

3.14 Transportation

The existing road in Quitchupah Creek was originally an old wagon road prior to 1900. It served ranches, allowed access to the forest up on the plateau, and provided a route for east-west travel. The road was possibly graded in the 1940's, and the earliest road maintenance logs are dated 1968. More recently Emery County maintains a gravel surface for the first half-mile going west from SR-10, with the remainder being a native surface. The easements for the road are based upon use (Funk, 1999).

Alternatives B and C would be located along the existing two-track road, the Quitchupah Creek Road #908, through Convulsion Canyon and Quitchupah Creek canyon. The alignment begins near the SUFCO Mine on the Acord Lakes Road and heads east down Convulsion Canyon on FS road 40006 to BLM road #908 to SR-10 (**Figure 1-1**). Currently, this road has a native (dirt) surface with some gravel on the last 0.5 mile before the highway and in other areas which have resulted from scarifying activities. Where this road enters SR-10, the highway is an uphill grade heading north. The alternate junction (Alternative C) of the proposed Quitchupah Creek road diverges from the existing dirt road alignment for the final two miles on the eastern end to avoid the uphill grade on SR-10 by intersecting it north of the crest of the hill.

The Water Hollow alternate alignment (Alternative D) involves leaving the existing Quitchupah Creek Road two miles east of its western end, crossing Water Hollow drainage and climbing up, then crossing the Water Hollow Benches and Saleratus Benches. The road alignment then turns north and east to intersect SR-10. Unlike the other two Alternatives, the majority of the Water Hollow road alignment does not follow an existing road or trail.

Currently, the traffic from the mine travels southwest on the Acord Lakes Road to I-70. The coal trucks going west travel I-70 to Salina and then north on Highways 89 and 28 to the railroad loadout near Levan, while the coal trucks heading east take I-70 to Fremont Junction and then turn north on SR-10 to the Hunter Power Plant near Castledale or the Savage Coal Terminal (SCT) loadout near Price. SR-10 is a north-south highway that connects the central Utah area on the eastern side of the Wasatch Plateau. This two-lane paved highway extends from Fremont Junction on I-70 north to Price. About four miles south of Price, coal trucks traveling to SCT turn east on SR-1306, Ridge Road.

STATE ROUTE 10

SR-10 is a north-south highway that connects Fremont Junction on I-70 with Price, Utah. It is an asphaltic concrete, generally two-lane highway that varies greatly in use depending upon the locality. It passes through the towns of Emery, Clawson, Ferron, Castle Dale, and Huntington. It is the primary road of interest since all Alternatives would lead to this road.

SR-10 is an older road built on moisture sensitive soils, the most notorious of which are soils derived from Mancos shales. The road follows the ups and downs of the terrain. There was not a lot of earthwork to eliminate the hills and valleys when this road was built more than 40 years ago. Hence the roadway is susceptible to expansion that may occur within the native soils. Between I-70 and Emery Town the pavement structure is a mix of strengths. Some areas are rated as strong, others as medium, and between milepost 9 and 11 as weak. Under existing traffic, the years to fatigue average nine with four years being worst case.

According to Utah Department of Transportation (UDOT) records, the southern 10-mile section of SR-10 has been repaved and a bridge north of Emery is being replaced. A statewide ongoing construction report

listed a 4-inch pavement overlay on 10 miles of SR-10, from milepost 0 (Fremont Junction, at I-70) to milepost 10 (Quitichupah Hill), and was planned for completion by October 2004 (Project # STP-0010(20)0/70418; UDOT 2004a). A chip seal coat was planned over this improved section in spring 2005. According to a September 2005 UDOT Status of Road Construction schedule, 100 percent of this project had been completed (UDOT 2005a). The replacement of Muddy Creek bridge north of Emery began in early summer 2005 (Project # BRF-0010(27)16; UDOT 2005a) and is 95 percent complete. Additional segments of SR-10 are scheduled to be repaved in 2008 (UDOT 2005b).

