

4.16 ACCESS AND TRANSPORTATION

4.16.1 Effects Analysis Indicators and Methodology of Analysis

The analysis of effects to access and transportation includes the following issues and indicators:

Issue: The Stibnite Gold Project (SGP) may affect access to public lands during mine construction, operations, and closure and reclamation.

Indicator:

- Number, location, and description of changes in access due to new and improved roadways.

Issue: The SGP may change the miles of roads, the amount of use, and types of vehicles on each road.

Indicators:

- Miles of new road.
- Change in amount of use.
- Changes in frequency of rail, air, and water transportation.

Issue: The SGP may affect public safety on the roads used by mine vehicles during construction, operations, and closure and reclamation activities.

Indicators:

- Miles of roads used by mine vehicles.
- Change in traffic volume.
- Potential number of accidents, both current and projected.
- Change in emergency access.

Access and transportation were analyzed using the Payette National Forest Land and Resource Management Plan (2003), Boise National Forest Land and Resource Management Plan (2010), Payette National Forest (PNF) Forest-wide Travel Analysis Report (2015a), Boise National Forest (BNF) Forest-wide Travel Analysis Process Final Report (2015b), Valley County Master Transportation Plan, geographic information system spatial analyses, and information and analysis documented in reports prepared for the SGP. Incomplete and unavailable information related to access and transportation include certain traffic count data, traffic management, and road maintenance details.

Traffic count data was collected in 2015 through 2017 from various sources. This resulted in the use of different types of counters and timeframes, which varied in the specificity of vehicle types recorded (i.e., full-size vehicles only or full-size and light vehicles) and consistency of data collected. Additionally, the percentage of vehicles representing existing Midas Gold Idaho, Inc. (Midas Gold) exploration traffic on these roads is not reflected in the data collected.

A traffic management plan, which would include details for traffic management including road closures affecting public and mine traffic access, has not been submitted. Details of traffic management for public access on the proposed routes for construction, operations, and closure and reclamation, including through the mine site are general and will be developed before the record of decision for the SGP is signed.

For the purposes of this analysis assumptions include road design and engineering including grade changes and curve specifications would be finalized before SGP implementation. Also, zero percent population growth rate was used to analyze the action alternative impacts to access and transportation. Although Valley County assumes four percent population growth throughout the county in its Master Transportation Plan, Valley County is a rural county with land use designations comprised of rural cities, villages, and tourist hubs (Valley County 2008). Although the population in the area has been growing rapidly and is predicted to continue at a substantial rate, in general, rural areas have been static, and populations are predicted to remain the same or increase at a slower rate (U.S. Forest Service [Forest Service] 2010). Additionally, traffic volume within the analysis area can be mainly attributed to recreational activities. The quantitative analysis using a zero percent population growth rate provides a clearer understanding of the alternatives' direct contribution in relation to existing traffic and the transportation system.

4.16.2 Direct and Indirect Effects

The analysis of effects associated with access and transportation is considered within the overall context of the road system in the analysis area. Elements of this context include:

- Mine site access would be provided via the two-lane State Highway (SH) 55 to other access roads located on private and public lands within Valley County, the PNF, and the BNF. Three primary routes are currently used to access the SGP area from Cascade or McCall: Yellow Pine, Lick Creek, and South Fork Salmon River routes (see Section 3.16.3.2, Primary Routes).
- Road maintenance activities (including dust control, removal of debris from roadway and rights-of-way, road repair, and snow removal) for National Forest System (NFS) roads are coordinated between the Forest Service and Valley County through Forest Roads and Trails Act (FRTA) easements.
- Portions of Valley County roads located within the analysis area are open year-round to highway legal vehicles. Valley County plows portions of Johnson Creek Road (County Road [CR] 10-413), Warm Lake Road (CR 10-579), and McCall-Stibnite Road (CR 50-412), and all of South Fork Salmon River Road (National Forest System Road

[FR] 50674/474). Some sections of roads closed in the winter are groomed for over-snow vehicle (OSV) use. This includes portions of Johnson Creek Road, Warm Lake Road, and Burnt Log Road (FR 447).

- A majority of the FRs within the analysis area are open year-round (with some seasonal restriction due to snow) to all motorvehicles (i.e., including off-highway vehicles [OHVs]), except for South Fork Salmon River Road (FR 50674/474), which allows highway legal vehicles only.
- Traffic volume within the analysis area can be mainly attributed to recreational activities and residential traffic. Other activities could include fuels management, mineral exploration, road and utility maintenance activities, and timber harvest. Current traffic levels within the analysis area also can be attributed to the activities that have been ongoing for exploration, monitoring, and research purposes.
- Vehicle accidents occurring on the existing roadway network are caused by driver error, vehicle mechanical issues, and environmental factors such as poor road conditions due to weather and wildlife crossings. Warm Lake Road experiences the highest incidents of accidents within the forest transportation system due to the higher traffic volumes and higher speeds observed (DJ&A, PC 2017).
- Air transportation is a common mode of transportation for residents and visitors recreating in the surrounding region. There are seven public use airports and one private airstrip (Stibnite airstrip) located within the analysis area.
- The Port of Lewiston, Idaho's only seaport, handles barging of cargo shipments and is located approximately 245 road miles and approximately 135 air miles northwest of the mine site.
- The Idaho Northern and Pacific line runs from Cascade south along the Payette River to Emmett and west to Payette where it connects with the Union Pacific line (Idaho Transportation Department [ITD] 2016). The Idaho Northern and Pacific line previously hauled timber products between Emmett and Cascade; however, the use of that railroad line has stopped largely due to the closure of the Boise Cascade sawmill in Cascade (ITD 2013; Valley County 2018). No active rail transportation is located within the analysis area.

For specific discussions on the impacts associated with the construction and use of access roads and SGP-related traffic to the physical, biological, and social environments, refer to Sections 4.6, Noise; 4.7, Hazardous Materials; 4.12, Fish Resources and Fish Habitat; 4.13, Wildlife and Wildlife Habitat; 4.18, Public Health and Safety; 4.19, Recreation; 4.20, Scenic Resources; 4.21, Social and Economic Conditions; 4.22, Environmental Justice; 4.23, Special Designations; and 4.24, Tribal Rights and Interests.

The analysis of effects to access and transportation included in this section is focused on the main access routes to and from the mine in the summer and winter where the bulk of mine-related traffic would occur during construction, operations, and closure and reclamation and therefore could result in potential traffic, access, and safety issues. Thus, this section does not

discuss traffic or public access impacts from SGP components such as the transmission line upgrades, the new transmission line to the mine site, communication facilities, or the maintenance facility where substantially less traffic would be anticipated in comparison to daily mine-related traffic on the main access routes to/from the mine site. Section 4.19, Recreation, discusses impacts from the OHV Connector Trail as this trail is for recreation-related vehicle traffic, as well as impacts to OHV use on roads and trails. In addition, because winter access east of Warm Lake and east and south of the village of Yellow Pine is primarily recreation-related, Section 4.19, Recreation, includes the discussion of winter public access impacts from new OSV routes and changes to existing winter access.

4.16.2.1 Alternative 1

4.16.2.1.1 CONSTRUCTION

Construction of Alternative 1 would last up to 3 years. Approximately 20 miles of existing Burnt Log Road (FR 447) would be widened and improved and approximately 15 miles of new road connecting to Meadow Creek Lookout Road (FR 51290) would be constructed within the first 2 years as part of the Burntlog Route. Approximately 1.3 miles of Meadow Creek Lookout Road and approximately 2 miles of Thunder Mountain Road (FR 50375) would also be upgraded. Improvements on Burnt Log Road are anticipated to be completed from May into November, depending upon road and weather conditions. Until the 73-mile Burntlog Route (including the Warm Lake Road from the SH 55 intersection) construction is completed (by the end of the second year), SGP-related traffic would primarily access the mine site via the Yellow Pine Route (refer to **Figure 3.16-1**; see also maps in **Appendix N-2**). Midas Gold would establish eight borrow sites along the Burntlog Route as needed to meet road construction and ongoing maintenance throughout the life of the operation and through closure and reclamation. Signs warning of construction activities would be placed along Burntlog Route.

The 70-mile Yellow Pine Route (Warm Lake Road from SH 55, Johnson Creek Road [CR 10-413], and the Stibnite Road portion of the McCall-Stibnite Road [CR 50-412]) would be used for summer and winter access until the Burntlog Route is constructed for long-term use. Minor surface improvements (e.g., ditch and culvert repair, adding gravel, winter snow removal, and summer dust suppression) would occur on the Yellow Pine Route to reduce sediment runoff and dust generation. There would be no road alignment modification or widening of these existing roads. The 83-mile South Fork Salmon River Route (including the Warm Lake Road from the SH 55 intersection), which is currently used for winter access to the mine site, would not be used as part of the SGP.

