This section describes the impacts on visual resources that would result from construction and operation of the proposed rail line. Appendix P, *Visual Resources Terminology, Methodology, and Rating System,* provides further information on the key observation points (KOPs) used for the analysis. KOPs are locations from which people would be able to see the proposed rail line in the landscape if it were constructed. KOPs include locations along travel routes and places where people may be especially sensitive to changes in the visual landscape, such as recreational areas (sensitive viewscapes<sup>1</sup>). Appendix P, *Visual Resources Terminology, Methodology, and Rating System,* also addresses the assumptions related to the conceptual renderings included in this section, as well as the visual quality rating summaries recorded during the assessment.

# **3.12.1** Analysis Methods

This subsection identifies the study area, data sources, and analysis methods OEA used to analyze visual resources.

## 3.12.1.1 Study Area

OEA based the study area for visual resources on the project viewshed. A viewshed is the area that is visible from a particular location (e.g., an overlook or scenic vista) or sequence of locations (e.g., a roadway or trail). A viewshed includes the foreground (up to 0.5 mile from the viewer), the middleground (from 0.5 mile to 3 miles from the viewer), and the background (more than 3 miles from the viewer) (FHWA 2015). Scenic vistas generally encompass a wide area with long-range views to surrounding elements in the landscape. Such vistas are often available to viewers due to open, flat agricultural lands with few obstructions and from elevated vantages with views over the landscape. In addition, vistas also have a directional range, i.e., some areas have scenic vistas with a 360° view in all directions, while others may be limited in one direction in a manner that reduces the line of sight angle and amount of vista that is visible, resulting in a narrower vista view. This EIS also considers impacts on scenic byways. Scenic byways are designations awarded to roads across the country that exhibit one or more of six core intrinsic qualities—scenic, natural, historic, recreational, archaeological, or cultural—that contribute toward a unique travel experience. There are four scenic byways in the study area, Dinosaur Diamond Prehistoric Highway, Indian Canyon Scenic Byway, Nine Mile Canyon Scenic Backway, and Reservation Ridge Scenic Backway, as shown in Figure 3.12-1.

OEA defined the study area so that it includes areas where the proposed rail line would be visible in the foreground or middleground for areas with high elevations or with expansive views. OEA did not assess views where the proposed rail line would be visible in the background because project features do not typically stand out at that distance (FHWA 2015; Litton 1968:3–5). OEA did consider visual features in the background, such as mountain ranges and water features, in areas where the proposed rail line could affect views of those features.

<sup>&</sup>lt;sup>1</sup> A viewscape is a visual connection that occurs between a person and the spatial arrangement of landscape features.

# **3.12.1.2** Data Sources

OEA reviewed the following data sources to determine the potential impacts on visual resources that could result from construction and operation of the proposed rail line.

- GIS files showing the design of the proposed rail line, locations of permanent project-related features that could affect visual resources, and locations of recreational areas where viewsheds could be affected.
- Information pertaining to lighting associated with the Action Alternatives, including the location of proposed nighttime construction, any nighttime activities that would require nighttime lighting (e.g., rail traffic and operations and maintenance activities), and any permanent sources of fixed lighting, including flashing safety signals.
- Land and Resource Management Plan for the Ashley National Forest (Forest Service 2017a).
- Vernal Field Office Approved Resource Management Plan (BLM 2008).
- Information on other relevant projects and actions for analyzing cumulative impacts.

# 3.12.1.3 Analysis Methods

OEA used the following methods to analyze impacts on visual resources in the study area.

- **OEA identified key concepts for the visual assessment.** Key concepts for the visual assessment include the visual character of an area, including natural and cultural features. The regulatory context of an area, such as land management objectives on public lands, is an important consideration for understanding the area's visual character. Visual preferences, or what people in the study area like and dislike about the area's visual character, define the study area's visual quality. Visual quality serves as the baseline for determining the degree of a project's visual impacts and whether those impacts would be adverse, beneficial, or neutral (FHWA 2015). Appendix P, *Visual Resources Terminology, Methodology, and Rating System*, provides details on these concepts and terms and their use in the visual resource assessment.
- **OEA identified the KOPs.** OEA prepared a viewshed analysis to determine the extent of the area where the proposed rail line would be visible in the foreground and middleground of the landscape. OEA visited the accessible portions of the study area and photographed KOPs, following the approach described in Appendix P, *Visual Resources Terminology, Methodology, and Rating System.* OEA photographed 21 KOPs from October 1 to October 3, 2019, photographs of which are also provided in Appendix P.
- **OEA analyzed the physical context**. OEA analyzed the physical context of each Action Alternative in three steps. First, OEA identified the visual features of the landscape, including any designated scenic vistas or state scenic highways. Next, OEA assessed the visual character and visual quality of the visual features relative to the overall regional visual character. Finally, OEA determined the importance of the visual resources to viewers, taking into consideration how the lands on which the KOPs are managed and used.
- **OEA created computer renderings of the proposed rail line at each KOP.** OEA produced computer-generated conceptual renderings to evaluate visual changes that would occur if the proposed rail line were constructed. These rendered key observation points (RKOPs) illustrate specific project elements (e.g., road-rail crossings, bridge crossings, and areas of cut and fill) at

13 different vantage points. OEA selected vantage points that provide representative views from which specific project elements would be visible to the public. Figure 3.12-1 identifies the RKOP locations, and the renderings are provided in Subsection 3.12.3, *Environmental Consequences*. Appendix P, *Visual Resources Terminology, Methodology, and Rating System*, describes the approach OEA used to select, prepare, and analyze the renderings and describes the RKOPs in detail.

