

Uintah Railroad

Inventoried Roadless Area Report

Prepared by:

Ryan Buerkle
Recreation, Cultural Resources, and Lands Staff Officer

for:

Ashley National Forest

7/22/2021

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers, employees, and applicants for employment on the bases of race, color, national origin, age, disability, sex, gender identity, religion, reprisal, and where applicable, political beliefs, marital status, familial or parental status, sexual orientation, or all or part of an individual's income is derived from any public assistance program, or protected genetic information in employment or in any program or activity conducted or funded by the Department. (Not all prohibited bases will apply to all programs and/or employment activities.)

Contents

Introduction	2
Methodology	2
Management Direction.....	2
Resource Indicators and Measures	3
Affected Environment	6
Existing Condition	6
Environmental Consequences.....	11
Direct Effects	11
Summary.....	16
References Cited.....	20

Introduction

The proposed railroad, and associated tunnels, cuts, fills, siding track, and other infrastructure is within the Inventoried Roadless Area (IRA) #0401011. The IRA has a total of 30,062 acres and the proposed railroad footprint would disturb 394 acres, which is 1.3 percent of the IRA.

The total approximate length of each item within the IRA is:

- Main Track – 12 miles
- Siding Track – 1 mile
- Tunnels – 5.27 miles
- Cuts – 5.96 miles
- Fill – 11.21 miles

Methodology

The term IRA refers to an area usually of at least 5,000 acres without developed and maintained roads, in a substantially natural condition. Inventoried roadless areas were initially identified during the Roadless Area Resource Evaluation of 1979 (RARE II). The Roadless Area Conservation Rule was adopted in 2001 and is often referred to as the roadless rule. In general, the roadless rule prohibits “road construction, reconstruction, and timber harvest in inventoried roadless areas” on the grounds that those activities would result in “altering and fragmenting landscapes” and create “immediate, long-term loss of roadless values and characteristics” (Roadless Rule Record of Decision, 36 CFR 294, 66 Fed. Reg 3244 (Jan. 12, 2001)). Areas designated as IRAs under the 2001 Roadless Rule have been evaluated on the six wilderness attributes (RARE II Wilderness Attribute Rating System, 1977) that characterized wilderness potential and nine values or features identified in the 2001 Roadless Area Conservation Rule (36 CFR 294.11) that characterize IRAs.

The Inventoried Roadless Rule recognizes prior rights associated with existing valid mining claims, and leasable and salable minerals presently under lease or contract, 36 CFR Part 294 Subpart B 294.12 (7).

Management Direction

The standard of analysis for impact to Inventoried Roadless areas mandates that the potential adverse effects to wilderness potential be described. During the ongoing Ashley Forest Plan Revision, a potential wilderness inventory and evaluation was conducted. The proposed railroad and associated tunnels, cuts, fills, sidetrack, and other infrastructure are located within the Cottonwood potential wilderness evaluation polygon. The effects to the characteristics of the potential wilderness from the railroad are analyzed in the effects to the inventoried roadless areas.

Information Sources

The information source for the analysis is the 2001 Roadless layer for the Ashley National Forest.

Incomplete and Unavailable Information

The exact number of visitors that recreate in the area is unknown. Also, the exact level of use United States Highway 191, which is the western boundary of the IRA, is unknown.

Resource Indicators and Measures

The six wilderness attributes that were used in the Roadless Area Evaluation of 1979 (RARE II) were:

Resource Indicator and Measure 1

Natural Integrity: a measure of whether the long-term ecological processes of the area are intact and operating.

Resource Indicator and Measure 2

Apparent Naturalness: a measure of whether an area appears natural to the casual observer, due to past and proposed activities.

Resource Indicator and Measure 3

Remoteness or Solitude: a measure of distance of sights and sounds of civilization; solitude is opportunities to experience solitude, or the isolation from the sights, sounds, and presences of others, and from the developments and evidence of man.

Resource Indicator and Measure 4

Opportunities for Primitive Recreation: a measure of experiences available to be isolated from the evidence of humans and the opportunity for independence and self-reliance is high while using outdoor skills.

Resource Indicator and Measure 5

Special Features (Ecological, Geologic, Scenic, or Historical): attribute that recognizes that wilderness may contain other values of ecological, geologic, scenic, or historical or cultural significance.

Resource Indicator and Measure 6

Manageability: a measure of the ability to manage an area to meet the size criteria (5,000+ acres), the resulting configuration of the potential wilderness, and the interaction of the other elements above. Changes in the shape of the Inventoried Roadless Area may have significant consequences to its wilderness to its wilderness potential.