While the Yellow Pine Route is in use, Midas Gold would coordinate with Valley County on the use and maintenance of the route for year-round access in accordance with Valley County's public road FRTA easement stipulations. Valley County's use and maintenance requirements involve soil erosion control, vegetation maintenance on slopes associated with earth cut or fill, repair and cleanup of drainage facilities, removal and cleanup of hazardous spills originating from road use, removal of obstructions from the roadway (e.g., fallen trees, limbs), dust control, and snow removal. Revisions could be required to the existing Valley County road maintenance

agreement for the Yellow Pine Route for use as a construction route under Alternative 1. Under a cooperative agreement with Valley County, Midas Gold maintenance measures would be performed to repair segments that have deteriorated over time. The aggregate source for Yellow Pine Route maintenance is unknown.

Warm Lake Road north of Cascade, Idaho intersects SH 55, a major transportation corridor throughout Valley County. Midas Gold would work with ITD to improve the Warm Lake Road intersection with SH 55 by adding left and right turning lanes. Improvements may include the addition of a northbound right turn lane, a southbound left turn lane, a new southbound through lane or an acceleration lane on SH 55; modified striping to reduce the skew angle to better accommodate heavier vehicles without additional improvements; and relocation of the 35-miles per hour to 50-miles per hour increase in speed limit on SH 55 at Warm Lake Road further north (Parametrix 2018).

The addition of turning lanes would allow for large trucks carrying equipment and supplies to make turns to/from SH 55 from/onto Warm Lake Road. The improvements also would require approval by Valley County.

4.16.2.1.1 Traffic Volumes

During construction, mine traffic under Alternative 1 would generate an estimated annual average daily traffic (AADT) of 65 vehicles (45 heavy vehicles and 20 light vehicles). Heavy vehicles typically travelling on the access roads would include mine supply and delivery trucks transporting materials, goods, equipment, and people. This would result in approximately five mine vehicles traveling to the mine site every hour during the 14 hours of vehicle movement outside the mine site (between 5:00 am and 7:00 pm). Mine haul trucks would only be used at the mine site on private mine haul roads not open to public use. **Table 4.16-1** shows the existing and Alternative 1 AADT for the public roads used during construction.

Table 4.16-1 Existing and Alternative 1 Construction AADT

Name	Existing AADT ¹	Construction AADT (% Increase from Existing)	% Heavy Vehicles ²
Alternative 1 AADT	-	65	69.2
SH 55	4,127	4,192 (1.6%)	1.1
Warm Lake Road (CR 10-579)	1,174	1,239 (5.5%)	3.6

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Name	Existing AADT ¹	Construction AADT (% Increase from Existing)	% Heavy Vehicles ²
Johnson Creek Road (CR 10-413)	57	122 (114%)	36.9
Stibnite Road (village of Yellow Pine to mine site)	39	104 (166%)	43.3
Burnt Log Road (FR 447)	27	27 ³	-

Table Source: HDR 2017a,b; ITD 2017

Table Notes:

- 1 Data was collected in 2015 or 2016 except for Warm Lake Road (CR 10-579) data collected in 2017. AADT is calculated by Total Recorded Count/Number of Days Recorded. All figures have been rounded up to whole numbers.
- 2 The approximate minimum percentage of SGP-related heavy vehicles occurring on the roads.
- 3 Traffic volumes on Burnt Log Road also would increase from existing conditions due to the construction of the Burntlog Route.

AADT = Annual Average Daily Traffic; CR = County Road; FR = National Forest System Road; SH = State Highway; "-" = not applicable.

As shown in **Table 4.16-1**, traffic volumes associated with Alternative 1 construction would increase approximately 114 percent on Johnson Creek Road (CR 10-413) and approximately 166 percent on the Stibnite Road portion of McCall-Stibnite Road (CR 50-412) from Yellow Pine to the mine site. Over a third of the vehicles traveling on these one-lane, native surfaced roads would be comprised of heavy vehicles and would result in slower travel times for non-mine-related traffic and may deter travelers from using these roadways. Travelers may use alternative roadways, including McCall-Stibnite Road (CR 50-412) and South Fork Salmon River Road (FR 50674/474), to access Yellow Pine. Traffic volumes on Burnt Log Road also would increase from existing conditions due to the construction of the Burntlog Route. The roadways that are currently more traveled would have a less noticeable increase in daily traffic; Warm Lake Road (CR 10-579) traffic would increase by 5.5 percent and SH 55 traffic would increase by only 1.6 percent. Heavy vehicles would comprise less than 4 percent of the total traffic on these two roadways; however, due to the one-lane constraints on both roadways, non-mine-related vehicles may experience slower travel times.

Additionally, reconstruction of the transmission line to the mine site could overlap with the Alternative 1 construction traffic. Construction is planned to occur along the existing alignment and construction crews would be separated throughout the SGP area to minimize construction traffic (HDR, Inc. [HDR] 2017c). Reconstruction of the transmission line along Warm Lake Road and Johnson Creek Road to the mine site is estimated to occur in the third and fourth years of construction and would overlap at the end of the Alternative 1 construction period. Therefore, traffic interruption and delays associated with the reconstruction of the transmission line would increase overall SGP-related traffic on Warm Lake and Johnson Creek roads.

Additionally, there is a seasonal effect of traffic on these roads. Valley County has many summer recreational areas that attract visitors from May through October with peak AADT levels in June, July, and August. Winter driving conditions influence the amount of traffic and result in less AADT during the winter months. Therefore, the seasonal effect of traffic on these roads would show a noticeably greater increase in mine-related winter traffic (i.e., drivers would notice a higher ratio of mine-related traffic to general traffic).

Midas Gold would limit their vehicle traffic outside the mine site to between 5:00 am and 7:00 pm everyday resulting in approximately 5 mine-related vehicles traveling on the Yellow Pine Route per hour during the 2 years the Burntlog Route is constructed. Non-mine-related vehicles may experience slower travel times as mine-related vehicle transport would occur during the morning and evening peak hours and typical commute or travel times. However, once construction of Burntlog Route is completed, the Yellow Pine Route would no longer be used by mine-related traffic, and the AADT on Johnson Creek (CR 10-413) and Stibnite Road would return to the existing AADT traffic volume.

4.16.2.1.1.2 Public Access

During construction, the public would continue to have access to the PNF and BNF on NFS roads currently available to the public (**Figure 2.3-1**), including along Johnson Creek Road, Burnt Log Road, and through the mine site on Stibnite Road connecting to Thunder Mountain Road (FR 50375). Road closures from half-day to multiple-days may occur during construction on Stibnite Road between the village of Yellow Pine and the mine site, part of Thunder Mountain Road (FR 50375), and Burnt Log Road.

Once the Burntlog Route is constructed, access through the mine site from Stibnite Road to Thunder Mountain Road, from the confluence of Sugar Creek and the East Fork South Fork Salmon River (EFSFSR) to the worker housing facility would be closed to the public. Public access would be restricted within the Operations Area Boundary during construction, operations, and closure and reclamation by fencing near the security-monitored gates, and signs warning the public against entry into the Operations Area Boundary. The Burntlog Route would provide public access to the Meadow Creek Lookout and Thunder Mountain area, when other public access is not available, throughout operations and closure and reclamation.

The newly constructed Burntlog Route connecting to Thunder Mountain Road would be a temporary road that is necessary for mining purposes and would meet 36 Code of Federal Regulations (CFR) 228A requirements for environmental protection to assume that mining operations are conducted to minimize adverse environmental impacts to the extent feasible for roads. Accordingly, the road would not be designated for public motor vehicle use under 36 CFR 212.50 on the Motor Vehicle Use Map. Therefore, for public motor vehicle use to be allowed on the road when other public access roads are blocked by mine operations, one of the other exceptions from the prohibitions on motor vehicle use on NFS land at 36 CFR 261.13 must be met. The approved plan of operations would meet the exception for written Forest Service authorization under 36 CFR 261.13(h) by including a provision in the mine plan for public use of the road when other public road access is blocked by mining operations.

4.16.2.1.2 OPERATIONS

Operations under Alternative 1 are proposed for 12 years but could be extended to 15 years. Mine-related traffic would include transport of employees to and from the mine site, delivery of supplies, antimony concentrate trucks, and activities associated with road maintenance such as snowplowing and sanding.

Supplies and deliveries for the mine site during construction, operations, and closure and reclamation would use SH 55 to Warm Lake Road (CR 10-579) to access the Stibnite Gold Logistics Facility. Based on past material deliveries, an estimated two-thirds of all mine related traffic would originate south of Warm Lake Road (CR 10-579) on SH 55 and the other third of mine-related traffic would originate from the north.

4.16.2.1.2.1 Traffic Volumes

Upon completion of the Burntlog Route, mine vehicles would travel approximately 73 miles from the intersection of Warm Lake Road (CR 10-579) and SH 55 to the mine site. Approximately 15 miles of new private access roads managed by Midas Gold, but open to public access when other routes are not available, would be created as part of the Burntlog Route. No new NFS roads would be created during the life of the mine. During the 12 to 15 years of mine operations, Alternative 1 would generate a total estimated AADT of 68 vehicles (49 heavy vehicles and 19 light vehicles). Midas Gold would limit their vehicle traffic outside the mine site to between 5:00 am and 7:00 pm resulting in approximately five mine-related vehicles traveling on Burntlog Route per hour. **Table 4.16-2** shows the existing and Alternative 1 AADT for the main roadway segments in the access and transportation analysis area during operations.

