2019. AAWS interactive map. Accessed online at: <https://gisweb2.azwater.gov/AAWS>

Subdivision	File Type	Water Provider	Rcvd Date	Issue Date	Total Demand	GW	100-Yr	No Lots
Anko #2	ASSURED WATER SUPPLY CERTIFICATE		1/1/1900	9/19/1988	8.4			15
Homestead Acres	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	1/1/1900	7/6/1987	71	7100	7100	45
Links Estates, The, #01	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/1/1900	6/19/1995	11.62		1162	72
Pecan Centers of Arizona	ASSURED WATER SUPPLY CERTIFICATE		1/1/1900	2/24/1981	23.16			76
Queen Creek Ranchos (1984)	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/1/1900	9/16/1984	11		1100	20
Queen Creek Ranchos (1991)	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	2/11/1991	5/1/1991	4		400	6
Sun Valley Farms #5,6,7	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/1/1900	8/7/1984	5		500	10
Superstition View Ranchettes	ASSURED WATER SUPPLY CERTIFICATE		5/4/1995	5/21/1995	7.3			13
Parcel 11 at Mountainbrook Village	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	2/6/1996	7/7/1996	90.8		3120	110
Golf View Estates	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	3/25/1996	1/21/1997	28.86		2886	78
Foothills at Gold Canyon Ranch, The	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	12/19/1996	5/29/2007	29.43		2943	108
Parcel 24 East at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	1/15/1997	5/26/1997	83.09		8309	103
Parcel 3 at Superstition Foothills	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	2/10/1997	9/3/1997	23.84		2384	32
Parcel 16A & 17 at Mountainbrook Village	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	3/2/1997	6/23/1997	47.18		4718	106
Vinwood	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	4/3/1997	11/2/1997	193.44		19344	60
Parcel 22 West at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	4/15/1997	7/8/1997	63.91		6391	70
Parcel 24 West at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/3/1997	11/2/1997	72.26		7226	103
Parcel 25 North at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	5/11/1997	8/7/1997	90.23		9023	79
Parcel 22 East at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	5/11/1997	8/7/1997	143.41		14341	94
Parcel 25 South at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	7/9/1997	3/10/1998	70.8		7080	72
Ridge at Black Butte, The	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	7/28/1997	10/15/1997	42.5		4250	122
Parcels 10 and 14B/C at Mountainbrook	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	8/11/1997	3/1/1998	66.42		6642	199
Parcel 18 at Mountainbrook Village	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	8/11/1997	3/1/1998	36.53		3653	94
Parcel 19 at Mountainbrook Village	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	8/11/1997	4/19/1998	260.52		26052	197
Coolidge Country Village Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	8/12/1997	5/21/2007	73.5		7350	150
Coolidge Country Villages Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	1/13/2005	2/23/2005	73.5	7350	7350	97
Sunrise at Gold Canyon	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/18/1997	1/28/1998	63.1		6310	161
Ironwood Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	10/1/1997	4/6/1998	71.59		7159	210
Johnson Ranch Units 1, 2, 6, & 7	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	11/23/1997	7/20/1998	694.19		69419	550
Parcel 13 at Superstition Foothills	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	12/15/1997	11/9/1998	7.6		760	10
Parcel 24 East at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	3/18/1998	6/27/1998	83.09		8309	103
Vista Point at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/20/1998	4/13/1999	35.46		3546	85
Johnson Ranch Unit 3A	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	4/19/1998	7/20/1998	85.45	8545	8545	164
Johnson Ranch Units 3B, 4A, and 4B	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	4/19/1998	7/20/1998	253.22		25322	557
Sierra Vista at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	3/29/2000	4/18/2000	61.83		6183	115
Estates at Gold Canyon, The	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/7/1998	5/29/2007	16.82		1682	33
Parcel 22 East at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	7/5/1998	1/26/1999	143.41		14341	94
Parcel 15 at Mountainbrook Village	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	8/12/1998	4/19/1999	28.31		2831	68
Parcel 25 North at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	10/19/1998	5/11/1999	32.23	3223	3223	70
KLC Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/4/1998	3/11/1999	25.07		2507	24
Johnson Ranch Unit 2	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	12/7/1998	12/15/1998	694.19		69419	550

Subdivision	File Type	Water Provider	Rcvd Date	Issue Date	Total Demand	GW	100-Yr	No Lots
Johnson Ranch Lakeview Gardens	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	2/7/1999	5/16/1999	20.3		2030	58
Tierra Rica Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	7/9/2007	4/15/1999	150.06	15006	15006	305
Las Montanas (formerly Tierra Rica Estates)	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	8/29/2004	10/4/2004	29.52	2952	2952	60
Las Montanas (formerly Tierra Rica Estates)	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	8/29/2004	10/4/2004	120.54	12054	12054	245
Las Montanas Unit II	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	6/28/2005	8/28/2005	23.62	2362	2362	48
Skyline Vista Ranch I	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	3/11/2007	8/18/1999	47.24		4724	113
Superstition Foothills Parcel 26 2-A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/1/1999	19.58		1958	46
Superstition Foothills Parcel 23A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/11/1999	14.21		1421	28
Superstition Foothills Parcel 28B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	1/27/2000	48.42		4842	103
Superstition Foothills Parcel 27B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/11/1999	19.97		1997	43
Superstition Foothills Parcel 23B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/11/1999	13.1		1310	26
Superstition Foothills Parcel 26C	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	2/9/2000	22.75		2275	51
Superstition Foothills Parcel 26B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/1/1999	39.54		3954	96
Superstition Foothills Parcel 28A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/1/1999	33.9		3390	75
Superstition Foothills Parcel 26 1-A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	11/11/1999	7.71		771	17
Superstition Foothills Parcel 27A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/21/1999	2/9/2000	26.19		2619	58
Sunrise Canyon	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	8/22/1999	8/25/1999	57	5700	5700	81
Peralta Preserve Units I, II and III	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	8/16/1999	12/11/1999	457.11		45711	832
Skyline Vista Ranch lots 16-18, 22-24	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	8/22/1999	10/5/1999	2.45		245	6
Johnson Ranch Unit 3A	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	9/6/1999	10/13/1999	64.47	6447	6447	164
Johnson Ranch Unit 4A	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	9/6/1999	10/13/1999	99.46			253
Johnson Ranch Lakeview Gardens	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	9/29/1999	1/4/2000	20.3		2030	58
Johnson Ranch Units 1 and 7	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	9/29/1999	1/4/2000	146.24	14624	14624	372
Johnson Ranch Units 3B, 4B & 6	ASSURED WATER SUPPLY CERTIFICATE	Johnson Utilities Company	9/29/1999	1/4/2000	135.23	13523	13523	344
The Links Estates, Unit II	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	7/16/2003	9/21/2003	19.44	1944	1944	76
Cambria	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	11/16/1999	12/3/2000	537.155		53715.5	834
Weaver Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	2/15/2000	8/21/2000	243.06	24306	24306	31
Superstition Foothills Parcel 23A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	2/16/2000	5/14/2000	14.21		1421	31
Superstition Foothills Parcel 23B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	2/16/2000	5/14/2000	13.1		1310	26
Superstition Foothills Parcel 26-1A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	2/16/2000	5/14/2000	7.71		771	17
Superstition Foothills Parcel 27B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	2/16/2000	5/11/2000	19.97		1997	43
Park Homes	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	3/7/2000	5/29/2000	78.76		7876	115
Black Mountain Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	3/29/2000	9/20/2000	41.92		4192	101
Sierra Vista at Gold Canyon Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	4/21/1998	9/30/1998	47.23		4723	116
Petroglyph Estates @Superstition Foothills	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	4/9/2000	10/12/2000	33.06		3306	55
Superstition Foothills Parcel 26C	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/8/2000	7/27/2000	17.378		1737.8	51
Superstition Foothills Parcel 27A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	6/8/2000	7/27/2000	26.19		2619	58
Heartland Unit 1	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	1/1/1900	9/25/2000	379.27	37927	37927	490
Valley Vista Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	7/27/2000	12/5/2000	136.6		13660	115
Valley Vista Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	9/1/2005	10/3/2005	136.6	13660	13660	115
Carter Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	8/16/2000	9/17/2001	91.57		9157	176
Kenilworth Gardens	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	8/29/2000	12/10/2000	616.28	61628	61628	1247
Chaparral Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	9/14/2000	1/25/2001	105	10500	10500	204
Chaparral Estates Unit 3	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	9/28/2005	12/18/2005	40.12	4012	4012	69



Subdivision	File Type	Water Provider	Rcvd Date	Issue Date	Total Demand	GW	100-Yr	No Lots
Superstition Foothills Parcel 23A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/25/2000	11/15/2000	10.856		1085.6	31
Superstition Foothills Parcel 23B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/25/2000	11/15/2000	13.1		1310	26
Superstition Foothills Parcel 26-1A	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/25/2000	11/15/2000	7.71		771	17
Superstition Foothills Parcel 27B	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/25/2000	11/15/2000	19.97		1997	43
Valley of the Sun Estates	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	10/31/2000	5/31/2001	3		300	9
Gold Mine Mountain	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	11/19/2000	2/15/2001	329.8		32980	114
Bel Aire Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	5/20/2001	11/28/2001	44.63	4463	4463	44
Kenworthy & Ocotillo	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	7/10/2001	11/28/2001	186.85	18685	18685	271
Ranch 160	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	9/3/2001	6/10/2002	298.29	29829.01	29829	550
Castlegate	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	10/17/2001	3/26/2002	446.77	44677	44677	930
The Cottages at Castlegate Parcel 1 & Parcel 2	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	11/8/2001	5/14/2003	152.01	15201	15201	261
Mandalay Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	11/15/2001	3/10/2003	17.95	1795	1795	32
Cota Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	1/1/2002	9/24/2002	35.41	3541	3541	67
Las Praderas	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/17/2002	4/16/2002	186.85	0	18685	271
Encanto Real, at San Tan Vistas	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	6/16/2002	12/4/2002	126.3	12630	12630	37
Encanto Real at San Tan Vistas	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	6/28/2004	8/22/2004	126.3		12630	37
Pecan Creek North	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	9/23/2002	12/4/2002	850.99	85099	85099	1319
Mountain Vista Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	10/28/2002	12/4/2002	23.97	2397	2397	45
Vineyard Estates	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	2/6/2003	7/14/2003	84.58	8458	8458	161
Saddle Creek Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	4/15/2003	2/8/2004	408.98	40898	40898	130
The Villages at Castlegate Parcels 1, 2 & 3	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	5/27/2003	11/13/2003	156.15	156.15	15616	218
Castlegate	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	6/18/2003	9/21/2003	446.77	44677	44677	930
Creekside Estates	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	6/29/2003	10/15/2003	139.44	13944	13944	41
Wayne Ranch	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	7/16/2003	11/13/2003	282.48	28248	28248	423
Vineyard Estates	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	8/4/2003	10/26/2003	85.96	8596	8596	161
Meadow Vista	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	8/5/2003	1/26/2004	119.82	11982	11982	232
The Cottages at Castlegate Parcel 1 & Parcel 2	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	8/6/2003	10/26/2003	152.01	15201	15201	261
Cambria I	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	8/21/2003	11/6/2003	50.97	5097	5097	104
Cambria III	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	8/21/2003	11/6/2003	89.89	8989	8989	164
Pecan Creek, Parcel 4 & 5	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	9/21/2003	1/7/2004	130.4	1304	13040	323
Pecan Creek, Parcels 1,3 & 8	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	9/21/2003	1/7/2004	252.25	25225	25225	568
Pecan Creek North Parcels 2 & 6	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	9/25/2003	12/4/2003	160.44	16044	16044	317
Castlegate, Parcel 5	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	9/28/2003	12/23/2003	62.6	6260	6260	93
Landmark Ranch - Unit 1 - Parcel 1	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	10/7/2003	2/1/2004	109.09	10909	10909	187
Castlegate Parcel 6	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	10/13/2003	3/23/2004	56.96	5696	5696	98
Pecan Creek North Parcel 7	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	10/22/2003	1/5/2004	61.875	6188	6188	111
Wayne Ranch	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	12/2/2003	4/6/2004	175.77	17577	17577	264
Replat of Carter Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	12/14/2003	3/23/2004	146.11	146.11	14611	253
Pecan Creek, Parcel 4, Lots 43-133 & Parcel 5, Lots 1-4	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/22/2004	3/24/2004	42.22	4222	4222	95
Creekside Estates	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	2/9/2004	3/31/2004	135.56	13556	13556	41
Heartland Unit 1	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	2/29/2004	7/20/2004	308.14	30814.3	30814.3	490
Castlegate Parcel 5	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	3/4/2004	5/4/2004	70.43	7043	7043	93
Pecan Creek North, Parcel 1, Lots 1-120 and 214-245	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	3/23/2004	5/18/2004	142.14	14214	14214	152
Rolling Ridge Estates	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	3/31/2004	10/4/2004	245.61	24561	24561	61
Wayne Ranch Lots 1-13 & 23-168	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	5/18/2004	9/13/2004	106.06	106.06	10606	159

Subdivision	File Type	Water Provider	Rcvd Date	Issue Date	Total Demand	GW	100-Yr	No Lots
Mandalay Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	7/15/2004	10/18/2004	106.97	10697	10697	32
Signal Peak Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	7/21/2004	1/24/2005	18.13	1813	1813	19
Laredo Ranch	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	8/2/2004	12/8/2004	589.55	58955	58955	966
Laredo Ranch	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	11/9/2005	2/14/2006	614.6	61460	61460	966
Milagro	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	8/26/2004	2/13/2005	77.19	7719	7719	140
Quail Run Estates	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	9/26/2004	2/21/2005	281.32	28132	28132	534
Quail Run Estates	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	6/6/2005	2/9/2006	282.56	28256	28256	534
Taylor Ranch	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	11/8/2004	4/24/2005	240.06	24006	24006	395
McClellan Meadows	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/22/2004	6/9/2005	179.23	17923	17923	325
McClellan Meadows	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	2/22/2006	4/17/2006	178.63	17863	17863	324
McClellan Meadows	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	5/9/2006	5/24/2006	178.63	17863	17863	324
Pecan Creek South	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	12/5/2004	4/4/2005	1146.1	114610	114610	1768
Pecan Creek South	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	7/4/2006	8/6/2006	1068.16	106816	106816	1625
Pecan Creek South Unit 3, lots 769 through 821, inclusive	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	7/4/2006	8/6/2006	77.94	7794	7794	143
Santo Vallarta	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	1/6/2005	6/2/2005	199.8	19980	19980	57
Arlington Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	1/17/2005	6/7/2005	19.52	1952	1952	22
Heartland - Unit 2	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	1/24/2005	11/14/2005	398.61	39861	39861	667
Heartland Unit 2, Lots 1-408	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	2/28/2006	4/17/2006	256.81	25681	25681	408
Heartland, Unit 2, Lots 409-667	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	2/28/2006	4/17/2006	141.88	14188	14188	259
Ocotillo Trails	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	3/10/2005	6/21/2005	60.77	6077	6077	82
Encanto Paseo	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	3/13/2005	11/17/2005	116.5	11650	11650	28
Encanto Vista I	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	8/1/2005	7/11/2006	272.03	27203	27203	55
Heartland Unit 1; lots 1001-1267 inclusive	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	6/29/2005	10/30/2005	134.87	13487	13487	267
Landmark Ranch Unit 1, Parcels 2, 3, & 4	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	7/4/2005	10/16/2005	275.09	27509	27509	451
The Parks, Parcels A, B and D	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	7/10/2005	6/8/2006	305.4	30540	30540	463
Encanto Vista II	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	8/1/2005	7/11/2006	74.7	7470	7470	21
The Borgata At Santan, Lots 1-35, 88-162 & 203-209 inclusive	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	9/11/2005	2/2/2006	280.54	28054	28054	117
Elizabeth Ranch	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	9/13/2005	11/29/2005	31.75	3175	3175	62
Belcara at Pima	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	9/14/2005	6/22/2006	60.9	6090	6090	46
Stone Creek Estates	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	9/26/2005	1/24/2006	313.94	31394	31394	163
Coolidge Gateway Manor	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	9/29/2005	1/2/2006	67.92	6792	6792	114
Heartland - Unit 4	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/6/2005	11/8/2006	346.51	34651	34651	480
Heartland - Unit 3	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/7/2005	5/1/2006	400.52	40052	40052	622
Skousen Farms	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/8/2005	6/22/2006	850.29	85029	85029	1300
Cross Creek Ranch I Phases 1-8 and Cross Creek Ranch II	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/9/2005	3/12/2006	701.02	70102	70102	1311
Skyline Estates	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	12/21/2005	5/24/2006	625.67	62567	62567	1017
Picacho Crossing	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	1/9/2006	3/7/2006	351.26	35126	35126	625
Lusitano	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	1/9/2006	5/18/2006	251.3	25130	25130	79
Circle Cross Ranch Unit 3	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/18/2006	5/22/2006	261.54	26154	26154	442
Sandia NW, Parcels A,B,C & K	ASSURED WATER SUPPLY CERTIFICATE	Woodruff Water Company	2/23/2006	11/20/2006	3722.28	372228	372228	4188
Landmark Ranch, Parcels 9 & 10	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	2/26/2006	5/10/2006	139.02	13902	13902	244
Ironwood Crossing Unit 1	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	3/13/2006	8/10/2006	635.14	63514	63514	662
Martin Valley	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	3/29/2006	8/10/2006	802.41	80241	80241	1108
Kenilworth Gardens	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	5/16/2006	1/7/2007	1138.45	113845	113845	1846