Two other county roads, newly constructed or scheduled for construction, that would affect traffic patterns on SR-10 are the South Moore Cut-off Road and the CONSOL Road in Emery County. The South Moore Cut-off Road, once completed, will be a shortcut for traffic from I-70 to the east to intersect with SR-10 at Moore and avoid travel on SR-10 between Moore and Fremont Junction 15 miles to the south. The road is being constructed in phases and is not expected to be completely paved for several years. The CONSOL Road serves the CONSOL Mine, which began operation in October 2002, for coal transport. The road intersects the east side of SR-10 at Quitichupah Creek; currently all of the CONSOL Mine coal is hauled north from this intersection.

Traffic Volumes on SR-10

The UDOT collects Average Annual Daily Traffic (AADT) information at various points throughout the State. The AADT is defined as the total volume passing a point or segment of a highway facility, in both directions, for one year, divided by the number of days in the year. There are no AADT data for the existing Acord Lakes Road, Quitichupah Creek Road, or Ridge Road. However, the Acord Lakes Road does experience periodic congestion, which has about 50 trucks per hour at peak times (Sorensen, 1999). The current volumes for all vehicular traffic for SR-10 are presented in **Table 3.14-1** and include the present SUFCO Mine related traffic (Christensen, 1999). Predicted AADT for 2020 includes any additional traffic as a result of future coal transport on SR-10.

Table 3.14-1 SR-10 Highway Traffic Volumes

From Interchange/Junction	To Interchange/Junction	AADT 2002	AADT 2003	AADT 2004 – % Trucks¹	AADT 2020 - % Trucks @ Max. Haul²
Sevier Emery County Line	West Emery	520	515	1,230- 70	1,507 - 67
West Emery	East Emery	1,605	1,580	1,655 – 32	2,107 - 49
East Emery	South Ferron	1,980	1,650	1,725 – 25	4,007 - 24
South Ferron	North Ferron	3,760	3,695	3,860 – 26	8,507 - 12
North Ferron	Clawson	3,080	3,030	3,170 – 21	7,407 - 22
Clawson	Junction SR-57	4,389	4,315	4,510 -16	
South Castle Dale	North Castle Dale	7,560	4,845	5,065 – 16	7,400 - 07
North Castle Dale	Junction SR-29	5,505	5,410	6,420 – 14	6,500 - 12
Junction SR-155	Junction SR-1306 Ridge Road	9,973	5,005	5,035 - 23	12,700 - 11

Source: UDOT

1. Truck is defined as combination unit truck
2. Maximum haul would be 4.5 million tons annually to Hunter Power Generating Plant at SR-57.

The current volumes of traffic, pavement conditions, safety, and traffic service levels include the coal transport, workers commuting to the mine, vendors providing equipment and supplies to the mine, and the general public on SR-10. The CONSOL Mine contributes 100 to 120 trucks per day five days a week to traffic on SR-10. According to the 2004 UDOT Highway Traffic Book, 32 percent of traffic on SR-10 between the Sevier-Emery County line north to Emery is combination unit truck traffic with a total truck traffic (single and combination units) of 42 percent. Between Clawson and the junction with SR-57, the truck traffic is 16 percent combination unit with a total truck traffic of 22 percent.

Bridges on SR-10

There are 14 bridges crossing SR-10 between Fremont Junction and Price. Of the 14 bridges, 11 are in good shape; two are rated as deficient; one (Muddy Creek) is currently being replaced. The two that need replacing are located at Rock Canyon Wash (Reference Post 32.16), and Poulsen Wash (Reference Post 33.04).