Table 4.16-2 Existing and Alternative 1 Operations AADT

Name	Existing AADT ¹	Operations AADT (% Increase from Existing)	% Heavy Vehicles ²
Alternative 1 AADT	-	68	72.1
SH 55	4,127	4,195 (1.6%)	1.2
Warm Lake Road (CR 10-579)	1,174	1,242 (5.8%)	3.9
Johnson Creek Road (CR 10-413)	57	57 (0%)	-

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Name	Existing AADT ¹	Operations AADT (% Increase from Existing)	% Heavy Vehicles ²
Stibnite Road (village of Yellow Pine to mine site)	39	39 (0%)	-
Burnt Log Road (FR 447)	27	95 (251.9%)	51.6

Table Source: HDR 2017a,b; ITD 2017

Table Notes:

- 1 Data was collected in 2015 or 2016 except for Warm Lake Road (CR 10-579) data collected in 2017. AADT is calculated by Total Recorded Count/Number of Days Recorded. All figures have been rounded up to whole numbers.
- 2 The approximate minimum percentage of SGP-related heavy vehicles occurring on the roads.

AADT = Annual Average Daily Traffic; CR = County Road; FR = National Forest System Road; SH = State Highway; "-" = not applicable.

As shown in **Table 4.16-2**, traffic volumes associated with Alternative 1 operations would increase traffic on the Burntlog Route. Specifically, the approximately 20-mile upgraded Burnt Log Road section of the Burntlog Route would experience a traffic increase of approximately 252 percent with over half of the traffic comprised of heavy vehicles. Heavy vehicles currently do not use Burnt Log Road, so the increase in mine-related vehicles (e.g., supply and delivery trucks, employee transport, or antimony concentrate transport offsite) on this roadway would result in a noticeable change in driver experience (e.g., driving among mine-related heavy vehicles and trucks along one-lane in each direction, native surfaced roads with steep slopes and sharp curves) and slower travel times. The more traveled roadways would have a less noticeable increase in daily traffic; Warm Lake Road traffic would increase by 5.8 percent and SH 55 traffic would increase by only 1.6 percent. Heavy vehicles would comprise less than 4 percent of the total traffic on these two roadways; however, due to the one-lane in each direction constraints on both roads, non-mine-related vehicles may experience slower travel times.

Traffic impacts during the winter would be the same as those discussed under Section 4.16.2.1.1.1, Traffic Volumes for Alternative 1 Construction.

4.16.2.1.2.2 Public Access

Public access within the analysis area would be the same as construction after the Burntlog Route is complete where access through the mine site from Stibnite Road to Thunder Mountain Road (FR 50375), from the confluence of Sugar Creek and the EFSFSR to the worker housing facility, would be closed to the public. The newly constructed Burntlog Route connecting to Thunder Mountain Road would allow public access when other routes are not available. Approximately 15 miles of new roads managed by Midas Gold, but open to public access, would be created.

4.16.2.1.3 CLOSURE AND RECLAMATION

Mine closure and reclamation activities of recontouring slopes, removing facilities, seeding and planting areas under Alternative 1 would require approximately 5 to 7 years. Any newly constructed roads for mine operations would be closed for any long-term use. Areas disturbed by the access and mine site roads would be contoured and graded to blend into surrounding terrain.

The Burntlog Route would be needed until the tailings storage facility (TSF) is fully reclaimed at the mine site. After reclamation of the TSF, the Burntlog Route would be decommissioned, and the existing upgraded sections of Burnt Log Road would be narrowed to their pre-mining widths while the new roadway portion of the Burntlog Route would be reclaimed. Once all final mine closure, reclamation, and related environmental closure monitoring work has been completed, the 20-foot roadway width of 20 miles of Burnt Log Road and 1.3 miles of Meadow Creek Lookout Road, and 2 miles along Thunder Mountain Road of the upgraded portion of Burntlog Route would be reduced to their approximate pre-mining width. Ditches, cross drains, culverts, safety berms, mile markers, guardrails, and signs on roads would be removed if these features are no longer needed upon permanent closure. These roads would retain their flatter grades and gentler curves constructed for mine operations.

Approximately 15 miles of Burntlog Route connecting to Meadow Creek Lookout Road and Thunder Mountain Road would be decommissioned, which would include pulling back and recontouring road cuts to slopes, removing culverts and bridges from all stream crossings, and removing safety berms, retaining walls (although soil nail walls would remain), mile markers, guardrails, signs, and the roadbed.

Monitoring of all facilities and disturbance areas would be conducted following the completion of closure and reclamation to demonstrate compliance with permit requirements and to measure the success of reclamation. Midas Gold would continue baseline environmental monitoring including quarterly surface water sampling, twice annual groundwater wells sampling, annual aquatic resources monitoring, and wildlife at mine site facilities on a weekly basis. Reclamation success monitoring such as erosion and sediment control monitoring would be completed twice annually and after 4 and 5 years for performance monitoring purposes until success criteria are satisfied.

4.16.2.1.3.1 Traffic Volumes

During closure and reclamation, Alternative 1 would generate a total estimated AADT of 25 vehicles (13 heavy vehicles and 12 light vehicles). Refer to Section 2.3.7.17, Closure and Reclamation Traffic, for closure and reclamation traffic details associated with the workforce, supplies and support, and other miscellaneous traffic including road maintenance for Alternative 1. Post-closure monitoring activities would generate a total estimated AADT of six light vehicles as discussed in Section 2.3.7, Closure and Reclamation. **Table 4.16-3** shows the existing and Alternative 1 AADT for the main roadway segments in the access and transportation analysis area during closure and reclamation.

Table 4.16-3 Existing and Alternative 1 Closure and Reclamation AADT

Name	Existing AADT¹	Closure and Reclamation AADT (% Increase from Existing)	% Heavy Vehicles²	Post-Closure AADT (% Increase from Existing)
Alternative 1 AADT	-	25	52	6
SH 55	4,127	4,152 (0.6%)	0.3	4,133 (0.1%)
Warm Lake Road (CR 10-579)	1,174	1,199 (2.1%)	1.1	1,180 (0.5%)
Johnson Creek Road (CR 10-413)	57	57 (0%)	-	63 (10.5%)
Stibnite Road (village of Yellow Pine to mine site)	39	39 (0%)	-	45 (15.4%)
Burnt Log Road (FR 447)	27	52 (92.6%)	25	33 (22.2%)

Table Source: HDR 2017a,b; ITD 2017

Table Notes:

- 1 Data was collected in 2015 or 2016 except for Warm Lake Road (CR 10-579) data collected in 2017. AADT is calculated by Total Recorded Count/Number of Days Recorded. All figures have been rounded up to whole numbers.
- 2 The approximate minimum percentage of SGP-related heavy vehicles occurring on the roads.

AADT = Annual Average Daily Traffic; CR = County Road; FR = National Forest System Road; SH = State Highway; "-" = not applicable.

As shown in **Table 4.16-3**, traffic volumes associated with Alternative 1 closure and reclamation would increase traffic on the Burntlog Route over existing conditions. Specifically, the upgraded Burnt Log Road section of the Burntlog Route would experience a traffic increase of approximately 92.6 percent. Only a quarter of the vehicles traveling this one-lane, native-surfaced road would be heavy vehicles that could result in slower travel times for non-mine-related traffic and may deter travelers from using this roadway. The more traveled roadways would have a less noticeable change in daily traffic; Warm Lake Road (CR 10-579) and SH 55 traffic would increase by less than one percent. Midas Gold would limit their vehicle traffic outside the mine site to between 5:00 am and 7:00 pm resulting in approximately two mine-related vehicles traveling on the Burntlog Route per hour during closure and reclamation. Heavy vehicles would comprise one percent or less of the total traffic on these two roadways during closure and reclamation; however, due to the one-lane constraints on both roadways, non-mine-related vehicles may experience slower travel times.

Closure and reclamation traffic impacts during the winter would be the same as those discussed under Section 4.16.2.1.1.1, Traffic Volumes for Alternative 1 Construction. Post-closure winter traffic would not be as noticeable, as closure and reclamation traffic heavy vehicle deliveries

would not occur, and only approximately six mine-related vehicles per day would utilize the accessible roadways in the analysis area for monitoring and maintenance purposes.

4.16.2.1.3.2 Public Access

Public access during the closure and reclamation phase would be coordinated with the Forest Service and would involve reopening Stibnite Road and establishing a permanent service road through the backfilled Yellow Pine pit for public access through the mine site for dispersed recreation uses connecting to Thunder Mountain Road (FR 50375) (**Figure 2.3-2**; see also maps in **Appendix N-2**). This would result in a total of approximately 2.5 additional miles of new road for public access. Post-closure public access would require revision to the existing FRTA easement with Valley County regarding road maintenance.