Subdivision	File Type	Water Provider	Rcvd Date	Issue Date	Total Demand	GW	100-Yr	No Lots
Sandia - SE1	ASSURED WATER SUPPLY CERTIFICATE	Woodruff Water Company	7/9/2006	12/10/2006	5126.45	446890	512645	5634
Sandia SE2	ASSURED WATER SUPPLY CERTIFICATE	Woodruff Water Company	7/9/2006	12/5/2006	846.33	79343	84633	484
Chaparral Estates Phase I and Phase II	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	2/26/2006	10/15/2006	26.97	2697	2697	50
Brighton Village Phase 1	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	9/14/2006	1/17/2007	763.3	76330	76330	890
Archer Meadows	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	9/26/2006	3/18/2007	84.83	8483	8483	139
Picacho Village	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	10/11/2006	1/10/2007	79	7900	7900	137
Ironwood Crossing Unit 2	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	10/12/2006	1/30/2007	277.73	27773	27773	364
CLK Ranches (Formerly known as KLC Ranches)	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	10/25/2006	6/7/2007	502.24	50224	50224	745
Casa Blanca	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/21/2006	3/11/2007	63.34	6334	6334	240
The Village at Coolidge	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	11/28/2006	2/21/2007	28.4	2840	2840	51
Shea Homes at Johnson Farms aka Trilogy Encanterra	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	1/8/2007	7/10/2007	2176.17	93658	217617	2452
Ironwood Crossing Unit 3	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	5/3/2007	11/30/2009	336.99	33699	33699	560
Stoney Creek Estates I & II	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	5/14/2007	1/14/2008	44.36	4436	4436	48
Borgata at Santan, Lots 87-142, 145-172 & 178-211	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	5/16/2007	11/18/2009	270.33	27033	27033	118
Pinal Professional Village	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	5/23/2007	1/28/2008	13.6	1360	1360	45
Shoppes at Pecan Ranch	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	11/18/2007	4/10/2008	50.49	5049	5049	8
Ocotillo Crossing	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	12/23/2007	9/8/2008	42.6	4260	4260	10
Los Arroyos	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	4/27/2008	10/16/2008	606.32	60632	60632	526
Ironwood Crossing Unit 4	ASSURED WATER SUPPLY CERTIFICATE	H2O Water Co	4/27/2010	11/15/2010	326.01	32601	32601	530
Toltec Estates	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Casa Grande	5/5/2010	8/29/2010	160.6	16060	16060	100
Desert Ranches	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co - Coolidge	10/13/2010	12/20/2010	68.69	6869	6869	16
Pima Crossing	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	11/24/2013	2/24/2014	71.39	7139	7139	122
Quail Ranch	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	5/29/2014	12/18/2014	684.91	68491	68491	955
Peralta Canyon Phase 1, Parcels 1-6	ASSURED WATER SUPPLY CERTIFICATE	Arizona Water Co.- Superstition	10/6/2016	1/9/2017	185.43	18543	18543	376
Paloma Ranch	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	4/25/2017	8/14/2017	46.4	4640	4640	80
The Parks Parcels C, E, and F	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	8/31/2017	11/14/2017	182.05	18205	18205	427
Ovation at Meridian	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	9/13/2017	11/15/2017	387.75	38775	38775	780
Pecan Cove	ASSURED WATER SUPPLY CERTIFICATE	Town of Queen Creek	6/5/2018	9/12/2018	33.16	3316	3316	78
Combs Ranch Unit 1	ASSURED WATER SUPPLY CERTIFICATE	Diversified Water Utilities, Inc.	10/4/2018	3/3/2019	113.16	11316	11316	210
Cross Creek Ranch	Analysis of Assured Water Supply	Arizona Water Co - Coolidge	4/17/2005	8/21/2005	1184.16	118416	118416	1676
Pinebrooke & Diffin	Analysis of Assured Water Supply		4/17/2007	8/7/2011	314.01	31401	31401	600
Sendera	Analysis of Assured Water Supply		4/17/2007	2/17/2010	1154.77	115477	115477	2078
Aviara	Analysis of Assured Water Supply		4/24/2007	2/17/2010	2070.7	207070	207070	4359
Bella Sierra	Analysis of Assured Water Supply	Diversified Water Utilities, Inc.	11/11/2009	11/15/2010	793.31	79331	79331	1475
Archer Meadows - Phase 2	Analysis of Assured Water Supply	Diversified Water Utilities, Inc.	12/16/2009	11/15/2009	315.84	31584	31584	533
Bella Vista North	Analysis of Assured Water Supply	Diversified Water Utilities, Inc.	9/12/2010	11/15/2010	2656.06	265606	265606	4499
Bella Vista North- Petra	Analysis of Assured Water Supply	Diversified Water Utilities, Inc.	11/4/2010	1/2/2011	1475.74	147574	147574	2805
Bella Vista Section 13	Analysis of Assured Water Supply	Diversified Water Utilities, Inc.	12/13/2010	12/27/2010	1554.2	155420	155420	2007
Ware Farms	Analysis of Assured Water Supply	H2O Water Co	12/27/2010	2/16/2011	1118.29	111829	111829	1800
Sierra Springs	Analysis of Assured Water Supply	H2O Water Co	1/30/2011	3/30/2011	119.62	11962	11962	158
Pinal County Farms	Analysis of Assured Water Supply	H2O Water Co	2/3/2011	3/30/2011	1033.61	103361	103361	1580
Healy Faulkner	Analysis of Assured Water Supply	H2O Water Co	2/21/2011	3/30/2011	243.49	24349	24349	325
Healy Faulkner	Analysis of Assured Water Supply	H2O Water Co	2/21/2011	3/30/2011	243.49	24349	24349	325
Church Farm	Analysis of Assured Water Supply	H2O Water Co	2/23/2011	3/30/2011	2053.03	205303	205303	2016
Home Place	Analysis of Assured Water Supply	H2O Water Co	11/14/2011	11/28/2011	1473.52	147352	147352	2124
Box Canyon 560 Residential	Analysis of Assured Water Supply		12/21/2011	1/12/2012	415.91	41591	41591	400
Ellsworth 200	Analysis of Assured Water Supply	Diversified Water Utilities, Inc.	4/30/2012	9/18/2012	513.75	51375	51375	750
Box Canyon	Analysis of Assured Water Supply		5/8/2012	9/24/2012	1069.52	106952	106952	

Subdivision	File Type	Water Provider	Rcvd Date	Issue Date	Total Demand	GW	100-Yr	No Lots
Mesa Farms	Analysis of Assured Water Supply		11/7/2013	7/16/2014	33993.95	3399395	3399395	
Johnson Ranch Estates	Analysis of Assured Water Supply		11/7/2013	7/16/2014	2072.3	207230	207230	4264
San Tan 30	Analysis of Assured Water Supply	Town of Queen Creek	12/1/2016	12/19/2016	59.95	5995	5995	106
Pecan Cove East	Analysis of Assured Water Supply	Town of Queen Creek	6/1/2017	6/8/2017	34.45	3445	3445	78
Cross Creek Ranch	Renewal of a Analysis of Assured water Supply	Arizona Water Co - Pinal Valley	6/22/2015	7/13/2015	483.14	48314	48314	
WUCFD-Water Utilites Community Facilities District	Modification of a Designation of Assured Water Supply	Apache Junction Water Facilities Dist.	9/28/2008	9/28/2010	3562.04		356204	
Town of Florence	Modification of a Designation of Assured Water Supply	Town of Florence	12/12/2011	12/6/2012	15069	1506900	1506900	
Johnson Utilities, LLC dba Johnson Utilities Pinal	Modification of a Designation of Assured Water Supply	Johnson Utilities	6/19/2007	11/30/2008	1379.51	159548	159548	3216
<b>Totals:</b>					123586.12	11144867.63	12360419.2	101261

## ***Government Springs (Lyons Fork) Grazing Allotment – Grazing Lease Renewals***

### Overview of RFFA

The Government Springs Allotment (also known as Lyons Fork) is approximately 8,370 acres and is primarily located on 7,256 acres of land administered by the Arizona State Land Department (ASLD). The allotment also includes 769 acres of private land, 113 acres of land administered by the Bureau of Land Management (BLM) Tucson Field Office, and 231 acres of land administered by the US Forest Service (USFS) - Tonto National Forest. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Government Springs Allotment is located about 3 miles south of US 60 and about 5.5 miles east of the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

### *ASLD*

The grazing lease for state lands in this allotment is held by Government Springs Ranch LLC, who lease about 7,256 acres over multiple parcels from ASLD. The lease (KE-5-539) allows grazing for up to 924 Animal Unit Months (AUMs). Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

### *Private Ownership*

Approximately 769 acres of private land exists within the Government Springs Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### *BLM*

The BLM administers only 113 acres of land in the Government Springs Allotment (BLM allotment AZ45440), and grazing lease information indicates 2 head of cattle, totaling 24 AUM's are permitted on BLM lands within the allotment. The existing lease will expire in September 2019. Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA), reauthorizing grazing within the allotment and any proposed rangeland improvements. There is no current EA, however, this evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the Government Springs Allotment, and that the grazing lease for these activities will be renewed when it expires.

### *USFS*

Approximately 231 acres of Lyons Fork Allotment, managed by the Tonto National Forest, overlap the Government Springs Allotment. No USFS grazing allotment information or supporting NEPA documentation for Lyons Fork Allotment were retrievable from the Tonto National Forest's website. However, for the purposes of this evaluation, we have assumed that the USFS does permit grazing and minor range improvements on their 231 acres of the Government Springs Allotment, and that grazing practices include a similar AUM per fractional area as the BLM, e.g. about 49 AUM. This evaluation assumes that, like BLM, the USFS grazing lease renewal will require an EA be completed when the current lease expires.

### Temporal overlap with Resolution Project

The exact timing for all grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Government Springs Allotment throughout the expected life of the Resolution mine (50 to 55 years).

Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

Resource	Rationale for Analysis
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

USDA Forest Service, Tonto National Forest. 2019. Projects list for current major projects and project archives. Available at: <https://www.fs.usda.gov/wps/portal/fsinternet/cs/projects/tonto/landmanagement/projects?archive=1&sortby=1>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. Tonto National Forest GIS Data; Rangeland. Available at: <https://www.fs.usda.gov/detail/r3/landmanagement/gis/?cid=stelprdb5209307>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Government Springs Pipeline Project***

### Overview of RFFA

Proposed water pipeline improvement project under the “Landowner Relations Program Cooperative Stewardship Agreement for Habitat Improvement” between Arizona Game and Fish Department (AGFD) Commission and Government Springs Ranch, LLC.

The proposed pipeline would start at an existing water storage tank at Government Springs (NAD 12S E0505352 N3678558) then be installed above ground for the remaining distance to the existing south side water storage tank and water-trough on Forest Road 248 (NAD 12S E05088 I I N3679103). The existing pipeline will be disconnected from the south side water storage tank and water trough. The new pipeline will extend 12,000 feet from an existing 3,000-gallon storage tank adjacent to a well that is 1,100 feet higher in elevation and will connect to an existing 3,000-gallon water storage tank and wildlife-friendly drinker. This tank and drinker were previously filled from a spring that is no longer producing water. This new pipeline will provide much-needed reliable water for wildlife, including elk, mule deer, and whitetail deer.

Government Springs Ranch is a 2,980-acre privately owned parcel located southwest of Globe, Arizona, in the Mineral Creek basin.

### Temporal overlap with Resolution Project

Unknown.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.



<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. While minor modifications to the hydrology of Mineral Creek from the pipeline project may affect flows, there are not expected to be any impacts caused by Resolution Copper to Mineral Creek and there would be no overlap of effects.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of an old, non-functional water pipeline with a new pipeline system would have no measurable effect on water quality.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on overall surface water quantity.
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. The new pipeline would charge the system with well water instead of an inconsistently wet spring. The stored water would be available for wildlife such as elk and deer.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource, except perhaps to benefit wildlife such as elk and deer and thereby prove beneficial to hunters, photographers, and other wildlife enthusiasts.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.

<b>Resource</b>	<b>Rationale for Analysis</b>
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of a non-functional water pipeline with a new, functionally similar pipeline system would have no measurable effect on this resource.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Replacement of an old water pipeline with a new pipeline system will have no measurable effect on this resource.

Source:

Headquarters West, LLC. 2019. "Government Springs Ranch, Gila and Pinal County." Available: <http://www.headquarterswest.com/listings/govtsprings2/index.htm>. Accessed: March 2019.

## ***Helmwheel - (Box O) Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Helmwheel Grazing Allotment (also known as the Box O) is approximately 52,037 acres including 14,811 acres of lands administered by the Bureau of Land Management (BLM), 30,623 acres of lands administered by the Arizona State Land Department (ASLD), and 6,604 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The allotment is approximately 2.3 miles northeast of S.R. 79 and 8.3 miles southeast of the Town of Florence. *Note: all acreages are approximate.*

#### ***BLM***

The BLM portion of the Helmwheel Allotment (14,811 acres) is active and includes approximately 119 cattle authorized for year-round use and includes 1,428 AUMs (BLM Allotment Number AZ06244). The BLM portion of the allotment was authorized on March 1, 2014 and is authorized until February 28, 2024. For the purposes of this evaluation, we have assumed that the BLM would renew of the lease and that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease. Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements.

#### ***ASLD***

For the purposes of this evaluation, we have assumed that the ASLD grazing lease within the Helmwheel Allotment (30,623 acres) is active and would include renewal of the lease for a term of up to 10 years. The ASLD portions of the allotment are authorized for approximately 2,843 AUMs and is leased to Box O Properties LLC (Lease 5-48244). It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### ***Private Ownership***

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands (6,604 acres) would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

United States Fish and Wildlife Service. 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Available at: [https://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/00029\\_Middle\\_Gila\\_River.pdf](https://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/00029_Middle_Gila_River.pdf). Accessed April 2019.

## ***Hicks-Pikes Peak Allotment Grazing Authorization***

### Overview of RFFA

Project is a new planning effort to authorize livestock grazing on the Hicks-Pikes Peak Allotment in a manner that is consistent with the goals, objectives, and standards and guidelines of the Tonto National Forest Plan. Plan to authorize livestock grazing on the allotment north of Globe.

### Temporal overlap with Resolution Project

The proposed project is currently on hold (USFS 2019); however, it is reasonably assumed that the proposed project would be implemented during the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

The rationale for analysis is based on preliminary environmental assessment for the proposed project (USFS 2017). In addition, range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project will have no effect on geological resources.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Areas in which soils and vegetation are disturbed by the Resolution project do not overlap this allotment.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. No meaningful levels of noise or vibration would be associated with this allotment.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Motor vehicle and or ATV/UTV access to range improvement sites would be on existing roads where practicable. Off-road vehicle use by pickup, trailer, ATV, UTV, or motorcycle needed to transport materials or machinery to maintain or inspect structural range improvements.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no generation of emissions associated with designation of the Hicks-Pikes Grazing Allotment.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Spring developments would not dewater the spring and must maintain a residual flow for riparian obligate vegetation and wildlife species.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Although the Salt River is divided into reaches by pasture, there are no fences across the river to prevent cattle from accessing the river in adjacent pastures. Once in the river, cattle may access up and down stream until reaching natural barriers. For water quality, the desired condition is to maintain criterion that are currently rated as Attaining and improve criterion currently rated as Impaired by to continuing to comply and cooperate with the ADWR.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to surface water quantity.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. A biologist would determine if further consultation with the U.S. Fish and Wildlife Service is necessary for areas proposed for new improvements after surveying.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational use would remain unchanged.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this proposed allotment.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. No increased fire risk is foreseen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. No hazardous materials would be used in the implementation of this grazing allotment.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The portion of the upper Salt River that flows through the allotment has been classified as potentially eligible for inclusion into the National Wild and Scenic Rivers System. The river was identified to include scenic, geologic, wildlife, recreational, and ecological values.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Archaeological survey would be conducted for areas proposed for surface disturbance which have no previous survey coverage, or have outdated surveys, which do not conform to current standards.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. It is Forest Service policy to continue contributions to the economic and social well-being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Archaeological survey would be conducted for areas proposed for surface disturbance which have no previous survey coverage, or have outdated surveys, which do not conform to current standards.

Resource	Rationale for Analysis
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. No environmental justice communities are present in the project area or vicinity.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. This grazing allotment does not overlap any grazing allotments impacted by the Resolution project.

Source:

US Forest Service (USFS). 2017, Hicks-Pikes Peak Allotment Grazing Authorization Preliminary Environmental Assessment. Available at:  
[https://www.fs.usda.gov/nfs/11558/www/nepa/107404\\_FSPLT3\\_4052292.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/107404_FSPLT3_4052292.pdf). Accessed February 2019.

USFS. 2019. Schedule of Proposed Actions January 2019 to March 2019. Available at:  
<https://www.fs.fed.us/sopa/components/reports/sopa-110312-2019-01.html>. Accessed March 2019.



## ***Horsetrack Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Horsetrack Grazing Allotment is approximately 28,187 acres including 11,208 acres administered by the Bureau of Land Management (BLM), 16,520 acres of lands administered by the Arizona State Land Department (ASLD) and 458 acres of private land. The allotment also covers approximately 3,406 acres of the Florence Military Reservation managed by the Department of Defense. However, it is assumed that no grazing is permitted on Department of Defense lands, therefore, it is not evaluated. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. This allotment is approximately 4 miles northeast of the Town of Florence and 11 miles southwest the Town of Superior. *Note: all acreages are approximate.*

### ***BLM***

The BLM portion of this allotment (11,208 acres) is currently authorized for 102 cattle for year-round use and is authorized for 1,224 AUMs (BLM Allotment Number AZ06111). This allotment was authorized on March 1 2019 and is authorized until February 28 2029. An inspection of the allotment in 1998 determined that it was in good condition and improving (United States Fish and Wildlife Service [USFWS] 2003). Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements.

This evaluation assumes that grazing will continue to occur on the BLM portions of this allotment and that the EA written for the lease renewal will allow for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. It is anticipated that no new roads or other facilities would be constructed under the grazing lease.

### ***ASLD***

For the purposes of this evaluation, we have assumed that the ASLD grazing lease within the Horsetrack Allotment (16,520 acres) is active and would include renewal of the lease for a term of up to 10 years. The ASLD portions of the allotment are authorized for approximately 1,414 AUMs. This allotment is leased to Seibert Cattle Company (Lease 5-52558). It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

### ***Private Ownership***

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands (458 acres) would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

United States Fish and Wildlife Service. 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Available at: [https://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/00029\\_Middle\\_Gila\\_River.pdf](https://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/00029_Middle_Gila_River.pdf). Accessed April 2019.

## ***Imerys Perlite Mine***

### Overview of RFFA

Imerys Perlite Mine submitted a plan of operations in 2013 which included plans for continued operation of the existing sedimentation basin at the millsite; continued use of segments of Forest Roads 229, 989, and 2403 for hauling; and mining at the Forgotten Wedge and Rosemarie Exception No. 8 claims. This project would continue previous mining activities. The effects analysis below is based on an existing environmental assessment, which resulted in a Finding of No Significant Impact (FONSI) for this project action.

### Temporal overlap with Resolution Project

Through 2034

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Perlite ore will continue to be mined at the quarry, but future operations would not change significantly from current under the proposed action. Subsidence will not occur as a result of this project. Ownership of mineral claims will not change.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The project will have minor direct and indirect impacts to vegetation, however the total amount of habitat lost as a result of the project is insignificant in terms of habitat quality and availability beyond the millsite and mine site.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. The project is continuing current operations at Imerys Perlite Mine.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. Imerys Perlite Mine will continue use of FR 229, 989, and a portion of 2403 throughout the life of the project. Imerys is responsible for maintaining these roads at a native surfaced road level. Traffic to and from the millsite occurs on a regular basis. Usage also occurs by Forest users and private land owners.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Impacts to air quality are minimized through implementation of dust abatement. Water is applied on haul roads and engineering controls are in place for fugitive dust from the processing plant at the millsite. Wet dust suppression is applied to active haul roads and unpaved areas of the site. All process equipment is also maintained to eliminate fugitive loss of material. Emissions are expected to continue at their current levels.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects; sufficient information exists to analyze. Dewatering is necessary to access the ore body in the active mine pit.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. An existing Stormwater Pollution Prevention Plan has been developed for the site under previous mining operations and management will continue under that plan.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The project will not result in changes to surface water/storm water discharge management.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Wildlife are not significantly impacted by the project, as most habitat impacts are almost entirely the result of past mining activity. Approximately 1.2 acres of mostly disturbed habitat impacts reptiles, mammals, and bird habitat, however no impacts are expected to endangered and threatened species or critical habitat. The habitat lost due to the project is considered low quality for desert tortoise and other wildlife, however mitigation for potential impacts to the Sonoran desert tortoise is in place.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No changes to recreation are expected as the project is a continuation to previous mining activities.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Perlite mining does not produce waste that would necessitate a tailings storage facility.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Perlite is fire resistant and does not increase fire risk.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Hazardous substances are not currently, and will not be, used or stored on Forest Service lands.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Little to no impacts to scenic values expected as the project exists wholly in areas which have been previously disturbed by mining and milling operations.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Cultural resources are not affected as they do not exist within the project area.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The project is a continuation of current operations of the mine.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. There are no effects to tribal values within the project area.