The nine values that characterize Inventoried Roadless area:

Resource Indicator and Measure 7

Soil, water, and air resources: These key resources are the foundation upon which other resource values and outputs depend. Healthy watersheds, catch, store, and safely release water over time, protecting downstream communities from flooding,

providing clean water for domestic, agricultural, and industrial used, helping to maintain abundant and healthy fish and wildlife populations, and providing the basing for many forms of recreation.

Resource Indicator and Measure 8

Sources of public drinking water: National Forests contain watersheds that are important sources of public drinking water. Management of these watersheds to maintain the flow of clean water is crucial to a growing population.

Resource Indicator and Measure 9

Diversity of plant and animal communities: Roadless areas are more likely than roaded areas to support greater ecosystem diversity, including the diversity of native and desired non-native plant and animal communities, due to the absence of disturbances caused by roads and accompanying activities. .

Resource Indicator and Measure 10

Habitat for TES and species dependent on large undisturbed areas of land: Roadless areas often support a diversity of habitats and communities, providing or affecting habitat for a number of threatened, endangered, proposed, and sensitive species.

Resource Indicator and Measure 11

Primitive and semi-primitive classes of recreation: IRAs can provide unique recreation opportunities in landscapes that often are mostly undeveloped and offer solitude, challenge, and risk. IRAs with such characteristics can often take pressure off heavily used wilderness areas by providing those opportunities in a primitive or semi-primitive setting.

Resource Indicator and Measure 12

Reference landscapes: The body of knowledge about the effects of management activities over long periods of time and on large landscapes is very limited. Reference landscapes can provide comparison areas for evaluation and monitoring. These areas provide a natural setting that may be useful as a comparison to study the effects of more intensely managed areas.

Resource Indicator and Measure 13

Natural appearing landscapes with high scenic quality: High quality scenery, especially scenery with natural appearing landscapes, is a primary reason that people choose to recreate.

Resource Indicator and Measure 14

Traditional cultural properties and sacred sites: Traditional cultural properties are places, sites, structures, art, or objects that have played an important role in the cultural history of a group. Sacred sites are places that have special religious significance to a group. Many of the nation's cultural resources are located on federal lands, with National Forest System lands containing a substantial share. Many of

these resources have not yet been inventoried, especially those that occur in inventoried roadless areas where development has been relatively minimal.

Table 1: Resource indicators and measures for assessing effects

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source (LRMP S/G; law or policy, BMPs, etc.)?
Natural Integrity	Long-term ecological processes of area intact and operating	Alteration of long term ecological processes	Yes	Roadless Area Evaluation of 1979 (RARE II)
Apparent Naturalness	Area appears natural to casual observer	Alteration to apparent naturalness	Yes	Roadless Area Evaluation of 1979 (RARE II)
Remoteness or Solitude	Level of remoteness or solitude	Distance to sights and sounds of civilization, and presence of others and developments and evidence of man.	Yes	Roadless Area Evaluation of 1979 (RARE II)
Opportunities for Primitive Recreation	Level of primitive recreation	Experiences available to be isolated from the evidence of humans and the opportunity for independence and self-reliance	Yes	Roadless Area Evaluation of 1979 (RARE II)
Special features	Ecological, Geologic, Scenic, or Historical values	Presence of special features	Yes	Roadless Area Evaluation of 1979 (RARE II)
Manageability	Ability to meet size criteria (5,000 acres plus) and the wilderness potential	Ability to manage as wilderness	Yes	Roadless Area Evaluation of 1979 (RARE II)
Soil, Water, and Air Resources	Watershed resources	Health of the watershed	Yes	Roadless Conservation Rule
Sources of public drinking water	Public water source	Condition of public water	Yes	Roadless Conservation Rule

		source.		
Diversity of plant and animal communities	Support of diverse plant and animal communities	Condition of plant and animal communities	Yes	Roadless Conservation Rule
Habitat for TES and species dependent on large undisturbed areas of land	Habitat for TES and other species	Presence of habitat for TES species and other species	Yes	Roadless Conservation Rule
Primitive and semi-primitive classes of recreation	Presence of primitive and semi-primitive classes of recreation	Potential for primitive and semi-primitive recreation	Yes	Roadless Conservation Rule
Reference Landscapes	Presence of reference landscapes	Areas present that provide comparison areas for evaluation and monitoring.	Yes	Roadless Conservation Rule
Natural appearing landscapes with high scenic quality	Presence of high-quality scenery	Changes in scenic quality	Yes	Roadless Conservation Rule
Traditional cultural properties and sacred sites	Presence of cultural properties and sacred sites	Impacts to cultural properties and sacred sites	Yes	Roadless Conservation Rule

Affected Environment

Existing Condition

The 0401011 inventoried roadless area (IRA) has a total are of 30,062 acres. The IRA is bordered on the north by the Ashley National Forest boundary, the east by the Sowers Canyon Road, 10152 and a powerline right of way, the west by US Highway 191, and the south by the Ashley National Forest boundary.