**OEA rated the RKOP visual characteristics.** OEA used different approaches to rate the quality from RKOPs of existing landscapes and potential changes from the proposed rail line. For RKOPs located on BLM-administered lands, OEA used an adaptation of the BLM's visual resource inventory (VRI) method Manual H-8410-1 (BLM 1986) and BLM Form 8400-5 Scenic Quality Rating Summary, to assign a scenic quality rating score for each RKOP, consistent with OEA's approach on past Board projects. OEA prepared rating forms for the existing view (the KOP) and for the view with the computer-rendered rail line added (the RKOP). OEA assessed the scenic quality of each viewshed in terms of landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications to determine how the KOPs and RKOPs would differ from each other. The scenic quality rating scores (based on the Scenic Quality Rating Summary form 8400-5) are provided in Appendix P, Visual Resources Terminology, Methodology, and Rating *System.* The scenic quality ratings for RKOPs on BLM-administered lands are also representative of changes that are likely to occur at other locations in the study area across the Action Alternatives. A reduction in scenic quality rating indicates that an impact would occur. OEA used the scenic quality ratings assessment process to inform whether the proposed rail line would conform to the BLM's Visual Resource Management (VRM) Class Objectives (Classes I, II, III, or IV). BLM's VRM Class Objectives indicate how BLM-administered lands should be managed to protect visual resources, as described in Appendix P, Visual Resources Terminology, Methodology, and Rating System.

For the RKOPs on non-BLM-administered lands, including National Forest and other public lands, and scenic byways,<sup>2</sup> OEA prepared a visual quality evaluation by following FHWA methods. These methods include establishing natural harmony, cultural order, and project corridor coherence ratings to determine the overall visual quality rating. The rendering analysis also evaluated daytime and nighttime light and glare ratings. The ratings used in the analysis are summarized in Appendix P, *Visual Resources Terminology, Methodology, and Rating System*. The ratings are representative of changes that are likely to occur at other locations in the study area, including private lands, and across all the Action Alternatives; they are not exclusive to a particular alternative.

<sup>&</sup>lt;sup>2</sup> National Scenic Byways designations recognize those roads across the country that exhibit one or more of six core intrinsic qualities—scenic, natural, historic, recreational, archaeological, or cultural—that contribute toward a unique travel experience.



Figure 3.12-1. Rendered Key Observation Point Locations

# 3.12.2 Affected Environment

This subsection identifies the existing environmental conditions related to visual resources in the study area. The study area is located at the western edge of the Rocky Mountain geographic region, within 80 miles of the Basin and Range geographic region.

The natural environment reflects a transition zone between the two regions. It is characterized by small plains intermixed with hills and mountains. Small valleys, streams, and plateaus are also present in this topographically varied landscape. Grasslands and pasturelands mixed with silvergreen sagebrush grow on flatter lands and up hillsides that also support mixed-conifer forests.

Across the Action Alternatives, the visual landscape is mostly intact and unaltered by humans. Exposed substrate is present throughout the study area and reveals multicolored rock faces, boulders, gravels, and soils. Outstanding scenic views result from the varied landforms against vast skies within a fairly undeveloped landscape with an absence of distracting human-made features, such as large buildings and transportation structures or large amounts of visible utility infrastructure that are inharmonious with the rural landscape. Scenic vista views also exist throughout the study area. Both the Indian Canyon Alternative and the Whitmore Park Alternative would cross portions of Ashley National Forest characterized by a diverse mix of grasslands, shrublands, meadows, aspens, and mixed-conifer forest that can be accessed by recreational viewers. Small pockets of agricultural land are also present in the study area, located along U.S. Highway 191 (US 191), Sowers Canyon Road, and approximately 3 to 8 miles south of Myton. These agricultural areas take advantage of the limited amount of flat land in the study area and create a circular and rectangular patchwork of brighter and darker greens in the landscape that contrast with surrounding areas that tend to be more arid, consisting of tan and brown vegetation.

In the context of visual resources, the cultural environment refers to features such as developed areas, light sources, and roadways and infrastructure. The cultural environment in the study area consists of rural residences and ranches and lacks dense, concentrated development. Within the study area, there are developed areas, such as small groupings of rural residences that are located off of Argyle Canyon Road and along Willow Creek, east of US 191. The largest community that is located in the study area just southeast of Duchesne, is accessed by Avenue 18290 W off of U.S. Highway 40 (US 40). Features associated with these developments that contribute to the cultural environment include fencing and ancillary structures, such as barns and sheds. The northeastern portion of the study area includes oil and gas facilities, rigs, and storage wells; pipelines transporting oil and gas can be seen across the landscape, primarily on BLM-administered lands. These lands also see a high amount of truck traffic with semi-trailer trucks transporting oil and gas and maintenance trucks accessing well pads and other oil and gas facilities. The cultural environment also includes dirt roads that wind through the landscape and more heavily traveled, paved highways and local routes, such as US 191, US 40, Avenue 5880 West, Avenue 3540 West, recreationists who use Sand Wash Road to access Desolation Canyon, and portions of Nine Mile Canyon Road. Additional infrastructure in the landscape includes a limited amount of lattice steel utility lines that cross Argyle Creek Road and wooden utility poles and lines in areas with a higher concentration of development. The study area is largely unlit with the primary sources of artificial light coming from rural residences and developed areas and vehicle headlights at night. Streetlights are generally not present in the study area.

Overall, the visual quality of the study area is high due to the limited amount of distracting humanmade features combined with high-quality views of the natural environment. The visual quality of the landscape has contributed to the presence of four scenic byways in the study area. These scenic byways are shown in Figure 3.12-1 and include the following.

- Dinosaur Diamond Prehistoric Highway, a National Scenic Byway and state of Utah scenic byway, which follows US 191 within the study area.
- Indian Canyon Scenic Byway, a state of Utah scenic byway, which also follows US 191 (between US 40 in Duchesne and U.S. Highway 6 [US 6] near Helper) and overlaps with the Dinosaur Diamond Prehistoric Highway.
- Nine Mile Canyon Scenic Backway, a state of Utah scenic backway, which follows Nine Mile Canyon and Soldier Creek Roads from Myton to US 191.
- Reservation Ridge Scenic Backway, a state of Utah scenic backway, which follows Forest Highway 147 from US 191 to US 6.

People in the study area have different sensitivities to changes to the visual landscape. OEA identified unaffected viewers, residential and tribal viewers, recreational viewers, roadway viewers, and industrial, commercial, and agricultural viewers. The sensitivity of these viewers to visual change ranges from high sensitivity (typically residential, tribal, and recreational viewers) to moderately high sensitivity (such as roadway travelers traveling routes for their scenic quality) to moderate sensitivity (such as roadway travelers that are commuting or transporting goods and industrial, commercial, and agricultural viewers).