4.16.2.1.4 SAFETY AND EMERGENCY ACCESS

For the duration of Alternative 1, the increase in total volume of mine-related vehicles, specifically heavy vehicles or trucks, on the Yellow Pine and Burntlog Routes would result in a greater safety risk for accidents occurring between vehicles due to degradation of the road with more frequent heavy vehicle travel and the one-lane constraints (i.e., no passing lane) that restrict the passing of slower moving vehicles. Burnt Log Road (FR 447) would be widened to 26 feet (including 3-foot vegetated shoulders), tight corners would be straightened to allow for improved safety and traffic visibility, grades would be maintained at less than 10 percent in all practicable locations, and placement of sub-base material and surface with gravel would occur to provide a stable long-term roadway and reduce sediment. Side-ditching, culverts, guardrails, and bridges would be installed where necessary. During winter road maintenance, snow would be removed from the Burntlog Route, haul roads at the mine site, the temporary construction access, and the Yellow Pine Route. Although no road alignment modification or widening would occur to Johnson Creek Road (CR 10-413) and Stibnite Road as part of the Yellow Pine Route under Alternative 1, upgrades, including minor surface improvements (e.g., adding gravel, winter snow removal, and summer dust suppression), would occur to reduce dust generation from vehicles, indirectly improving visibility, and support safer road conditions.

Additionally, pilot cars would be used during equipment mobilization and demobilization along Burntlog Route and portions of Yellow Pine Route, as needed, to control speed and reduce potential for conflicts or incidents along these narrow access roads leading into the SGP area.

The increased heavy vehicle traffic would degrade the existing and proposed transportation system over the duration of the SGP. However, maintenance measures authorized under a cooperative agreement with Valley County and the Forest Service would be performed to repair segments that have deteriorated over time. The continued maintenance and improvements of the road system would help reduce dust and maintain public safety for the duration of the SGP.

Emergency access would be maintained throughout the analysis area. Emergency access would be provided on the Yellow Pine Route during the first two years of construction and then on Burntlog Route for the remainder of the SGP. In the event of an emergency or when a threat to human life is identified (e.g., fires), roads would be temporarily closed, as appropriate.

Measures would be implemented that would help reduce the incidence of accidents, including busing and/or van pooling to the mine site, housing workers at the mine site to minimize the frequency of SGP worker vehicle trips, driver training (e.g., use of truck compression brakes on steep sections and along areas where residences are located and familiarity with the travel routes including locations of steep slopes that require downshifting), and equipping staff traveling to and from the mine site with two-way radios to communicate positions, relay information about road conditions, and warn of public vehicles traveling on Burntlog Route (or Yellow Pine Route during construction). This also would allow for rapid response in the event of an accident.

Additionally, Midas Gold would adhere to SGP design features and resource protection measures, Forest Service-required measures, and permit stipulations, including, but not limited to: ensuring drivers and airplane/helicopter pilots are appropriately licensed; annual inspections of transport vehicles; observing county and state speed limits, road restrictions (e.g., use of tire chains for snow or icy road conditions), and load limits; and coordination with Forest Service (and Valley County as appropriate) on air and road operations to further reduce the incidence of accidents.

For additional discussion on geotechnical hazards and public safety, refer to Sections 4.2, Geologic Resources and Geotechnical Hazards and 4.18, Public Health and Safety, respectively.

4.16.2.1.5 OTHER MODES OF TRANSPORTATION

4.16.2.1.5.1 Air Transportation

Under Alternative 1, a helipad would be maintained in an area adjacent to the administration offices and warehouse facilities for mining and ore processing at the mine site for exploration and Medevac purposes (**Figure 2.3-2**). Helicopters would be used to deliver rigs and supplies for surface exploration drilling activities on an as needed basis when truck or crawler mounted rigs are unable to reach the drill site. Though drilling activities would typically occur 24 hours a day, helicopter support would only occur during daylight hours. Other potential indirect air traffic, such as spectators to the SGP, may occur during operation of Alternative 1. However, overall air traffic associated with Alternative 1 would be low in intensity and generate negligible changes in air traffic patterns.

The new substation at Johnson Creek would not impact air traffic use of the Johnson Creek airstrip.

4.16.2.1.5.2 Water Transportation

Under Alternative 1, approximately one round trip (two truck trips) of antimony concentrate would be hauled off-site daily to a commercial barge or truck loading facility depending on the refinery location. As previously discussed, the Port of Lewiston would be the closest port for transport by commercial barge. The daily shipment of antimony and the potential indirect transport of supplies and materials to and from the mine site would generate minimal to

negligible changes in water transportation. The addition of associated impacts to transport by commercial barge from the Port of Lewiston to and from distributors, purchasers, and refineries under Alternative 1 would be considered very minimal and would blend into the typical traffic associated with this type of goods movement.

4.16.2.1.5.3 Rail Transportation

As discussed in Section 3.16.3.6.3, Rail Transportation, there are no rail transportation systems in the analysis area. However, there is a potential for trucks to transport antimony concentrate to rail lines located in Boise. Additionally, supplies and materials may be indirectly transported to and from the mine site by trucks originating from rail shipments. Nevertheless, these impacts would generate negligible changes to rail transport during operation of Alternative 1 and would not substantially alter the level of service for this mode of transportation.

4.16.2.2 Alternative 2

Under Alternative 2, project features associated with access and transportation would be the same as Alternative 1 except for:

- The routing of a 5.3-mile segment of the Burntlog Route (Riordan Creek Segment), resulting in 13.5 miles of new construction for the Burntlog Route;
- A public access road (one of two options) through the mine site connecting Stibnite Road to Thunder Mountain Road (FR 50375);
- The generation of lime and limestone at the mine site using development rock from the West End pit, resulting in fewer truck trips to and from the mine site; and
- An increase in the number of truck trips per year that would be required to deliver chemicals and remove waste from the mine site for water treatment in perpetuity (an additional 40 truck trips per year).

4.16.2.2.1 CONSTRUCTION

Traffic volume and public access impacts under Alternative 2 would be the same as those described under Alternative 1 for construction.

4.16.2.2.2 OPERATIONS

4.16.2.2.2.1 Traffic Volumes

Upon completion of Burntlog Route, mine vehicles would travel approximately 71 miles from the intersection of Warm Lake Road (CR 10-579) and SH 55 to the mine site. Approximately 13.5 miles of new private access roads would be created during the life of the mine. No new NFS roads would be created during the life of the mine. Due to the generation of lime at the mine site under Alternative 2, operational AADT would be 50 vehicles (33 heavy vehicles and 17 light vehicles) under Alternative 2. Midas Gold would limit their vehicle traffic outside the mine site to between 5:00 am and 7:00 pm, resulting in approximately four mine-related vehicles

traveling on the Burntlog Route per hour. **Table 4.16-4** shows the existing and Alternative 2 AADT for the main roadway segments in the access and transportation analysis area during operations.

Table 4.16-4 Existing and Alternative 2 Operations AADT

Name	Existing AADT ¹	Operations AADT (% Increase from Existing)	% Heavy Vehicles ²
Alternative 2 AADT ³	-	50	66
SH 55	4,127	4,177 (1.2%)	0.8
Warm Lake Road (CR 10-579)	1,174	1,224 (4.3%)	2.7
Johnson Creek Road (CR 10-413)	57	57 (0%)	-
Stibnite Road (village of Yellow Pine to mine site)	39	39 (0%)	-
Burnt Log Road (FR 447)	27	77 (185.2%)	42.9

Table Source: HDR 2017a,b; ITD 2017

Table Notes:

- 1 Data was collected in 2015 or 2016 except for Warm Lake Road (CR 10-579) data collected in 2017. AADT is calculated by Total Recorded Count/Number of Days Recorded. All figures have been rounded up to whole numbers.
- 2 The approximate minimum percentage of SGP-related heavy vehicles occurring on the roads.
- 3 The additional 40 trucks per year required to deliver chemicals for water treatment would provide an increase in 0.1 AADT for operational traffic.

AADT = Annual Average Daily Traffic; CR = County Road; FR = National Forest System Road; SH = State Highway; "-" = not applicable.

As shown in **Table 4.16-4**, traffic volumes associated with Alternative 2 operations would increase traffic on the Burntlog Route. Specifically, the upgraded Burnt Log Road section of the Burntlog Route would experience a traffic increase of approximately 185 percent with approximately 42 percent of traffic comprised of heavy vehicles. Overall, there would be less mine-related traffic on the road during operations than during construction; however, the driver experience would still be noticeably different than existing conditions with an increase in mine-related heavy vehicles and slower travel times. The roadways currently more traveled would have a less noticeable increase in daily traffic; Warm Lake Road traffic would increase by 4.3 percent and SH 55 traffic would increase by only 1.2 percent. Additionally, as previously discussed, winter driving conditions influence the amount of traffic and typically result in less AADT. Therefore, the seasonal effect of traffic on these roads would show a noticeably greater increase in mine-related winter traffic (i.e., drivers would notice a higher ratio of mine-related traffic to general traffic).

4.16.2.2.2 Public Access

Under Alternative 2, public access would be the same as Alternative 1 (e.g., the newly constructed Burntlog Route connecting to Meadow Creek Lookout Road [FR 51290]), except public access also would be provided through the mine site from Stibnite Road to Thunder Mountain Road (FR 50375) during mining operations. The newly constructed Burntlog Route connecting to Meadow Creek Lookout Road and then Thunder Mountain Road would allow public access when other routes are not available (i.e., the public access route through the mine site). The newly constructed roadway portion of the Burntlog Route would be a temporary road that is necessary for mining purposes and would meet 36 CFR 228A requirements for environmental protection. Public motor vehicle use would be allowed on the newly constructed, private mining road when other public access roads are blocked by mine operations. Approximately 13.5 miles of new roads managed by Midas Gold, but open to public access when needed, would be created.