Table 2: Resource indicators and measures for the existing condition

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Existing Condition (Alternative 1)
Natural Integrity	Long-term ecological processes of area intact and operating	Alteration of long term ecological processes	Human activities have moderately impacted ecological processes in past.
Apparent Naturalness	Area appears natural to casual observer	Alteration to apparent naturalness	Evidence of human activities and management are common along road corridors but not common

			away from roads
Remoteness or Solitude	Level of remoteness or solitude	Distance to sights and sounds of civilization, and presence of others and developments and evidence of man.	Most locations are screened from the sights and sounds of man by topography or dense stands of trees.
Opportunities for Primitive Recreation	Level of primitive recreation	Experiences available to be isolated from the evidence of humans and the opportunity for independence and self-reliance	The area offers primitive recreation opportunities, but access is limited.
Special features	Ecological, Geologic, Scenic, or Historical values	Presence of special features	There are no special features in the area.
Manageability	Ability to meet size criteria (5,000 acres plus) and the wilderness potential	Ability to manage as wilderness	There are multiple Forest Service System Roads cherry stemmed through the IRA and seven oil and gas well pads in the area.
Soil, Water, and Air Resources	Watershed resources	Health of the watershed	Four drainages that the IRA spans are considered functioning at risk.
Sources of public drinking water	Public water source	Condition of public water source.	The project area is not located in a municipal watershed
Diversity of plant and animal communities	Support of diverse plant and animal communities	Condition of plant and animal communities	Diversity of plant and animal communities are stable and typical for the high to mid elevation plateau/escarpment habitat types
Habitat for TES and species dependent on large undisturbed areas of land	Habitat for TES and other species	Presence of habitat for TES species and other species	Marginal habitat for wolverine and a small amount of habitat for lynx are present. There is also habitat for Black Bear, Moose, Mule Deer, Pronghorn, Rocky Mountain Bighorn Sheep, and Elk.
Primitive and semi-primitive classes of	Presence of primitive and semi-primitive classes of recreation	Potential for primitive and semi-primitive recreation	Semi-primitive non-motorized and semi-primitive motorized Recreation Opportunity

recreation			Spectrum classifications are present.
Reference Landscapes	Presence of reference landscapes	Areas present that provide comparison areas for evaluation and monitoring.	The area is not considered a reference landscape
Natural appearing landscapes with high scenic quality	Presence of high quality scenery	Changes in scenic quality	Scenic quality of most of the IRA is high to moderate and low in some location within the IRA due to past and current human activities.
Traditional cultural properties and sacred sites	Presence of cultural properties and sacred sites	Impacts to cultural properties and sacred sites	Surveys have provided evidence of prehistoric activity, but no sites have been found.

Resource Indicator and Measure 1

Natural Integrity - Human induced changes in the area that have impacted natural integrity include firewood cutting, oil and gas well pads and associated access routes, road construction, livestock grazing and improvements, and recreation activities. Impacts from firewood cutting, livestock grazing and improvements, and recreation activities are scattered across the landscape while oil and gas infrastructure are concentrated in the northeastern part of the area. The long-term ecological processes are intact and operating.

Resource Indicator and Measure 2

Apparent Naturalness - Evidence of human activities is common in some areas. This evidence is primarily associated with roads, unauthorized routes, firewood cutting, oil and gas well pads and associated access routes, livestock grazing improvements, and recreation activities. Getting away from the road system and oil and gas well pads the naturalness is apparent except for occasional signs of livestock grazing improvements and signs of off-highway vehicles unauthorized trails primarily in the valley bottoms.

Resource Indicator and Measure 3

Remoteness or Solitude - Most locations in the area are screened from the sights and sounds of man by topography or dense stands of trees. The existing oil and gas well pads are in or at the head of small valleys in the northeastern corner of the area, and along the Sowers Canyon road on the eastern boundary and sounds from these can be heard in the local vicinity. Sounds from vehicles on the local road system can sometimes be heard in the vicinity of these roads and sounds from traffic on US Highway 191 can be heard within the Left Fork of Indian Canyon.