# 3.12.3 Environmental Consequences

Construction and operation of the proposed rail line could result in impacts related to visual resources. This subsection first presents the potential impacts that would be the same for all three Action Alternatives and then compares the potential impacts that would be different across the Action Alternatives. For comparison purposes, this subsection also discusses the status of visual resources under the No-Action Alternative.

## 3.12.3.1 Impacts Common to All Action Alternatives

This subsection discusses potential impacts on visual resources that would be the same across the three Action Alternatives. All of the Action Alternatives would require vegetation removal, landform changes, building removal, new culverts, and new bridge structures. All of the Action Alternatives would traverse scenic landscapes and would affect viewers; therefore, all of the Action Alternatives would result in similar types of visual impacts. The severity and intensity of these impacts would depend on the change to the viewscape, on how sensitive viewers are to those changes, and on how close viewers would be to the changes.

## Construction

During the construction period, construction activities would move along the corridor of the Action Alternative as different segments of the proposed rail line are constructed. These construction activities would affect rural viewers, roadway travelers, tribal viewers, and recreationists adjacent to or in the study area. The introduction of construction activities and equipment into the viewsheds would result in temporary visual changes. All viewer groups are likely accustomed to seeing machinery, trucks, and vehicles on or near the roadway because oil and natural gas production, agriculture, and ranching require such equipment. However, construction of the proposed rail line would involve heavy machinery that is not commonly used in a rural environment. In addition to these more general impacts, the following specific construction impacts would also occur.

#### Industrial-Looking Elements

Construction activities for any of the Action Alternatives would introduce heavy equipment and associated vehicles, such as dozers, graders, scrapers, and trucks, into the viewshed. The Coalition would determine the locations for construction staging areas and associated facilities in the temporary footprint during the design process but locations would likely be placed within the rail line footprint at bridges, tunnel portals, roadway crossings, and other locations.<sup>3</sup> Depending on location, people in the area would be able to see staging areas with temporary field offices, worker parking, and equipment and materials storage areas, which would add industrial elements into viewsheds that are largely rural in nature. To minimize these impacts, OEA is recommending mitigation requiring the Coalition install visual barriers, as appropriate and practicable, to obstruct undesirable views of project-related construction activities and to maintain the privacy of adjacent landowners (VIS-MM-1).

#### **Fugitive Dust**

Construction activities involving heavy equipment use, soil and material transport, and land clearing in the rail line footprint, along public roadways, and at construction staging areas would create fugitive dust. Fugitive dust could temporarily affect viewsheds by introducing particles in the air, which could diminish the visual clarity of the area. The Coalition has proposed voluntary mitigation to implement appropriate fugitive dust suppression controls (VM-23).

### **Temporary Nighttime Lighting**

If nighttime construction activities occur, lighting equipment could create glare that might affect sensitive viewers adjacent to the project footprint. To minimize this potential impact, OEA is recommending mitigation requiring the Coalition direct construction-related nighttime lighting onto the immediate study area to minimize impacts from shining lights on sensitive viewers, sensitive natural resource areas, recreational areas, roadways, and trails (VIS-MM-2).

#### **Privacy of Rural Viewers**

Construction activities could occur adjacent to or near rural properties, homes, and agricultural buildings, which would evoke a sense of invaded privacy for rural viewers.

<sup>&</sup>lt;sup>3</sup> The *rail line footprint* includes the area of the railbed, as well as the full width of the area cleared and cut or filled. The rail line footprint would also include other physical structures installed as part of the proposed rail line, such as fence lines, communications towers, siding tracks, relocated roads, and power distribution lines. The rail line footprint is the area where rail line operations and maintenance would occur. The area would be permanently disturbed. The *temporary footprint* is the area that could be temporarily disturbed during construction, including areas for temporary material laydown, staging, and logistics. Disturbed areas in the temporary footprint would be reclaimed and revegetated following construction. The *project footprint* is the combined area of the rail line footprint and temporary footprint, both of which would be disturbed during construction, comprising where construction and operations of the proposed rail line would occur.

## Operations

The following operation impacts would be common to all Action Alternatives. The intensity of the impact would vary depending on the number of viewers present, proximity of viewers to the proposed rail line, degree of physical change in the landscape, visibility of the physical change, volume of train traffic, and required maintenance.

### Permanent Nighttime Lighting

Operation of any of the Action Alternatives would introduce small mobile sources of light from train headlights when trains travel at night. However, because trains would move on the proposed rail line, they would be an intermittent light source, not a fixed source of new lighting, and would not affect most viewer groups. OEA anticipates that some rail-related infrastructure, such as communications towers, would be a source of permanent nighttime lighting. The Coalition would determine specific design features and any related permanent lighting prior to construction and operation of the proposed rail line. To the extent that any permanent nighttime light sources would be visible to sensitive viewers, adverse impacts could result.

### **Viewshed Visual Quality**

Rail operations would affect the visual quality of viewsheds by adding industrial infrastructure to the rural landscape and breaking up the compositional balance between natural landforms and vegetation and by changing natural landscapes to a rail corridor. Figure 3.12-2 shows RKOP 090, which illustrates this impact.

The visibility of any of the Action Alternatives would vary seasonally and under changing atmospheric conditions. Elements of the proposed rail line would be more apparent in the spring when the built features would contrast more with natural features. For example, darker green grasses would contrast against the lighter browns, pinks, tans, grays, and oranges of landscape scars, earthen embankments, unvegetated rights-of-way, and road relocations, as well as the grays of built features, such as bridges and culverts. Conversely, the proposed rail line would be slightly less visible in the summer and fall when it would blend in with the brown grass and exposed earth. In the winter and early spring, some rail-related features would be obscured by snow, which would apply a uniform white cover over the landscape.

Deciduous trees would partially obscure portions of the proposed rail line when in leaf and would reveal more views when leafless. Forest fires along portions of US 191 and Argyle Canyon Road in 2019 have left behind hillsides with few shrubs, little herbaceous vegetation, and charred trunks. Once the forest begins to regrow, over many years, these areas would provide a partial visual buffer from the proposed rail line.