Resource	Rationale for Analysis
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. EJ communities are not disproportionately affected by the project.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. The project does not impact any livestock grazing operations.

Source:

Imerys Perlite USA, Inc. 2015. Plan of Operations, Imerys Perlite Mine. 45156 Silver King Mine Road, Superior, Arizona, 85253. October.

U.S. Forest Service. 2015. Imerys Perlite Mine, USA, Inc. Project Plan of Operations Environmental Assessment. Globe Ranger District, Tonto National Forest. April.

## ***Kalamazoo Superior Pit – BLM Mineral Material Sale***

### Overview of RFFA

Decorative rock quarry owned and operated by Tucson-based Kalamazoo Materials, Inc. Their Superior pit operation is located approximately 3 miles south-southeast of the Town of Superior. The quarry location may necessitate a rerouting of the proposed eastern alignment of the pipeline corridor to/from the Peg Leg alternative tailings storage facility, if Peg Leg (Alternatives 5) is ultimately selected by the Forest Service, in cooperation with the BLM, as the agency-preferred EIS alternative.

### Temporal overlap with Resolution Project

According to Daniel Moore, Geologist with the BLM Tucson Field Office, “Kalamazoo Superior Pit contracts are set to expire June 2019. This was an excavate/crush/screen/haul operation on 33 acres, in operation since 2000. The operator has been reclaiming as they sell off remaining stockpiled materials. No new mining is underway or expected. It is likely that the operator will request additional time or tonnage to complete the removal of stockpiled materials. I expect the quarry to be closed/reclaimed within three years.”

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Based on this information from Mr. Moore, the Kalamazoo Superior pit will be permanently closed before the Resolution Mine is actively operating, and thus should present no obstacle to routing of the Peg Leg eastern pipeline corridor, if the Peg Leg tailings storage site should ultimately be selected by the Tonto National Forest as the preferred alternative for the Resolution Mine EIS. Furthermore, this BLM information indicates all active mining at the Kalamazoo site has already ceased, and thus no present or future adverse environmental impacts to any of the resources listed below are expected.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Personal Communication with Daniel Moore, Geologist, BLM Tucson Field Office, regarding Kalamazoo Superior Pit mining operations and timeline to site closure. Via email. February 11, 2019.



## ***LEN Range Improvements***

### Overview of RFFA

Two actions have been proposed relating to the LEN allotment, which is a large grazing allotment in the so-called “Copper Butte” area located south of Superior between State Route 177 on the east side and the White Canyon Wilderness on the west side; the LEN allotment is administered by the BLM Tucson Field Office. The area is authorized a total of 2,956 AUMs across 25,553 acres of public land.

The first action would be to renew the grazing permit (#6197). The second action includes re-drilling eight existing wells and drilling three new wells; equipping them with solar pumps, storage tanks and water troughs; and performing maintenance of roads and access to the range improvements.

This proposed project is in response to existing information that shows resource concerns related to current livestock use that should be considered before lease issuance. These concerns include: the reconstruction of livestock waters that have reached the end of their productive lifespan and require reconstruction with more modern construction materials and techniques such as solar powered electric pumps on windmills and water storage tanks rather than only water troughs; maintenance of roads to allow for access to the improvements which must be built by modern equipment such as rotary drilling trucks; and the need for additional water sources away from the Gila River so that livestock are provided separate sources of water during the breeding season for yellow-billed cuckoos and southwestern willow flycatchers. The effects analysis below is based on an environmental assessment currently being prepared by the BLM Tucson Field Office, as well as the BLM *Ray Land Exchange and Plan Amendment Final Supplemental Environmental Impact Statement* (March 2019).

### Temporal overlap with Resolution Project

2017-2027. The renewed grazing permit would be for a 10-year period.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. No mineral resources are involved with this project and the re-drilling/drilling of 11 wells will not result in subsidence. Impacts to geologic resources have not been identified for detailed analysis within the EA.

Resource	Rationale for Analysis
Soils and Vegetation	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Most of the LEN allotment is comprised of soil with a high rock component in their structure. Because of this, some erosion occurs in areas where there is livestock trailing during heavy rainfall events, but this erosion and effects are comparable to what background levels of erosion would be without livestock and are therefore insignificant and discountable. The maintenance of roads for range improvements will result in less soil erosion on the roads and trails from loose soils stirred up by recreational vehicles.</p> <p>Analysis is not required for noxious weeds and non-native invasive plants. Weed infestations usually appear to be related to roads and recreational vehicles rather than livestock operations. Relatively little weed infestation has occurred from plants that were recently introduced to the area, therefore the issue will not be analyzed in detail in the EA. In addition, under the proposed action, there is reduced risk of noxious weed spread. Most invasive species are edible by livestock during their growth stages.</p> <p>The primary vegetation community on the LEN allotment is Sonoran-Paloverde-Mixed Cacti Desert Scrub.</p> <p>Although no specific acreages of new or existing surface disturbance in connection with the proposed action are specified yet in the EA currently being developed, the assumption is that new disturbance to soils and vegetation related to the re-drilling of 8 existing wells and drilling of three new wells and the improvement of access roads and other associated range facilities in the context of the 25,553-acre allotment area would be quite minimal. Any loss of soils and desert scrub vegetation for these improvements may well be offset by new restrictions of livestock away from the more valuable and sensitive soils and riparian vegetation in and around the Gila River.</p>
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise and vibration were not identified as issues warranting detailed analysis in this project.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. Presently, conditions of some roads on the allotment are in disrepair and not passable by any beside high clearance four-wheel drive vehicles. The proposed project will include minimal road maintenance and repair to allow drilling equipment into the project sites.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Road maintenance to allow equipment to access range improvements would only produce minor amounts of dust and for a short duration.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, upland perennial sources of water would be provided to supplement the existing upland water infrastructure on the allotment. The supplemental water sources would provide adequate water facilities for existing authorized grazing management activities.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action will not impact groundwater or surface water quality.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Surface Water Quantity	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, upland perennial sources of water would be provided to supplement the existing upland water infrastructure on the allotment. The supplemental water sources would provide adequate water facilities for existing authorized grazing management activities.
Wildlife	<p>Contributes to cumulative effects; sufficient information exists to analyze. The effects of the proposed action on wildlife / habitat has been identified as an issue that will be analyzed in further detail in the EA. Analysis is still underway, however a 2017 land health evaluation for the LEN allotment identified seven threatened and endangered species which may occur within the LEN allotment. In addition, 17 BLM sensitive species are known or have the potential to exist within the allotment.</p> <p>Under the proposed action, the grazing permit on the LEN allotment would be renewed. Wildlife is impacted by livestock through behavioral disturbance, competition for forage, and by their presence.</p> <p>No analysis is required for impacts to migratory birds as the proposed action will be removing livestock from the riparian corridor along the Gila River during the summer months when migratory birds are breeding. As a result, no disturbance to nesting will result from livestock operations.</p>
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Smoother roads may allow for increased recreational OHV traffic during the high use months (fall through spring).
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this project.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Under the proposed action, the grazing permit on the LEN allotment would be renewed and livestock grazing would continue. Livestock can alter fire regimes while foraging by reducing the amount of fine fuels available to carry fire; however, effects would be similar to those from existing grazing practices.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. No hazardous materials would be used in this project.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Range improvements such as storage tanks would be colored similarly to the surrounding environment in order to reduce visual impacts on the landscape.
Cultural Resources	Contributes to cumulative effects, but insufficient information exists to analyze. A Class I cultural resource file search in August 2017 was performed for the LEN Allotment Land Health Evaluation which found no historic properties or areas likely to contain historic properties within areas of concentrated livestock use on the allotment. However, as this project constitutes a new range improvement, a Class III cultural resource survey is required.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Socioeconomics has not been identified as a resource requiring detailed analysis in the EA.

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Currently, there are no known adverse impacts to culturally significant sites, plants, items or landscapes, however consultations by BLM with tribes who claim cultural affiliation to and/or traditional use of the area must be reinitiated in the case of any range improvement project. Tribes that have been previously consulted include the Hopi Tribe, Pascua Yaqui Tribe, Tohono O'odham Nation, and the White Mountain Apache Tribe.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Environmental justice communities would not be impacted by the proposed action.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, the grazing permit for the LEN allotment would be renewed. There would be no changes to present condition regarding grazing lease terms (AUMs, etc.), however livestock would be removed from the riparian along the Gila River during the summer months.

Source:

Bureau of Land Management, Arizona State Office, Gila District Office. 2019. Ray Land Exchange and Plan Amendment Final Supplemental Environmental Impact Statement. Tucson, Arizona. March.

Bureau of Land Management, Tucson Field Office. 2019. Lease Renewal, Construction of Range Improvements and Road Maintenance, LEN Allotment. Environmental Assessment DOI-BLM-AZ-G020-FY16\_0018-EA. Tucson Field Office. Accessed online at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/60831/165798/202124/LEN\\_Chapter-1-and-2.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/60831/165798/202124/LEN_Chapter-1-and-2.pdf)

Bureau of Land Management, Tucson Field Office. 2017. Land Health Evaluation, LEN Lease No. 6197. September. Accessed online at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/60831/134930/165084/LEN\\_Allotment\\_Land\\_Health\\_Evaluation.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/60831/134930/165084/LEN_Allotment_Land_Health_Evaluation.pdf)

## ***Miami-Inspiration Mine***

### Overview of RFFA

The Miami Inspiration Mine is part of a very large, historic mining area approximately 90 miles east of Phoenix that contains multiple pits and underground workings, and which has been mined since the late 1800s. The Miami Mine complex and on-site smelter are owned and operated by Freeport-McMoRan., Inc.

Freeport-McMoRan ceased sulfide copper production via flotation processes in 2015 and now only produces copper at the Miami Mine through leaching of existing oxide ore stockpiles and SX/EW processing operations. This production is expected to decline over time, although no timeline has been specifically forecast.

The area around the Miami mine has been heavily disturbed by more than 100 years of large-scale mining activity and the landscape has been permanently altered. Some reclamation and revegetation activities are taking place.

### Temporal overlap with Resolution Project

No timeline for permanent shutdown of stockpile leaching operations at the Miami Inspiration mine has been announced by Freeport-McMoRan, so it is assumed these activities will continue for the foreseeable future (10-20 years, or perhaps longer).

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Leaching of existing rock stockpiles should have no effect on geologic or mineral resources. Subsidence is also not a factor.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Leaching of existing rock stockpiles should present no additional impact to soils and vegetation.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. No excess noise or vibrations from leaching and/or SX/EW processing are anticipated.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Ongoing leaching and processing operations at the Miami Mine should not alter existing traffic patterns or contribute to additional area traffic.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. No additional emissions from drip emitters or leachate processions would occur above existing levels.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. No impacts to groundwater or surface waters are anticipated as long as leachate is properly contained on-site and Freeport-McMoRan complies with all requirements of their Arizona Department of Environmental Quality-issued Aquifer Protection Permit and other regulatory requirements.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Same as above for Groundwater Quantity.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Same as above for Groundwater Quantity.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. No off-site impacts to wildlife or wildlife habitat are expected.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to recreation in the area are expected.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Leaching and processing operations would have no effect on existing tailings impoundments and would not create additional tailings.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Leaching and processing operations would have no effect on risks of wildfire or fuel loading.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Sulfuric acid and other chemicals supporting the heap leach and SX/EW operations have for many years been used for leaching and processing operations at the Miami Mine. No increase in the quantities or changes to how they are transported to the mine are anticipated.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Visual resources in the area of the Miami Mine have already been permanently altered; leaching and SX/EW processing operations would not change the existing visual character or the area.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. No new effects to cultural resources are anticipated.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. No impacts to existing socioeconomic conditions are expected.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. No new effects to tribal resources are anticipated.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. No new effects are expected.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no change to existing grazing allotments or rangeland access.

Source:

Freeport-McMoRan. 2019. "Global Mining Operations: North America: Miami." Available: <https://www.fcx.com/operations/north-america>. Accessed: March 2019.

Mindat.org. 2019. "Miami-Inspiration District, Globe-Miami District, Gila Co., Arizona, USA." Available: <https://www.mindat.org/loc-192872.html>. Accessed: March 2019.

## ***Millsite Rangeland Improvements***

### Overview of RFFA

The Millsite Allotment consists of approximately 44,573 acres of National Forest System Lands located approximately 20 miles east of Apache Junction, Arizona, on the southern end of the Mesa Ranger District.

The Mesa Ranger District is proposing to add three new 10,000-gallon storage tanks and two 600-gallon troughs to improve range condition through better livestock distribution and to provide additional wildlife waters in three pastures on the allotment. Water developments are proposed within the Cottonwood, Bear Tanks, and Hewitt pastures of the Millsite grazing allotment.

An Environmental Assessment reauthorizing grazing within the allotment and the proposed rangeland improvements was completed in August 2015 and a Decision Notice/Finding of No Significant Impact was issued that same month.

Improvements have not yet been completed but can proceed.

### Temporal overlap with Resolution Project

Although the exact timing of when these rangeland improvements would occur is unknown, it can be reasonably assumed that these improvements would be implemented on the grazing allotment during the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA as identified in <i>Final Environmental Assessment: Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations</i> (USDA 2016) does not measurably impact this resource.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Livestock tend to congregate in areas near a reliable water source, leading to trampling over time of vegetation in that particular portion of a pasture or allotment. Adding water sources in different areas will better allow the livestock to be rotated throughout the year, thereby allowing areas of heavily disturbed vegetation to recover. Thus, the proposed action should have a measurably beneficial effect on soils and vegetation.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Although there may be very short-term and localized increases in noise and vibration during construction of the proposed livestock watering facilities, there would be no long-term effects.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed actions would have no impact on this resource.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed actions would have no impact on this resource.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects; sufficient information exists to analyze. Three new 10,000-gallon storage tanks and two 600-gallon troughs would improve range condition through better livestock distribution and to provide additional wildlife waters in three pastures on the allotment.

Resource	Rationale for Analysis
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Water: Surface Water Quantity	Contributes to cumulative effects; sufficient information exists to analyze. Ground disturbance could alter runoff patterns or potentially increase erosion.
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. Installation of additional livestock watering facilities would have beneficial effects on wildlife by providing additional waters in the area and reducing competition between livestock and wildlife for access to water.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed actions would have a negligible impact on scenic resources.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. This RFFA does not measurably impact this resource (USDA 2016).
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Three new 10,000-gallon storage tanks and two 600-gallon troughs would improve range condition through better livestock distribution.

Source:

Mesa Ranger District, Tonto National Forest. 2010. *Environmental Assessment: Millsite Allotment Analysis*. Pinal and Maricopa Counties, Arizona. August.

United States Department of Agriculture (USDA). Forest Service Southwestern Region. January 2016. Final Environmental Assessment: Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations. Available at: <https://portal.azoah.com/oedf/documents/17-001-WQAB/SCAT-13-Final%20EA.BaselineProject.2016.BATES.pdf>. Accessed March 2019.



## ***Myers Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Myer Grazing Allotment is approximately 6,052 acres including 4,618 acres of lands administered by the Bureau of Land Management (BLM) and 1,424 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. This allotment is approximately 1 mile southeast of the Florence Military Reservation and 4.9 miles northeast of the Town of Florence. *Note: all acreages are approximate.*

### ***BLM***

The BLM portion of the Myers Allotment (4,618 acres) is active and includes approximately 47 cattle authorized for year-round use and includes 564 AUMs (BLM Allotment Number AZ06132). The BLM portion of the allotment was authorized on March 1, 2019 and is authorized until February 28, 2029. A 2000 survey of the BLM portions of the allotment determined that the Myers allotment was meeting range condition standards and was in stable condition (U.S. Fish and Wildlife Service [USFWS] 2003). For the purposes of this evaluation, we have assumed that the BLM would renew of the lease and that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease. Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements.

### ***Private Ownership***

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands (1,424 acres) would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

United States Fish and Wildlife Service. 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Available at: [https://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/00029\\_Middle\\_Gila\\_River.pdf](https://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/00029_Middle_Gila_River.pdf). Accessed April 2019.

## ***Nichols Ranch Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Nichols Grazing Allotment is approximately 13,859 acres including 13,809 acres of lands administered by the Arizona State Land Department (ASLD) and 50 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. This allotment is approximately 4 miles north of the Florence Military Reservation and 10.5 miles west of the Town of Superior. *Note: all acreages are approximate.*

#### ***ASLD***

For the purposes of this evaluation, we have assumed that the ASLD grazing lease within the Nichols Ranch Allotment (13,809 acres) is active and would include renewal of the lease for a term of up to 10 years. The ASLD portions of the allotment are authorized for approximately 1,300 AUMs. This allotment is leased by Seibert Cattle Company (Lease 5-95352). It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### ***Private Ownership***

For the purposes of this evaluation, we have assumed that existing grazing practices on private lands (50 acres) would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## **OMYA Quarry**

### Overview of RFFA

Limestone quarry has been in interim shutdown for approximately 10 years due to low market prices; persistent water in pit. OMYA has instead been processing limestone/calcium carbonate and marble products from another quarry the company owns in southern California.

According to Judd Sampson, geologist with Tonto National Forest, preliminary testing had showed the water in the pit is the result of stormwater runoff rather than hydrologic connectivity to Queen Creek or any springs in the area. There are no current plans to resume operations at the pit and ongoing monitoring and interim shutdown management is expected to continue to occur.

According to Arizona Department of Mines and Mineral Resources records:

“The Tonto National Forest reported that the Plan of Operations (Plan) for OMYA Arizona's white marble and limestone mining operation at the Queen Creek Limestone Mine is to be finalized and signed on Sept. 30, 2003. OMYA Arizona has been operating the mine on an extension of a prior existing Plan. The new Plan will allow continued quarry operations and expansion into an extended pit area.

The Queen Creek Limestone Mine supplies white calcium carbonate to OMYA Arizona's calcium carbonate processing plant in Superior and to Superior Marble Company's marble crushing and screening plant, also in Superior.

OMYA Arizona's plant produces finely ground, natural calcium carbonate products for functional fillers and extenders from calcium carbonate marble they mine at the Queen Creek Limestone Mine. They also process calcium carbonate in the same plant for food additives. Their calcium carbonate food additives come from a mine in the Southern California desert.”

OMYA Arizona is a relatively small-scale mining and processing operation involving approximately 30 employees total.

According to a company profile of OMYA included in a 2017 ADEQ report on total maximum daily loads for dissolved copper in Queen Creek:

“Omya Inc., Superior, AZ, a limestone quarry, has been operating since 1999. Its quarry is adjacent to Queen Creek in the headwaters area, approximately 3.5 miles north of Highway 60 with its processing facility located within Superior. The quarry produces limestone for use in high-grade food and pharmaceutical products.

Omya Inc. produces approximately 100,000 tons per year of calcium carbonate with 60 percent used for industrial purposes and the remaining 40 percent for food products. Omya's Arizona Pollution Discharge Elimination System (AZPDES) Multi-sector General Permits (AZMSG) include AZMSG-63038 for the quarry site and AZMSG-63037 for the in-town processing site.”