Human activities in the area that impact the feeling of solitude include sights and sounds of vehicles, oil and gas infrastructure, woodcutter's chainsaws, and the sights and noises of livestock grazing. For the most part, topographic features of the area and natural vegetative screening isolate the sights, sounds, and presence of others. The sense of solitude can be found within a short distance of the roads and oil and gas well pads.

Resource Indicator and Measure 4

Opportunities for Primitive Recreation - The area offers primitive recreation opportunities including backpacking, hunting, hiking, and horseback riding. Most of the primitive recreation activities occur along the canyon bottoms of Left Fork Indian Canyon, Cottonwood Canyon, and Sowers Canyon. Few primitive recreation activities occur on the side slopes of the numerous side canon areas, due to steep terrain and limited access routes. In the areas where primitive recreation typically occurs there is evidence of livestock grazing and unauthorized motorized routes.

Resource Indicator and Measure 5

Special Features – There are no special features in the area that do not also occur across other areas of the forest.

Resource Indicator and Measure 6

Manageability – There are multiple cherry stemmed Forest Service System routes and oil and gas well pads and associated access routes within the area. The straight-line boundary on the northern border is not associated with any landscape or geographic features.

Resource Indicator and Measure 7

Soil, water, and air resources - Water from the area contributes to instream flows of the Duchesne River and supplies spring and pond water for livestock grazing within the area. The IRA spans four watersheds, Left Fork Indian Canyon and Cottonwood Canyon on the western side and portions of Lance Canyon-Sowers Canyon and Tabby Canyon – Sowers Canyon on the east side. All four watersheds have a watershed condition class of functioning at risk.

Resource Indicator and Measure 8

Sources of public drinking water - The project area is not located within a municipal watershed.

Resource Indicator and Measure 9

Diversity of plant and animal communities - The western half of the IRA (Left Fork Indian Canyon drainage) has mixed conifers dominated by Douglas-fir with occasional aspen stands in the higher elevations. Mid-elevations have stands of dense Douglas-fir with aspen on northern aspects, and sparse pinyon pine with Douglas-fir on southern aspects. Grasses, sagebrush, and mountain mahogany cover less steep slopes. In the eastern half of the area (Sowers Canyon drainages), the species mixes are the same, but grass and sagebrush areas are more open with dense north facing Douglas-fir stands.

A variety of wildlife species frequent and inhabit the area. Some of the area has been designated by Utah Division of Wildlife Resources as high value winter range for deer and elk, and summer habitat for pronghorn. The area also provides corridors for migration of large mammals between the west and east sides of the South Unit of the

Ashley National Forest and the Ashley National Forest and the Uintah Wasatch Cache Forest to the west.

Resource Indicator and Measure 10

Habitat for TES and species dependent on large undisturbed areas of land - Marginal habitat for wolverine and a small amount of habitat for lynx are present. There is also habitat for Black Bear, Moose, Mule Deer, Pronghorn, Rocky Mountain Bighorn Sheep, and Elk. There is habitat for two endemic plants, *Erigeron untermannii*, *Indian Canyon fleabane*, and *Mentzelia goodrichi*, *Goodrich's blazingstar*.

Resource Indicator and Measure 11

Primitive and semi-primitive classes of recreation – There are no Primitive Recreation Opportunity Spectrum (ROS) classes in the IRA. The IRA is 31% Semi-Primitive Non-Motorized (SPNM), 20% Semi-Primitive Motorized (SPM), and 50% Roaded Natural (RN) ROS classifications. The SPNM classification is primarily located between the Roaded Natural ROS classification next to Highway 191 to Cottonwood Ridge. The SPM classifications are located along Cottonwood Ridge. Semi-primitive opportunities include backpacking, hiking, horseback riding, and hunting.

Resource Indicator and Measure 12

Reference landscapes – The area is not considered a reference landscape

Resource Indicator and Measure 13

Natural appearing landscapes with high scenic quality – The southern boundary of the area is delineated by the north ridgeline of Argyle Canyon/Bad Land Cliffs. Immediately north of this ridgeline, the topography is dissected by numerous drainages that descend to the bottom of the upper (southern) end of Left Fork Indian Canyon. Another ridgeline breaks off the north ridge line of Argyle Canyon/Bad Lands Cliffs and descends north and east to the heads of Cottonwood Canyon and Tabby Canyon and beyond. This ridge line divides the western and eastern halves of the area, with drainages descending north and west from the ridge line to the bottom of Left Fork Indian Canyon, and south and east from the ridge line to the bottom of Sowers Canyon.