#### Visual Continuity of Agricultural Landscape

Operation of any of the Action Alternatives would disrupt the visual continuity of agricultural land, which occurs in limited areas throughout the study area. Rural viewers may experience loss of land, fencing, or other landscape features of personal importance. The degree of visual disruption would depend on the existing terrain and degree of modification, presence or absence of vegetation, degree of vegetation removal, and the viewer's position in the landscape. The proposed rail line would be more visually pronounced in the areas where siding would be located because the line there would 15 to 20 feet wider than elsewhere. The proposed rail line would also disrupt the visual continuity of water bodies (Section 3.3, *Water Resources, Subsection* 3.3.3, *Wetlands*, provides an additional discussion on these features). Figure 3.12-3 illustrates this impact that could occur on agricultural lands; the figure shows RKOP 139 with a house removed in the conceptual rendering.

#### **Natural Landforms**

Operation of any of the Action Alternatives would alter natural landforms in the viewshed. Large areas of cut would remove portions of hillsides and plant cover, leaving behind large landscape scars. Large, long areas of fill in valleys would create substantial earthen berms and introduce raised visual masses between peaks and valleys. These features would often be parallel to local roadways and would cross rivers and streams. Viewers can currently see along affected rivers and streams where the waterway may bend and disappear from view behind vegetation and terrain. The new berms would create visual masses that would limit views up and down curving waterways. Figure 3.12-4 shows RKOP 125, which illustrates this impact. To minimize these impacts, OEA is recommending mitigation requiring the Coalition implement regrading with undulations and topographical variations to mimic natural terrain, where possible (VIS-MM-3).

#### **Vegetation Removal**

Areas of cut and fill would remove portions of plant cover on hillsides and flat areas, including agricultural and grassland areas, shrubs, and mature trees. Vegetation improves visual quality and helps screen-built features in the landscape. Vegetation removal would make landscape scars and the proposed rail line more visually prominent than it would be otherwise. Figure 3.12-5 shows RKOP 083, which illustrates this impact. To minimize these impacts, The Coalition has proposed mitigation to permanently reestablish native ground cover on disturbed areas to prevent soil erosion, where feasible (VM-22).

#### **Engineered Vertical Features**

Any of the Action Alternatives would introduce engineered vertical features across unaltered natural landforms that could disrupt and detract from views of the surrounding landscape. Bridge crossings would create visual masses that segment views on either side of the bridge. These features could require the removal of riparian vegetation, where bridges cross streams, rivers, and drainages. Subsection 3.4.3.2, *Impact Comparison between Action Alternatives*, shows the estimated amount of riparian habitat disturbance for each Action Alternative. Construction of tunnels would involve clearing vegetation, regrading topography, and stabilizing hillslopes near tunnel entrances, which would change the appearance of mountainsides. Figure 3.12-6 shows RKOP 126, which illustrates this impact.







#### Figure 3.12-4. RKOP 125 Looking East to South across Willow Creek from US 191 (Indian Canyon Alternative and Wells Draw Alternative)



## Figure 3.12-5. RKOP 83 Looking Southeast near Milepost 47.4 (Indian Canyon Alternative) and Milepost 53.4 (Whitmore Park Alternative)





The Coalition would construct up to four new communications towers for each Action Alternative. These towers would add tall vertical elements where few to no such features currently exist that would affect visual resources depending on their placement in the landscape; the height, mass, materials, and associated appurtenances of the structure; and the presence of sensitive viewer groups. In some locations, the Coalition could install single-phase distribution lines to power the signal system and detectors in areas where few to none currently exist. Although common along public roadways and on private land easements, single-phase distribution lines are uncommon in most of the study area, particularly along US 191 and Nine Mile Canyon Road. New power distribution lines would introduce tall vertical features in areas where they do not currently exist. While new power lines would be located in the rail line footprint and would tie into the closest existing power distribution line, the addition of new infrastructure associated with the power lines would still detract from the visual environment.

All vertical features could disrupt views of the surrounding landscape by detracting from the visual quality of the viewshed, altering the visual landscape to accommodate construction of such features (e.g., vegetation removal and landform modification), or obscuring or limiting visible portions of the surrounding landscape, including the hills and sky.

To minimize the visual impact of engineered vertical features, OEA is recommending mitigation measures requiring the Coalition design bridges, communications towers, and other project-related structures to complement the natural landscape, to the extent practicable. OEA's recommended mitigation would also require the Coalition to use paint colors and surfacing that mimic natural features and blend into the surrounding landscape, to the extent practicable (VIS-MM-4).

### **Road Relocations and Grade Crossings**

Under any of the Action Alternatives, various public and private roads would be relocated. The Coalition would install grade crossings where the Action Alternative would cross a roadway. These changes would be visible to rural viewers, roadway travelers, and recreationists. Figure 3.12-7 shows RKOP 146, which illustrates this impact.

## 3.12.3.2 Impact Comparison between Action Alternatives

Table 3.12-1 summarizes the impacts on visual resources from the RKOPs on BLM-administered lands in the study area and indicates changes in visual quality ratings. OEA rated the RKOPs using the BLM rating system, which includes high (A), moderate (B), and low visual quality (C) ratings. OEA rated all of the RKOPs as having low visual quality for all of the Action Alternatives. Table 3.12-2 summarizes the impacts on visual resources from the RKOPs that are not on BLM-administered lands, using the FHWA Visual Quality Rating guidance. These ratings include very high visual (VH), high (H), moderately high (MH), moderate (M), moderately low (ML), low (L) and very low (VL) visual quality. OEA rated these RKOPs ranging from having moderately high to very low visual quality.

Table 3.12-1 and Table 3.12-2 also indicate which Action Alternatives could affect each RKOP. Figure 3.12-2 through Figure 3.12-11 show conceptual renderings for selected KOPs. Appendix P, *Visual Resources Terminology, Methodology, and Rating System,* includes a discussion of criteria OEA used to select KOPs for rendering.