### Temporal overlap with Resolution Project

The mine plan filed with the Tonto National Forest in 2003 covers a proposed 40 years of activity in two 20-year phases. Phase 1 is scheduled to end in 2023. However, the company ceased active operations at Superior quarry approximately 10 years ago and continues to operate in interim shutdown.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Quarry has ceased operations; unlikely to reopen.

Source:

Arizona Department of Environmental Quality. 2000. "Public Notice of the Preliminary Decision to Issue an Individual Aquifer Protection Permit No. P-I04187 to OMYA (Arizona) Inc." Phoenix, AZ. September 6.

Arizona Department of Environmental Quality. 2017. "Queen Creek Dissolved Copper TMDL." Phoenix, Arizona. September 17. Publication Number OFR-17-03.

Arizona Department of Mines and Mineral Resources. 2002. AZMILS Data 753, Queen Creek Limestone (aka OMYA Arizona). Phoenix, AZ. June 21.

Sampson, Judd, and Lee Ann Atkinson. 2019. Geologists, Tonto National Forest, Supervisor's Office. Personal communication. February 27.

## ***Pinal County Joint Land Use Study***

### Overview of RFFA

The Pinal County Joint Land Use Study (JLUS) is a planning effort between the Arizona National Guard, surrounding communities, state and federal agencies, the public, and other affected stakeholders to identify and address compatibility issues. The four Arizona National Guard installations that are involved include the Florence Military Reservation, Rittenhouse Training Site, Silverbell Army Heliport, and Picacho Peak Stagefield. Involved communities are the Town of Florence, Marana, and Queen Creek and the City of Eloy. Proposed benefits to the Pinal County JLUS include protecting the health and safety of surrounding residents and workers, preserving long-term land use compatibility between the Arizona National Guard and the surrounding communities, promoting community planning that addresses compatibility issues, and enhancing cooperation between the Arizona National Guard and community officials.

### Temporal overlap with Resolution Project

There is insufficient information available to determine temporal overlap with the Resolution Copper Mine Project.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** At this time, there is not enough detail to analyze the effects of this project in detail. The JLUS is a planning-level effort that is currently underway; no decisions or concrete proposals have yet been made public.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Impacts to geology, minerals, and subsidence have not been identified as a factor to be analyzed in detail.
Soils and Vegetation	Contributes to cumulative effects, but insufficient information exists to analyze. Biological resources including vegetation have been identified as a factor to be analyzed in detail. See conclusion text above.
Noise and Vibration	Contributes to cumulative effects, but insufficient information exists to analyze. Noise and vibration have been identified as factors to analyze in detail. Primary concerns are impacts to quality of life due to vibration from military and/or civilian activities as well as impacts to human activity, health, and safety caused by exposure to high noise levels. See conclusion text above.
Transportation	Contributes to cumulative effects, but insufficient information exists to analyze. Roadway capacity has been identified as a factor to be analyzed in detail. See conclusion text above.
Air Quality	Contributes to cumulative effects, but insufficient information exists to analyze. Air quality has been identified as a factor to analyze in detail. Primary concerns for air quality include pollutants that limit visibility and potential non-attainment of air quality standards that could limit changes in future operations at the installation or in the area. See conclusion text above.



<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects, but insufficient information exists to analyze. Water quantity has been identified as a factor to analyze detail. Water quantity concerns include assurance that adequate water supplies are available for use by the installation and surrounding communities. Water supply for agricultural and industrial use is also a concern. See conclusion text above.
Water: Groundwater and Surface Water Quality	Contributes to cumulative effects, but insufficient information exists to analyze. Water quality has been identified as a factor to analyze in detail. Water quality concerns include the assurance that water of good quality is available for use by the installation and surrounding communities. See conclusion text above.
Water: Surface Water Quantity	Contributes to cumulative effects, but insufficient information exists to analyze. Water quantity has been identified as a factor to analyze detail, however there is not enough detail at this time to analyze the effects. Water quantity concerns include assurance that adequate water supplies are available for use by the installation and surrounding communities. Water supply for agricultural and industrial use is also a concern. See conclusion text above.
Wildlife	Contributes to cumulative effects, but insufficient information exists to analyze. Wildlife resources has been identified as a factor to analyze in detail. Primary concerns are for federal and state listed threatened or endangered species and the habitats they live in or utilize. The presence of sensitive biological resources could require special considerations for development. See conclusion text above.
Recreation	Contributes to cumulative effects, but insufficient information exists to analyze. Recreation has been identified as a factor to be analyzed in detail. Key concerns include assurance of adequate parks and recreation opportunities that are of good quality and available for use by the installation as well as surrounding communities as the area develops. See conclusion text above.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Tailings are not involved in this project.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects, but insufficient information exists to analyze. Fuels and fire management has been identified as a factor to be analyzed in detail. Key concerns include assurance of adequate fire services that are of good quality and available for use by the installation as well as surrounding communities as the area develops. See conclusion text above.
Public Health & Safety: Hazardous Materials	Contributes to cumulative effects, but insufficient information exists to analyze. Hazardous materials would be in use on the installation and have been identified as an area requiring detailed analysis. See conclusion text above.
Scenic Resources	Contributes to cumulative effects, but insufficient information exists to analyze. Scenic resources have been identified as a factor for detailed analysis. Development of surrounding communities and the installation would continue to impact present scenic conditions. See conclusion text above.

<b>Resource</b>	<b>Rationale for Analysis</b>
Cultural Resources	Contributes to cumulative effects, but insufficient information exists to analyze. Cultural resources have been identified as a factor to analyze in detail. See conclusion text above.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Socioeconomics has not been identified as a factor requiring detailed analysis.
Tribal Concerns and Values	Contributes to cumulative effects, but insufficient information exists to analyze. Tribal values have been identified as a factor to analyze in detail. See conclusion text above.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Impacts to environmental justice communities have not been identified as a factor to be analyzed in detail.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Impacts to livestock grazing has not been identified as an issue requiring detailed analysis.

Source:

Pinal County and Arizona National Guard. 2019. *Pinal County Joint Land Use Study: Project Overview*.  
Available: <https://view.joomag.com/pinal-county-jlus-fact-sheet-1/0062203001519428244?short>.  
Accessed: March 2019.

## ***Pinal County Whitlow Pit – BLM Mineral Material Sale***

### Overview of RFFA

Decorative rock quarry owned and operated by Pinal County. Their Whitlow pit operation is located approximately 7 miles south of the Town of Superior and 0.5 mile west of State Route 177. The quarry location may necessitate a rerouting of the proposed western alignment of the pipeline corridor to/from the Peg Leg alternative tailings storage facility, if Peg Leg (Alternatives 5) is ultimately selected by the Forest Service, in cooperation with the BLM, as the agency-preferred EIS alternative.

### Temporal overlap with Resolution Project

According to Daniel Moore, Geologist with the BLM Tucson Field Office, “The Pinal County Whitlow Pit is a gravel pit [that has been] used by Pinal County for road projects since 1983. This free use permit expires in October 2019. Pinal County has expressed interest in obtaining a new free use permit for the site. This is an excavate/haul operation on 15 acres. I have no estimate for when this pit will close. Based on development patterns I expect that Pinal County will have need of the pit well into the future.”

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** The small size of this aggregate mining operation (15 acres) and the fact that it has been operating for more than 35 years and no evidence of substantial adverse environmental impacts has been noted leads us to conclude this activity will not contribute meaningfully to cumulative environmental effects in the context of the Resolution Mine project. Any impacts from this project in the future would be similar to current impacts already assessed as part of the Affected Environment.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Personal Communication with Daniel Moore, Geologist, BLM Tucson Field Office, regarding Pinal County Whitlow Pit mining operations and timeline to potential site closure. Via email. February 11, 2019.

## ***Pinaladera Fuels Management***

### Overview of RFFA

Fuels reduction on 83,558 acres south of Globe. The goal of the project is to reduce inter-forest and intra-forest vegetation competition and hazardous fuel accumulation, returning the area of Pine Mountain to a more resilient, fire adapted ecosystem. The purpose of this project is to utilize prescribed fire or naturally occurring wildfire to achieve this desired outcome.

The Tonto National Forest proposes to use prescribed fire or naturally occurring wildfire to move the project area towards the desired condition, focusing on the upper elevations in the Ponderosa pine vegetation type, then juniper and brush as we move down towards lower elevations. The project boundary encompasses approximately 50,000 acres. It is anticipated that about 50 percent of the acreage identified within the project boundary would be removed through burning. This project may occur over many years and it may be necessary to treat a particular area more than once to achieve or maintain the desired resilient landscape.

### Temporal overlap with Resolution Project

Although the project is currently on hold (USFS 2019) and the implementation of the proposed project is unknown, it can be reasonably assumed that the proposed project would be implemented within the expected life of the Resolution mine project (50 to 55 years) unless the Tonto National Forest cancels the project.

### Rationale for analysis as cumulative effect in EIS, by resource

The rationale for analysis for all resources is based on the Mesa Ranger District letter (USDA 2017).

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Prescribed fires would not have any impact on geology, surface resources or claims, and would not result in subsidence.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Vegetation within the project area is a mixture of ponderosa pine at the higher elevations, intermixed with oak and juniper. At the lower elevations, the vegetation type consists of mostly brush and grass. A backing fire method would be used to reduce flame height and intensity to protect the tops of pine trees and preserve soil stability. Ground disturbance in the area would be minimal, if any.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Short term noise would be exceedingly minimal from forest machinery and workers during the prescribed burns.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Where existing forest roads and trail systems would be used as boundary features to contain fire, these features would need minimal improvement, such as removal of brush along these routes.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. In the short term there would be increased smoke and fumes from the fires that would impact air quality negatively. However, prescribed burns are only carried out on days having favorable weather conditions, including specific ranges of light winds, to reduce the negative effects of smoke. Prescribed burns of excess vegetation are considered an effective means of reducing far greater adverse effects of uncontrolled wildfire.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to groundwater sources.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Watersheds will be maintained so as to improve them to a satisfactory or better condition.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to surface water quantity.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Prescribed burns of excess vegetation are considered an effective means of reducing far greater adverse effects of uncontrolled wildfire, which poses a significantly greater danger to woodland habitats and wildlife than small, controlled burns.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Trails would be monitored after burning to ensure no hazards are present as a result of these activities
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved in this project.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Prescribed burning would occur in small sections, or burn blocks, at a time. Wildland fires will be managed with an appropriate suppression response. Fire management objectives for this area include: providing a mosaic of age classes within the total type which will provide for a mix of successional stages, and to allow fire to resume its natural ecological role within ecosystems. Wildland fires or portions of fires will be suppressed when they adversely affect forest resources, endanger public safety, or have a potential to damage significant capital investments. On the balance, this project provides a beneficial impact to fuels and fire management.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no use of hazardous materials associated with this proposed action.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. A portion of the Arizona National Scenic Trail lies within the project area. Though this section of trail may not be available for recreation during burning activities to protect public safety, there will be no long term impacts to the trail.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. No change to cultural resources is anticipated.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is unlikely to create any additional jobs or impact existing socioeconomic conditions.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. No change to cultural resources is anticipated.

Resource	Rationale for Analysis
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. There would be no effects to environmental justice communities in the area.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. While there are grazing allotments and uses present in the Pinals, the project would be designed to avoid livestock. In addition, prior arrangements would be made with livestock grazing permit holders to ensure cattle are not in the area during prescribed burning activities.

Source:

United States Department of Agriculture (USDA) U.S. Forest Service (USFS). 2017. Mesa Ranger District Letter. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/3803\\_FSPLT3\\_4125641.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/3803_FSPLT3_4125641.pdf). Accessed February 2019.

USFS Tonto National Forest. 2019. Schedule of Proposed Actions January 2019 to March 2019. Available at: <https://www.fs.fed.us/sopa/components/reports/sopa-110312-2019-01.html>. Accessed March 2019.

## ***Pinto Valley Mine Expansion***

### Overview of RFFA

The Pinto Valley Mine is an existing open pit copper and molybdenum mine located approximately 8 miles west of Miami, Arizona in Gila County. Pinto Valley Mining Corp. is proposing to expand mining activities onto the Tonto National Forest, extend the mine life to 2039, and to consolidate previous and ongoing authorizations for the mine. The proposed project would result in an estimated 1,011 acres of new disturbance (245 acres on Tonto National Forest land and 766 acres on private land owned by Pinto Valley Mining Corp.). The environmental impact statement (EIS) will evaluate and disclose the potential environmental effects from approval of the Mining Plan of Operations for activities on the Tonto National Forest. The EIS also will evaluate any necessary amendments to the Tonto National Forest Land and Resource Management Plan.

### Temporal overlap with Resolution Project

The Tonto National Forest issued a Notice of Intent to prepare the Pinto Valley Mine EIS on March 28, 2017, and the scoping period closed on April 27, 2017. Completion of the Final EIS and issuance of a Record of Decision on the project is expected in late spring/early summer of 2020.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects; sufficient information exists to analyze. While subsidence is not considered a factor in the proposed expansion of open-pit operations, other mining activities may result in increased potential for acid rock drainage and possibly an increased potential for downstream contamination of water sources.
Soils and Vegetation	Contributes to cumulative effects; sufficient information exists to analyze. The proposed action as described in the amended Pinto Valley Mine Plan of Operations (MPO) would result in the short-term (<5 years) or long-term (20-30 years) loss of soils and vegetation through surface disturbance of up to 1,011 acres. Some areas could later be reclaimed and revegetated, but there would also be the permanent, irreversible loss of other areas that would, for example, be buried beneath expanded tailings impoundments or waste rock stockpiles or would be permanently lost to expansion of the pit area.
Noise and Vibration	Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. Continuation of mine operations for another 20+ years will contribute to equivalent or possibly increased noise and vibration levels perceptible to nearby residences and/or recreational users of adjacent lands. Because the effects of noise and vibration at the mine property are geographically limited and very quickly attenuate with distance, analysis of those effects as a cumulative effect is not considered necessary. However, noise and vibrations from increased haul truck traffic may contribute to cumulative effects for residences and along major roadways.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending; however, continued mine operations will undoubtedly contribute to heavy haul truck traffic along U.S. 60 and other roadways in the area, as well as vehicular traffic from mine employees, contractors, and others coming to and from the PV mine.



Resource	Rationale for Analysis
Air Quality	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending, but scoping comments received by the Forest indicate a potential for increased emissions of criteria air pollutants as a result of expanded mine operations, including potentially significant increases in particulate matter and greenhouse gases. These emissions may also negatively affect designated Class I airsheds in the vicinity (e.g., wilderness areas, national parks).</p>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	<p>Contributes to cumulative effects, but insufficient information exists to analyze. EIS impact analysis is pending. The primary issues related to groundwater resources that will be thoroughly analyzed prior to any Record of Decision for the project include impacts to groundwater quantity in the Pinto Creek watershed resulting from water use by the mine, impacts to surface and groundwater quality from geochemically impacted seepage and surface water runoff, and impacts to surface water and groundwater from the formation of a pit lake after the PVM closes. According to the scoping and issues report for the project (Tonto National Forest 2017):</p> <p>“The PVM Project requires, on average, an estimated 9,722 gallons of water per minute for onsite milling, dust control, potable water, and other uses. These water requirements are met by two pipeline supply systems originating from different basins and through the reuse of water within the PVM site. A portion of the water required for the PVM Project would continue to be withdrawn from groundwater wells in the Pinto Valley watershed, which, combined with continued dewatering operations in the pit for mine water supply, would result in groundwater drawdown. Groundwater pumping reduces the water level and changes the flow direction in the aquifer, potentially affecting groundwater availability and water use. As a result, groundwater pumping could potentially reduce groundwater available to recharge springs and streams such as Pinto Creek, thereby reducing surface water flow and potentially impacting the survival and long-term persistence of riparian vegetation.”</p> <p>Because Pinto Creek is an entirely different watershed than could be affected by Resolution Mine-related activities (Pinto Creek ultimately flows to Roosevelt Lake), analysis as a potential CE is not considered necessary.</p>
Water: Groundwater and Surface Water Quality	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. As noted above under groundwater quality, the primary concern with regard to water quality centers around the potential for geochemical seepage or runoff from tailings or other mine facilities into groundwater and surface waters within the Pinto Creek watershed. (It should be noted that Pinto Creek is an Arizona Department of Environmental Quality [ADEQ]-listed impaired water under §303(d) of the Clean Water Act—the waterway exceeds Arizona Water Quality Standards for dissolved copper.)</p>

Resource	Rationale for Analysis
Water: Surface Water Quantity	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. As noted above, key issues with regard to surface water quantity include significant groundwater pumping at the mine, which may diminish inflow into Pinto Creek and other waterways and reduce overall surface water volumes. In addition, stormwater management controls at the mine could further reduce the amount of surface water moving downstream in the Pinto Creek drainage.</p> <p>Because Pinto Creek is an entirely different watershed than could be affected by Resolution Mine-related activities, analysis as a potential CE is not considered necessary.</p>
Wildlife	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending but, as with soil and vegetation resources (see above), loss of up to 1,011 acres of current habitat is anticipated. Some portions of these areas may later be successfully reclaimed and revegetated, but other areas would remain permanently altered.</p>
Recreation	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. It is unclear at this time how public recreational use of lands in the vicinity of the mine—particularly for hiking and hunting—may change as a result of expanded mine operations.</p>
Public Health & Safety: Tailings Safety	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending; however, there remains a risk of potential tailings dam or stability failures, the effects of which may threaten residents or visitors along Pinto Creek downstream from the mine.</p>
Public Health & Safety: Fuels and Fire Management	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. EIS impact analysis is pending; however, there initially appears to be low risk of increased wildfire as the area around the PV mine is already substantially disturbed and little potential fuel for wildfire is present. It is assumed that MSHA regulations governing fire control within the area of actual mine operations are sufficient.</p>
Public Health & Safety: Hazardous Materials	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. Potential impacts to public health and safety include the potential for exposure from accidental spills of hazardous materials being transported to or from the mine. Because chemicals and other hazardous materials will also be used at the Resolution Mine, analysis as a potential CE for this resource is necessary.</p>
Scenic Resources	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is likely to have little substantive effect on scenic resources in the area, given that the Pinto Valley Mine has already been operating for decades and the visual quality in the immediate area has already been altered.</p>
Cultural Resources	<p>Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending, but there is a likelihood that expansion of present mine operations will result in the permanent disturbance of existing archeological sites and artifacts in proximity to the mine.</p>

Resource	Rationale for Analysis
Socioeconomics	Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. The proposed expansion and continuation of operations at the Pinto Valley Mine may result in a range of impacts—potentially both beneficial and adverse—to social and economic conditions in the region. These effects may include changes in overall employment and the types of job opportunities in the area; housing availability and property values; the general quality of available community services and infrastructure; as well as quality of life issues such as air quality, water quality and quantity, ease of transportation and access, and recreation.
Tribal Concerns and Values	Contributes to cumulative effects; sufficient information exists to analyze. No potential impacts to tribal concerns and issues from the proposed action or alternatives have yet been identified, but such concerns and issues, if any, may become known through future government-to-government tribal consultation.
Environmental Justice	Contributes to cumulative effects; sufficient information exists to analyze. EIS impact analysis is pending. Proposed expansion and continuation of operations at the Pinto Valley Mine may negatively and disproportionately affect environmental justice communities in the area. For example, large-scale mining projects often result in a decrease in available, affordable housing in a given area because of a relatively sudden influx of workers to that same area, which thereby pushes up prices. Activity at the Pinto Valley Mine, in combination with other mining in the Globe-Miami-Superior-Kearny-Hayden area, may contribute to this well-documented phenomenon.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. EIS impact analysis is pending. As yet, no potential effects to grazing permittees or established allotments have been identified. Because the proposed area of disturbance would primarily be on private lands owned by Pinto Valley Mining Corp and the disturbance to Tonto National Forest lands would be relatively small (245 acres), the contributing adverse effects on regional rangeland are considered negligible.