The drainages that descend to the Left Fork Indian Canyon in the western portion of the inventory area have Douglas-fir and mixed coniferous forest stands, with and without seral aspen at higher elevations. At mid elevations, these drainages have a cover of dense stands of Douglas fir and aspen on north aspects and sparse pinyon pine and Douglas fir on south aspects. On the less steep slopes all aspects grass and sagebrush, and mountain mahogany is prevalent. At the lower elevations, the drainages that descend to Left Fork Indian Canyon have moderately dense pinyon pine and juniper with patchy areas of perennial grass and mountain mahogany. The drainages that descend to Sowers Canyon have sparse pinyon pine, Douglas fir, and juniper with the amount of Douglas fir increasing with elevation. The north to east aspects has either moderately dense pinyon pine and Douglas fir or perennial grass,

sagebrush, and mountain mahogany. At lower elevations, the drainages have a very sparse vegetative cover of scattered pinyon pine and juniper, and perennial grasses.

There is a 230 kV electrical transmission line and right-way along the full length of Sowers Canyon, which forms the eastern boundary of the IRA. A communication site is located at the summit of Left Fork Indian Canyon immediately adjacent to the western boundary. The northeastern part of the roadless area is covered by portions of three oil and gas leases, and seven active oil and gas well pads are present.

The area has been affected by fences, water developments for grazing, oil and gas well sites, past construction of cherry stemmed roads and access routes, and the sights of motorized activities on adjacent and cherry stems roads and one motorized trail within the IRA.

The majority of the area has a scenic attractiveness of typical, with the east slope of Indian Canyon and Jones Hollow as distinct. The majority of the area has high and moderate scenic quality while the area around Wild Horse Ridge has low scenic quality from management and user activities which have altered scenic character.

Resource Indicator and Measure 14

Traditional cultural properties and sacred sites – Surveys have provided evidence of prehistoric activity, but no sites have been found.

Environmental Consequences

Direct Effects

Bounds of Analysis

The bounds of analysis are the IRA ##0401011, certain areas of the IRA, such as the Left Fork Indian Canyon, are identified when there would be effects to those specific areas.

Alternative 1 – No Action

Direct Effects

Alternative 1 would have no impact to the IRA characteristics

Alternative 2 – Proposed Action

Direct Effects

The proposed railroad and the associated infrastructure are located within IRA #0401011 and would disturb 1.3%, 394 acres, of the IRA. Any disturbance activity would have some level of effect on the IRA. The construction and operation of the proposed railroad includes 12 miles of new railroad track, 1 mile of siding track, and the associated cuts, fills, bridges, culverts and other infrastructure which would affect

some of the six wilderness attributes (RARE II Wilderness Attribute Rating System, 1977) that characterized wilderness potential and some of the nine values or features identified in the 2001 Roadless Area Conservation Rule (36 CFR 294.11) that characterize IRAs.

Table 3: Resource indicators and measures for Alternative 2

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 2
Natural Integrity	Long-term ecological processes of area intact and operating	Alteration of long term ecological processes	Natural Integrity of 1.3% of the IRA would be affected by construction of the railroad along the proposed railroad route in the Left Fork of Indian Canyon. The natural integrity would remain stable in 98.7% of the IRA.
Apparent Naturalness	Area appears natural to casual observer	Alteration to apparent naturalness	The proposed railroad would alter the apparent naturalness of 1.3% of the IRA in the Left Fork of Indian Canyon. The existing apparent naturalness would remain the same in 98.7% of the IRA.
Remoteness or Solitude	Level of remoteness or solitude	Distance to sights and sounds of civilization, and presence of others and developments and evidence of man.	Sense of remoteness and solitude would be reduced in the Left Fork of Indian Canyon by construction and operation of the proposed railroad. The level of remoteness and solitude in most of the IRA would remain the same.
Opportunities for Primitive Recreation	Level of primitive recreation	Experiences available to be isolated from the evidence of humans and the opportunity for independence and self-reliance	Opportunities for primitive recreation would be minimally reduced in the Left Fork of Indian Canyon due to the construction and operation of the proposed railroad but would remain the same in most of the IRA.
Special features	Ecological, Geologic, Scenic, or Historical values	Presence of special features	There are no special features in the area.
Manageability	Ability to meet size criteria (5,000 acres)	Ability to manage as wilderness	There are multiple Forest Service System Roads cherry stemmed