RKOP	KOP Rating (Existing Vista)ª	RKOP Rating (Post- Project Vista)ª	Difference in Rating	Action Alternatives Affected	Reason for Change in Rating
027	С	С		Wells Draw Alternative	Trains on the proposed line would be visible on a distant ridgeline, adding to existing oil pumps and related infrastructure, which would provide a discordant landscape and add to the moderate disharmony. The road in the foreground and middleground would disrupt the natural landscape.
033	С	С		Wells Draw Alternative	Embankments and vegetation clearing for the proposed rail line would introduce a stark modification to the hills in the background. Modifications add variety but are very discordant and promote strong disharmony. The proposed rail line and trains would be visible in the background from this location.
037	С	С		Wells Draw Alternative	The proposed rail line would create a noticeable disconnect with the surrounding landscape and would distract from the naturalness of the area. The proposed rail line bridge would obstruct the view of the middleground and background. The bridge would present a linear, flat contrast to the surrounding landscape and form.
044	С	С		Wells Draw Alternative	The proposed rail line would introduce discordant elements to an otherwise largely natural setting. Modifications would be few (roadway in two locations) and would add little visual variety to the area. The addition of cleared areas, embankments, and graded slopes would not greatly increase the effects of cultural modification.

#### Table 3.12-1. Scenic Quality Rating Summary for BLM-Administered Lands in the Study Area

Notes:

<sup>a</sup> An A rating indicates having high visual quality, a B rating indicates having moderate visual quality, and a C rating indicates having low visual quality.

KOP = key observation point; RKOP = rendered key observation point

RKOP	KOP Rating (Existing Vista) <sup>a</sup>	RKOP Rating (Post-Project Vista)ª	Difference in Rating	Action Alternatives Affected	Reason for Change in Rating
073	ML	ML	-1	Wells Draw	The proposed rail line would introduce notable visible modifications (cut-and-fill slopes, tracks, train). Some existing healthy trees would be removed, making the burned area more visible, which should improve with time as slopes grow in and trees regrow. The natural and cultural landscape would be adequately balanced, but would require minor to moderate improvement for compatibility (reseeding, reforesting).
083	МН	Μ	-1	Indian Canyon Whitmore Park	The proposed rail line would add another human-made element to the landscape and would likely distract from the naturalness of the area. However, because the proposed rail line would generally follow the valley parallel to the graded roadway and would not remove large amounts of vegetation, and because the graded slopes would mimic the surrounding hillsides, it would not detract greatly from available views.
090	МН	Μ	-1	Indian Canyon Whitmore Park	The landscape would have notable visible modifications (graded slope), that would detract from available views especially if the graded face could not be planted to blend with surrounding area. The proposed rail line would require moderate to substantial redesign to rectify compatibility with surrounding environments, including revegetation of slopes and potentially terracing and revegetation of slopes or rock treatment to blend with natural slopes.

## Table 3.12-2. Visual Quality Rating Summary using FHWA Visual Quality Rating Guidance

RKOP	KOP Rating (Existing Vista) <sup>a</sup>	RKOP Rating (Post-Project Vista)ª	Difference in Rating	Action Alternatives	Reason for Change in Rating
110-A	MH	ML	-2	Indian Canyon Wells Draw	The natural landscape would have more visible modifications, including the roadway in the foreground, railroad tracks and trains in the foreground and middleground, and significantly more graded slopes in the foreground and middleground. Introducing the proposed rail line into the natural landscape would result in a slightly disjunctive area. The cultural landscape would contain some unifying elements but would generally lack design cohesion. The proposed rail line would moderately degrade the natural or cultural landscape, replacing natural slopes with large embankments.
110-B	МН	ML	-2	Indian Canyon Wells Draw	The landscape would have more visible modifications, roadway in foreground, railroad tracks and trains in foreground and middleground, significantly more graded slopes in foreground and middleground. The rail line footprint would not correspond to the natural or cultural landscape and could be perceived as disjunctive. The cultural landscape would contain some unifying elements but would generally lack design cohesion, with graded slopes affecting several areas in at different angles, appearing disjointed.
120	МН	ML	-2	Whitmore Park	The natural landscape would have many visible modifications including existing and new roadways; significantly more graded slopes in foreground, middleground, and especially background; and railroad tracks and trains in the foreground and middleground. The railroad tracks and trains in the foreground and middleground would be discordant.

RKOP	KOP Rating (Existing Vista)ª	RKOP Rating (Post-Project Vista)ª	Difference in Rating	Action Alternatives Affected	Reason for Change in Rating
125	MH	VL	-4	Indian Canyon Wells Draw	The natural landscape would be severely degraded. Most of the view would change significantly, replacing the majority of the natural environment with graded slopes, roads, tracks, trains, and shiny culvert pipes. The rail line footprint would be in disarray, and the proposed rail line would replace natural hillsides with massive grading and exposed soil and rock, roadways, and tracks and trains. The Action Alternatives would require substantial redesign to rectify the natural landscape's compatibility with surrounding environments, including revegetation of slopes and potentially terracing and revegetation of slopes or rock treatment to blend with natural slopes, as well as using culvert pipes that blend better with the environment. These issues may not be possible to rectify due to the scale of disturbance.
126	Η	ML	-3	Indian Canyon Whitmore Park	The landscape would have notable visible foreground modifications that would detract from available views, though background natural views would remain. The natural state would be of lesser quality than natural environments that are more common to the region and vicinity. The cultural landscape would contain some unifying elements but generally would lack design cohesion. The landscape would contain highly disjointed land uses, with tracks and tunnel and roadways appearing disjointed.

RKOP	KOP Rating (Existing Vista)ª	RKOP Rating (Post-Project Vista)ª	Difference in Rating	Action Alternatives Affected	Reason for Change in Rating
139	Η	Μ	-2	Indian Canyon Whitmore Park	The landscape would have visible modifications that would moderately detract from views. The natural and managed vegetation would be mostly intact. Cut and fill on the hillside would be noticeable and discordant with the surrounding landscape. The cultural landscape would be typical of the region and vicinity. A few farm buildings, including at least one residence, would be removed, but the position of the tracks and train at the edge of the valley would be logical and unobtrusive.
146	Μ	Μ		Indian Canyon	The natural landscape would have visible natural and human modifications. The natural state would be common to the region and vicinity. Only natural vegetation in the foreground would be removed; the background would remain the same. The cultural landscape would contain some unifying elements. The addition of the crossing tracks would be a unifying element, providing a strong horizontal line. The cultural environment could be perceived as ordinary or familiar. The proposed rail line, in the foreground, would respond well to the natural and cultural landscape and could be perceived as being compatible with surrounding environments.

