3.11 Visual Resources

3.11.1 What are the visual resources related to this project and why are they important?

> **Visual or scenic resources** are the natural and built features of the landscape contributing to the public's experience and appreciation of an environment.

Visual resource or scenic impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which that project's presence changes the perceived visual character and quality of the environment surrounding it. Sightseeing is one of the activities that engage a high percentage of Colorado's recreationalists, indicating the importance of visual character to I-70 Mountain Corridor visitors and residents; visual resources need protection for both economic and aesthetic purposes.

3.11.2 What study area and process were used to analyze visual resources?

The Corridor width considers all views and viewers located within the northern and southern ridgelines through which the interstate passes. The Colorado Department of Transportation (CDOT) inventoried the existing visual environment by examining the character of the landscape and identifying potential viewers (also called sensitive receptors) within the viewshed of the Corridor. The Colorado Department of Transportation organized landscape characteristics and sensitive receptor locations into 27 distinct scenery analysis units or landscape units throughout the Corridor, which are described in the *I-70 Mountain Corridor PEIS Visual Resources Technical Report* (CDOT, March 2011). The inventory also identified gateway views, focal views, and canyon views.

The Colorado Department of Transportation coordinated the approach for this visual resource assessment with federal land managers, consistent with the Bureau of Land Management and the United States Forest Service visual analysis methodologies. The Colorado Department of Transportation examined county and municipal land use plans to understand established viewsheds and visual resources identified for preservation. The Colorado Department of Transportation also coordinated with staff and citizens from the Corridor communities to understand each community's values and identity (see **Chapter 6, Public and Agency Involvement**). Following the Bureau of Land Management Visual Resource Management Program and the United States Forest Service Scenery Management System of landscape classifications, CDOT evaluated each landscape unit to determine the overall landscape scenic attractiveness and visibility of the Corridor from sensitive viewpoints. The visual designations established by the Bureau of Land Management and United States Forest Service for their lands remained as determined by those agencies.

3.11.3 What agencies have CDOT and FHWA coordinated with and what are their relevant issues?

During project scoping, CDOT and the Federal Highway Administration (FHWA) (the lead agencies) coordinated with the Bureau of Land Management, the United States Forest Service, and numerous Corridor communities to understand important scenic values and preservation standards. Common concerns identified from the scoping period include preserving the scenic beauty of mountains and canyons, suggesting consistent and unobtrusive design elements, and considering the visual and shading impacts of elevated alternatives (CDOT, May 2001).

Agencies are concerned that highway widening could increase congestion, cause indirect impacts, and make the unique mountain experience more urban, thus badly degrading the visual and aesthetic experience of the Colorado mountains. Additionally, municipalities raised concerns that while noise walls mitigate for noise impacts, they could alter existing scenic vistas of mountains and historic towns. They requested that the I-70 Mountain Corridor Context Sensitive Solutions, meant to protect both natural and community resources, consider visual resources. The potential of increasing light pollution in the Corridor and changing the nature of the Corridor from a small highway to an "expanse of pavement" are also concerns.

3.11.4 What are the areas of visual interest identified in the Corridor?

Geology, topography, water bodies, vegetation, and the built environment define the visual characteristics of the Corridor. Urban development historically is the primary driver behind the visual change in the Corridor. Scars from the construction of the original I-70 highway and historic mining activities (including exposed mineral cuts) still remain. Roadway cut-and-fill slopes are most evident in the canyon environments of Clear Creek and Garfield counties and along Straight Creek, where existing cut-and-fill slopes dominate the setting. In recent years, however, the mountain pine beetle infestation in Colorado's mountains left behind rust-colored forests of dead trees, changing the visual character of the mountainsides. The visual characteristics of the Corridor are described below from west to east. The *I-70 Mountain Corridor PEIS Visual Resources Technical Report* (CDOT, March 2011) contains additional details about the visual resources in the Corridor.

The town of Glenwood Springs is located at the confluence of the Colorado and Roaring Fork rivers and is known for its striking red rock escarpments. From Glenwood Springs, the Corridor extends east through the Glenwood Canyon for 12 miles, with canyon walls extending 2,500 feet above the river elevation. The canyon transitions into a broad river valley surrounded by steep hillsides at the Eagle County border.