After mine construction is complete, a 12-foot-wide, approximately 3- to 4-mile gravel road connecting Stibnite Road to Thunder Mountain Road would be open to all vehicles year-round. Midas Gold would maintain the public access road under Valley County's FRTA easement; however, it would not be plowed. There are two options for public access through the mine site (refer to Section 2.4.4.2, Public Access). Under Option 1, an approximately 3-mile public access road through a widened portion of the western side of Yellow Pine pit and paralleling a mine haul road would be constructed. Under Option 2, an approximately 4-mile public access road west of the Yellow Pine pit and paralleling the same mine haul road as Option 1 would be constructed. The selected public access road option would be separated from the mine site roads by berms, security fencing, and underpasses. For added safety, the public access road would be temporarily closed during construction and maintenance activities of the public access road, and during other mining activities that would be considered public safety hazards (e.g., high wall scaling and blasting). Signs would be placed to inform the public of the closure. During closures on the road through the mine site, public use of the Burntlog Route would be allowed.

4.16.2.2.3 CLOSURE AND RECLAMATION

Impacts to traffic volume and public access under Alternative 2 would be similar to those described under Alternative 1 for closure and reclamation; however, Alternative 2 would require an additional 40 truck trips per year to deliver chemicals for water treatment in perpetuity. Like operations, 40 truck trips for water treatment would provide an increase of 0.1 AADT for closure and reclamation and post-closure traffic. Post-closure, traffic to the mine site (i.e., the additional 40 truck trips per year required to deliver chemicals for water treatment in perpetuity) would no longer utilize the Burntlog Route, but would use the Yellow Pine Route to access the mine site which would be plowed to provide year-round access for treatment plant workers. Water treatment-related deliveries would not occur during the winter; supplies and waste would be stockpiled on site. Public access to and through the mine site would remain post reclamation and would require revision to the existing FRTA easement with Valley County.

4.16.2.2.4 SAFETY AND EMERGENCY ACCESS

Safety and emergency impacts under Alternative 2 would be similar to those described for Alternative 1. However, an alternate route through the mine site is proposed for public use thus reducing the potential for accidents on this route. During operations, public traffic would be separated from mine traffic on the road through the mine site thereby reducing potential safety issues. Post reclamation, there would be 40 truck trips per year to deliver water treatment materials. When these trips occur, there could be a slightly higher risk of accidents due to slow moving trucks on the Yellow Pine Route and road through the mine site (up to the water treatment plant).

4.16.2.2.5 OTHER MODES OF TRANSPORTATION

Air, water, and rail transportation impacts under Alternative 2 would be the same as those described under Alternative 1.

4.16.2.3 Alternative 3

Under Alternative 3, project features associated with access and transportation would be the same as Alternative 1 except for:

- An approximately 3.2-mile segment of Burntlog Route would be routed through Blowout Creek valley, resulting in 19.6 miles of new construction for the Burntlog Route. The mine security gate would be located along this segment and would restrict public access through the mine site.
- The OHV connector trail from a transmission line access road to Meadow Creek Lookout Road (FR 51290) would not be constructed. Public access around the mine site would be from the Burntlog Route to Meadow Creek Lookout Road which would be improved from the Burntlog Route turnoff at Blowout Creek to Thunder Mountain Road (FR 50375) to allow access to Thunder Mountain and Monumental Summit areas.

4.16.2.3.1 CONSTRUCTION

Traffic volume and public access impacts under Alternative 3 would be the same as those described under Alternative 1 for construction.

4.16.2.3.2 OPERATIONS

Traffic volume and public access impacts under Alternative 3 would be the same as those described under Alternative 1 for operations, except upon completion of the Burntlog Route, mine vehicles would travel approximately 75 miles from the intersection of Warm Lake Road (CR 10-579) and SH 55 to the mine site due to the rerouting of Burntlog Route through Blowout Creek valley. Approximately 19.6 miles of new private access roads managed by Midas Gold, but open to public access, would be created under Alternative 3. No new NFS roads would be created during the life of the mine under Alternative 3.

4.16.2.3.3 CLOSURE AND RECLAMATION

Traffic volume and public access impacts under Alternative 3 would be the same as those described under Alternative 1 for closure and reclamation, except upon closure and reclamation of the EFSFSR TSF, public access would be provided around the TSF using one of two options. Under Option 1, the temporary operational EFSFSR TSF access road along the TSF pipeline would be converted to a permanent public access route reconnecting Stibnite Road (CR 50-412) and Thunder Mountain Road (FR 50375). Under Option 2, the temporary mine access road segment of the Burntlog Route through Blowout Creek valley would be converted to a permanent public access road connecting to Meadow Creek Lookout Road (FR 51290) then to Thunder Mountain Road. This public access road would not be plowed during the winter. The new public access roads through the mine site post reclamation would result in approximately 7.6 to 9 miles of new roads available for public access.

Additionally, a permanent access road through the backfilled Yellow Pine pit for public access through the mine site for dispersed recreation uses connecting to Thunder Mountain Road through one of the two options would be established post closure. The new road for public access would require revision to the existing FRTA easement with Valley County.

4.16.2.3.4 SAFETY AND EMERGENCY ACCESS

Safety and emergency impacts under Alternative 3 would be similar to those described under Alternative 1.

4.16.2.3.5 OTHER MODES OF TRANSPORTATION

Air, water, and rail transportation impacts under Alternative 3 would be the same as those described under Alternative 1.

4.16.2.4 Alternative 4

Under Alternative 4, the Yellow Pine Route would be used to access the mine site, and the Burntlog Route would not be constructed. Upon completion of the Yellow Pine Route, mine vehicles would travel approximately 70 miles from the intersection of Warm Lake Road (CR 10-579) and SH 55, to Johnson Creek Road (CR 10-479) and Stibnite Road (CR 50-412) to the mine site. Road widening and straightening, along with drainage and bridge improvements would be required for the Johnson Creek Road portion of the Yellow Pine Route. The Stibnite Road portion would be improved by straightening curves, constructing retaining walls, and installing 182 18-inch culverts and 2 60-inch culverts. In addition, the Stibnite Road portion also would be improved by widening curves to accommodate 55-foot semi-truck trailers. Approximately 1 mile of road through the village of Yellow Pine would be paved. Construction and improvements to the Yellow Pine Route would require approximately 4 years with a total construction schedule of 5 years (2 years more than the Burntlog Route).

4.16.2.4.1 CONSTRUCTION

4.16.2.4.1.1 Traffic Volume

Traffic volume impacts under Alternative 4 would be the same as those described under Alternative 1 for construction. Additionally, along the Yellow Pine Route, Johnson Creek Road would require periodic temporary road closures during mine construction during the first season of construction. Stibnite Road would have a daily closure from 10:00 am to 4:00 pm for the 3- to 4-year construction period for activities, including road grading, heavy equipment movement, etc. Residents would need to use SH 55 to Warren Wagon Road then to FR 340 to access the Edwardsburg/Big Creek area.

4.16.2.4.1.2 Public Access

The public would share the Yellow Pine Route with mine-related traffic through construction, operations, and closure and reclamation on Johnson Creek Road and Stibnite Road. As discussed above, Johnson Creek Road would require periodic temporary road closures, and Stibnite Road would require daily closures from 10:00 am to 4:00 pm for the 3- to 4-year duration of mine construction activities. Residents would need to use SH 55 to Warren Wagon Road then to FR 340 to access Edwardsburg/Big Creek.

Public access during mine construction and operations is shown on **Figure 2.6-3** and maps in **Appendix N-5**. As with Alternative 2, Alternative 4 would include public access through the mine site on the same road used to bring mine supplies and employees from the end of the Yellow Pine Route at the mine gate to the ore processing, administration, warehouse, and employee housing areas. Public access through the mine site would provide motorized access to Thunder Mountain Road (FR 50375).

4.16.2.4.2 OPERATIONS

4.16.2.4.2.1 Traffic Volume

Traffic volume impacts under Alternative 4 would be the same as those described under Alternative 1 for operations, except instead of the Burntlog Route, mine-related traffic would use the Yellow Pine Route for the duration of the SGP under Alternative 4. Public traffic and mine traffic would share the road from Landmark to the mine site. Mine vehicles would travel approximately 70 miles from the intersection of Warm Lake Road (CR 10-579) and SH 55 to the mine site. No new private access roads or NFS roads would be created under Alternative 4.

Table 4.16-5 shows the existing and Alternative 4 AADT for the main roadway segments in the access and transportation analysis area during operations.

Table 4.16-5 Existing and Alternative 4 Operations AADT

Name	Existing AADT¹	Operations AADT (% Increase from Existing)	% Heavy Vehicles²
Alternative 4 AADT	-	68	72
SH 55	4,127	4,195 (1.6%)	1.2
Warm Lake Road (CR 10-579)	1,174	1,242 (5.8%)	3.9
Johnson Creek Road (CR 10-413)	57	125 (119.3%)	39.2
Stibnite Road (village of Yellow Pine to mine site)	39	107 (174.4%)	45.8
Burnt Log Road (FR 447)	27	27 (0%)	-

Table Source: HDR 2017a,b; ITD 2017

Table Notes:

1 Data was collected in 2015 or 2016 except for Warm Lake Road (CR 10-579) data collected in 2017. AADT is calculated by Total Recorded Count/Number of Days Recorded. All figures have been rounded up to whole numbers.