RKOP	KOP Rating (Existing Vista)ª	RKOP Rating (Post-Project Vista)ª	Difference in Rating	Action Alternatives Affected	Reason for Change in Rating
156	Η	МН	-1	Whitmore Park	The landscape would have few visible modifications and the modifications would not greatly detract from available views. A small amount of vegetation would be removed for the railroad embankment. The natural state would be of higher quality than natural environments that are more common to the region and vicinity. Railroad embankments and the bridge would be visible, but would make little contribution to the view due to distance. The rail line footprint would correspond well to the natural and cultural landscape and could be perceived as being compatible with surrounding environments.

Notes:

<sup>a</sup> VH indicates having *very high* visual quality; H indicates having *high* visual quality; MH indicates having *moderately high* visual quality; M indicates having *moderately low* visual quality; L indicates having *low* visual quality; and VL indicates having *very low* visual quality. KOP = key observation point; RKOP = rendered key observation point

## **Construction and Operations**

This subsection compares the potential impacts on visual resources across the three Action Alternatives for both construction and operation. Table 3.12-1 and Table 3.12-2 summarize the impacts of the proposed rail line for typical RKOPs in the study area and indicate changes in visual quality ratings using the BLM and FHWA rating systems, respectively. Table 3.12-3 shows sensitive viewscapes and infrastructure changes by Action Alternative. For reference, Figure 3.12-1 shows the locations of the RKOPs and Figure 3.12-2 through Figure 3.12-11 show the conceptual renderings with potential visual intrusions and impacts.

Action Alternative	Length <sup>a</sup> (miles)	Sensitive Viewscapes	Infrastructure Changes
Indian Canyon	80.5	<ul> <li>Ashley National Forest</li> <li>BLM lands</li> <li>Tribal trust lands</li> <li>Indian Canyon Scenic Byway</li> <li>Reservation Ridge Scenic Backway</li> </ul>	<ul> <li>Install 4 new towers</li> <li>Install 6 new sidings</li> <li>Remove 3 nonresidence structures</li> </ul>
Wells Draw	103.2	<ul> <li>Ashley National Forest</li> <li>BLM lands</li> <li>Reservation Ridge Scenic Backway</li> </ul>	<ul> <li>Install 4 new towers</li> <li>Install 3 new sidings</li> <li>Remove 4 residences</li> <li>Remove 1 other structure</li> </ul>
Whitmore Park	88.3	<ul> <li>Ashley National Forest</li> <li>BLM lands</li> <li>Tribal trust lands</li> <li>Indian Canyon Scenic Byway</li> <li>Reservation Ridge Scenic Backway</li> </ul>	<ul> <li>Install 4 new towers</li> <li>Install 9 new sidings</li> <li>Remove 1 residence</li> <li>Remove 5 other structures</li> </ul>

Table 3.12-3. Sensitive	e Viewscapes and	Infrastructure	Changes by	Action Alternative
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Notes:

<sup>a</sup> Represents the length of the Action Alternative.

BLM = U.S. Department of the Interior, Bureau of Land Management

Because of its length, the Wells Draw Alternative would have the most impacts on visual resources and sensitive viewers during both construction and operation. The shorter Indian Canyon Alternative and Whitmore Park Alternative would have fewer impacts. OEA concludes that these adverse impacts would range from minor to moderately adverse and would be minimized by the implementation of OEA's recommended mitigation measures.





#### Sensitive Viewscapes

The Action Alternatives would affect the sensitive viewscapes described below. Impacts on the landscape are described in Subsection 3.12.3.1, *Impacts Common to All Action Alternatives*.

#### Ashley National Forest

The Wells Draw Alternative would avoid Ashley National Forest and would not result in visible changes to Ashley National Forest lands. The Indian Canyon Alternative and Whitmore Park Alternative would both result in visible changes to Ashley National Forest lands from the introduction of rail line infrastructure, rail operations, large areas of cut and fill, areas of vegetation removal, and potentially new bridges and drainage culverts. Under the current Ashley National Forest Land Management Plan (Forest Service 2017a), there is a 0.25-mile area on either side of US 191, a National Scenic Byway and state of Utah scenic byway, that is mapped as having a Visual Quality Objective (VOO) of "retention" and "partial retention" beyond 0.25 mile. Under the retention VOO, visual changes should not be evident and changes may only repeat form, line, color, and texture that are characteristic of the landscape. Under the partial retention VQO, visual changes should not be very noticeable and changes should remain visually subordinate to the visual strength of the characteristic landscape (Bacon 1979). The Forest Service rated the portion of US 191 that crosses through Ashley National Forest as having a high relative degree of importance, indicating that people have a high regard for the views from US 191 (Forest Service 2017b). A portion of land surrounding US 191 within Ashley National Forest is considered to be distinctive in terms of scenic attractiveness, where landforms, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality (Forest Service 2017b).

As illustrated in Figure 3.12-2 (RKOP 090), the tracks in the foreground would be apparent and a passing train would be noticeable to the casual observer on US 191. The removal of vegetation and cut-and-fill areas would also be noticeable to the casual observer. The Indian Canyon Alternative and the Whitmore Park Alternative would create a distinct visual feature in the landscape when seen from US 191. Train headlights could draw viewers' attention toward trains at night. In addition, the sound and motion of the trains could draw attention to the track and affect visual quality. Under the Indian Canyon Alternative and Whitmore Park Alternative, impacts on visual resources resulting from the proposed rail line would conflict with the existing VQO designations, and the Forest Service would need to amend the *Ashley National Forest Land Management Plan* (Forest Service 2017) to update VQO designations to permit the proposed rail line.

