USDA Forest Service
Tonto National Forest
Arizona

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Process Memorandum to File

Transportation and Access Analysis: Assumptions; Methodology Used; Relevant Regulations, Laws, and Guidance; and Key Documents

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.

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Revision History

Date	Personnel	Revisions Made
08/06/18	Emily Newell	Process memorandum created.
10/29/18	Emily Newell	Revisions to memorandum title, revision history table added, edits to purpose of process memorandum section, references and key documents section added.
10/30/18	Emily Newell	References added.
01/14/19	Emily Newell	Ready for project manager review.
7/12/19	Donna Morey	Update process memorandum to draft environmental impact statement section.
8/7/19	Emily Newell	Final consistency review.
12/30/20	Chris Garrett	Final update for consistency prior to final environmental impact statement release.
3/28/25	Chris Garrett	Added an assessment validate the background traffic volumes used in the traffic analysis.

Purpose of Process Memorandum

In order to provide a concise and accessible summary of resource impacts, certain detailed information has not been included directly in the environmental impact statement (EIS). The purpose of this process memorandum is to describe additional supporting resource information in detail. The transportation and access section of chapter 3 of the EIS includes brief summaries of the information contained in this process memorandum. This process memorandum covers the following topics:

- Resource analysis area
- Analysis methodology
- Regulations, laws, and guidance
- Key documents and references cited

Detailed Information Supporting Environmental Impact Statement Analysis

Resource Analysis Area

The transportation and access analysis area for the proposed mine facilities includes the roads adjacent to the proposed mine, roads that will provide regional access to the proposed mine and its facilities, road within or cut off by the perimeter fence that would be inaccessible to the public from mine activities, the proposed primary access roads and utility maintenance roads, as well as numerous less frequently used routes or recreational routes that may potentially be affected by a general increase in area traffic. This 82,188-acre analysis area is depicted in section 3.5 of the final (FEIS). The analysis area for transportation and access issues Includes within its boundaries approximately 141

miles of State highways, 418 miles of Pinal County and local roads, and 533 miles of National Forest System (NFS) roads.

Analysis Methodology

Southwest Traffic

Much of the analysis contained in the transportation and access section of the draft EIS can be found in the traffic impact analysis reports (Southwest Traffic Engineering LLC 2016, 2017, 2018). When modeling for trip generation for the tailings and storage facility alternatives, the following assumptions were used:

- During construction and regular operations of the mine, employees will be operating on 12-hour shifts and thus are assumed to have, on average, between 2 and 3 days off per week. Applying a 0.66 shift reduction factor accounts for the number of days per week an employee is predicted to travel to/from the site.
- Every vehicle entering the site is assumed to carry an average of 1.7 employees. To account for the reduction in trips generated by the site as a result of employees carpooling, a 1.7 employee per vehicle carpooling factor was used.

Verification of Analysis Usability Considering Calendar Dates

Many analyses in the EIS do not require specific calendar dates; however, the traffic analysis requires that specific calendar dates are assigned to modeled projections. The reason for this is because the modeled traffic impacts are based on the Resolution Copper predicted traffic, combined with background traffic. While Resolution Copper predicted traffic remains the same, background traffic tends to increase over time with increases in population. Therefore, the specific year for which the analysis is conducted affects the background traffic numbers. In turn, this affects the analysis of potential impact as measured by predicted level of service.

Traffic analyses used in the EIS were conducted between 2017 and 2020 by Southwest Traffic Engineering LLC. In order to assess future traffic conditions, these analyses assumed a two percent growth rate for background traffic. Traffic conditions were analyzed for two future points in time: 2022 (representing construction) and 2027 (representing operations).

Due to delays in the National Environmental Policy Act (NEPA) process, the years 2022 and 2027 no longer represent the expected dates for construction and operations.[1] In order to determine that the traffic analyses remain valid for disclosing potential traffic impacts due to the Resolution Copper project, it is necessary to assess whether the background traffic conditions assumed in the analysis remain reasonable.