2 The approximate minimum percentage of SGP-related heavy vehicles occurring on the roads.

AADT = Annual Average Daily Traffic; CR = County Road; FR = National Forest System Road; SH = State Highway; "-" = not applicable.

As shown in **Table 4.16-5**, operations under Alternative 4 would result in increased traffic volumes on the Yellow Pine Route. Specifically, traffic on Johnson Creek Road and Stibnite Road would increase approximately 119 percent (32 percent heavy vehicles) and 174 percent (48 percent heavy vehicles), respectively. Heavy vehicles currently use the Yellow Pine Route to access the mine site in the summer; however, Alternative 4 operational traffic would result in a noticeable change in driver experience and slower drive times on the Yellow Pine Route due to the substantial increase in mine-related vehicles. Even though Johnson Creek Road would be upgraded under Alternative 4, the road would still have many curves and slopes, thus requiring slow speeds. Refer to Section 4.16.2.4.4, Safety and Emergency Access, for further discussion on safety.

The more traveled roadways would have a less noticeable increase in daily traffic; Warm Lake Road traffic would increase by approximately 5.8 percent and SH 55 traffic would increase by 1.7 percent. Midas Gold would limit their vehicle traffic outside the mine site to between 5:00 am and 7:00 pm, resulting in approximately five mine-related vehicles traveling on the Yellow Pine Route per hour.

4.16.2.4.2.2 Public Access

Public access through the mine site during operations would be similar to Alternative 2, except Alternative 4 would include one option for public access through the mine site, as discussed in

Section 2.6, Alternative 4. Approximately 4 miles of public access through the mine site would be provided. No new construction of mine access roads outside of the mine site would occur under Alternative 4.

4.16.2.4.3 CLOSURE AND RECLAMATION

4.16.2.4.3.1 Traffic Volume

Traffic volume impacts under Alternative 4 would be the same as those described under Alternative 1 for closure and reclamation, except instead of the Burntlog Route, mine-related traffic would use the Yellow Pine Route during closure, reclamation, and post-closure activities. **Table 4.16-6** shows the existing and Alternative 4 AADT for the main roadway segments in the access and transportation analysis area during closure and reclamation.

Table 4.16-6 Existing and Alternative 4 Closure and Reclamation AADT

Name	Existing AADT ¹	Closure and Reclamation AADT (% Increase from Existing)	% Heavy Vehicles ²	Post-Closure AADT (% Increase from Existing)
Alternative 4 AADT	-	25	52	6
SH 55	4,127	4,152 (0.6%)	0.3	4,133 (0.2%)
Warm Lake Road (CR 10-579)	1,174	1,199 (2.1%)	1.1	1,180 (0.5%)
Johnson Creek Road (CR 10-413)	57	82 (43.9%)	15.9	63 (10.5%)
Stibnite Road (village of Yellow Pine to mine site)	39	64 (64.1%)	20.3	45 (15.4%)
Burnt Log Road (FR 447)	27	27	-	27

Table Source: HDR 2017a,b; ITD 2017

Table Notes:

- 1 Data was collected in 2015 or 2016 except for Warm Lake Road (CR 10-579) data collected in 2017. AADT is calculated by Total Recorded Count/Number of Days Recorded. All figures have been rounded up to whole numbers.
- 2 The approximate minimum percentage of SGP-related heavy vehicles occurring on the roads.

AADT = Annual Average Daily Traffic; CR = County Road; FR = National Forest System Road; SH = State Highway; "-" = not applicable.

As shown in **Table 4.16-6**, traffic volumes associated with Alternative 4 closure and reclamation would increase current volumes for the Yellow Pine Route. Specifically, traffic on Johnson Creek Road and Stibnite Road would increase approximately 44 percent (approximately 16 percent heavy vehicles) and 64 percent (approximately 20 percent heavy vehicles), respectively. Closure and reclamation mine-related traffic would be less than operational traffic with 25 AADT for closure and reclamation versus 68 AADT for operations. The driver experience would still include some heavy vehicles that result in slower drive times, but heavy

vehicles would eventually decrease to one or none daily as closure and reclamation is completed. The roadways currently more traveled would have a less noticeable increase in daily traffic; Warm Lake Road traffic would increase by 2.1 percent and SH 55 traffic would only increase by 0.6 percent. Midas Gold would limit their vehicle traffic outside the mine site to between 5:00 am and 7:00 pm, resulting in approximately two mine-related vehicles traveling on the Yellow Pine Route per hour during closure/reclamation.

4.16.2.4.3.2 Public Access

As with Alternative 1, a new road would be constructed under Alternative 4 over the backfilled Yellow Pine pit connecting Stibnite Road to Thunder Mountain Road (FR 50375). A total of approximately 2.5 additional miles of new road for public access through the mine site would remain post closure and would require revision to the existing FRTA easement with Valley County.

4.16.2.4.4 SAFETY AND EMERGENCY ACCESS

Alternative 4 would have greater safety and emergency impacts than Burntlog Route due to additional safety considerations required to use the Yellow Pine Route exclusively, which is in steeper terrain than the Burntlog Route and subject to avalanches and landslides.

Under Alternative 4, improvements to the Yellow Pine Route would include road widening and straightening, as well as drainage and bridge improvements to the Johnson Creek Road portion of the Yellow Pine Route. The Stibnite Road portion of the Yellow Pine Route would be improved by straightening curves, constructing retaining walls, and installing 182 18-inch culverts and 2 60-inch culverts. More cut and fill would be required for the Yellow Pine Route in comparison with the Burntlog Route. This would require additional safety considerations for geotechnical hazards, landslides, and avalanche zones and may result in periods of road closure. Additionally, access through the mine site under Alternative 4 would be through a single point of ingress and egress and would require safety considerations for mine deliveries and public access. The steep climb to provide access around the Yellow Pine pit would require a wider road with more switchbacks to accommodate the heavy trucks transporting mine supplies and may increase hazardous driving conditions for crew rotation, emergency responses, and wildfire evacuation. For additional discussion on hazards and safety, refer to Sections 4.2, Geologic Resources and Geotechnical Hazards; and 4.18, Public Health and Safety.

4.16.2.4.5 OTHER MODES OF TRANSPORTATION

Air, water, and rail transportation impacts under Alternative 4 would be the same as those described under Alternative 1.

4.16.2.5 Alternative 5

Under Alternative 5, no action would be undertaken for the SGP. Consequently, the current transportation systems for roads, air, and water would remain as they are under existing conditions and there would not be any SGP-related traffic on the roadways.

Valley County would continue to maintain the roads under the FRTA easements. Road maintenance activities would include blading and shaping the roadbed, ensuring proper moisture conditions of the road surface, cleaning and repairing drainage facilities, removal of obstructions, dust abatement, and snow removal (Lau 2018).

No direct or indirect effects on access and transportation from SGP-related activities would occur under Alternative 5.

4.16.3 Mitigation Measures

Mitigation measures required by the Forest Service and measures committed to by Midas Gold as part of design features of the SGP are described in **Appendix D**, Mitigation Measures and Environmental Commitments; see **Table D-1**, Preliminary Mitigation Measures Required by the Forest Service; and **Table D-2**, Mitigation Measures Proposed by Midas Gold as Project Design Features, respectively. The preceding impact analysis has taken these mitigation measures into consideration, as well as measures routinely required through federal, state or local laws, regulations or permitting, such that the identified potential impacts of the SGP are those that remain after their consideration.

Mitigation measures may be added, revised, or refined based on public comment, agency comment, or continued discussions with Midas Gold and will be finalized in the Final Environmental Impact Statement.

4.16.4 Cumulative Effects

The cumulative effects analysis area for access and transportation that could be directly or indirectly affected by the SGP consists of the access roads located on private and public lands in Valley County, the PNF, and the BNF that would be used to access the SPG area, and extends out to and along SH 55 north to the Port of Lewiston and south to Boise.

Cumulative effects consider the range of existing and foreseeable activities and their potential effects with respect to access and transportation. Past and present actions that have, or are currently, affecting access and transportation include recreational activities, fuels management, road and utility maintenance activities, and timber harvest. In addition, some of the current traffic levels in the analysis area also can be attributed to activities at the mine site that have been ongoing for exploration purposes, monitoring, and background studies. Reasonably foreseeable future actions that could cumulatively contribute to access and transportation impacts in the analysis area include all the projects listed in **Table 4.1-2** pertaining to recreational management, watershed management, road management, fuels management, mineral exploration, residential development, and special use management.

4.16.4.1 Common to All Action Alternatives

Supplies and deliveries for the mine site during construction, operations, and closure and reclamation would go to the Stibnite Gold Logistics Facility using SH 55 to Warm Lake Road (CR 10-579). Approximately two-thirds of all mine-related traffic would originate south of Warm

Lake Road and would use SH 55 through the communities of Cascade, Banks, and Horseshoe Bend. Approximately one-third of all mine-related traffic would originate north of Warm Lake Road and would use SH 55 through the communities of Donnelly, Lake Fork, and McCall. Through McCall, mine-related traffic would use Deinhard Lane and Boydston Street.