Source:

U.S. Forest Service, Tonto National Forest. 2019. Project Website: *Pinto Valley Mine Environmental Impact Statement*. Available at: <http://www.pintovalleymineeis.us/index.html>. Accessed February 2019.

U.S. Forest Service, Tonto National Forest. 2017. *Pinto Valley Mine Environmental Impact Statement: Draft-Final Scoping and Issues Report*. September 29. Available at: [http://www.pintovalleymineeis.us/documents/PVM\\_Scoping%20Report\\_Draft-Final\\_2017\\_0928.pdf](http://www.pintovalleymineeis.us/documents/PVM_Scoping%20Report_Draft-Final_2017_0928.pdf). Accessed February 2019.

## ***Ray Land Exchange and Proposed Plan Amendment***

### Overview of RFFA

As originally proposed in 1994 to the Bureau of Land Management (BLM) by the mining firm ASARCO LLC, a land exchange between the two parties would include approximately 10,976 acres of public lands and federally owned mineral estate located near ASARCO's Ray Mine Complex in east-central Arizona being conveyed to ASARCO. In exchange for these federal lands, the BLM would acquire approximately 7,304 acres of private lands, primarily in northwestern Arizona, that possess resource qualities considered to be of significant value to the public.

An FEIS analyzing the impacts of the proposed exchange was completed in June 1999 and a Record of Decision was signed in May 2000. However, the analysis in the FEIS and the subsequent decision were challenged by a consortium of environmental groups, first by appeal through the IBLA and then by litigation. This legal action ultimately moved up to the Ninth Circuit Court of Appeals, which, in 2010, ruled that there was a fundamental flaw in the EIS analysis and remanded the EIS back to the BLM to correct the document. A Final Supplemental FEIS was published in March 2019.

### Temporal overlap with Resolution Project

Land would be exchanged upon approval of the Supplemental EIS, which is unlikely to occur until late 2019 at the earliest. One condition before actual conveyance of selected land exchange parcels takes place would be mandatory data recovery of all identified archaeological sites, which may take 2 years or longer to accomplish. Additional exploratory drilling and analysis of the Copper Butte ore deposit or other areas of the Selected Lands may require several years after that.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects; sufficient information exists to analyze. ASARCO would gain exclusive rights and control of development of mineral resources on the selected lands. Mineral rights on the offered lands would be managed by the BLM as a public resource, except where restricted.
Soils and Vegetation	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, there would likely be total loss of existing natural upland and riparian vegetation communities in areas with foreseeable mining uses. There would be no requirements for riparian reclamation.
Noise and Vibration	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, noise and vibration impacts would likely occur in areas on the selected lands with foreseeable mining uses.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, holders and lessees of current and existing ROWs would negotiate directly with ASARCO regarding their status, terms, and conditions.
Air Quality	Contributes to cumulative effects; sufficient information exists to analyze. Impacts would be addressed through Clean Air Act permitting. No additional mitigation measures could occur.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects; sufficient information exists to analyze. Impacts would depend on use; however, under the proposed action potential water demand outside of foreseeable uses would not be analyzed through an MPO.
Water: Groundwater and Surface Water Quality	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, post-closure groundwater quality protection would be solely authorized by ADEQ. Foreseeable mining uses on the selected lands would result in impacts to groundwater and surface water quality.
Water: Surface Water Quantity	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, foreseeable mining uses on the selected lands would result in impacts to surface water quantity.
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, there would likely be total loss of existing wildlife habitat in areas where high and moderate habitat potential intersect with foreseeable mining uses. BLM sensitive species would no longer be assessed on the selected lands. BLM would acquire new potential wildlife habitat through the offered lands.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. Dispersed recreation within the selected lands would become fully unavailable. However, the offered lands would become available for recreation under BLM management. The selected lands would also see impacts to the “solitude” characteristics of the White Canyon ACEC and White Canyon Wilderness. Recreational settings on the Arizona National Scenic Trail would also be impacted.
Public Health & Safety: Tailings Safety	Contributes to cumulative effects; sufficient information exists to analyze. It is known that at some point ASARCO wishes to develop a copper mining operation at the “Copper Butte” area west of the Ray Mine. Tailings may be part of this development.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, fire management on the selected lands would no longer be managed by their current, respective RMPs.
Public Health & Safety: Hazardous Materials	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, BLM would relinquish all regulatory, management, and administrative responsibility for hazardous materials on the selected lands. These issues would still be regulated under the MSHA.
Scenic Resources	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, the selected lands would likely undergo significant changes to visual conditions and be permanently altered. Views from the Arizona Trail could be impacted as well. VRM classifications for the offered lands would be designated by BLM and BLM visual resource policy would apply for future land authorizations.
Cultural Resources	Contributes to cumulative effects; sufficient information exists to analyze. Fifty-seven NRHP-eligible properties would be directly and adversely impacted by the proposed action.

<b>Resource</b>	<b>Rationale for Analysis</b>
Socioeconomics	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, Pinal and Gila County would see increases in tax revenues and decreases in PILT revenues. In addition, a significant increase in full-time employment opportunity and new average wages is expected. Grazing economics and recreation-related spending would decrease overall.
Tribal Concerns and Values	Contributes to cumulative effects; sufficient information exists to analyze. Five TCPs would be adversely impacted by the proposed action.
Environmental Justice	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, EO 12898 would no longer be applicable on the selected lands. The offered lands would comply with EO 12898.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Under the proposed action, livestock grazing would cease on the selected lands, resulting in a reduction of 1,151 AUMs, however, the offered lands could become available for federal grazing.

Source:

U.S. Department of the Interior. 2019. Ray Land Exchange, Final Supplemental Environmental Impact Statement/Proposed Plan Amendments. Arizona State Office, Gila District Office. DOI-BLM-AZ-G020-2017-0025-EIS. March.

U.S. Department of the Interior. 1999. Final Environmental Impact Statement Ray Land Exchange/Plan Amendment. Arizona State Office, Tucson Field Office. BLM/AZ/PL-98/0013. June. Accessed online at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/82268/125056/152487/RayLandExchange-Final\\_EIS\\_1999.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/82268/125056/152487/RayLandExchange-Final_EIS_1999.pdf)

## ***Resolution Copper Reclamation Activities and Post-Closure Monitoring at the West Plant Site***

### Overview of RFFA

Under the Arizona Department of Environmental Quality's (ADEQ's) Aquifer Protection Permit (APP) program and its Voluntary Remediation Program (VRP), Resolution Copper has been excavating soils impacted from historic mining activities—particularly from the old Magma Mine and smelter—at the Resolution West Plant Site adjacent to and just north of the Town of Superior. These ADEQ-approved remediation actions have included removing smelter buildings and the smelter stack, reclaiming tailings on-site, installing new soil covers, and revegetating these areas. Major reclamation earth-moving activities will continue through 2020. After that, Resolution Copper will continue post-reclamation monitoring of groundwater and continue to revegetate and monitor revegetation success in remediated areas.

### Temporal overlap with Resolution Project

Resolution Copper's remediation activities at the West Plant Site will have concluded long before the Resolution Mine, if approved, becomes operational (estimated to occur in 2026 or 2027).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** There will be no temporal overlap between these soil remediation activities and operation of the Resolution Mine. Furthermore, these activities will not result in adverse environmental effects—they will, in fact, prove beneficial toward improving scenic aspects in this area north of the Town of Superior as well as significantly decreasing potential human health risks from exposure to contaminated soils and wind-blown particulate matter.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Arizona Department of Environmental Quality. 2019. "Resolution Copper Mining - West Plant | VRP Site." Available: <https://azdeq.gov/resolution-copper-mining>. Accessed: March 2019.

Golder Associates Inc. 2016. *Remedial Action Work Plan for Smelter Affected Soil in the Industrial Area South: West Plant Site, Superior, Arizona*. Tucson, Arizona. March.

Resolution Copper. 2018. "Reclamation Brochure 2018: Claiming the Future by Reclaiming the Past." Superior, Arizona.



## ***Recreation Special Uses***

### Overview of RFFA

The Tonto National Forest (NF) manages recreation special use permits pursuant to 36 CFR 251, and the analysis area is used by a number of permitted recreation and commercial special use activities. Recreation events are commercial activities requiring temporary, authorized use of National Forest Service (NFS) land. Commercial activity on Tonto NF lands occurs when an entry or participation fee is charged by the applicant, and the primary purpose is the sale of a good or service. Most of these applicants offer guided tours that provide the safety, knowledge, and experience of qualified guides with quality equipment, while others provide in-demand equipment and basic instruction for visitors to explore on their own. Activities include hiking, camping, climbing, canyoneering, horseback riding, jeep tours, motorcycle riding, UTV and ATV tours, road biking, and mountain biking. Each company follows strict operating procedures, safety practices, and Forest Service regulations to protect the environment.

### Temporal overlap with Resolution Project

It is anticipated that the Tonto NF will continue to issue recreational special use permits throughout the estimated life of the Resolution mine (50 or 55 years), however, the specific types of recreational permits to be issued are unknown.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreation special use permits are temporary in nature and are unlikely to measurably impact this resource.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreation special use permits are temporary in nature and are unlikely to measurably impact this resource.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreation special use permits are temporary in nature and are unlikely to measurably impact this resource.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreation special use permits are temporary in nature and are unlikely to measurably impact this resource.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreation special use permits are temporary in nature and are unlikely to measurably impact this resource.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreation special use permits are temporary in nature and are unlikely to measurably impact this resource.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.

<b>Resource</b>	<b>Rationale for Analysis</b>
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Recreation	Contributes to cumulative effects, sufficient information exists to analyze. Recreational special use permits are likely to positively contribute towards recreational activities and access.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Recreational special use permits are temporary in nature and are unlikely to measurably impact this resource.

Source: No specific information sources were identified for this RFFA

## ***Ripsey Wash Tailings Project***

### Overview of RFFA

ASARCO LLC is proposing to construct a new tailings storage facility (TSF) to support its Ray Mine operations. The proposed TSF, situated within the Ripsey Wash watershed just south of the Gila River approximately 5 miles west-northwest of Kearny, Arizona, would be located on 2,627 acres of private lands and 9 acres of BLM lands. The tailings facility would include two starter dams, new pipelines to transport tailings and reclaimed water, a pumping booster station, a containment pond, a pipeline bridge across the Gila River, and other supporting infrastructure. ASARCO has determined the new facility would support up to approximately 750 million tons of material (tailings and embankment material). A segment of the Arizona National Scenic Trail (AZNST) would be relocated east of the TSF. A section of Florence-Kelvin Highway and a power line would also be rerouted.

The preliminary cumulative effects determinations below are largely based on results of the impact analysis contained in the *Ray Mine Tailings Storage Facility Final Environmental Impact Statement* (U.S. Army Corps of Engineers, 2018).

There are no meaningful cumulative effects of the Ripsey Wash TSF in combination with the proposed Resolution Mine, *except* if Resolution Alternative 5, the Peg Leg TSF location, is selected as the Resolution Mine EIS agency-preferred alternative. In that case, the proximity of the Ripsey Wash TSF and the Peg Leg TSF would have multiple cumulative effects on area resources, as indicated under the resource sections below.

### Temporal overlap with Resolution Project

ASARCO estimates that the new TSF at Ripsey Wash would be able to support continued Ray Mine operations for approximately the next 40-50 years.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects under the Resolution Mine EIS Alternative 5, the Peg Leg alternative; sufficient information exists to analyze. Approximately 2,640 acres of land would be occupied by the tailings facility itself, thus effectively removing that acreage from any future possible mining or other uses. No subsidence effects are foreseen.
Soils and Vegetation	Contributes to cumulative effects under the Resolution Mine EIS Alternative 5, the Peg Leg alternative; sufficient information exists to analyze. As noted directly above, approximately 2,640 acres would be occupied by the tailings facility itself, thus permanently burying existing soils and vegetation within the TSF boundary. Other existing surface soils and vegetation will, for approximately the next 50 years, be overlain by TSF maintenance roads, slurry and water pipelines, and other supporting tailings facility infrastructure. The majority of these linear facilities could be removed and the underlying soils and vegetation reclaimed following facility closure.

Resource	Rationale for Analysis
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise and vibration impacts associated with the Ripsey Wash TSF site would be short-term and primarily occur during early site development and construction activities, an estimated 3-year period that would include road building, starter dam construction, seepage trench installation, detention dam and diversion ditch construction, and miscellaneous pipeline and utility installation. Noise and vibrations during the operations phase are expected to be exceedingly minimal and unlikely to affect any persons beyond immediate proximity of the TSF. Major construction activities generating noise and vibrations from the Ripsey Wash location are highly unlikely to coincide with those at the Resolution Mine Peg Leg site, if that alternative is selected.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. Minor increase of approximately 115 vehicles per day along SR 177 during 3-year construction phase; during operations, only a negligible increase in project-associated vehicular traffic. Approximately 1.4 miles of the existing, unpaved Florence-Kelvin highway would be rerouted to the north and northeast of the TSF site and replaced with paved (asphalt) road.
Air Quality	Contributes to cumulative effects under the Resolution Mine EIS Alternative 5, the Peg Leg alternative; sufficient information exists to analyze. Project activities at the TSF would create both fugitive dust (particulates) and gaseous emissions from vehicles and other equipment, primarily during the construction activities, but these emissions would be localized and are not expected to cause any discernible impacts to existing ambient air quality of the region..
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	<p>Contributes to cumulative effects; sufficient information exists to analyze. Construction and operation of the TSF would temporarily increase recharge to the Quaternary deposits from the footprint area of the TSF. Down-gradient seepage trenches will be constructed to capture groundwater movement through the Quaternary deposits beneath the TSF, and this water would be returned to the Ray Concentrator for reuse. This activity would eliminate recharge to the Gila River. The loss of recharge to the Gila River Quaternary deposits would be less than 0.02% of Gila River basin recharge.</p> <p>Following closure, infiltration into the underlying alluvium and bedrock would decrease because tailings slurry would no longer be applied to the top of the TSF; the tailings themselves have low permeability and over time would consolidate, further decreasing permeability; and some water would be entrapped within the tailings. ASARCO will continue to operate its seepage collection and pump-back systems following closure to prevent seepage from entering the Gila River.</p>
Water: Groundwater and Surface Water Quality	Contributes to cumulative effects; sufficient information exists to analyze. Results of geochemistry characterization and testing on the proposed tailings and borrow materials reveal a low potential to impact groundwater or surface water with the design and operational safeguards proposed for the TSF. Kinetic testing revealed a low potential for any acid generation from tailings materials and confirmed that alluvium material to be used for construction activities are not acid-generating. The meteoric water mobility testing on both tailings and alluvium material also revealed that possible dissolution and mobilization of minerals from these materials are low.

Resource	Rationale for Analysis
Water: Surface Water Quantity	<p>Contributes to cumulative effects; sufficient information exists to analyze. The construction and operation of the Ripsey Wash TSF would remove runoff potential from approximately 16% of the Ripsey Wash drainage basin and approximately 20% of the East Wash drainage basin. However, the overall runoff loss to the Gila River from the TSF is considered negligible, amounting to about 0.018% of the Gila River watershed.</p> <p>In addition, the TSF would result in the direct disturbance of approximately 130.91 acres of jurisdictional ephemeral drainages that would be filled, excavated, dewatered or subject to surficial disturbances, resulting in the loss or significant modification of their form, functions, and values.</p>
Wildlife	<p>Contributes to cumulative effects; sufficient information exists to analyze. General effects on wildlife from the Ripsey Wash TSF would be the physical loss of habitat and habitat fragmentation. Impacts to threatened, endangered and sensitive species such as southwestern willow flycatcher (endangered) and the yellow-billed cuckoo (threatened) are expected to be indirect and minor.</p>
Recreation	<p>Contributes to cumulative effects; sufficient information exists to analyze. Dispersed recreational opportunities such as OHV riding, hiking, camping, and hunting would be affected by the construction and operation of the Ripsey Wash TSF. The Arizona Trail immediately adjacent to the TSF footprint would require relocation of approximately 6.8 miles of existing trail with about 6.4 miles of new trail construction primarily along the eastern slopes of the Tortilla Mountains and about 0.2 miles of shared use along Riverside Drive. The Arizona Trail experience on the realigned trail would be affected over the short term (approximately 3 years) by noise and visual effects from construction of the TSF and the realigned Florence-Kelvin highway. After construction, trail users would continue to experience visual impacts from the TSF and realigned highway, as well as some traffic noise.</p>
Public Health & Safety: Tailings Safety	<p>Contributes to cumulative effects; sufficient information exists to analyze. According to the Final EIS (U.S. Army Corps of Engineers 2017), "The engineering design of the Ripsey Wash TSF embankment and seepage control system and other associated structures such as the detention dams, diversion channels and ponds must be in compliance with the Arizona DEQ APP regulations and guidelines. The APP considers geotechnical, geohydrological and stability issues.</p> <p>The Arizona DEQ specifies criteria in the APP application that the TSF design must meet Arizona BADCT. Specific criteria and the process to be followed in selecting Arizona BADCT are presented in the Arizona Mining Guidance Manual BADCT (ADEQ 2004) and in compliance with Arizona Revised Statute (ARS) 40-243.B.1.</p> <p>The Arizona DEQ has approved the APP for the Ripsey Wash TSF. The approved APP complies with Arizona BADCT stability criteria."</p>
Public Health & Safety: Fuels and Fire Management	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The presence of the TSF is considered to present very low increased risk of wildfire, as virtually no flammable materials would be present other than gasoline in company and employee vehicles and construction equipment, lubricating oils for pumps and other machinery, and the like.</p>

Resource	Rationale for Analysis
Public Health & Safety: Hazardous Materials	Contributes to cumulative effects; sufficient information exists to analyze. The potential for accidental spills always exists, although risk is considered low given safety awareness and safety precaution measures. The tailings pipeline across Gila River will be double-cased, and a tailings collection pond will be in place in the event of a problem or maintenance issue. Spill control contingency plans required by APP by Arizona DEQ are in place to handle accidents and spills.
Scenic Resources	Contributes to cumulative effects; sufficient information exists to analyze. The Ripsey Wash TSF would result in large-scale, permanent changes in the landscape that would create strong visual contrasts and cause major and highly noticeable changes to the area's existing character. The TSF at full build-out would be visible from portions of the Florence-Kelvin highway, SR 177, the Arizona Trail, and various OHV routes in the vicinity. The facility would also be visible in the background view from the White Canyon Wilderness Area, although views of the TSF from the wilderness would be from relatively inaccessible areas with rugged and steep terrain that are expected to have limited public visitation.
Cultural Resources	Contributes to cumulative effects; sufficient information exists to analyze. Twenty-two identified NRHP-eligible sites are located within the Ripsey Wash TSF permit area, and one nearby site (the Florence-Kelvin highway bridge, known locally as the Kelvin Bridge) is already on the NRHP. Development of the TSF would adversely affect the 22 NRHP-eligible sites located within the project footprint, but the Kelvin Bridge would not be affected.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The construction of a new TSF is estimated to provide up to 200 jobs to the Pinal County workforce during the estimated 3 years of construction activity, but employment levels would return to current levels once TSF operations commence, as the new TSF is simply designed to replace the existing Elder Gulch TSF and would be operated with the current on-site workforce. The relatively short duration of the construction period is not expected to result in any longer-term effects on local schools, law enforcement, hospitals, or other community infrastructure. Analysis for CE effects is not considered necessary, given the relatively low increase in economic activity associated with construction of the TSF and the fact there would be no temporal construction-time overlap between the Ripsey Wash TSF and the Resolution Mine EIS Peg Leg alternative TSF, if that location were selected.
Tribal Concerns and Values	Contributes to cumulative effects; sufficient information exists to analyze. No significant effects to tribal concerns or values as a result of the project have been identified. However, a CE effects analysis is required.
Environmental Justice	Contributes to cumulative effects; sufficient information exists to analyze. Disproportionate impacts to environmental justice communities are expected.
Land Use: Livestock and Grazing	Contributes to cumulative effects under the Resolution Mine EIS Alternative 5, the Peg Leg alternative; sufficient information exists to analyze. There would be relatively minor change to existing grazing allotments, with the A Diamond allotment losing 2,426 acres or about 11.5% of area; and the Rafter Six allotment being reduced by 149 acres, or about 0.06% of allotment.