Acord Lakes Road

At the present time, all vehicles accessing the SUFCO Mine use the Acord Lakes Road, a county road that extends from I-70 past a mountain homes development to the SUFCO Mine, a distance of about 11.1 miles. This road is classified as a rural collector road in the State collector system. It was upgraded by the SUFCO Mine in 1977 from a dirt USFS road to 28 feet wide with an asphaltic concrete surface, designed for a traffic speed of 40 miles per hour. The road section consists of 17.5 inches of untreated base course overlaid by 2.5 inches of gravel sub-base. The asphaltic concrete surface consists of a 3-inch base course overlaid by a 4.5-inch thick surface course. At least one surface seal coat with 0.75-inch chips provides a wear surface. No acid or toxic materials were used in the road surfacing (Duncan, 1982). The Acord Lakes Road is maintained by the SUFCO Mine in cooperation with Sevier County SSD and UDOT. SUFCO repairs the road surface, blades the adjacent drainage ditches, fills potholes, and resurfaces the road. SUFCO spends approximately \$139,000 per year maintaining the Acord Lakes Road. The road is maintained consistent with a USFS Level 4 maintenance program (USDA-USFS, 1992). Drainage along the road is controlled by roadside drainage channels and culverts. The culverts were constructed in accordance with manufacturer recommendations. These culverts have sustained soil pressures, vehicular loads, and drainage flows. No significant structural problems have been observed with the culverts.

Traffic from the Acord Lakes Road must proceed either east or west on I-70. The majority of coal trucks head west to Salina and the Levan loadout. However, in the past as much as one million tons a year of the coal from the SUFCO Mine has been transported east to Fremont Junction and then north on SR-10 to railroad loadouts near Price. In 2002, an additional 2.5 mmpy were transported on this route between the SUFCO Mine and Pacificorp's Hunter Power Plant.

For loaded coal trucks, the route on Acord Lakes Road southwest to I-70 is generally down-gradient; then the route east on I-70 crosses the Emigrant Pass summit at 8,030 feet elevation, a climb of 1,300 feet in 7.5 miles. After Emigrant Pass, the route east on I-70 to Fremont Junction is down-gradient and the route north on SR-10 is level with short steep grades over hills. The ascent of the Emigrant Pass summit on I-70 can be difficult in the winter during inclement weather and periodically the road is closed by heavy snows or ice on the road surface.

Ridge Road

Ridge Road, SR-1306, is classified as a “rural major collector” that was completed in 1989 to bypass Price for traffic eastbound to Wellington and US-6. It is 7.3 miles long and has 12-foot wide lanes in each direction, 4-foot shoulders, 5.5 inches of bituminous surface course, and 6 inches of untreated base course. There is some confusion by the regulatory agencies about whether Carbon County or the State owns the road; however, UDOT performs the maintenance on it. It is used for coal transport only for the first couple of miles to access the SCT coal loadout but continues on to terminate at the east side of Wellington at US-6.

Potential Impacts To Transportation

REGULATORY

The proposed transportation routes to transport coal and service the SUFCO Mine would be required to meet the regulations from several entities who would be affected or have jurisdictional control. The project would adhere to the Emery County planning process and local ordinance 8-7-85A. The existing Quitchupah Creek Road is covered under an interlocal agreement for maintenance between Emery and Sevier Counties (Funk, 1999), but the agreement would likely be revised if the proposed project were constructed. If the construction corridor were to expand beyond the county-granted easement of 100 feet for Class B roads, then Sevier County would need to file an easement application with SITLA to cover the portion that may be outside the existing easement. With a changed road use, UDOT would require an Encroachment Permit for entrance on to SR-10 (Laws, 1999). In addition, the SR-10 right-of-way width is limited, which may necessitate the acquisition of additional right-of-way width.

NO ACTION - ALTERNATIVE A

Existing traffic patterns in the area of interest would remain essentially the same except for the proportional amount attributed to future increased mine production. Essentially the increase in coal truck traffic to the east is dictated by coal contracts to power plants and would continue on the present road system. The Acord Lakes Road would continue to experience periodic congestion when carrying about 50 trucks per hour at peak times.

