# 14. VISUAL RESOURCES

This chapter discusses the existing visual resources in the vicinity of the proposed Northern Rail Extension (NRE) and analyzes the potential for construction of the alternative segments to impact visual resources. Proposed rail operations are also reviewed in relation to visual resources. The analytical approach is based on Bureau of Land Management (BLM) Visual Resource Management (VRM) methodology.

## 14.1 Applicable Regulations

This visual resources analysis applies the BLM VRM methodology to evaluate the potential visual impacts of the project. As a Federal land-management agency, BLM is charged with managing the scenic resources of public lands through the Federal Land Policy and Management Act of 1976 (FLPMA) (BLM, 2007). FLPMA states that the scenic quality of Federal lands should be protected for the enjoyment of all Americans. To meet this objective, BLM developed the VRM methodology, which is a systematic way to evaluate and compare the potential visual impacts of the different alternative components of a proposed action. The VRM system is used by the BLM to analyze potential visual impacts and apply visual design techniques to ensure that surface-disturbing activities are in harmony with their surroundings. BLM has certain management authorities for Federal public lands in the project area that have been withdrawn for military use, including the authority to issue a linear right-of-way grant. The project area also includes Alaska state lands and private lands; however, none of these entities has a system or methodology to assess the visual impacts to the existing landscape. While BLM methodology does not apply to non-Federal lands, the VRM methodology was used—for consistency—to assess potential visual impacts for the entire length of the proposed NRE.

## 14.2 Affected Environment

The proposed rail line would extend from the vicinity of North Pole to Delta Junction. Depending on the route, the rail line would also be near other small communities along Richardson Highway, including Salcha and Delta Junction.

Much of the proposed rail line would parallel the Tanana River (see Figure 14-1), which is a large tributary of the Yukon River. There is recreational boating traffic on this stretch of the river in the summer, and in the winter there is snowmachining along certain sections. The proposed rail line would also roughly parallel Richardson Highway, one of the major highways in Interior Alaska. Richardson Highway has several scenic overlooks and is classified by Alaska Department of Transportation and Public Facilities as a State Scenic Byway with natural, scenic, historic and archeological values.

There are four state recreational areas within 5 miles of the project area. The Birch Lake State Recreation Site and Quartz Lake State Recreation Area are both within 10 miles of Delta Junction and each have campground and boat launch facilities. Salcha River State Recreation Site is 40 miles south of Fairbanks and has camping facilities, a boat ramp, and public use cabins. Harding Lake State Recreation Area is 45 miles south of Fairbanks and has a large campground, picnic areas, and a boat launch.

**Figure 14-1 – Aerial View of the Tanana River**

Most of the project area falls within the Tanana River Basin, which is composed of flat to nearly flat bottomlands, with some hills. Variation in elevation is generally limited to a slope gradient of less than one degree. Riparian features, such as meandering rivers, side sloughs, and oxbow lakes, are prevalent. Vegetation communities are dominated by spruce (white and black) and hardwood species, with tall scrub thickets occurring on floodplains and wetlands throughout wetter sites.

Outside of the river corridors, the generally flat terrain and prevalence of the spruce forests result in little visual contrast in texture. Within the river corridors, water is the dominant visual element; however, there is visual contrast between vegetated and non-vegetated areas along rivers and streams, as well as some variation in form and texture due to some local hills. Visual contrast to the natural landscape in form, line, color, and texture is created throughout the study area by human settlements and infrastructure such as roads, utility lines, and bridges. These settlements and developments are primarily along the Tanana River and its tributaries.

## 14.3 Environmental Consequences

Environmental consequences are measured using the VRM methodology which is summarized below. Following an overview of the methodology, impacts on visual resources are assessed by alternative segments. Appendix N provides more information about the methodology, the visual inventory and the visual impact analysis results.