Source:

U.S. Army Corps of Engineers, Los Angeles District. 2018. *Ray Mine Tailings Storage Facility Final Environmental Impact Statement*. Phoenix, Arizona. August.

U.S. Army Corps of Engineers, Los Angeles District. 2018. *Ray Mine Tailings Storage Facility Final Environmental Impact Statement: Record of Decision*. Phoenix, Arizona. December 14.

## ***Ruiz Grazing Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Ruiz Grazing Allotment is approximately 13,843 acres including 710 acres of lands administered by the Bureau of Land Management (BLM) Tucson Field Office, 11,561 acres of lands administered by the Arizona State Land Department (ASLD), and 1,557 acres of private land. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The southern boundary of the Ruiz Allotment is adjacent to US 60, and is about 9 miles east of the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

### ***BLM***

There is no publicly accessible data for BLM portions of the Ruiz allotment (710 acres) (BLM 2019), therefore, the status of the Ruiz allotment (active or non-active grazing allotment), number of cattle authorized for year-round use, and permitted animal unit months (AUMs) on BLM lands is unknown.

Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and any proposed rangeland improvements. There is no current EA available for this allotment, however, this evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the allotment, and that the grazing lease for these activities will be renewed when it expires.

### ***ASLD***

The grazing lease for ASLD portions of the Ruiz allotment is held by Ruiz Ranch Inc. who lease about 11,561 acres over multiple parcels from ASLD. The lease (KE 5-103440) allows grazing for up to 1,246 AUM's. Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

### ***Private Ownership***

Approximately 1,557 acres of private land exists within the Ruiz Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Teacup Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.



<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Sedow and Haystack Butte Allotment Range Improvements***

### Overview of RFFA

The project proposes to authorize additional range improvements to supply additional water for livestock. This is necessary to allow the existing grazing authorization to achieve conservative utilization of forage and increase livestock distribution. A Preliminary Environmental Assessment of this proposed action was published by the Tonto National Forest, Globe Ranger District, in January 2018. This study indicates there would be no significant adverse environmental impacts from the proposed water supply improvements.

### Temporal overlap with Resolution Project

The proposed project was implemented in December 2018 (USFS 2019) and will be concluded before the Resolution mine, if approved, becomes operational (estimated to occur in 2026 or 2027).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** There will be no temporal overlap between the proposed action and operation of the Resolution Mine. Therefore, an analysis of the proposed project as a reasonably foreseeable future action as it relates to the Resolution mine project is not warranted. In addition, range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. No increased fire risk is foreseen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Tonto National Forest, Globe Ranger District. 2018. *Sedow and Haystack Butte Allotment Range Improvements: Preliminary Environmental Assessment*. Available at: [https://www.fs.usda.gov/nfs/11558/www/nepa/107755\\_FSPLT3\\_4175927.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/107755_FSPLT3_4175927.pdf). Accessed February 2019.

U.S. Forest Service, Tonto National Forest. 2019. Schedule of Proposed Actions January 2019 to March 2019. Available at: <https://www.fs.fed.us/sopa/components/reports/sopa-110312-2019-01.html>. Accessed March 2019.

## ***Silver Bar Mining Regional Landfill and Cottonwood Canyon Road***

### Overview of RFFA

AK Mineral Mountain, LLC, NL Mineral Mountain, LLC, POG Mineral Mountain, LLC, SMT Mineral Mountain, LLC, and Welch Mineral Mountain, LLC proposed to build a municipal solid waste landfill on private property surrounded by BLM land in an area known as the Middle Gila Canyons area. In 2007, Pinal County rezoned the private land to authorize development of the landfill, known as the Silver Bar Mining Regional Landfill (SBMRLF). In 2009, the owners/developers received a Master Facility Plan Approval from ADEQ.

There is no way to access the proposed landfill without crossing BLM land. The owners/developers and Pinal County have applied for a BLM ROW grant and Temporary Use Permit (TUP) for two temporary construction sites to obtain legal access to the private property and authorization of the needed roadway improvements. The proposed action includes improving a portion of the existing Cottonwood Canyon Road and a portion of the existing Sandman Road in order to accommodate two-way heavy truck traffic to and from the proposed landfill. Both access roads are located on BLM land with a portion of Cottonwood Canyon Road also on land owned by ASLD.

A BLM Environmental Assessment for this proposed action was completed in April 2017, and a Finding of No Significant Impact (FONSI) for this action was issued on May 5, 2017. Under the proposed action, approximately 6 miles of Cottonwood Canyon Road, including approximately 0.4 miles on BLM-administered land and approximately 5 miles on State Trust land, and approximately 0.6 miles of Sandman Road on BLM-administered land, would be improved. The access road on BLM-administered land would be widened to 44 feet as needed.

The owners/developers are also requesting a TUP for two temporary construction sites on BLM-administered land for construction of two culverts as part of the proposed roadway improvements.

### Temporal overlap with Resolution Project

The overall life of the proposed landfill is 50 years.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed ROW is subject to valid, existing right of mining claimants. However, the project does not affect claimants' access to their claims.

Resource	Rationale for Analysis
Soils and Vegetation	<p>Contributes to cumulative effects; sufficient information exists to analyze. Construction on Cottonwood Canyon Road may increase the potential for introduction and/or spread of noxious weeds and invasive plants, however this impact would be minimal due to the small amount of new ground disturbance. In addition, landfill traffic and activities could increase potential for the introduction of weed seed.</p> <p>Approximately four acres of creosotebush-bursage vegetation and 11.2 acres of Arizona upland desertscrub would be removed to expand Cottonwood Canyon Road. Development of the landfill would result in the clearing of 350 acres of vegetation.</p> <p>Two BLM sensitive species, Pima Indian mallow and Tumamoc globeberry have the potential to occur within the project limits and within the landfill 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 landfill or the project limits.</p>
Noise and Vibration	<p>Contributes to cumulative effects; sufficient information exists to analyze. Noise and vibration impacts may increase slightly due to changes in traffic volumes as well as ground disturbing activities.</p>
Transportation	<p>Contributes to cumulative effects; sufficient information exists to analyze. Traffic generated by the planned landfill would significantly increase the overall annual daily traffic on Cottonwood Canyon Road. Greater safety risk may occur on this road due to the mixed use of OHVs and truck traffic to and from the proposed landfill.</p> <p>Mineral Mountain Road and Price road are likely to be impacted by displaced traffic due to temporary closures and disruption of access on Cottonwood Canyon Road.</p>
Air Quality	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The overall impacts to air quality during construction would be minor. Dust would be managed through reasonably available control technologies and best management practices, and construction activities would be temporary. Construction activities would temporarily increase emissions; however these emissions are not likely to result in violations of ambient air quality standards and/or hazardous pollutant thresholds.</p> <p>During operations, increased truck traffic on Cottonwood Canyon Road would have a negligible impact on local air quality. Mitigation would be used to manage fugitive dust and as a result, the proposed action will not increase fugitive dust or add to particulate matter emissions from other sources. Net impacts to air quality would be negligible.</p>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. A site groundwater monitoring plan (GWMP) has been prepared. As part of the GWMP, groundwater monitoring would be performed and is designed to identify environmental impacts associated with the landfill prior to beginning operations. Monitoring would continue for at least two years.</p> <p>Impacts to groundwater quantity would be measured through piezometers and the onsite well.</p>

Resource	Rationale for Analysis
Water: Groundwater and Surface Water Quality	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Water quality impacts that have the potential to occur would be minimized and mitigated through Stormwater and Pollution Prevention Plan (SWPPP) BMP's. Impacts are predicted to be minor and temporary. Road improvements may facilitate the movement of water and lessen the amount of silt, debris, and sand that typically is washed downstream and across the road.</p> <p>Portions of the landfill site would lie below current groundwater levels. The proposed landfill would have groundwater inflow (inward gradient) which results in reduced potential to impact groundwater. Groundwater will be collected and evaluated for any significant leachate leaks.</p> <p>Overall, the preoperational GWMP and closure and post-closure care (CPC) phase would ensure that the impacts within the project area of the proposed landfill on water quality are eliminated.</p>
Water: Surface Water Quantity	<p>Contributes to cumulative effects; sufficient information exists to analyze. An unnamed ephemeral wash passing through the landfill site would be impacted by the landfill's construction. No proposed landfill may be located within a half mile of a 100-year floodplain with flows in excess of 25,000 cfs, however the hydrological analysis generated 100-year peak flow on Cottonwood Canyon Wash of less than 3,800 cfs.</p>
Wildlife	<p>Contributes to cumulative effects; sufficient information exists to analyze. One endangered, one proposed, and two candidate species with varying potential were identified to have the potential to be affected by the proposed action. They are the lesser long-nosed bat, the acuña cactus, the Sonoran desert tortoise and the Tucson shovel-nosed snake, respectively. It has been determined that this project will not affect the lesser long-nosed bat or the acuña cactus. It may impact individual Sonoran desert tortoises and Tucson shovel-nosed snakes but will not result in a trend toward Federal listing or loss of viability. Conservation measures will be implemented to alleviate impacts to the Sonoran desert tortoise and the Tucson shovel-nosed snake.</p> <p>Migratory birds would be directly impacted by the proposed action due to ground disturbance and/or vegetation removal during construction as well as temporary increases in noise associated with construction activities. Construction of the proposed landfill would result in the destruction of nesting substrate for migratory birds. This destruction would occur primarily in the areas of undisturbed desert scrub. In addition, collection of water during landfill operations may attract migratory birds and could result in direct impacts if the contaminated water is consumed.</p>

Resource	Rationale for Analysis
Recreation	<p>Contributes to cumulative effects; sufficient information exists to analyze. This project will improve and maintain road conditions on Cottonwood Canyon Road for landfill haul truck traffic. As a result, the road will be made more reliable for use by road and street vehicles used by recreational visitors.</p> <p>The proposed action would result in the loss of recreation parking areas on BLM land, however a new parking area for the public is proposed on the landfill property. Adverse effects are expected as the proposed new parking area does not appear to be sufficient for current recreational users. As a result, recreational users are likely to lead to resource damage by creating new turnouts or enlarging existing turnouts on BLM land east of the Sandman Road intersection.</p> <p>Recreational access would be temporarily impacted along Cottonwood Canyon Road during construction. Recreational users would be detoured and would be likely to impact existing parking areas along Mineral Mountain Road.</p>
Public Health & Safety: Tailings Safety	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. There are no tailings involved in this ROW and landfill development project.</p>
Public Health & Safety: Fuels and Fire Management	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. A site health and safety plan would be prepared for possible emergency situations, including those involving fire.</p>
Public Health & Safety: Hazardous Materials	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project would have no impact on the generation of hazardous materials as the proposed landfill would adhere to Federal municipal solid waste landfill (MSWLF) standards, therefore generation of hazardous materials are not expected.</p> <p>It is possible there may be spills of fuel, lubricants, and/or antifreeze during construction that would require clean-up and proper disposal. In addition, the designated parking site for recreation users on the private property would contain a waste disposal area for users of BLM-administered land which may help to reduce illegal dumping and excessive trash on State Trust and BLM-administered land.</p>
Scenic Resources	<p>Contributes to cumulative effects; sufficient information exists to analyze. The slight widening of the road to accommodate drainage would not have an impact on the overall characteristics of the landscape, however the proposed landfill would be visible from State Highway 79, U.S. Highway 60, and Cottonwood Canyon Road. Visual impacts would be greatest on Cottonwood Canyon Road.</p>



Resource	Rationale for Analysis
Cultural Resources	<p>Contributes to cumulative effects; sufficient information exists to analyze. The proposed road improvements facilitated by the proposed action create an adverse effect to six eligible cultural sites located along Cottonwood Canyon Road. Three sites of unknown eligibility would require eligibility testing and three sites that have been recommended eligible for the NRHP would require data recovery. Additionally, one cultural resource site that is outside the area of potential effect, but sufficiently close enough that it may be impacted, has been recommended eligible.</p> <p>Impacts are also associated with the development of the landfill. Three NRHP recommended eligible sites would be adversely impacted and mitigation is necessary to resolve the adverse effects.</p> <p>The proposed action will involve ground disturbing activities that may have indirect impacts through increase in human activity which could result in additional surface disturbance where cultural resources exist as well as a potential increase in looting and artifact theft in an area that was previously low use. These indirect impacts would be both short- and long-term.</p>
Socioeconomics	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The project would allow for the development of a new municipal solid waste landfill in the east valley and northern Pinal County. Should contracts be secured, the size of the landfill would allow for the disposal of all Pinal County municipal solid waste (MSW) to stay in Pinal County, resulting in less trash hauling traffic and lower MSW disposal costs for residents of Pinal County and possibly eastern Maricopa County. However, the associated economic impacts of this development would be considered relatively minor on a larger scale.</p>
Tribal Concerns and Values	<p>Contributes to cumulative effects; sufficient information exists to analyze. BLM management objectives require the protection and preservation of tribal cultural and sacred sites and access to those sites wherever possible. All areas of the proposed action were surveyed, and the BLM will devise and MOA to be signed by the Tribes, SHPO, and all other cooperating agencies. Tribes will also be provided with periodic project updates and requests for participation.</p>
Environmental Justice	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. The project is not expected to have any impact on environmental justice communities.</p>
Land Use: Livestock and Grazing	<p>Analysis not required; would not contribute to cumulative effects or effects are negligible. Grazing permits would not be altered by the proposed action.</p>

Source:

U.S. DOI, Bureau of Land Management, 2017. Cottonwood Canyon Road Right-of-Way: Final Environmental Assessment. BLM Case File No. AZA 35539. BLM EA No. AZ-G020-2011-0017. Tucson Field Office. Spring. Accessed online at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/40151/106704/130522/Cottonwood\\_Canyon\\_Road\\_ROW\\_Final\\_EA\\_AZ-G020-2011-0017\\_ACS\\_05.15.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/40151/106704/130522/Cottonwood_Canyon_Road_ROW_Final_EA_AZ-G020-2011-0017_ACS_05.15.pdf)

U.S. DOI, Bureau of Land Management, 2017. Finding of No Significant Impact. Right-of-Way Grant for Cottonwood Canyon Road and a Portion of Sandman Road. NEPA No. DOI-BLM-AZ-G020-2011-0017-EA. Tucson Field Office. May. Accessed online at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/40151/106707/130525/FONSI\\_Cottonwood\\_05.05.17\\_esignature.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/40151/106707/130525/FONSI_Cottonwood_05.05.17_esignature.pdf)

## **Silver King Mine**

### Overview of RFFA

Silver King Mine has submitted a new plan of operations to reactivate the historic underground mine; however, it is not complete under the regulatory definition at 36 CFR 228.4(c). The Forest is currently awaiting modifications by Silver King Mine to meet regulatory requirements for completeness and further processing. Silver King Mine had previously submitted a plan that was analyzed for impacts in 2003, however this plan will not be considered appropriate for impact analysis because it is no longer “reasonably foreseeable” per the submittal of the new plan. The recently submitted plan is considered reasonably foreseeable, however as it is incomplete and its details are not available, we cannot at this time feasibly analyze the impacts of the project.

### Temporal overlap with Resolution Project

Unknown, pending analysis and approval of new plan.

Contributes to cumulative effects; sufficient information exists to analyze.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.
Noise and Vibration	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.
Air Quality	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Water: Groundwater and Surface Water Quality	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.
Recreation	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Public Health & Safety: Tailings Safety	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.

<b>Resource</b>	<b>Rationale for Analysis</b>
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.
Scenic Resources	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Cultural Resources	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Socioeconomics	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Tribal Concerns and Values	Contributes to cumulative effects, but insufficient information exists to analyze – pending analysis and approval of new plan.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible – pending analysis and approval of new plan.

Source:

Personal communication with Judd Sampson, Forest Geologist for the Tonto National Forest. April 11, 2019.

## ***Slash S Grazing Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Slash S Grazing Allotment is approximately 18,398 acres including 15,351 acres of lands administered by the Arizona State Land Department (ASLD), and 2,971 acres of private land. Although there are 25 acres of land administered by the Bureau of Land Management (BLM) Tucson Field Office, comments on the DEIS from BLM indicate that BLM does not maintain a grazing lease in this allotment. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Slash S Allotment is located about 10 miles southeast of US 60 and the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

### *ASLD*

The grazing lease for ASLD portions of the Slash S allotment is held by Webb Cattle Company who lease about 11,351 acres over multiple parcels from ASLD. The lease (KE 5-804) allows grazing for up to 5,757 AUMs. Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

### *Private Ownership*

Approximately 2,971 acres of private land exists within the Slash S Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Teacup Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Superior Grazing Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Superior Grazing Allotment is approximately 58,671 acres and located on 56,139 acres of land administered by the United States Forest Service (USFS) - Tonto National Forest, 233 acres of land administered by the Bureau of Land Management (BLM) Tucson Field Office, and 2,971 acres of private land. Although 1.6 acres of land is administered by the Arizona State Land Department (ASLD), this this evaluation assumes ASLD does not maintain a grazing lease for this allotment. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Superior Allotment is adjacent to US 60 and the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

### *USFS*

Approximately 56,139 acres of the Superior Allotment are managed by the Tonto National Forest. An Application for Term Grazing Permit was submitted on March 5, 2010 and signed by a recommending officer on March 15, 2010. It was recommended that 314 cattle are recommended to graze on the allotment from January 1 through December 31, and 174 yearlings are recommended to graze on the allotment from January 1 through May 31.

No information on AUM values are currently available from the USFS regarding this allotment and no supporting NEPA documentation is readily retrievable from the Tonto National Forest's website. However, for the purposes of this evaluation, we have assumed that the USFS does permit grazing and minor range improvements on their 56,139 acres within the Superior Allotment. This evaluation assumes that, like BLM, the USFS grazing lease renewal will require an EA be completed when the current lease expires.