As previously discussed, the traffic for action alternatives would travel on SH 55 to Warm Lake Road then either along Johnson Creek Road (CR 10-413) to Stibnite Road (CR 50-412) or along the existing Burnt Log Road (FR 447) and newly constructed Burntlog Route to access the mine site. The SGP would generate considerable impacts to access and transportation as the action alternatives would individually add over 100 percent increase in traffic volume on Burnt Log Road, Johnson Creek Road, and Stibnite Road during construction and operations.

The local NFS roads within the analysis area are in a rural area, and traffic volumes are generally low. A higher percent increase in traffic volumes for the action alternatives would be likely the closer the roads are to the mine site. The South Fork Restoration and Access Management Plan, the East Fork Salmon River Restoration and Access Management Plan, and the Big Creek Hazardous Fuel Reduction projects are located closer to the mine site. The contribution to traffic volumes of the action alternatives which include traffic generated from the reconstruction of the transmission line combined with these projects would likely have a greater cumulative effect on the roadways closer to the mine site.

Contrary, the closer to the larger arterial (e.g., SH 55) and collector (e.g., Warm Lake Road) roads, the percent increase in traffic volume decreases to less than approximately four percent for the action alternatives. The Granite Meadows, SH 55 Banks Beach Parking Study, and SH 55 Round Valley Improvements projects are located along or accessed via SH 55 and would affect traffic along the major arterial and collector roads. The traffic contribution of the action alternatives combined with these projects would result in negligible changes to the overall traffic volume as the SGP-level volumes dissipate into the larger traffic volumes of other projects and general travel along these roads.

As such, the SGP combined with other reasonably foreseeable future projects would have a greater cumulative effect on roads closer to the mine site and less contribution on the larger arterials further from the mine site.

4.16.4.2 Alternative 5

Under Alternative 5, there would be no SGP. The effects of past mining activities and the current geophysical investigation activities would remain. The reasonably foreseeable future actions identified in **Table 4.1-2** including forest management, motorized use of road systems, fire suppression, prescribed fire and wildfire, dispersed camping, fishing, and hunting activities would continue in the cumulative effects area and vicinity, which could impact access and transportation in the cumulative effects analysis area. Under Alternative 5, the Golden Meadows Exploration Project would have an insignificant direct effect to access and transportation and, therefore, an insignificant cumulative contribution.

4.16.5 Irreversible and Irrecoverable Commitments of Public Resources

4.16.5.1 Common to All Action Alternatives

The SGP would temporarily alter the land and roadway system within the analysis area; however, access and transportation would not be irreversible or irretrievable. The access roads and haul roads within the mine site would be reclaimed and put back to existing conditions. Access along the Burntlog Route would be removed.

However, consumption of renewable and non-renewable resources would be required for infrastructure development, including metals, aggregate, cement, wood, and other materials. Funds and labor would be irretrievably committed for project permitting and development. Raw materials needed for construction including crushed stone, sand, concrete, lumber, water, diesel fuel, gasoline, and steel would constitute an irretrievable commitment.

Additionally, non-renewable resources associated with transportation (including gasoline, diesel, natural gas, and electrical power generated from these fuels) would be irreversibly committed for project construction, operations, and closure. Fuels would be required to operate motor vehicles, machinery, and mining equipment.

4.16.5.2 Alternative 5

Under Alternative 5, the SGP would not be undertaken. Consequently, there would be no irreversible and irretrievable commitment of public resources as it relates to access and transportation.

4.16.6 Short-term Uses versus Long-term Productivity

4.16.6.1 Alternative 1

Development of Alternative 1 would result in short-term uses of the road system within the analysis area; however, under Alternative 1 the new and extended portions of Burnt Log Road (FR 447) and Burntlog Route would be reclaimed and decommissioned upon closure and reclamation and, therefore, would not result in a long-term loss of productivity. Public access would be expanded from existing conditions temporarily to additional roads and trails including Burntlog Route, the OHV Connector Trail, Johnson Creek Road temporary OSV route, and the Cabin Creek OSV route; however, the Warm Lake to Landmark groomed OSV route and Johnson Creek Road groomed portion from Landmark to Wapiti Meadows Ranch would be closed for the duration of Alternative 1. Upon completion of closure and reclamation of Alternative 1, a public access road would be located through the mine site to connect Stibnite Road (CR 50-412) to Thunder Mountain Road (FR 50375), which would increase long-term productivity of the road system.

4.16.6.2 Alternative 2

Development of Alternative 2 would result in the same short-term uses and long-term productivity of the road system within the analysis area as described under Alternative 1 except for the extended use of public access to through the mine site from McCall-Stibnite Road (CR 50-412) to Thunder Mountain Road (FR 50375) starting from operations.

4.16.6.3 Alternative 3

Development of Alternative 3 would result in the same short-term uses and long-term productivity of the road system within the analysis area as under Alternative 1.

4.16.6.4 Alternative 4

Development of Alternative 4 would result in the same short-term uses and long-term productivity of the road system within the analysis area as under Alternative 1 except for Yellow Pine Route would be used for the duration of Alternative 4 and new and upgraded portions of Burnt Log Road/Burntlog Route would not be constructed. Additionally, public access through the mine site also would be provided by constructing a new road to link Stibnite Road (CR 50-412) to Thunder Mountain Road (FR 50375) that would be shared with mine-related traffic (e.g., supplies and deliveries).

4.16.6.5 Alternative 5

Under Alternative 5, the SGP would not be undertaken. Consequently, the temporary public access roads developed for the action alternatives would not create any short-term uses that would affect access and transportation. Additionally, long-term productivity associated with access and transportation may be affected without the creation of the permanent public access route connecting Stibnite Road (CR 50-412) to Thunder Mountain Road (FR 50375) through the mine site which would result from all of the action alternatives.

4.16.7 Summary

The following section provides a summary of the SGP impacts and a comparison of differences associated with each alternative. **Table 4.16-7** provides a summary comparison of access and transportation impacts by issues and indicators for each alternative.

4.16.7.1 Traffic Volumes

Under Alternatives 1, 2, and 3, Midas Gold would widen and improve the existing Burnt Log Road (FR 447) and construct approximately 15, 13.5, and 19.6 miles of new road, respectively, connecting with Meadow Creek Lookout Road (FR 51290) within the first 2 years of construction. With construction only occurring from May to November, SGP-related traffic to the mine site would primarily access the mine site via the Yellow Pine Route, until the Burntlog Route is completed (by the second year). Yellow Pine Route would be used for winter access until the Burntlog Route is constructed for long-term use. Aside from minor surface improvements, winter snow removal, and summer dust suppression, no road alignment

modification or widening would occur for the Yellow Pine Route under Alternatives 1, 2, or 3. Under Alternative 4, Burntlog Route would not be constructed or used for the SGP and all SGP-related traffic would use Yellow Pine Route. Approximately 4 miles of public access through the mine site would be provided. Construction of the Yellow Pine Route would require approximately 4 years under Alternative 4, compared to 3 years of construction under Alternatives 1, 2, and 3 for the Burntlog Route.

During construction, mine traffic under all action alternatives (Alternatives 1, 2, 3, and 4) would generate an estimated AADT of 65 vehicles (45 heavy vehicles and 20 light vehicles). Construction traffic volumes on Johnson Creek Road (CR 10-413) and Stibnite Road would more than double. Over a third of the vehicles traveling on these one-lane, native surfaced roads would be comprised of heavy vehicles and could result in slower travel times for non-mine-related traffic and may deter these travelers from using these roadways. Travelers may use alternative roadways including McCall-Stibnite Road (CR 50-412) to South Fork Salmon River Road (FR 50674/474).

During operations, mine-related traffic would include transport of employees to and from the mine site, delivery of supplies, and activities associated with road maintenance such as snowplowing and sanding. During the 12 years of mine operations, Alternatives 1, 3, and 4 would generate a total estimated AADT of 68 vehicles (49 heavy vehicles and 19 light vehicles) resulting in approximately five mine-related vehicles traveling outside the mine site per hour between 5:00 am and 7:00 pm. Alternative 2 would generate less traffic than the other action alternatives due to the generation of lime at the mine site. Under Alternative 2, operational AADT would be 50 vehicles (33 heavy vehicles and 17 light vehicles), resulting in approximately four mine-related vehicles per hour traveling outside the mine site.

The upgraded Burnt Log Road and the newly constructed Burntlog Route would experience an increase in traffic of over 185 percent, under Alternative 2, and 250 percent, under Alternatives 1 and 3, with approximately half of the traffic comprised of heavy vehicles. Although heavy vehicles currently use Yellow Pine Route to access the mine site, Alternative 4 traffic would result in a noticeable change in driver experience and slower drive times due to the substantial increase in mine-related heavy vehicles along Yellow Pine Route during the life of the SGP. Even though upgrades to Johnson Creek Road and Stibnite Road would be made, these roads would still have many curves and slopes.