The same impacts described for RKOP 090 would also occur from the vantage point of RKOP 126, adjacent to US 191 in Ashley National Forest (Figure 3.12-6). The addition of a tunnel as shown in Figure 3.12-6 would attract increased attention from travelers on US 191. To ensure that visual impacts on Forest Service Lands are minimized, OEA is recommending mitigation requiring the Coalition follow the reasonable requirements related to visual resources management of any Forest Service decision permitting the proposed rail line within Ashley National Forest, should the Board authorize either the Indian Canyon Alternative or the Whitmore Park Alternative, and to ensure that construction and operation on Forest Service lands comply with the *Ashley National Forest Land Management Plan* (VIS-MM-5).

#### **BLM-Administered Lands**

The Indian Canyon Alternative would result in visible changes to approximately 2.5 miles of BLMadministered lands west of US 191 along Emma Park Road. This area is classified as BLM VRM Class IV lands means that major modifications to the existing visual character are allowed. Visual changes would result from the introduction of rail line infrastructure, rail operations, large areas of cut and fill, areas of vegetation removal, and potentially new drainage culverts and would be consistent with the changes allowed on VRM Class IV lands. Because this classification of BLM-administered lands allows for major modification to the existing visual character of the land, OEA does expect that construction and operation would result in adverse visual impacts in these areas.

The Wells Draw Alternative would also result in visible changes to BLM-administered lands, including BLM VRM Class IV, Class III, and Class II lands. This Action Alternative would cross approximately 30.7 miles of BLM VRM Class IV lands west of Nine Mile Canyon Road, south of Ashley National Forest, northeast of Nine Mile Canyon Road, and along Emma Park Road to the west of US 191. Because this classification of BLM-administered lands allows for major modification to the existing visual character of the land, OEA does expect that construction and operation would result in adverse visual impacts on these areas. The Wells Draw Alternative would also cross approximately 25.3 miles of BLM VRM Class III lands north of Argyle Canyon Road, near US 191 and along Nine Mile Canyon Road. In these areas, the proposed rail line would stand out in some locations and attract viewers' attention to these lands, but the area would partially retain the characteristics of the existing visual environment. While there would be adverse impacts on the visual landscape, the objectives of BLM VRM Class III lands allow for such modifications, and would be achieved.

South of Ashley National Forest, the Wells Draw Alternative would cross approximately 1.1 miles of BLM VRM Class II lands associated with the Lears Canyon Area of Critical Environmental Concern (ACEC) within the Vernal Field Office (refer to Section 3.11, Land Use and Recreation, for additional information regarding the Lears Canyon ACEC). Visual changes to these lands would be the same as those described for BLM VRM Class IV and Class III lands. However, BLM VRM Class II lands have a higher standard of visual management. The proposed rail line would stand out to varying degrees. would not reflect the characteristics of the existing visual environment, and would attract viewers' attention. Therefore, OEA concludes that the Wells Draw Alternative would result in adverse visual impacts on BLM VRM Class II lands. In order for BLM to issue a right-of-way grant for the Wells Draw Alternative, BLM may need to amend the BLM Vernal Field Office Resource Management Plan to change the VRM classification in this area so that the proposed rail line is consistent with VRM class objectives. However, visual access to the VRM Class II parcels would be very limited. These parcels would not be visible from Argyle Canyon Road or Forest Road 163, which are the closest public roads that pass near the BLM VRM Class II area. Construction of the Wells Draw Alternative would not remove any existing buildings or residences on BLM-administered lands (Table 3.12-1). Figure 3.12-8 (RKOP 033) and Figure 3.12-9 (RKOP 037) represent views from the Nine Mile Canyon Scenic Backway within BLM-administered lands.



#### Figure 3.12-8. RKOP 033 Looking Southeast toward Milepost 67 (Wells Draw Alternative)







If the Board were to authorize the Indian Canyon Alternative or the Wells Draw Alternative, the Coalition would need to obtain a right-of-way from BLM for portions of the proposed rail line that would cross BLM-administered lands. In addition to mitigation requiring the Coalition to implement the reasonable requirements of any BLM decision permitting the proposed rail line on BLMadministered lands, OEA is also recommending additional mitigation measures to ensure that visual impacts on BLM-administered lands would be minimized. If implemented, those mitigation measures would require the Coalition to consult with BLM during final project design; comply with all applicable BLM VRM requirements and procedures; incorporate visual design consideration into the design of the proposed rail line on BLM-administered lands; undertake additional visual impact analyses on BLM-administered lands in consultation with BLM, as appropriate; and implement appropriate additional measures to mitigation visual impacts on BLM-administered lands, as required by BLM (VIS-MM-6). OEA is also recommending mitigation requiring the Coalition to implement additional appropriate measures to minimize light pollution on BLM-administered lands, if the Board authorizes the Indian Canyon Alternative or the Wells Draw Alternative (VIS-MM-7). Because the Whitmore Park Alternative would not cross BLM-administered lands, OEA's additional mitigation measures related to visual impacts on BLM-administered lands would not be necessary if the Board were to authorize that Action Alternative.

#### Tribal Trust Lands

The Indian Canyon Alternative and Whitmore Park Alternative would be more visible from shortrange vantage points at the eastern boundary of the Tribal trust lands within the Uintah and Ouray Indian Reservation. Viewers on Tribal trust lands would see cut and fill, altered natural terrain, and passing trains (Figure 3.12-3). These impacts would be noticeable and would likely attract attention from the casual observer in the middleground (0.5 mile to 3 miles from the viewer). OEA is recommending mitigation requiring the Coalition follow the requirements of the Ute Indian Tribe regarding the design of the proposed rail line on Tribal trust lands to minimize visual impacts if the Board should authorize construction and operation of either the Indian Canyon Alternative or the Whitmore Park Alternative (VIS-MM-8). The Wells Draw Alternative would avoid any Tribal trust lands.