To validate background traffic values, projected traffic at a two percent growth rate was compared with the Arizona Department of Transportation (ADOT) annual reports of average daily traffic for U.S. Route (U.S.) 60 in Superior. ADOT also projects future traffic for 20 additional years. The specific road

[1] This portion of the process memorandum was added in March 2025.

segment used from the ADOT annual reports was Mary Drive to State Route (SR) 177 for the years 2018 through 2021, and Panther Drive to SR 177 for 2022. Comparisons are shown in table 1 below.

Conclusions for U.S. 60 in Superior

- Background traffic estimates for U.S. 60 in Superior (based on 2 percent annual increase) used in the EIS traffic analysis are greater in magnitude than the ADOT projections for this road segment.
- Background traffic estimates for U.S. 60 in Superior used in the EIS traffic analysis for construction (2022) appear to remain valid past 2030.
- Background traffic estimates for U.S. 60 in Superior used in the EIS traffic analysis for operations (2027) appear to remain valid past 2033.

Table 1. Comparison of background traffic on U.S. 60 in Superior

Road Segment	2018	2019	2020	2021	2022	2027	2030	2035	2042
Source for Data	**ADOT Average Annual Daily Traffic (AADT) Reports***					**Extrapolated between 2022 and 2042 ADOT values**			**As reported in ADOT AADT for 2022**
U.S. 60 in Superior (Mary Drive to SR 177 [2018–2021]) (Panther Drive to SR 177 [2022])	9,622	9,651	6,543	6,929	6,998	8,983	10,173	12,158	14,936
2018 values projected at 2% growth as used in EIS traffic analyses	9,622	9,814	10,011	10,211	10,415	11,499	12,203	13,473	15,476

* Available at: https://azdot.gov/planning/data-and-information/traffic-monitoring and https://arcg.is/1qe9XP0.

Regulations, Laws, and Guidance

Mine operations are subject to a wide range of Federal, State, and local requirements. Many of these require permits before the mine operations begin; others may require approvals or consultations, mandate the submission of various reports, and/or establish specific prohibitions or performance-based standards. Table 2 provides a summary of transportation laws, regulations, policies, and plans at the Federal, State, and local level.

Table 2. Relevant laws, regulations, policies, and plans

Laws, Ordinances, Regulations, and Standards	Description	Applicability
U.S. Forest Service (Forest Service) Forest Service Handbook 7709.59, "Road System Operations and Maintenance"	Provides guidance for planning, traffic management, investment sharing (cost share), highway safety, traffic studies, road maintenance, and other NFS road operations and maintenance activities.	Road system operations and maintenance are part of the process of managing NFS roads and road uses to best meet land and resource management objectives. Four NFS road intersection movements would experience a change in level of service by year 2022 as a result of the project.
Forest Service Manual (FSM) 7703.26, "Adding Roads to the Forest Transportation System"	Travel analysis considers the values affected by roads, including access to and use, protection, and administration of NFS lands; public health and safety; valid existing rights; and long-term road funding opportunities and obligations. Environmental analysis for roads includes effects on associated ecosystems; introduction of invasive species; effects on threatened and endangered species and areas with significant biodiversity, cultural resources, fish and wildlife habitat, water quality, and visual quality; effects on recreation opportunities; and effects on access to NFS lands.	Alternative 4 would require a rerouting of Silver King Road approximately 1 mile in length. Alternative 5 would require new disturbance along the pipeline corridor. Alternative 6 would require new disturbance along the pipeline corridor. Travel analysis requirements are met for the NFS roads analyzed in the FEIS. Roads on private land and roads under the jurisdiction of entities other than the Forest Service are not required to undergo travel analysis. Road width, surfacing, and grades for segments of the access roads that would be NFS roads must meet or exceed Forest Service standards or have appropriate professional engineering justification and Forest Service approval for deviations from Forest Service standards.
FSM 7709.56, "Road Preconstruction Handbook"	Provides guidance on the location, survey, design, and preparation of cost estimates for NFS roads.	These guidelines are applicable to roads on NFS lands.