	plus) and the wilderness potential		through the IRA and five oil and gas well pads in the area. The presence of the proposed railroad would have a minimal effect on the potential manageability of the area because it is adjacent to the western boundary and US Highway 191.
Soil, Water, and Air Resources	Watershed resources	Health of the watershed	Four drainages that the IRA spans are considered functioning at risk. The proposed railroad would have an effect on the soil and water resources within the Left Fork of Indian Canyon, but would not have an effect in the remainder of the IRA
Sources of public drinking water	Public water source	Condition of public water source.	Project area is not located in a municipal watershed
Diversity of plant and animal communities	Support of diverse plant and animal communities	Condition of plant and animal communities	Diversity of plant and animal communities would remain stable and typical for high to mid elevation plateau/escarpment habitat throughout most of the IRA. The diversity of plant and animal communities in 1.3% of the IRA in the Left Fork of Indian Canyon would be affected by the proposed railroad and would remain stable in 98.7% of the IRA.
Habitat for TES and species dependent on large undisturbed areas of land	Habitat for TES and other species	Presence of habitat for TES species and other species	Marginal habitat for wolverine and a small amount of habitat for lynx are present. There is also habitat for Black Bear, Moose, Mule Deer, Pronghorn, Rocky Mountain Bighorn Sheep, and Elk. The construction and operation of the railroad would have an effect on the habitat types within 1.3% of the IRA in the Left Fork Indian Canyon for the above species. The habitat types would remain the same in 98.7% of the IRA.
Primitive and semi-primitive classes of recreation	Presence of primitive and semi-primitive classes of recreation	Potential for primitive and semi-primitive recreation	The proposed railroad would not decrease the semi-primitive recreation classes.
Reference Landscapes	Presence of reference landscapes	Areas present that provide comparison areas for evaluation and	The area is not considered a reference landscape

monitoring.

Natural appearing landscapes with high scenic quality	Presence of high quality scenery	Changes in scenic quality	Scenic quality of the majority of the area is high to moderate and low in some locations within the IRA due to past and current human activities. The scenic quality of 1.3% of the IRA in the Left Fork of Indian Canyon would be reduced due to the construction and operation of the proposed railroad but would remain stable within 98.7% of the IRA.
Traditional cultural properties and sacred sites	Presence of cultural properties and sacred sites	Impacts to cultural properties and sacred sites	Surveys have provided evidence of prehistoric activity, but no sites have been found.

Resource Indicator and Measure 1

Natural Integrity – Existing human induced changes in the natural integrity would continue in the majority of the IRA where the natural integrity of the inventoried roadless area would primarily remain intact and operating. Within the Left Fork of Indian Canyon, the natural integrity of 1.3% of the IRA would be reduced by the cuts and fills required for the construction of the proposed railroad. Construction of culverts and stream alterations for drainage crossing and where the proposed railroad is constructed next to a stream bed would also alter the natural integrity. Removal of vegetation for the proposed railroad construction would reduce the natural integrity. The natural integrity of 98.7% of the IRA would remain the same.

Resource Indicator and Measure 2

Apparent Naturalness - The construction and operation of the proposed railroad would decrease the apparent naturalness of 1.3% of the IRA, 394 acres, in the Left Fork of Indian Canyon. The cuts and fills would change the natural appearing landscape, additional railroad infrastructure such as bridges and culverts would contrast to the surrounding landscapes, and the removal of vegetation would decrease the apparent naturalness. The proposed railroad would be located adjacent to US Highway 191 just inside the western boundary of the IRA. The apparent naturalness in the 98.7% of the IRA would remain the same.

Resource Indicator and Measure 3

Remoteness - The proposed railroad would be located adjacent to US Highway 191 in the Left Fork of Indian Canyon, just inside the western boundary of the IRA. The feeling of remoteness in the inventoried roadless area would be impacted by the proposed railroad in the Left Fork of Indian Canyon but is already limited due to the presence of US Highway 191. The impacts of sight and sound of the proposed railroad construction and operations would require traveling a greater distance into the IRA to experience the same degree of remoteness. Natural vegetative screening and topography of the area would provide some moderation of effects. The level of remoteness in most of the IRA would not change.

Solitude - The proposed railroad would be located adjacent to US Highway 191 just inside the western boundary of the IRA. The feeling of solitude in the inventoried roadless area would be impacted in the Left Fork of Indian Canyon but is already limited due to the presence of US Highway 191. The impacts of sights and sounds would require traveling a greater distance from the operation to find the same degree of solitude. Natural vegetative screening and topography of the area would provide some moderation of effects. The level of solitude in most of the IRA would not change.