The Superior Allotment was not listed as a Current Major Project, or listed in the Project Archives for Tonto National Forest (USDA Forest Service, Tonto National Forest 2019).

### *BLM*

There is no BLM grazing allotment information or supporting NEPA documentation for BLM portions of the Superior Allotment (233 acres) (BLM 2019), therefore, the status of the Superior allotment (active or non-active grazing allotment), number of cattle authorized, and permitted animal unit months (AUMs) on BLM lands is unknown.

Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and the proposed rangeland improvements. There is no current EA available for this allotment, however, this evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the allotment, and that the grazing lease for these activities will be renewed when it expires.

### *Private Ownership*

Approximately 2,971 acres of private land exists within the Superior Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Superior Allotment throughout the expected life of the Resolution mine (50 to 55 years).

Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

Resource	Rationale for Analysis
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Resource	Rationale for Analysis
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

USDA Forest Service, Tonto National Forest. 2019. Projects list for current major projects and project archives. Available at: <https://www.fs.usda.gov/wps/portal/fsinternet/cs/projects/tonto/landmanagement/projects?archive=1&sortby=1>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. Tonto National Forest GIS Data; Rangeland. Available at: <https://www.fs.usda.gov/detail/r3/landmanagement/gis/?cid=stelprdb5209307>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.



## ***Superior Soil Study Area***

### Overview of RFFA

Under ADEQ's Voluntary Remediation program (VRP) BHP may be sampling and monitoring soils in the vicinity of / and surrounding the Town of Superior to test for impacts from the historic mining activities during operation of the Magma Mine.

### Temporal overlap with Resolution Project

The proposed Superior soil study area project will have concluded long before the Resolution Mine, if approved, becomes operational (estimated to occur in 2026 or 2027). It is anticipated that the proposed Superior soil study area project will be completed within the first quarter of 2019 (ADEQ 2019).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** There will be no temporal overlap between the proposed Superior soil study area and operation of the Resolution Mine. Furthermore, the proposed Superior soil study area consisted of limited initial site characterization activities that likely resulted in no adverse environmental effects.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Arizona Department of Environmental Quality. 2019. "Superior Soil Study Area | VRP Site." Available: <https://azdeq.gov/superior-soil>. Accessed: March 2019.

## ***Superior to Silver King 115-kilovolt (KV) Relocation Project***

### Overview of RFFA

Relocate a segment of the existing Superior-Silver King 115-kV transmission line on private property near Superior. At the request of the property owner, Resolution Copper Mining LLC, the approximately 1-mile segment would be moved approximately 0.25 mile to the northwest.

### Temporal overlap with Resolution Project

Construction should begin between 2012 and 2022. Currently in design.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. No major impacts to geology or minerals are expected. Subsidence would not occur as a result of the proposed action.
Soils and Vegetation	Contributes to cumulative effects, sufficient information exists to analyze. Installation of the new transmission line would disturb a small area of vegetation and increase the potential for introduction and establishment of noxious weeds and invasive species.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise generated by the construction and operation of the proposed project would be consistent with other industrial development that already exists in the vicinity of the project area.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would occur fully within Resolution's private property.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action does not have any impacts on air quality.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would not impact groundwater quantity and GDEs.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would not affect groundwater or surface water quality.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would not impact surface water quantity.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Three special-status species have limited potential to occur within the project area, however impacts are considered to be unlikely due to the poor habitat quality within the project area.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would occur fully within Resolution's private property.

<b>Resource</b>	<b>Rationale for Analysis</b>
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Tailings are not involved with this project.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Although the presence of the power line in the new area would represent a marginal increase in wildfire risk, the vegetation in the project area is sparse and the potential for wildfire is considered low. Therefore, impacts to fuels or fire management are not expected.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would not utilize hazardous materials.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Residents of Superior do not have views of the current 115kV transmission line nor of its proposed new location, so visual impacts are concluded to be of little concern.
Cultural Resources	Contributes to cumulative effects; sufficient information exists to analyze. The proposed action has the potential to affect one historic property that is recommended NRHP-eligible. It has been recommended for SRP and Resolution to alter the project design in order to avoid affecting the historic property.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. No impacts to socioeconomics are expected.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would occur fully within Resolution's private property.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would occur fully within Resolution's private property and is not expected to affect any environmental justice communities.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed action would occur fully within Resolution's private property. No grazing currently occurs within the project area.

Source:

Salt River Project. 2012. Superior to Silver King 115kV Transmission Line Segment Relocation Project. Application for a Certificate of Environmental Compatibility. June. Accessed online at: [https://www.srpnet.com/electric/transmission/projects/superiorsilverking/pdfx/cec/SUSI\\_CEC\\_FullApp06-2012.pdf](https://www.srpnet.com/electric/transmission/projects/superiorsilverking/pdfx/cec/SUSI_CEC_FullApp06-2012.pdf)

## ***Southwest Transmission Cooperative (SWTC) Apache-Hayden Powerline ROW Renewal and Pole Replacement***

### Overview of RFFA

The BLM originally granted AZAR-0032556 to Arizona Electric Power Cooperative in 1963 for a 115 kV transmission line. The length of the transmission line across BLM land was originally about 20 miles long total. The width of the ROW is 100 feet (50 feet from centerline). The portion of the line on public land contained 242.42 acres. On October 19, 1990, the BLM amended the grant to include the right to maintain 39 acres of previously constructed access roads. The access roads are all 20 feet in width (10 feet from centerline). On June 29, 2001, the BLM assigned the grant to Southwest Transmission Cooperative, Inc. (SWTC). On April 14, 2003, the BLM amended the grant again and converted it to a FLPMA ROW. Throughout the term of the grant, various lands affected by the power line left BLM jurisdiction. AZAR-032556 expired on July 29, 2013. SWTC filed a renewal application on March 10, 2015. The power line is administratively divided into two distinct segments: Segment 1 (0.6 miles, Safford FO): Apache-Winchester, 115/230 kV double circuit transmission line on single-pole steel structures. The 2003 amendment to the ROW allowed SWTC to add the 230 kV line and a fiber optic ground wire to the poles. Segment 2 (8.9 miles, Tucson FO): Winchester-Hayden, 115 kV single-circuit transmission line on two-pole wood and some steel structures, built in 1963. In the renewal, SWTC would like to gain the right to add a fiber optic ground wire to this segment as well. The fiber optic is for internal communication use only and can be installed without needing a temporary construction area. SWTC would also like the freedom to replace any existing wood two-poles with single pole steel structures as needed. The proposed action is to renew the ROW for the entire transmission line and all previously designated access roads. SWTC will retain the rights to operate and maintain the line and the roads. SWTC wants express permission to be able to replace two-pole wood structures with single pole steel structures as needed in Segment 2 as part of regular maintenance. Last, SWTC wants to amend their ROW to add a fiber optic ground wire to Segment 2 (BLM 2018).

### Temporal overlap with Resolution Project

It can be reasonably certain that the proposed ROW would be granted within the temporal bounds of the estimated life of the Resolution Mine project (50 to 55 years) unless the applicant cancels the proposed project.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusions:** As far as can be determined, no additional documentation or other information is currently available. Potential environmental effects of the proposed actions have not yet been evaluated by the BLM and insufficient documentation has been submitted to identify the exact right-of-way compared to the Resolution project. However, the project does not involve substantial new routes and infrastructure already exists in the ROW. Therefore, it is considered unlikely there would be substantial contributing (i.e., cumulative) impacts.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.

Source:

Bureau of Land Management (BLM). ePlanning. 2018. DOI-BLM-AZ-G020-2018-0033-CX (SWTC Apache-Hayden Power Line ROW Renewal). Available at: <https://eplanning.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=109550>. Accessed March 2019.

## ***Teacup Grazing Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Teacup Grazing Allotment is approximately 41,316 acres including 28,795 acres of lands administered by the Bureau of Land Management (BLM) Tucson Field Office, 12,098 acres of lands administered by the Arizona State Land Department (ASLD), and 423 acres of private land. Grazing on private lands is administered by the owner. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Teacup Allotment is located about 12.5 miles from US 60 and the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

### ***BLM***

The BLM administers 28,795 acres of land in the Teacup Allotment (BLM allotment AZ06168), and grazing lease information indicates 392 head of cattle, totaling 3,058 animal unit months (AUM's) are permitted on BLM lands within the allotment. This use was authorized on March 1, 2012 and is valid until February 28, 2022 (BLM authorization number 0202633).

As part of its lease renewal process for public lands in the Teacup Allotment, the BLM Gila District, Tucson Field Office is proposing to renew the grazing lease for a ten year term, and provide new range improvements. Range improvements could include an upland perennial source of water to supplement the existing upland water infrastructure on the allotment, providing adequate water facilities (wells and storage tanks) for existing authorized grazing management activities (BLM 2019).

Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA), reauthorizing grazing within the allotment and any proposed rangeland improvements, which is in progress. This evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the Teacup Allotment, and that the grazing lease for these activities will be renewed when it expires.

### ***ASLD***

The grazing lease for ASLD portions of the Teacup allotment is held by Rick Bader who leases about 12,098 acres over multiple parcels from ASLD. The lease (KE 5-1230) allows grazing for up to 1,583 AUMs. Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

### ***Private Ownership***

There is approximately 423 acres of private land within the Teacup Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Teacup Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.



Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

\_\_\_\_\_. 2019. *Lease Renewal, Construction of Range Improvements and Road Maintenance, Teacup and Whitlow allotments; Environmental Assessment*. DOI-BLM-AZ-G020-FY201-0047-EA. Available at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/90798/165794/202118/Teacup-whitlow\\_Chapter-1-and-2.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/90798/165794/202118/Teacup-whitlow_Chapter-1-and-2.pdf). Accessed April 2019.

United States Fish and Wildlife Service. 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Available at: [https://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/00029\\_Middle\\_Gila\\_River.pdf](https://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/00029_Middle_Gila_River.pdf). Accessed April 2019.

## ***Tonto National Forest Plan Revision***

### Overview of RFFA

Each National Forest and Grassland is governed by a Land and Resource Management Plan (Forest Plan) in accordance with the National Forest Management Act (NFMA). The Tonto National Forest has a forest plan providing comprehensive management direction for resources on the National Forest System Lands. This includes plan direction for management, protection, and uses of the Forest. Monitoring conditions on the Forest ensures projects are done in accordance with plan direction and identify conditions that might require a change in the Forest Plan.

The Tonto National Forest began revising its Forest Plan in 2014 using the 2012 Planning Rule for the National Forest System. In November 2017, the Forest released the Preliminary Proposed Plan for public comment. The information received is being used to develop a draft forest plan and draft environmental impact statement. These documents have not yet been released.

### Temporal overlap with Resolution Project

The Forest Plan would remain in effect, once approved, until replaced. The previous Forest Plan was completed in 1985 and is still in effect; it is reasonable to assume the proposed plan would be effective during the expected life of the Resolution mine project (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to geology, minerals, and subsidence.
Soils and Vegetation	Contributes to cumulative effects, but insufficient information exists to analyze. The proposed project is a planning document but almost certainly would contain management direction pertinent to soils and vegetation. Exact direction is not known yet, however, and cannot be analyzed.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to noise and vibration.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. The proposed project is a planning document and has not outlined any concrete impacts to transportation. However, while exact changes to management of National Forest System roads are known, general impacts can be assessed qualitatively.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to air quality.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to groundwater quantity and groundwater-dependent ecosystems.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to groundwater and surface water quality.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to surface water quantity.
Wildlife	Contributes to cumulative effects, but insufficient information exists to analyze. The proposed project is a planning document but almost certainly would contain management direction pertinent to wildlife. Exact direction is not known yet, however, and cannot be analyzed.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. The proposed project is a planning document and has not outlined any concrete impacts to recreation or motorized trail use. However, while exact changes to management of National Forest System roads are known, general impacts can be assessed qualitatively.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Tailings are not involved with this project.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects, but insufficient information exists to analyze. The proposed project is a planning document but almost certainly would contain direction on fire and fuel management. Exact direction is not known yet, however, and cannot be analyzed.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to public safety regarding hazardous materials.
Scenic Resources	Contributes to cumulative effects, but insufficient information exists to analyze. The proposed project is a planning document but almost certainly would contain management direction pertinent to scenic resources. Exact direction is not known yet, however, and cannot be analyzed.
Cultural Resources	Contributes to cumulative effects; sufficient information exists to analyze. The proposed project is a planning document and has not outlined any concrete impacts to cultural resources, but general changes in management on the landscape have the potential to affect these resources.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to socioeconomicss.
Tribal Concerns and Values	Contributes to cumulative effects; sufficient information exists to analyze. The proposed project is a planning document and has not outlined any concrete impacts to tribal resources, but general changes in management on the landscape have the potential to affect these resources.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to environmental justice communities.

Resource	Rationale for Analysis
Land Use: Livestock and Grazing	Contributes to cumulative effects, but insufficient information exists to analyze. The proposed project is a planning document but almost certainly would contain management direction pertinent to livestock and grazing. Exact direction is not known yet, however, and cannot be analyzed.

Source: No specific source of information was identified, since the forest plan has not yet been released.

## ***Town of Florence Development Projects***

### Overview of RFFA

Various large-scale master planned communities are identified in the 2020 Florence General Plan: Merrill Ranch, Dobson Farms (near MARRCO), Arizona Farms (near MARRCO), Skyview Farms, and Palorosa. Merrill Ranch plans a capacity of 26,000 residences. The General Plan was written soon after the 2008-2009 real estate downturn and will be updated soon in accordance with Arizona law.

None of these master planned communities identified in the 2020 General Plan have submitted master development plans in a recent time frame. Merrill Ranch submitted one in 2007 prior to the housing market crash, however no updates have been provided since. A primary resource of concern should any of these master planned communities seek to continue development would be the assurance of future groundwater supplies. This reasonably foreseeable action has been addressed in the “Future Assured Water Supplies” RFFA worksheet, and readers should direct their attention there for information on that resource.

For all other resources, we are unable to analyze for impacts as we lack concrete master development plans for communities within Florence.

### Temporal overlap with Resolution Project

The master planned communities were included in the Florence 2020 General Plan, implying a temporal overlap with the Resolution Copper Mine project.

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Due to the housing demand downturn and a consequent lack of master development plans, we cannot identify if, or when, these communities may have specific development plans approved and when these master-planned communities may actually be constructed.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Soils and Vegetation	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Noise and Vibration	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Transportation	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Air Quality	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Contributes to cumulative effects, but insufficient information exists to analyze. However, while insufficient information exists for specific development related to this RFFA, note that the overall use of water resources and development in the East Salt River Valley is assessed for cumulative effects.
Water: Groundwater and Surface Water Quality	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Surface Water Quantity	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Wildlife	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Recreation	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Public Health & Safety: Tailings Safety	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Public Health & Safety: Hazardous Materials	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Scenic Resources	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Cultural Resources	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Socioeconomics	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Tribal Concerns and Values	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Environmental Justice	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects, but insufficient information exists to analyze. See overall conclusion.

Source:

Town of Florence. 2010. *Town of Florence 2020 General Plan*. Available: <http://www.florenceaz.gov/wp-content/uploads/documents/Community%20Development/2020%20General%20Plan/Florence%2020%20General%20Plan.pdf>. Accessed April 2019.

## ***Town of Superior Transfer Station Remediation***

### Overview of RFFA

Transfer station was issued a Notice of Violation in 2012 for waste containing asbestos. Superior proposed remediation plan in 2016, which ADEQ approved. Phase 1 and 2 are complete (took waste away and installed cleaner burners). Phase 3 will include decontaminating and grading the site where contaminants were removed.

According to a news article from July 2016 published on the website Copper.com: “The [Town of Superior Town] Council...approved the Transfer Station Remediation Plan negotiated with the Arizona Department of Environmental Quality (ADEQ) that will enable Superior to avoid nearly \$1 million in immediate payments to clean up the site of the Superior Transfer Station, which has been closed since March 2012. At that time, the station, then operated by Orion Recycling, was found by ADEQ to be in violation of Arizona environmental regulations with the most egregious violations was the stockpiling of asbestos contaminated construction material. While some cleanup of the site was then performed, Superior lacked funding to continue the work and the station was put under an ADEQ consent decree in March 2014.

Under the approved plan, Superior is acquiring an air curtain burner that performs low-pollution burning of vegetative matter. To be installed by the end of September, the burner will immediately tackle the 6,500 yards of green waste (including wood) that has been sitting on the site since 2012. As the burner can reduce to ash green waste at the rate of four tons an hour, this project could take from 100 to 170 days. The resulting ash would be only about 3% the volume of the existing green waste.

Beginning in mid-September, Superior also will initiate the removal of asbestos-contaminated material currently housed in two bulk containers on the site. Once completed, the area under these piles will be cleaned, decontaminated and graded, leaving behind 50,000 square feet of clear space. This part of the plan is expected to be completed by early April 2017.

Once these two ADEQ mandated tasks are completed, Superior will continue to operate the Transfer Station handling in-coming materials.”

### Temporal overlap with Resolution Project

Cleanup was anticipated to be complete by late 2017 or early 2018.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project will have no effect on geological resources.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project will have no effect on soils and vegetation, other than incineration of hundreds of tons of “green waste,” including wood, that has been identified for disposal and stored at the Transfer Station site for approximately 5 years or longer.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Noise and vibrations generated by cleanup of the site is expected to be extremely localized and not affect the general population of Superior.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project would be completed prior to Resolution Copper project.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to water resources are foreseen.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to water resources are foreseen.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to water resources are foreseen.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effects to wildlife are anticipated.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The site is located within the municipal limits of the Town of Superior and not an area frequented by recreational users.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. No tailings are involved.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. No increased risk of wildfire is foreseen.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Project would be completed prior to Resolution Copper project.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. No effect to area visual resources.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Site is within the Town of Superior and would not affect cultural resources.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. No impacts to area socioeconomic conditions are expected.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Site is within the Town of Superior and would not affect any known Tribal resources.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Site is within the Town of Superior and would not have any disproportional effect on EJ communities.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. No grazing occurs at the site.

Source:

Hodl, James. 2016. "Superior Town Council Approves 2017 Budget, Transfer Station Remediation Plan." Available at: <http://www.copperarea.com/pages/superior-town-council-approves-2017-budget-transfer-station-remediation-plan/>. July 16. Accessed January 2019.



## ***Tonto National Forest Travel Management Plan***

### Overview of RFFA

The Tonto National Forest Travel Management Plan establishes the system of roads, trails, and areas designated for motorized vehicle use and determines suitable locations for dispersed camping. In April 2019, the TNF released a draft Supplemental Environmental Impact Statement (DSEIS) to respond to the objections received with the Travel Planning Final Environmental Impact Statement (FEIS) and associated Draft Record of Decision from 2016. This supplement will only address specific narrow focused issues raised in the formal objection process to the Draft Record of Decision, while the rest of the FEIS will be considered as still relevant in the other subjects. Additional analysis under 36 CFR 212 Subpart B include:

- Compliance with the Travel Management Rule;
- Objections of specific routes segments and areas;
- Impact of motorized travel on designated and eligible Wild and Scenic Rivers;
- Recommended minimum road system;
- Clean Air Act compliance; and,
- Compliance with the National Forest Management Act (NFMA) (USDA 2019b).