Coal purchased from SUFCO Mine by Pacificorp for use at the Hunter Power Generating Plant would continue to be transported via the current route. Thus, road wear due to heavy coal trucks would continue on I-70 between the Acord Lakes Road Junction and Fremont Junction, and especially on SR-10.

Beginning in 2002, the minimum amount of coal transported to Emery County destinations was two million tons annually. That was the minimum amount that Pacificorp had contracted to purchase for use in the Hunter Power Plant near Castle Dale, Utah. The maximum amount that Pacificorp will purchase from the SUFCO Mine is 4.5 mmtpy. In 2004, Hunter purchased 4.2 mm short tons of Utah coal, mostly from SUFCO. This contract will be filled whether or not the proposed project is approved. The one million tons hauled to railroad loadouts in Carbon County is dependent upon railroad price structures. Estimated increases in AADT on SR-10 from coal truck traffic range from 372 to 1024, depending on the amount of coal trucked to the Hunter Power Plant and the Carbon County railroad loadouts. This is an increase in the range of 8 to 23 percent over the current AADT on SR-10 between Ferron and SR-57, and an increase in the range of 70 to 170 percent over the current AADT on SR-10 south of Emery (**Table 3.14-1**). When compared to the AADT predicted for 2020, the range of increase is 8 to 14 percent on SR-10 at Castledale, and 70 to 128 percent on SR-10 at Emery.

The existing roads on Forest and public lands would continue to be the road system for Convulsion and Quitchupah Creek. This would adequately serve the livestock operators and few recreationists in the Project Area according to the Convulsion Canyon Road Analysis (USFS, 2002).

QUITCHUPAH CREEK ROAD ALIGNMENT - ALTERNATIVE B

The primary impact of the Quitchupah Creek Road on transportation would be the reduction of coal truck traffic on I-70 between the Acord Lakes Road junction and Fremont Junction and on eight miles of SR-10 south of the Quitchupah Creek Road. Additionally, where the current Quitchupah Creek Road intersects SR-10, major modifications, in the form of turn lanes, to the highway and bridge would be necessary to allow all traffic to converge safely. Slow moving trucks that enter the highway must be avoided by oncoming traffic and allowed to gain highway speed before merging into the traffic flow.

Because of the northbound uphill grade on SR-10 north of the proposed junction, loaded coal trucks would need a long acceleration lane to prevent traffic delays. At Quitchupah Hill, a passing lane on the northbound uphill grade is presently needed to accommodate the coal truck traffic and would also be required for the proposed Quitchupah Creek Road.

The proposed road would junction with SR-10 at the existing intersection with the CONSOL Mine Road, an Emery County road 4.5 miles south of the Town of Emery. Because the proposed road and the CONSOL Mine Road would both carry coal truck traffic, both right and left turn lanes would be required for each road. Also, due to the uphill grade for northbound traffic an extended acceleration and climbing lane of 2,300 feet would be required for the coal truck traffic (**Figure 2.3**). Thus, there would be 4 lanes south of the intersection and 5 lanes north of the intersection. The existing bridge over Quitchupah Creek would need to be widened 8 feet to the west and 32 feet to the east, almost doubling its current width.

It is unlikely that the junction between the proposed road and SR-10 would cause traffic flow interruptions. The addition of turn lanes and an acceleration lane would keep the coal trucks from pulling into moving traffic and give enough distance to pick up speed before moving into the through-lanes. Traffic exiting SR-10 would also utilize the turn lanes, thereby avoiding traffic interruption. These elements would provide safety and smooth traffic flow. The disturbance for construction of the intersections and additional lanes would occur within the UDOT right-of-way or acquired right-of-way.

The route in Convulsion Canyon and Quitchupah Creek is all downgradient for loaded coal trucks, dropping 1600 feet in elevation. This route would allow loaded coal trucks to avoid the ascent of the Emigrant Pass summit on I-70.