## 14.3.1 Methodology

The VRM system involves "inventorying scenic values and establishing management objectives for those values through the resource management planning process, and then evaluating proposed activities to determine whether they conform to the management objectives" (BLM, 2007). Specifically, the VRM system is a two-step process that establishes a Visual Resources Inventory and Visual Contrast Ratings. The Visual Resources Inventory is a system developed by BLM to establish the visual resources management objectives of a region. Through the inventory evaluation process, the region's scenic value, the sensitivity of public concern for scenic quality of the landscape, and distance zones based on relative visibility from travel routes or observation points are assessed. Based on these three visual criteria, each location is placed into one of four VRM objective classes. BLM National VRM Coordinators are responsible for the visual inventory process and establishment of the VRM class objective of the region. However, in a region where no VRM Class has been established, an Interim VRM Class may be established using the Visual Resources Inventory System (BLM, 2007).

The project area for the proposed NRE had no VRM Class rating, so an Interim VRM Class was established, which is Class II—High Value—for most of the project area (see Appendix N). The Visual Contrast Rating system compares the degree of the contrast with the current landscapes and then evaluates if the class objectives, established with the Visual Resources Inventory, are met. Key observation points (KOPs)—locations selected to be representative of the critical locations from which the project would be seen—were established and used for this evaluation. The goal of the VRM Class rating system is to maintain the rating. Appendix N presents the Visual Resources Inventory establishing the Interim VRM Class.

## 14.3.2 Impacts by Alternative Segment

This section describes the visual impacts of the common segments and alternative segments of the proposed NRE. Table 14-1 summarizes information on the common types of visible features for each of the common and alternative segments. In addition, communication towers, work camps and construction staging areas would be constructed at locations that would be independent of the rail line route.

### North Common Segment

The North Common Segment would be 2.7 miles long and run parallel to Richardson Highway approximately 0.5 mile to the south. This segment would not cross any rivers, but would cross Eielson Farm Road. There are existing electricity and utility corridors running through the same area.

Although the segment runs parallel to Richardson Highway, the rail line would not likely be visible to Richardson Highway travelers due to vegetation, distance, and viewing angle, except possibly when trains are passing by. Therefore, the Section of Environmental Analysis (SEA) expects that the North Common Segment would meet VRM Class II management objectives.

### Eielson Alternative Segments

The three Eielson alternative segments would be between Richardson Highway and the Tanana River, starting at the southern end of the North Common Segment west of the Moose Creek community and ending at the start of the Salcha alternative segments south of Eielson Air Force Base (AFB).

**Table 14-1**
**Selected Features of each Segment**
**(Shaded segments are part of the proposed action)**

| | | Eielson | | | Salcha | | Central | | Donnelly | | | Delta | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Viewing Feature** | **North Common** | **1** | **2** | **3** | **1** | **2** | **1** | **2** | **1** | **2** | **South Common** | **1** | **2** |
| Segment Length (in miles) | 2.7 | 10.3 | 10.0 | 10.1 | 11.8 | 13.8 | 5.1 | 3.6 | 25.8 | 26.2 | 10.5 | 11.5 | 11.5 |
| Grade Separated Crossings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| At-Grade Paved Crossings | 1 | 1 | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Bridges Over Tanana River | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bridges Over Other Major Rivers[a] | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 1 | 1 |
| Alternative Mileage within 0.25 mile of Travel Corridor[b] | 2.7 | 10.3 | 10.0 | 10.1 | 4.8 | 11.5 | 0 | 1.7 | 1.8 | 2.5 | 0 | 4.3 | 3.1 |
| Passenger Facilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Communication Towers | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |
| Small Bridges | 1 | 1 | 3 | 3 | 0 | 2 | 1 | 2 | 4 | 2 | 3 | 0 | 0 |

[a] Other major rivers include the primary tributaries to the Tanana River in the project area: Delta River, Little Delta River, Delta Creek, and Salcha River.

[b] Travel corridors are defined as the rivers listed in footnote a and paved roads.

All three Eielson alternative segments include at-grade road crossings and bridged crossings of small streams, but do not include any major bridged river crossings. The primary differences between the three Eielson alternative segments that would impact visual resources are their relative proximity to the Eielson Farm Community and farmland east of the Tanana River and their crossing of Piledriver Slough, an area with recreational use. Eielson Alternative Segments 1 and 2 would both be on the western side of Piledriver Slough and would cross through some Eielson Farm Community property, but Eielson Alternative Segment 2 would cross Piledriver Slough with a small bridge south of Eielson AFB thereby avoiding the residential area near Old Richardson Highway and Stripes Avenue. By keeping closer to Richardson Highway, Eielson Alternative Segment 3 would cross Piledriver Slough with a small bridge to the north of Eielson AFB and avoid the Eielson Farm Community.