Laws, Ordinances, Regulations, and Standards	Description	Applicability
FSM 7710, "Transportation Planning Handbook," May 1991	Establishes requirements for administration of the NFS transportation system, including roads and trails.	The analysis area includes roads managed by the Forest Service that are applicable under FSM 7710.
"Roadway Design Guidelines" (Arizona Department of Transportation 2014)	Guides the roadway designer in exercising sound engineering judgment in applying design parameters. These guidelines are complementary to the American Association of State Highway and Transportation Officials' "A Policy on Geometric Design of Highways and Streets" (American Association of State Highway and Transportation Officials 2004) and the "Roadside Design Guide" (American Association of State Highway and Transportation Officials 2011) and are to be used in conjunction with these documents. The American Association of State Highway and Transportation Officials' policies reflect general nationwide practices and are not necessarily applicable to the conditions in Arizona. Where the design values provided in the ADOT manual differ from those presented in the American Association of State Highway and Transportation Officials' guidelines, the ADOT manual takes precedence.	ADOT has exclusive jurisdiction over State highways, State routes, and State-owned airports, as well as jurisdiction over all State-owned transportation systems or modes. ADOT has the responsibility to contribute the most desirable design parameters consistent with safety, service, environment, and cost effectiveness and to apply these parameters with sound engineering judgment on routes under State jurisdiction.
"Guidelines for Highways on Bureau of Land Management and U.S. Forest Service Lands" (Wheat Scharf Associates and ADOT/FHWA/BLM/USFS Steering Committee 2008)	Guides the roadway designer in exercising sound engineering judgment in applying design parameters.	These guidelines are applicable to ADOT roads on Bureau of Land Management (BLM) and NFS lands.
Traffic Guidelines and Processes, ADOT, June 2015	Provides a guide for department personnel and consultants for traffic studies, operations, and design.	Traffic studies were conducted as part of the analysis for the draft EIS and were informed based on the ADOT Traffic Guidelines and Processes.

Laws, Ordinances, Regulations, and Standards	Description	Applicability
"Low Volume Roads Engineering Best Management Practices Field Guide," Gordon Keller and James Sherar, professional engineers, July 2003	Provides guidance to build better, more cost-effective roads and roads that minimize adverse environmental impacts.	New roads are planned to be constructed as a result of the project.
"Guidelines for Geometric Design of very Low-Volume Local Roads," American Association of State Highway and Transportation Officials, 2001	Provides guidance for very low-volume local roads.	The analysis area includes low-volume local roads. Low-volume local roads require different geometric design than those normally applied to higher volume roads.

Sources: American Association of State Highway and Transportation Officials (2004); American Association of State Highway and Transportation Officials (2011); Arizona Department of Transportation (2014); U.S. Forest Service (2009); U.S. Forest Service (2010); Wheat Scharf Associates and ;ADOT/FHWA/BLM/USFS Steering Committee (2008).

Key Documents and References Cited for Transportation and Access

The following list is meant to highlight key process or analysis documents available in the project record. It should not be considered a full list of all available documentation considered within this process memorandum or the EIS analysis.

American Association of State Highway and Transportation Officials. 2004. *A Policy on Geometric Design of Highways and Streets*. 5th ed. Washington, D.C.: American Association of State Highway and Transportation Officials.

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Wheat Scharf Associates and ADOT/FHWA/BLM/USFS Steering Committee. 2008. *Arizona Department of Transportation Guidelines for Highways on Bureau of Land Management and U.S. Forest Service Lands*. Prepared for Arizona Department of Transportation, Federal Highway Administration, Bureau of Land Management, and U.S. Forest Service. Tucson, Arizona: Wheat Scharf Associates.