Pacificorp currently purchases coal from the SUFCO Mine for the Hunter Power Generating Plant. Building the Quitchupah Creek Road would shorten the one-way transportation distance from the SUFCO Mine to destinations in Emery and Carbon Counties by an average of 55.4 miles round-trip, lowering the cost of coal delivery (See **Section 3.15**, Socioeconomics). The Quitchupah Creek Road would remove coal trucks from I-70 between the Acord Lakes Road Junction and Fremont Junction and from SR-10 south of the junction with the Quitchupah Creek Road. Wear on these sections of road would decrease as compared to the No Action Alternative.

The construction of Quitchupah Creek Road would alleviate coal truck traffic on 17 miles of I-70 between Acord Lakes Road Junction and Fremont Junction and the 8.4 mile section of SR-10 between I-70 and the intersection with the Proposed Road. This would lessen wear and surface cracking on that portion of road, decreasing repairs and maintenance costs. The proposed Quitchupah Creek Road would lessen the round-trip haul by about 55.4 miles.

ALTERNATE JUNCTION AND ALTERNATE DESIGN - ALTERNATIVE C

This Alternative is identical to the above except for the final (easternmost) two miles. This route diverges from the proposed route near the west boundary of Section 13, Township 22 South, Range 5 East and proceeds generally east across that section on public lands, continuing through Section 18 on private lands, Township 22 South, Range 6 East, to intersect SR-10 in the southwest corner of Section 17, Township 22 South, Range 6 East. Where the loaded trucks would enter SR-10, the grade for northbound traffic is only 0.07 percent. Significantly fewer modifications to SR-10 would be needed for this alternative. This junction with SR-10 allows loaded coal trucks to avoid the steep grades on Quitchupah Hill.

The proposed road would junction with SR-10 approximately 3.0 miles south of the Town of Emery creating a new intersection. Because the proposed road would carry coal truck traffic, both right and left turn lanes would be required for the proposed road. Thus, there would be 3 lanes south of the intersection and 4 lanes north of the intersection. Since there is little grade for northbound traffic, an acceleration lane of only 1,380 feet would be required for the coal truck traffic (**Figure 2.7**).

It is unlikely that the junction between the proposed road and SR-10 would cause traffic flow interruptions. The addition of turn lanes and an acceleration lane would keep the coal trucks from pulling into moving traffic and give enough distance to pick up speed before moving into the through-lanes. Traffic exiting SR-10 would also utilize the turn lanes, thereby avoiding traffic interruption. These elements would provide safety as well as ensure smooth traffic flow. The disturbance for construction of the intersection and additional lanes would occur within the UDOT right-of-way or acquired right-of-way.

The route in Convulsion Canyon and Quitchupah Creek is all downgradient for loaded coal trucks, dropping 1600 feet in elevation. This route would allow loaded coal trucks to avoid the ascent of the Emigrant Pass summit on I-70.

The number of trucks transporting coal from the SUFCO Mine through Emery and Carbon Counties would be the same as under Alternatives A and B. Therefore, the estimated AADT on SR-10 as a result of coal truck traffic would be the same as Alternative B.

The Quitchupah Creek Road with an Alternative Junction would shorten the round-trip distance from the SUFCO Mine to Emery and Carbon County destinations by about 58 miles. As with Alternative B, coal truck traffic would be removed from I-70 for 17 miles between the Acord Lakes Road Junction and Fremont Junction and then about 10 miles on SR 10 between Fremont Junction and the proposed Quitchupah Creek Road with Alternative Junction. Wear on these sections of road due to coal truck traffic would decrease.

WATER HOLLOW ALTERNATE ALIGNMENT - ALTERNATIVE D

Under Alternative D, the number of trucks transporting coal from the SUFCO Mine through Emery and Carbon Counties would be the same as under Alternatives A, B, and C. Therefore, the estimated AADT on SR-10 as a result of coal truck traffic would be the same as Alternative B.