KOP 4 analyzed the impacts of a rail crossing of a road in the Piledriver Slough area and found a weak contrast rating. Figure 14-2 shows a view near Piledriver Slough and Scout Lake on Eielson AFB, west of Richardson Highway. It is expected that a rail line in this area would generally result in a weak contrast rating as there are several roads and a high voltage transmission line also running through the area. Therefore, although Eielson Alternative Segment 3 would pass over Piledriver Slough and would cross more minor roads than the other two Eielson alternative segments, it is unclear which alternative segment would have the least visual impact. Regardless, SEA anticipates that any of the Eielson alternative segments would meet VRM Class II management objectives.

**Figure 14-2 – Eielson Alternative Segment 3, Near Piledriver Slough and Scout Lake on Eielson Farm Road**

## Salcha Alternative Segments

Either of the two Salcha alternative segments would start at the southern end of Eielson Alternative Segment 1, 2, or 3 north of the Town of Salcha on the northeastern bank of the Tanana River and would end at the beginning of the connector to one of the Central alternative segments on the southwestern bank of the Tanana River. Both Salcha alternative segments would cross the Tanana River at points not visible from Richardson Highway or other land-based KOPs. Salcha Alternative Segment 1 would cross to the southwestern side of the Tanana River almost immediately; Salcha Alternative Segment 2 would remain on the northeastern side of the Tanana River for several miles before crossing.

Salcha Alternative Segment 2 would cross four roads compared to one road crossing for Salcha Alternative Segment 1. Salcha Alternative Segment 2 also would cross the Salcha River (the only segment to do so) creating strong visual contrast at this site (see Figure 14-3). In addition to these visual impacts, Salcha Alternative Segment 2 would create several hill cuts in the terrain to accommodate the 200-foot-wide right-of-way, creating strong visual contrast (see Figure 14-4). Salcha Alternative Segment 2 would require relocation of Richardson Highway and Salcha Elementary school. Finally, Salcha Alternative Segment 2 would go through the Salcha community, which as a residential area is generally considered to be sensitive to visual changes. Based on these features of Salcha Alternative Segment 2, impacts to visual resources would be less with Salcha Alternative Segment 1. Salcha Alternative Segment 2 would not meet VRM Class II management objectives without mitigation for the hill cut and the crossings of the Tanana and Salcha rivers, and proximity to the Salcha community (see Chapter 20 for proposed mitigation measures). Salcha Alternative Segment 1 would meet VRM Class II management objectives except for the crossing of the Tanana River which results in strong contrast to some landscape elements.

**Figure 14-3 – Salcha Alternative Segment 2, View Looking West along Salcha River**

**Figure 14-4 – Salcha Alternative Segment 2, View Looking Southeast from the Western Bank of the Salcha River, South of the Confluence with the Tanana River**

## Connector Segments A through E

The connector segments are rail alignments between 0.9 and 4.4 miles long that would connect the Central alternative segments to the Salcha and Donnelly alternative segments. Each of the five connector segments is on the west side of the Tanana River. The segments used for the project would depend upon the selection of the Salcha, Central and Donnelly alternative segments. These segments would have no major river crossings or road crossings, but would cross winter recreation trails and streams. These segments are isolated from viewpoints along the Tanana River and Richardson Highway. The visual contrast of this segment is therefore weak, so SEA anticipates that the connector segments would meet the VRM Class II management objectives.

## Central Alternative Segments

The Central alternative segments would run parallel to the southwestern shore of the Tanana River between the connector/Salcha alternative segments and the connector/Donnelly alternative segments. SEA expects that the visual contrast would be similar for the two Central alternative segments. Although Central Alternative Segment 2 would be closer to the Tanana River, SEA does not expect that it would be visible from Richardson Highway or other viewing locations on the northeastern side of the Tanana River (due to the dense vegetation and flat terrain in the area). Neither Central alternative segment would have a major river crossing or road crossing, but each would cross winter recreation trails and streams. Both Central alternative segments would be isolated from viewpoints along the Tanana River and Richardson Highway. The visual contrast of this segment is therefore weak, so SEA anticipates that the Central alternative segments would meet the VRM Class II management objectives.