Resource Indicator and Measure 4

Opportunities for Primitive Recreation - Opportunities for primitive recreation would be minimally reduced in the IRA during the proposed railroad construction activities due to the temporary closure of some access points. During the operation of the proposed railroad a possible delay in travelling to the starting points for primitive recreation activities may occur due to the presence of trains at the railroad crossing points. The opportunities for primitive recreation would remain the same in most of the IRA.

Resource Indicator and Measure 5

Special features – There are no special features in the IRA.

Resource Indicator and Measure 6

Manageability – There are multiple Forest Service System Roads cherry stemmed through the IRA and seven oil and gas well pads in the area. The presence of the proposed railroad would have a small effect on the manageability of the area, because it is adjacent to the western boundary and U.S. Highway 191.

Resource Indicator and Measure 7

Soil, Water, and Air Resources – Four drainages that the IRA spans are considered functioning at risk. The proposed railroad would have a small effect on the water resources of in the Left Fork of Indian Canyon. The cuts and fills of construction of the railroad could increase sediments into the drainages and placement of culverts, but construction mitigation measures would limit sediments. Stream alterations could change drainage patterns and affect sediment discharge. The soil, water, and air resources in most of the IRA would remain the same.

Resource Indicator and Measure 8

Sources of public drinking water – There are no sources of public drinking water in the project area.

Resource Indicator and Measure 9

Diversity of plant and animal communities - Diversity of plant and animal communities are stable and typical for high to mid elevation plateau/escarpment habitat and would remain stable in most of the IRA. The diversity of plant and animal communities within 1.3%, 394 acres, of the IRA would be reduced from the activities of the proposed railroad, and would remain stable in 98.7% of the IRA

Resource Indicator and Measure 10

Habitat for TES and species dependent on large undisturbed areas of land - Marginal habitat for wolverine and a small amount of habitat for lynx are present. There is also habitat for Black Bear, Moose, Mule Deer, Pronghorn, Rocky Mountain Bighorn Sheep, and Elk. The proposed construction and operation of the railroad would reduce habitat types within 1.3%, 394 acres, of the IRA. The habitat types in 98.7% of the IRA would remain the same.

Resource Indicator and Measure 11

Primitive and semi-primitive classes of recreation – There are no Primitive Recreation Opportunity Spectrum (ROS) classes in the IRA. The IRA is 31% Semi-Primitive Non-Motorized (SPNM), 20% Semi-Primitive Motorized (SPM), and 50% Roded Natural (RN) ROS classifications. The SPNM classification is primarily located between the Roded Natural ROS classification next to Highway 191 to Cottonwood Ridge. The SPM classifications are located along Cottonwood Ridge. The proposed railroad is located within the Roded Natural ROS class. The proposed railroad would not decrease the semi-primitive classes of recreation in the IRA.

Resource Indicator and Measure 12

Reference Landscapes – The area is not considered a reference landscape

Resource Indicator and Measure 13

Natural appearing landscapes with high scenic quality - Scenic integrity of the area is high to moderate in most of the IRA and low in some locations within the IRA due to past and current human activities. The proposed railroad route closely follows U.S. Highway 191, which is the western boundary of the IRA, therefore only a small amount of the IRA high scenic quality would be affected. The scenic quality of 1.3%, 394 acres, of the IRA within the Left Fork of Indian Canyon would be reduced due to the construction and operation of the proposed railroad by changes in the form, line, color, and texture of the natural appearing landscape. The scenic quality in 98.3% of the IRA would remain the same.

Resource Indicator and Measure 14

Traditional cultural properties and sacred sites - Surveys have provided evidence of prehistoric activity, but no sites have been found.

Summary

The proposed railroad construction and operation would have an effect on 1.3% of IRA for the following roadless characteristics of Natural Integrity, Apparent Naturalness, Remoteness or Solitude, Opportunities for Primitive Recreation, Soil, Water, and Air Resources, Diversity of plant and animal communities, Habitat for TES and species dependent on large undisturbed areas of land, and Natural appearing landscapes with high scenic quality within the Left Fork of Indian Canyon of the IRA. When considering the IRA 0401011 as a whole for the six wilderness attributes that characterize wilderness potential and the nine values or features identified in the 2001

Roadless Conservation Rule the IRA condition remains stable with the construction and operation of the proposed railroad due to the size of the IRA, the location of the proposed railroad adjacent to the western boundary and US Highway 191, and that 98.7% of the IRA would not be affected.