#### Scenic Byways and Backways

The Indian Canyon Alternative and Whitmore Park Alternative would run parallel to US 191, which is designated as the Indian Canyon Scenic Byway between US 40 and US 6. The Indian Canyon Alternative and the Whitmore Park Alternative would result in changes visible from this scenic byway due to the introduction of rail line infrastructure, rail operation, large areas of cut and fill, areas of vegetation removal, and potentially new bridges and drainage culverts. An observer on the Indian Canyon Scenic Byway would likely notice the tracks in the foreground, and a passing train would be noticeable and could draw the attention of the casual observer (Figure 3.12-2). The removal of vegetation and cut-and-fill areas would also be noticeable to the casual observer. Both the Indian Canyon Alternative and Whitmore Park Alternative would create a distinct visual feature in the landscape when seen from the Indian Canyon Scenic Byway. OEA's recommended mitigation measures would minimize these impacts (VIS-MM-3, VIS-MM-4), but some changes to the viewshed from the Indian Canyon Scenic Byway would be unavoidable.

The views from the Reservation Ridge Scenic Backway would not be affected by any of the Action Alternatives. Views of the Action Alternatives from this scenic backway would be limited, and if they are visible, project changes would not be discernable.

The Wells Draw Alternative would result in changes visible from the Nine Mile Canyon Scenic Backway. A traveler on the Nine Mile Canyon Scenic Backway would notice the tracks in the foreground and middleground, and a passing train would be noticeable to and could cause attention from the casual observer (Figure 3.12-8 [RKOP 033] and Figure 3.12-9 [RKOP 037]). Views from RKOP 037 would be affected from the introduction of the bridge (Figure 3.12-9). The removal of vegetation and cut-and-fill areas would also be noticeable to the casual observer. The Wells Draw Alternative would create a distinct visual feature in the landscape when seen from the Nine Mile Canyon Scenic Backway. Although OEA's recommended mitigation measures would minimize these impacts (VIS-MM-3, VIS-MM-4), changes to the viewshed from the Nine Mile Canyon Scenic Backway would be unavoidable under the Wells Draw Alternative.

#### Historic Sites

Viewers at historic sites on federal, state and private lands could see cut and fill and altered natural terrain as a result of the Action Alternatives. For the Whitmore Park and Indian Canyon Alternatives, these historic sites would include US 6, a segment of the Denver and Rio Grande Railroad, segments of the Indian Canyon Road, the Indian Canyon Ranger Station, National folk-style dwellings, corrals, bridges, and cabins. Under the Wells Draw Alternative, the historic sites would include US 6, a segment of the Denver and Rio Grande Railroad, Smith's Well, cabins, corrals, bridges, cairns, a homestead, and the Myton Canal. Impacts from construction and operation of these Action Alternatives would range from close-up and direct views of cut and fill, vegetation removal, and structures to distant or obscured views of the Action Alternative. Please refer to Section 3.9, *Cultural Resources*, which provides further information regarding impacts on historic properties.

#### Sensitive Residential Viewers

Any of the Action Alternatives would involve constructing new rail infrastructure, such as sidings, communications towers, and bridges, all of which would add new visual elements to the rural landscape and would be particularly intrusive to residential viewers living in the study area. The Wells Draw Alternative would involve constructing the most bridges and the Whitmore Park Alternative would be the same for all three Action Alternatives (Appendix A, Action Alternatives *Supporting Information*, for a detailed description of project-related features for each Action Alternative). Any of the Action Alternatives would also involve relocating and razing existing buildings, which residential viewers would likely perceive as negative impacts on the viewshed. The Wells Draw Alternative would involve relocating and razing four residences and one additional building; the Whitmore Park Alternative would involve relocating and razing one residence and five additional buildings; and the Indian Canyon Alternative would involve relocating and razing three nonresidential buildings.

As shown in Figure 3.12-4 (RKOP 125), the Indian Canyon Alternative and Wells Draw Alternative would substantially alter the viewshed near a visually sensitive residential area along US 191. The Whitmore Park Alternative would avoid this area by heading east. Figure 3.12-10 (RKOP 120) depicts a view of the Whitmore Park Alternative from an area with scattered rangelands, located approximately 2.8 miles east of US 191. Here, the Whitmore Park Alternative would cross the roadway and switch back and forth up the hillsides, which would alter the foreground of this scenic vista view.





As shown in Figure 3.12-7 (RKOP 146), the Indian Canyon Alternative would introduce new and highly noticeable visual changes in the Duchesne Mini-Ranches area, a residential area of high viewer sensitivity. The Whitmore Park Alternative would also introduce new visual elements that would be visible from the Duchesne Mini-Ranches. Figure 3.12-11 (RKOP 156) depicts the view from an elevated vantage point in this residential area located approximately 3.5 miles south of US 40. The figure shows that the proposed rail line would alter the background of this scenic vista view for residents in the area but would not affect the foreground or middleground of the view. The Wells Draw Alternative would avoid visual impacts on the Duchesne Mini-Ranches residential area.

The Wells Draw Alternative would, however, introduce significant visual impacts in a residential area of high viewer sensitivity located along Argyle Canyon Road. Figure 3.12-9 (RKOP 037) illustrates the introduction of the railbed, cut and fill, and associated vegetation removal where the Wells Draw Alternative would run parallel to Argyle Canyon Road. These impacts would draw the attention of the casual observer and introduce visual impacts in residential areas of high viewer sensitivity. The Indian Canyon Alternative and the Whitmore Park Alternative would avoid visual impacts on residential areas along Argyle Canyon Road.

## 3.12.3.3 No-Action Alternative

Under the No-Action Alternative, the Coalition would not construct and operate the proposed rail line, and there would be no impacts on visual resources.

# 3.12.4 Mitigation and Unavoidable Environmental Effects

Construction and operation of the proposed rail line would introduce a new and highly noticeable industrial infrastructure that would affect visual resources, including visually sensitive areas on BLM-administered and Forest Service lands. Any of the Action Alternatives would include substantial cut and fill and the construction of bridges, tunnels, and other features in a largely undeveloped landscape that is currently characterized by natural features and rural vistas. The Wells Draw Alternative would, in general, result in the greatest impacts on visual resources as a result of its longer length and larger project footprint, but any of the Action Alternatives would result in visual impacts. The Coalition has proposed voluntary mitigation measures and OEA is recommending additional mitigation measures to avoid or minimize visual impacts (Chapter 4, *Mitigation*). Even if those mitigation measures are implemented, however, some impacts on visual resources would be unavoidable. OEA concludes that those unavoidable impacts would range from minor to moderately adverse, depending on the specific observation point.