## Donnelly Alternative Segments

The Donnelly alternative segments would start at the south end of the Central alternative segments northwest of the Little Delta River and roughly parallel the southwestern side of the Tanana River to the start of the South Common Segment. In terms of visual contrast, SEA anticipates that Donnelly Alternative Segment 1 and Donnelly Alternative Segment 2 would be very similar. Both would cross Delta Creek and Little Delta River and would cross an Alaska Department of Natural Resources (ADNR) winter trail at-grade. Although Donnelly Alternative Segment 2 would be closer to the Tanana River, SEA does not expect that it would be visible from Richardson Highway or other viewing locations on the northeastern side of the Tanana River (due to the dense vegetation and flat terrain in the area). However, due to the proximity to the Tanana River, boaters on the Tanana River would be more likely to view Donnelly Alternative Segment 2 bridges over Delta Creek and Little Delta River (Figure 14-5). Therefore, SEA anticipates that Donnelly Alternative Segment 1 would have the least visual impact of the Donnelly alternative segments. SEA anticipates that the Donnelly alternative segments would meet VRM Class II management objectives except for the crossings of Delta Creek and Little Delta River, which result in strong contrast to existing structural landscape elements.

**Figure 14-5 – Donnelly Alternative Segments, View Looking North along the Little Delta River**

## South Common Segment

The South Common Segment would start at the southern end of the Donnelly alternative segments east of Delta Creek and continue towards the southeast to the Tanana River. This segment would cross four winter travel routes, but would not include any major river or paved road crossings. This segment would be isolated from viewpoints along the Tanana River, Richardson Highway, and other primary travel areas and KOPs (Figure 14-6). The visual contrast of this segment would be generally weak to none; therefore, SEA anticipates that the South Common Segment would meet the VRM Class II management objectives.


**Figure 14-6 – South Common Segment, View from Recreational Trail**

### Delta Alternative Segments

The Delta alternative segments connect the southern end of the South Common Segment to the terminus south of Delta Junction. The two Delta alternative segments differ regarding visual impacts in that Delta Alternative Segment 2 would cross the Delta River much farther north than Delta Alternative Segment 1. Due to the longer extent of Delta Alternative Segment 2 on the populated east side of the Delta River, Delta Alternative Segment 2 would cross several more roads as well as farmland prior to reaching the southern terminus than does Delta Alternative Segment 1. Delta Alternative Segment 2 would include two grade separated crossings of Richardson and Alaska highways and one at-grade crossing of Old Richardson Highway as well as two additional at-grade crossings of less frequently traveled public roadways (Figure 14-7). Therefore, Delta Alternative Segment 1 would have less visual impact than Delta Alternative Segment 2. SEA anticipates that Delta Alternative Segment 2 and Delta Alternative Segment 1 would meet VRM Class II management objectives except for the Delta River and highway crossings, which both alternatives would have, resulting in strong contrast to some landscape elements.

## 14.3.3 Temporary Facilities

Temporary construction facilities or operations common to all alternatives include borrow areas, riprap and ballast sources, as well as temporary construction bridges, construction staging areas, and construction camps. Many of these temporary facilities would be positioned away from travel corridors, urban areas, or other frequently visited sites or would likely be hidden from

**Figure 14-7 – Delta Alternative Segment 2, View Looking East along Jack Warren Road in Delta Junction**

view at KOP sites because of screening by vegetation. While the temporary facilities would likely have a strong visual impact during construction if they were visible from KOPs, these facilities would be removed and the sites restored after construction is completed. The Applicant has stated that areas disturbed during construction would be returned to their preconstruction contours to the extent practicable, reseeded or replanted within one growing season following construction, and that seed mixtures would not contain known invasive plant species. SEA anticipates that the temporary facilities would meet VRM Class II management objectives following post-construction restoration.

### 14.3.4 No-Action Alternative

Under the No-Action Alternative, the proposed NRE would not be undertaken and there would be no project-related changes to the present conditions. Because there would be no changes, there would be no contrast with the existing landscape; therefore, visual management objectives would be met.