Table 4: Summary comparison of environmental effects to the IRA resources

Resource Element	Indicator/Measure	Alt 1	Alt 2
Natural Integrity	Long-term ecological processes of area intact and operating	Human activities have moderately impacted ecological processes in past.	Natural Integrity of 1.3% of the IRA would be affected by construction of the railroad along the proposed railroad route in the Left Fork of Indian Canyon. The natural integrity would remain stable in 98.7% of the IRA.
Apparent Naturalness	Area appears natural to casual observer	Evidence of human activities and management are common along road corridors but not common away from roads	The proposed railroad would alter the apparent naturalness of 1.3% of the IRA in the Left Fork of Indian Canyon. The existing apparent naturalness would remain the same in 98.7% of the IRA.
Remoteness or Solitude	Level of remoteness or solitude	Most locations are screened from the sights and sounds of man by topography or dense stands of trees.	Sense of remoteness and solitude would be reduced in the Left Fork of Indian Canyon by construction and operation of the proposed railroad. The level of remoteness and solitude in most of the IRA would remain the same.
Opportunities for Primitive Recreation	Level of primitive recreation	The area offers primitive recreation opportunities, but access is limited.	Opportunities for primitive recreation would be minimally reduced in the Left Fork of Indian Canyon due to the construction and operation of the proposed railroad but would remain the same in most of the IRA.
Special features	Ecological, Geologic, Scenic, or Historical values	There are no special features in the area.	There are no special features in the area.
Manageability	Ability to meet size criteria (5,000 acres plus) and the	There are multiple Forest Service System Roads cherry stemmed through	There are multiple Forest Service System Roads cherry stemmed through the IRA and five oil and

Resource Element	Indicator/Measure	Alt 1	Alt 2
	wilderness potential	the IRA and seven oil and gas well pads in the area.	gas well pads in the area. The presence of the proposed railroad would have a minimal effect on the potential manageability of the area, because it is adjacent to the western boundary and US Highway 191.
Soil, Water, and Air Resources	Watershed resources	Four drainages that the IRA spans are considered functioning at risk.	Four drainages that the IRA spans are considered functioning at risk. The proposed railroad would have an effect on the soil, and water resources within the Left Fork of Indian Canyon, but would not have an effect in the remainder of the IRA
Sources of public drinking water	Public water source	Project area is not located in a municipal watershed	Project area is not located in a municipal watershed
Diversity of plant and animal communities	Support of diverse plant and animal communities	Diversity of plant and animal communities are stable and typical for the high to mid elevation plateau/escarpment habitat types	Diversity of plant and animal communities would remain stable and typical for high to mid elevation plateau/escarpment habitat throughout most of the IRA. The diversity of plant and animal communities in 1.3% of the IRA in the Left Fork of Indian Canyon would be affected by the proposed railroad and would remain stable in 98.7% of the IRA.
Habitat for TES and species dependent on large undisturbed areas of land	Habitat for TES and other species	Marginal habitat for wolverine and a small amount of habitat for lynx are present. There is also habitat for Black Bear, Moose, Mule Deer, Pronghorn, Rocky Mountain Bighorn Sheep, and Elk.	Marginal habitat for wolverine and a small amount of habitat for lynx are present. There is also habitat for Black Bear, Moose, Mule Deer, Pronghorn, Rocky Mountain Bighorn Sheep, and Elk. The construction and operation of the railroad would have a small effect on the habitat within 1.3% of the IRA in the Left Fork Indian Canyon for the above species. The habitat would remain the same in 98.7% of the IRA.
Primitive and semi-primitive classes of recreation	Presence of primitive and semi-primitive classes of recreation	Semi-primitive non-motorized and semi-primitive motorized	The proposed railroad would not decrease the semi-primitive recreation classes.

Resource Element	Indicator/Measure	Alt 1	Alt 2
		Recreation Opportunity Spectrum classifications are present.	
Reference Landscapes	Presence of reference landscapes	The area is not considered a reference landscape	The area is not considered a reference landscape
Natural appearing landscapes with high scenic quality	Presence of high-quality scenery	Scenic quality of most of the area is high to moderate and low in some location within the IRA due to past and current human activities.	Scenic quality of the majority of the area is high to moderate in the majority of the IRA and low in some locations within the IRA due to past and current human activities. The scenic quality of 1.3% of the IRA in the Left Fork of Indian Canyon would be reduced due to the construction and operation of the proposed railroad but would remain stable within 98.7% of the IRA.
Traditional cultural properties and sacred sites	Presence of cultural properties and sacred sites	Surveys have provided evidence of prehistoric activity, but no sites have been found.	Surveys have provided evidence of prehistoric activity, but no sites have been found.

References Cited

2001 Roadless Area Conservation Rule