The plan seeks to improve the management of motorized vehicle use on lands within the Tonto National Forest in accordance with the Travel Management Rule. The plan will produce the publication of a motor vehicle use map showing those roads, trails and areas designated for motor vehicle use, after which travel on areas not designated for motor vehicle use will be prohibited unless authorized. As the Travel Management Plan is a planning document there may not have concrete impacts to all resources, however, the outcome will include various changes in the National Forest System road network, which are outlined below.

### Temporal overlap with Resolution Project

The DSEIS was released in April 2019. Based on this timeline, it is reasonable to assume the proposed plan would be effective during the expected life of the Resolution mine project (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to geology, minerals, and subsidence.
Soils and Vegetation	Contributes to cumulative effects; sufficient information exists to analyze. The proposed reduction in miles available for motor vehicle use would reduce the number of roads in areas mapped as soils with moderate or high risk of erosion and reduce the area of weed infestations by reducing use.
Noise and Vibration	Contributes to cumulative effects; sufficient information exists to analyze. The Plan would alter localized traffic noise slightly, as the plan would include rerouting various NFS roads.
Transportation	Contributes to cumulative effects; sufficient information exists to analyze. The SEIS proposes a total of 3,708 miles of motorized routes open to the public, a reduction from the 4,959 miles of motorized open routes prior to the Travel Management Rule.
Air Quality	Contributes to cumulative effects; sufficient information exists to analyze. Limiting availability of motorized routes open to the public will result in a reduction of air quality impacts resulting from OHV use.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to groundwater quantity and groundwater-dependent ecosystems.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to groundwater and surface water quality.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to surface water quantity.
Wildlife	Contributes to cumulative effects; sufficient information exists to analyze. The proposed reduction in miles available for motor vehicle use would reduce the number of listed species that are exposed to roads as well as reduce road density within habitat-types for management indicated species. The number of roads within riparian areas would also be reduced, resulting in beneficial impacts to wildlife.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. Limiting availability of motorized routes open to the public will result in reduced access to recreational activities currently practiced on the Forest, including sightseeing, camping, hiking, hunting, fishing, recreational riding, and collecting fuelwood and other forest products. In addition, the proposed action would limit motorized retrieval of big game to one mile on either side of designated motorized routes for elk and bears only.  The proposed action would designate 2,341 miles of motorized trails. Currently, there are no designated motorized trails on the Tonto National Forest.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Tailings are not involved with this project.
Public Health & Safety: Fuels and Fire Management	Contributes to cumulative effects; sufficient information exists to analyze. Reducing unauthorized OHV use on illegal user routes will reduce the risk of wildland fire.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to public safety regarding hazardous materials.
Scenic Resources	Contributes to cumulative effects; sufficient information exists to analyze. Some of the illegal user routes that would be closed under the proposed action would be reclaimed and naturally revegetate over time, however the heavily used areas would be unlikely to revegetate without intensive rehabilitation.
Cultural Resources	Contributes to cumulative effects; sufficient information exists to analyze. Limiting availability of motorized routes open to the public will result in reduced damage to cultural resources occurring from motor vehicle use off of designated roads.
Socioeconomics	Contributes to cumulative effects; sufficient information exists to analyze. Reducing the number of roads available to motor vehicle use will result in decreased costs that must be allocated to road maintenance.

Resource	Rationale for Analysis
Tribal Concerns and Values	Contributes to cumulative effects; sufficient information exists to analyze. Limiting availability of motorized routes open to the public will result in reduced impacts to areas of tribal value occurring from motor vehicle use off of designated roads.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to environmental justice communities.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. The proposed project is a planning document and has not outlined any concrete impacts to livestock and grazing.

Source:

United States Department of Agriculture (USDA). 2019. Travel Management on the Tonto National Forest, Draft Supplemental Environmental Impact Statement. Tonto National Forest. April. Accessed online at: [https://www.fs.usda.gov/nfs/11558/www/nepa/59232\\_FSPLT3\\_4634306.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/59232_FSPLT3_4634306.pdf)

\_\_\_\_\_. 2016. Travel Management on the Tonto National Forest, Final Environmental Impact Statement. Tonto National Forest. June. Access online at: [https://www.fs.usda.gov/nfs/11558/www/nepa/59232\\_FSPLT3\\_3086270.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/59232_FSPLT3_3086270.pdf)

## ***Unpermitted Discharge of Recycled Water into Queen Creek***

### Overview of RFFA

In January 2019 ADEQ issued a Water Quality Advisory for the unpermitted discharge of recycled water into Queen Creek in the San Tan Valley area. ADEQ issued this public advisory because a discharge of recycled water occurred from the Pecan Water Reclamation Plant.

Periodic controlled discharges of recycled water into Queen Creek in the San Tan Valley from treated effluent ponds at the Pecan Water Reclamation Plant were deemed necessary in early 2019 by the plant's management company, EPCOR, to avoid potential berm failure and/or overtopping of these basins. The excess of stored water has been the result of unusually cool and wet weather and consequently a reduced demand by local area farmers and others for the treated water for irrigation and other purposes. To date (March 2019), discharges from the plant into Queen Creek have totaled more than 15 million gallons, according to the company.

The Pecan Water Reclamation Plant is located just north of Queen Creek on Gantzel Road in the San Tan Valley, approximately 23 miles due west of the Town of Superior.

The company has stated it will conduct water quality sampling downstream of any future discharges to ensure water remains in compliance with ADEQ standards for treated effluent.

ADEQ issued the advisory to let the public know to avoid drinking or otherwise being in contact with the recycled water, although it is not otherwise considered a threat to public health and safety.

### Temporal overlap with Resolution Project

Similar intermittent discharges are possible at any time in the future. EPCOR has stated it is working to increase treated effluent storage basin capacity to help alleviate this issue.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Future discharges from the reclamation facility are not planned and therefore cannot be predicted, but they are possible. However, based on the past discharges, effects would be temporary, very short-lived, and would not overlap with impacts from the Resolution Copper project.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Future discharges from the reclamation facility are not planned and therefore cannot be predicted, but they are possible. However, based on the past discharges, effects would be temporary, very short-lived, and would not overlap with impacts from the Resolution Copper project.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Future discharges from the reclamation facility are not planned and therefore cannot be predicted, but they are possible. However, based on the past discharges, effects would be temporary, very short-lived, and would not overlap with impacts from the Resolution Copper project.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant could have minor effects on this resource but would represent only temporary, very short-term changes.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.

Resource	Rationale for Analysis
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. The discharges of treated effluent water from the plant would not affect this resource.

Source:

Arizona Department of Environmental Quality (ADEQ). 2019. Press Release: Water Quality Advisory. February 20. Available: <https://azdeq.gov/press-releases/press-release-adeq-issues-water-quality-advisory-unpermitted-discharge-treated-water>. Accessed: March 2019

Northern Arizona Gazette. 2019. "Potential unpermitted discharge of treated water from Pecan Water Reclamation Plant into Queen Creek." February 28. Available: <http://www.northernarizonagazette.com/tag/pecan-water-reclamation-plant/>. Accessed: March 2019.

## ***Van Dyke Mine***

### Overview of RFFA

The Van Dyke Mine is located immediately adjacent and east of the main Miami-Inspiration ore body, which is owned and operated by Freeport-McMoRan. The Cu deposit at the Van Dyke property was first discovered in 1916, and in 1919 a primary shaft was sunk to a depth of 1,692 feet. In the decades that followed the mine produced nearly 12 million pounds of copper. Large-scale production ceased in 1945.

According to Mindat.org (Hudson Institute of Mineralogy), the orebody consists primarily a deep, “low-grade, disseminated sulfide deposit. It contains ...small amounts of oxidized copper minerals.” Overall ore grade is estimated at 0.51 percent.

Kocide Mineral Corporation ran an in-situ leach-solvent operation at the Van Dyke Mine in the 1980s, but ceased operations in 1990. Tucson-based Arimetco International acquired the property in 1992, but does not appear to have actively mined the deposit and subsequently sold all interests to Canada-based Copper Fox Metals Inc. Copper Fox then established a subsidiary called Desert Fox Van Dyke Company., which now holds a “100% working interest in the Van Dyke project located in the Globe-Miami District in Arizona.”

### Temporal overlap with Resolution Project

The Copper Fox Metals website about the Van Dyke property states that the company is engaged in a Preliminary Economic Assessment (PEA) study and, though initial indications are that the Van Dyke mine would be a sound candidate for an in-situ leaching (ISL) operation using the existing shaft as a recovery well, additional ISL tests must first be undertaken to determine overall economic viability. Specifically:

*“The results of the PEA are preliminary in nature as they include an inferred mineral resource which is considered too speculative geologically to have the economic considerations applied that would enable them to be categorized as mineral reserves. There is no certainty that the PEA forecasts will be realized or that any of the resources will ever be upgraded to reserves.”*

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. Development of this mine is considered speculative at this time.

Source:

Copper Fox Metals, Inc. 2019. "Projects: Van Dyke: Overview". Available: <https://www.copperfoxmetals.com/projects/van-dyke/overview/>. Accessed: March 2019.

Mindat.org. 2019. "Van Dyke Mine (Van Dyke shaft; Van Dyke deposit; Van Dyke claim; Oxymin's Van Dyke deposit), Miami, Miami-Inspiration District, Globe-Miami District, Gila Co., Arizona, USA." Available: <https://www.mindat.org/loc-25740.html>. Accessed: March 2019.



## ***Victory Cross Grazing Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Victory Cross Grazing Allotment is approximately 8,974 acres including 2,862 acres of lands administered by the Bureau of Land Management (BLM) Tucson Field Office, 4,470 acres of lands administered by the Arizona State Land Department (ASLD), and 1,542 acres of private land. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Victory Cross Allotment is located about 14 miles southeast of US 60 and the Town of Superior in Pinal County, Arizona. *Note: all acreages are approximate.*

#### ***BLM***

The Victory Cross allotment (BLM allotment number AZ45030) is an active grazing allotment that has 163 cattle authorized for year round use, and is permitted for 411 animal unit months (AUMs), for use on the BLM portions of the allotment (2,862 acres). This use was authorized on March 1, 2017 and is valid until February 28, 2027 (BLM authorization number 0200087).

Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA) reauthorizing the grazing within the allotment and the proposed rangeland improvements. There is no current EA available for this allotment, however, this evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the allotment, and that the grazing lease for these activities will be renewed when it expires.

#### ***ASLD***

The grazing lease for ASLD portions of the Victory Cross allotment is held by Rick L. Jodasass, who leases about 4,470 acres over multiple parcels from ASLD. The lease (KE 5-94729) allows grazing for up to 1,048 AUMs. Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### ***Private Ownership***

Approximately 1,542 acres of private land exists within the Victory Cross Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Victory Cross Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Whitlow Grazing Allotment, Grazing Lease Renewals***

### Overview of RFFA

The Whitlow Grazing Allotment is approximately 23,276 acres including 10,363 acres of lands administered by the Bureau of Land Management (BLM) Tucson Field Office, 11,275 acres of lands administered by the Arizona State Land Department (ASLD), and 1,638 acres of private land. Each agency/private owner administers grazing leases on their respective lands, and not the entire allotment. The Whitlow Allotment is located about 15 miles southwest of US 60 and the Town of Superior in Pima County, Arizona. *Note: all acreages are approximate.*

#### ***BLM***

The BLM administers 10,363 acres of land in the Whitlow Allotment (BLM allotment AZ06032), and grazing lease information indicates 136 head of cattle, totaling 588 animal unit months (AUM's) are permitted for year round use on BLM lands within the allotment. This use was authorized on March 1, 2012 and is valid until February 28, 2022 (BLM authorization 0202633).

As part of its lease renewal process for public lands in the Whitlow Allotment, the BLM Gila District, Tucson Field Office is proposing to renew the grazing lease for a ten year term, and provide new range improvements such as an upland perennial source of water to supplement the existing upland water infrastructure on the allotment, providing adequate water facilities (wells and storage tanks) for existing authorized grazing management activities (BLM 2019).

Under the National Environmental Policy Act (NEPA) BLM's lease renewal will require an Environmental Assessment (EA), reauthorizing grazing within the allotment and any proposed rangeland improvements, which is in progress. This evaluation assumes that cattle grazing and minor range improvements are currently occurring on the BLM portions of the Whitlow Allotment, and that the grazing lease for these activities will be renewed when it expires.

#### ***ASLD***

The grazing lease for ASLD portions of the Whitlow allotment is held by Rick Bader who leases about 11,275 acres over multiple parcels from ASLD. The lease (KE 5-1441) allows grazing for up to 1,066 AUMs. Lease details are not readily available; therefore, this evaluation assumes that the ASLD grazing lease would include renewal of the lease for a term of up to 10 years. It is assumed that the lease renewal would provide for minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. No new roads or other facilities would be constructed under the grazing lease.

#### ***Private Ownership***

Approximately 1,638 acres of private land exists within the Whitlow Allotment; however, grazing on private lands is administered by the owner, and public records are not available. For the purposes of this evaluation, we have assumed that existing grazing practices on private lands would continue unchanged with no term limits. We have assumed that grazing on private lands would likely include minor range improvements such as repair or maintenance of existing fences, cattle guards, stock tanks, etc. Substantial private development such as roads, housing, and commercial facilities are possible, but none are anticipated.

### Temporal overlap with Resolution Project

The exact timing of grazing lease renewals and/or rangeland improvements is not known; however, it can be reasonably assumed that they would be implemented on the Whitlow Allotment throughout the expected life of the Resolution mine (50 to 55 years).

### Rationale for analysis as cumulative effect in EIS, by resource

**Overall conclusion:** Range allotment plans are used actively to manage authorized livestock grazing to address potentially adverse effects of permitted activities on natural and cultural resources. This RFFA would renew existing permits involving the same acres and AUMs. Minor and localized impacts that would be addressed via active management by way of the range allotment management plans. With the exception of livestock grazing itself, existing conditions and trends would continue but there would be no cumulative effect.

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Recreation	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. See overall conclusion.
Land Use: Livestock and Grazing	Contributes to cumulative effects; sufficient information exists to analyze. Grazing allotments will be affected in varying degrees by the proposed Resolution project activities and its alternatives. The degree of impacts would be dependent upon the activity.

Source:

Arizona State Land Department (ASLD). 2019. State Land Department Online Map Server, showing parcel ownership and grazing allotment data. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed April 22, 2019.

Bureau of Land Management (BLM). 2019. Rangeland Administration System Reports, showing Authorization Used by Allotment for the Tucson Field Office. Available at: <https://reports.blm.gov/report/ras/3/Authorization-Use-by-Allotment>. Accessed April 22, 2019.

\_\_\_\_\_. 2019. BLM Grazing Allotment Polygons, spatial data for geographic information systems. Available at: <https://catalog.data.gov/dataset/blm-grazing-allotment-polygons>. Accessed April 15, 2019.

US Fish and Wildlife Service (USFWS). 2003. Biological Opinion: Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem. Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

## ***Wild and Scenic River Eligibility***

### Overview of RFFA

Segments of Arnett Creek and Telegraph Canyon were evaluated for their eligibility for inclusion in the National Wild and Scenic Rivers System in October 2017 as part of the forest plan revision process. These river segments were identified as eligible for inclusion because they possess unique and outstandingly remarkable values for both scenery and fisheries. These two river segments were further classified as 'Recreational' per Chapter 80 of the Land Management Planning Handbook (*FSH 1909-12 Chapter 80 Wild and Scenic River Evaluation*).

The factors considered for determining river segment classification included shoreline development, accessibility, water quality, special lands uses (such as utility corridors and other recreation special use permits), livestock grazing, and past management activities (such as timber harvesting, or exploration and development of oil and gas), based on what exists today.

The eligible river segments of Arnett Creek and Telegraph Canyon will be managed to protect their outstandingly remarkable values (scenery and fisheries) and to retain their classification as Recreational until such time as they are formally designated, or because of changed circumstances, no longer meet wild and scenic river eligibility criteria. Specific management direction is provided in the revised forest plan.

### Temporal overlap with Resolution Project

The eligibility status for Arnett Creek and Telegraph Canyon is effective with the Record of Decision associated with revising the Tonto National Forest Land Management Plan. This Record of Decision is anticipated in the next three years and would be in effect for 10-15 years from the date of signature.

### Rationale for analysis as cumulative effect in EIS, by resource

<b>Resource</b>	<b>Rationale for Analysis</b>
Geology, Minerals, and Subsidence	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect geological resources.
Soils and Vegetation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect soil or vegetation resources.
Noise and Vibration	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect noise and vibration levels associated with Arnett Creek/Telegraph Canyon.
Transportation	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect local or regional roadways.
Air Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not generate emissions.
Water: Groundwater Quantity and Groundwater-Dependent Ecosystems	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect groundwater sources.
Water: Groundwater and Surface Water Quality	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect groundwater or surface water sources.

<b>Resource</b>	<b>Rationale for Analysis</b>
Water: Surface Water Quantity	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination protects the outstandingly remarkable fisheries values in perpetuity, and would not change surface flow patterns.
Wildlife	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not affect wildlife resources along Arnett Creek/Telegraph Canyon.
Recreation	Contributes to cumulative effects; sufficient information exists to analyze. Eligibility status and public recognition of the outstandingly remarkable values may attract additional recreational use of the river segments or adjoining national forest area.
Public Health & Safety: Tailings Safety	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination does not involve tailings.
Public Health & Safety: Fuels and Fire Management	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not affect fuels and fire management of the river segments.
Public Health & Safety: Hazardous Materials	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not affect exposure to hazardous materials.
Scenic Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination protects the outstandingly remarkable scenic values in perpetuity.
Cultural Resources	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not affect cultural resources in the area.
Socioeconomics	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not likely change economic conditions.
Tribal Concerns and Values	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not affect tribal values of the area.
Environmental Justice	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not affect environmental justice communities in the area.
Land Use: Livestock and Grazing	Analysis not required; would not contribute to cumulative effects or effects are negligible. The wild and scenic river eligibility determination would not affect existing rangeland or grazing conditions as a result of Wild and Scenic River status.



Source:

National Wild and Scenic River System (official website). 2019. Available: <https://www.rivers.gov>. Accessed April 2019.

U.S. Forest Service, Southwestern Region. 1993. *Preliminary Analysis of Eligibility and Classification for Wild/Scenic/Recreational River Designation – National Forests of Arizona*. Albuquerque. January.

U.S. Forest Service, Tonto National Forest. 2017a. *Tonto National Forest Draft Wild and Scenic Rivers Eligibility Study*. Available at: [https://drive.google.com/file/d/0B1wq3f66mAw\\_X2JZTE11TzNCWms/view](https://drive.google.com/file/d/0B1wq3f66mAw_X2JZTE11TzNCWms/view). Accessed March 2019.

U.S. Forest Service, Tonto National Forest, Globe Ranger District. 2017b. *Pinto Valley Mine Environmental Impact Study Draft: Final Scoping Issues Report*. Available at: [http://www.pintovalleymineeis.us/documents/PVM\\_Scoping%20Report\\_Draft-Final\\_2017\\_0928.pdf](http://www.pintovalleymineeis.us/documents/PVM_Scoping%20Report_Draft-Final_2017_0928.pdf). Accessed March 2019.