The proposed road would junction with SR-10 approximately 6.5 miles south of Emery Town and 2.0 miles south of Quitchupah Creek Bridge creating a new intersection. Because the proposed road would carry coal truck traffic, both right and left turn lanes would be required for the proposed road. Thus, there would be 3 lanes south of the intersection and 4 lanes north of the intersection. Since there is little grade for northbound traffic, an acceleration lane of only 1,380 feet would be required for the coal truck traffic (**Figure 2-11**).

It is unlikely that the junction between the proposed road and SR-10 would cause traffic flow interruptions. The addition of turn lanes and an acceleration lane would keep the coal trucks from pulling into moving traffic and give enough distance to pick up speed before moving into the through-lanes. Traffic exiting SR-10 would also utilize the turn lanes, thereby avoiding traffic interruption. These elements would provide safety as well as ensure smooth traffic flow. The disturbance for construction of the intersection and additional lanes would occur within the UDOT right-of-way or acquired right-of-way.

The Water Hollow Alternative route is mostly downgradient for loaded coal trucks, dropping 1,600 feet in elevation; however, crossing Water Hollow drainage would require loaded coal trucks to ascend a 5-7 percent grade for about 1,200 feet. This ascent would slow loaded coal trucks traveling across the Water Hollow Bench.

This route also would allow loaded coal trucks to avoid the ascent of the Emigrant Pass summit on I-70.

The Water Hollow Road would reduce the round-trip distance from the SUFCO Mine to Emery and Carbon County destinations by 46 miles. As with Alternatives B and C, coal truck traffic would be removed from I-70 for 17 miles between the Acord Lakes Road Junction and Fremont Junction, and removed from SR-10 for six miles from Fremont Junction north to two miles south of Quitchupah Creek. Wear on these sections of road due to coal truck traffic would decrease.

MITIGATION AND MONITORING FOR BUILD ALTERNATIVES

All new roads across Federal, State, or local lands would be constructed to AASHTO, UDOT, or agency standards. The drainage control system would be monitored for at least three years to insure proper function and implement any repairs or design changes necessary for long term stability (see Quitchupah Creek Road Monitoring Plan, Alternative D). Also, there would be conditions in the right-of-way document that would require SSD to perform maintenance and repairs to keep the road in compliance with the Highway Safety Act.

IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES AND RESIDUAL ADVERSE IMPACTS

Under any of the build alternatives, a public roadway would be constructed dedicating 45-55 acres of land to roadway. Under Alternatives B or C, the current dirt/two-track roadway along Quitchupah Creek would no longer be available. Coal trucks would utilize the roadway to travel to eastern loadouts rather than other roadways. The public could also use this roadway for access. The proposed road would be a rural collector road in the State road system joining Acord Lakes Road with SR-10.

CUMULATIVE EFFECTS

Because coal mining and related activities have been occurring in the region for several decades, many access roads are evident within the surrounding area. Users, ranchers, recreationists, miners, and others have and may continue to create unauthorized roads. Some roads may become deteriorated or impassable through inactivity. The new public roads in the area include the South Moore Cut-off Road which may reduce traffic from 50 to 200 AADT on SR-10 due to the shortcut east to I-70. Another new road is the realignment of the CONSOL Mine Road which carries coal truck traffic from CONSOL Mine to markets north on SR-10. This additional coal truck traffic joins with the existing coal truck traffic northbound on SR-10 near the Quitchupah Creek bridge.

The cumulative effect would be that additional acreage (45-55 acres) would be dedicated to roadway. Additional maintenance of roads would be required in the Proposed Action area and the possibility of increased traffic accidents and delays may result.

The duration of effects (e.g., increased traffic volume, increased potential for accidents, increased traffic delays, and road degradation) resulting from past, present, and reasonably foreseeable actions combined with the Proposed Action or any Action Alternative would peak for the length of time coal is transported (20+ years), but continue for as long as the rural collector road is in service.