During closure and reclamation, activities including slope recontouring, facility removal, seeding and planting, and post-closure environmental monitoring would require approximately 7 years. Under Alternatives 1, 3, and 4, closure and reclamation would generate a total estimated AADT of 25 vehicles (13 heavy vehicles and 12 light vehicles). Post-closure monitoring activities would generate a total estimated AADT of six light vehicles. The duration of monitoring and monitoring requirements would be outlined in the final permit approval documents.

There would be greater traffic volume and public access impacts under Alternative 2 for closure and reclamation compared to the other action alternatives. There would be approximately 40 additional truck trips per year required to deliver chemicals for water treatment in perpetuity,

which would provide an increase of 0.1 AADT for closure and reclamation and post-closure traffic under Alternative 2.

Furthermore, these roads experience a seasonal effect which results in noticeable differences in traffic. Valley County has many summer recreational areas that attract visitors from May through October with peak AADT levels in June, July, and August. Winter driving conditions influence the amount of traffic and result in lower AADT levels during the winter months. Therefore, the seasonal effect of traffic on these roads would show a noticeably greater increase in mine-related winter traffic (i.e., drivers would notice a higher ratio of mine-related traffic to general traffic) during construction, operations, and closure and reclamation. Post-closure winter traffic would not be as noticeable as heavy vehicle deliveries would not occur and approximately six mine-related light vehicles per day would utilize the accessible roadways in the analysis area for monitoring and maintenance purposes.

4.16.7.2 Public Access

Under Alternatives 1, 2, and 3, public access to the SGP area would essentially be the same; however, under Alternative 2 there would be a public access route through the mine site during the SGP construction, operations, and closure and reclamation phases. There also would be a public access route through the mine site under Alternative 4. Under Alternative 4, the Burntlog Route would not be constructed, and the Yellow Pine Route would be used for both public and SGP-related access.

4.16.7.3 Safety and Emergency Access

For the duration the SGP, the increase in total volume of mine-related vehicles, specifically heavy vehicles or trucks, on the Yellow Pine and Burntlog routes would result in a safety risk for accidents occurring between public and SGP-related traffic due to the one-lane constraints for passing slower moving vehicles and degradation of the road with more frequent heavy vehicle travel. There would be no increased risk on the Burnt Log Road (FR 447) under Alternative 4, because the Burntlog Route would not be constructed or used for the SGP. However, the steep terrain would be a greater risk to safety along the Yellow Pine Route under Alternative 4 as it would be the only route used for the life of the SGP and would require safety considerations for geotechnical hazards, landslides, and avalanche zones, including intermittent and extended road closures during the four years of construction. Additionally, access through the mine site under Alternative 4 would be through a single point of ingress and egress and would require safety considerations for mine deliveries and public access. The steep climb to provide access around the Yellow Pine pit would require a wider road with more switchbacks to accommodate the heavy trucks transporting mine supplies and may increase hazardous driving conditions for crew rotation, emergency responses, and wildfire evacuation.

4.16.7.4 Other Modes of Transportation

Under all action alternatives, a helipad would be located at the mine site for exploration during daylight hours and Medevac purposes. Approximately one round trip (2 truck trips) of antimony concentrate would be hauled off-site daily to a commercial barge located at the Port of Lewiston

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or truck loading facility depending on the refinery location. The daily shipment of antimony and the potential indirect transport of supplies and materials to and from the mine site would generate minimal to negligible changes in water transportation. Although there is no rail transportation system in the analysis area, there is potential for the trucks to transport mine products to rail lines located in Boise or for supplies and materials to be indirectly transported to and from the mine site by trucks originating from rail shipments. Nevertheless, these impacts would generate negligible changes to rail transport during operation of the SGP and would not substantially alter the level of service.

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Table 4.16-7 Comparison of Access and Transportation Impacts by Alternative

Issue	Indicator	Baseline Conditions	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
The SGP may affect access to public lands during mine construction, operations, and closure and reclamation.	Number, location, and description of changes in access due to new and improved roadways.	See Table 3.16-1 and Figure 3.16-1	- Burnt Log Road (plowed) - No public access through the mine site during operations - Loss of winter groomed OSV trail on Warm Lake Road to Landmark	Same as Alternative 1 except: - Mine site public access during operations (Option 1 and 2) (not plowed) - Rerouted Riordan Creek Segment on Burntlog Route (plowed)	Same as Alternative 1 except: - EFSFSR TSF public access or mine access route upon closure and reclamation	Same as Alternative 1 except: - no BLR, only YPR (plowed)	No change from baseline conditions.
The SGP may change the miles of roads and trails, the amount of use, and types of vehicles on each road or trail.	Miles of new road for public use.	Forest Service = 1,557 miles Valley County = 278 miles State = 131 miles	Forest Service = no change Valley County = 2.5 miles ¹ State = no change Private = 15 miles ²	Forest Service = no change Valley County = 2.5 miles ¹ State = no change Private = 13.5 miles (with an additional 3 to 4 miles through the mine site) ³	Forest Service = 7.6-9 miles ⁴ Valley County = 2.5 miles ¹ State = no change Private = 19.6 miles ²	Forest Service = no change Valley County = 2.5 miles ¹ State = no change Private = 4 miles through the mine site ⁵	No change from baseline conditions.
	Change in amount of use.	See Table 3.16-1 for existing roads.	YPR = 5 mine-related vehicles/hr (C) BLR = 5 mine-related vehicles/hr (O); 2 mine-related vehicles/hr (C-R)	Same as Alternative 1 except: BLR = 4 mine-related vehicles/hr (O)	Same as Alternative 1.	Same as Alternative 1 except all phases occurring on YPR.	No change from baseline conditions.
	Changes in frequency of rail, air, and water transportation.	Rail – no active lines Air – 7 public use airports Water – Port of Lewiston	Rail – No impact. Air – Helicopter usage for when roads are inaccessible. Recreators may spectate the mine site. Water – 1 roundtrip (2 truck trips) daily of antimony concentrate shipped by barge	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.	No change from baseline conditions.
The SGP may affect public safety on the roads used by mine vehicles during construction, operations, and closure and reclamation activities.	Approximate miles of roads used by mine vehicles.	YPR = 70 miles SFSRR = 83 miles BLR = 0 mile (does not exist)	YPR = 70 miles BLR = 73 miles	YPR = 70 miles BLR = 71 miles	YPR = 70 miles BLR = 75 miles	YPR = 70 miles BLR = 0 mile	No change from baseline conditions.
	Change in traffic volume. (AADT)	Refer to Table 3.16-2 .	C = 65 (45 HV) O = 68 (49 HV) C-R = 25 (13 HV) Post Closure = 6 (0 HV)	C = 65 (45 HV) O = 50 (33 HV) C-R = 25 (13 HV) Post Closure = 6 (0 HV) *Additional 40 truck trips (O and C-R) per year required to deliver chemicals for water treatment.	Same as Alternative 1.	Same as Alternative 1.	No change from baseline conditions.

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Issue	Indicator	Baseline Conditions	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	Number of accidents, both current and projected.	Warm Lake Road = 8/year Johnson Creek Road = 2/year Stibnite Road = 1/year	Midas Gold would implement safety measures to reduce accidents including radio communication.	On-site lime generation would result in fewer mine-related vehicle trips and a decrease in the likelihood of being in an accident.	Same as Alternative 1.	YPR has a steeper topography and terrain that would require wider roads, more cut/fill sections, and more switchbacks.	No change from baseline conditions.
	Change in emergency access.	N/A	Additional access routes via public access through the mine site upon closure (C-R). Removal of Warm Lake OSV (C/O/C-R) and Johnson Creek OSV (C).	Same as Alternative 1 except: public access through mine site	Same as Alternative 1.	Same as Alternative 1.	N/A

Table Notes:

- 1 Additional miles of new road for public access post closure would require revision to the existing FRTA easement with Valley County.
 - 2 The newly constructed Burntlog Road would be a temporary road necessary for mining purposes (pursuant to 36 CFR 228A[f]). The duration for public access on private roads outside of the mine site (i.e., temporary mining access roads associated with the SGP) when other public access roads are blocked by mine operations would only occur during the life of the mine.
 - 3 The newly constructed Burntlog Road would be a temporary road necessary for mining purposes (pursuant to 36 CFR 228A[f]). The duration for public access on private roads outside of and through the mine site (i.e., temporary mining access roads associated with the SGP) when other public access roads are blocked by mine operations would only occur during the life of the mine.
 - 4 Additional miles of new road for public access post closure attributed to the EFSFSR TSF public access or mine access routes.
 - 5 During the life of the mine, mine traffic would utilize the existing road network. No new roads would be constructed outside of the mine site; however, public access would be provided on private roads through the mine site (i.e., temporary mining access roads associated with the SGP) when other public access roads are blocked by mine operations for the duration of the SGP.
- + = includes; - = removes; AADT = annual average daily traffic; BLR = Burntlog Route; C = Construction; C-R = Closure and Reclamation; EFSFSR TSF = East Fork South Fork Salmon River Tailings Storage Facility; FRTA = Forest Roads and Trails Act; hr = hour; HV = heavy vehicles; N/A = not applicable; O = Operations; OHV = off-highway vehicle; OSV = over-snow vehicle; SFSRR = South Fork Salmon River Road; YPR = Yellow Pine Route.