Dominant geologic elements throughout Eagle County are the colorful and rugged sandstone cliffs and canyons of the Eagle Valley Formation, including the red rock escarpments at Red Canyon. Much of the landform between Dotsero and Dowd Canyon includes a glaciated, U-shaped valley following the riparian corridor of the Eagle River. The banded cliffs of the Minturn Formation through Dowd Canyon open again into the U-shaped Vail Valley. Substantial alteration to the natural landscape has occurred in this segment, where urban development has been spurred by both Vail and Beaver Creek ski resorts.

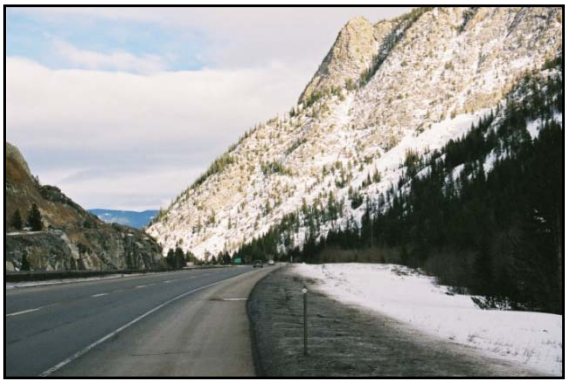


Figure 3.11-1. Eastern View of Tenmile Canyon

The rugged Gore Mountain Range dominates the landscape east and west of Vail Pass. Vail Pass itself is characterized by the spruce fir forests, open meadows, and contrasting red sandstone cliffs. After leaving Vail Pass and east of Copper Mountain ski resort, the I-70 highway traverses Officers Gulch and Tenmile Canyon, paralleling Tenmile Creek. The Corridor passes through the Blue River Valley, in the Dillon/Silverthorne vicinity, where views from the interstate include open vistas of the Gore Range to the west, the Williams Fork Range (part of the Continental Divide) to the east, and Dillon Reservoir to the south. The Silverthorne and Dillon areas are highly developed towns that alter the natural landscape notably. The Corridor continues along the heavily forested Straight Creek on the ascent to the Continental Divide (Eisenhower-Johnson Memorial Tunnels), and the effects of the mountain pine beetle kill are especially apparent on the hillsides in this segment.

The landscape east of the Eisenhower-Johnson Memorial Tunnels offers views of the Continental Divide and Loveland ski area. This western portion of Clear Creek County, between Herman Gulch and Silver Plume, is characterized by the largely undeveloped forest setting, where the interstate passes through a glaciated, U-shaped valley from Loveland ski area to the US 40 turn off (milepost 232). To the east, the topography transforms into a rugged unglaciated, V-shaped canyon, following Clear Creek, where views of the county's mining history (such as the Georgetown train and Argo Gold Mill) and 14,000-foot peaks are prominent. Starting at Silver Plume, urban development, mostly from remaining historic mining towns, is more prevalent.

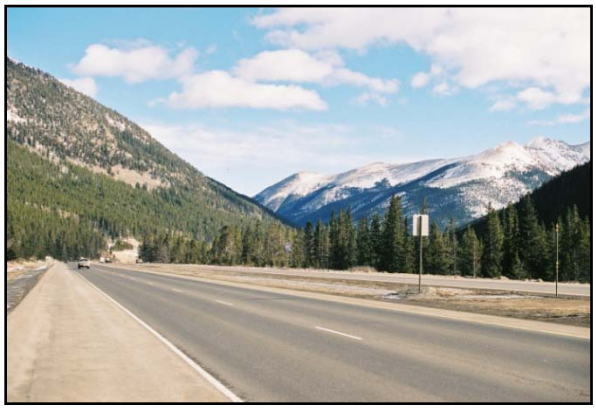


Figure 3.11-2. Eastern View of Herman Gulch

The Corridor leaves Clear Creek County at Floyd Hill, where the Corridor enters the panoramic Beaver Brook and Mount Vernon Canyon. The Corridor offers motorists heading east their first view of the Denver metropolitan area and travelers heading west their first view of the Continental Divide at the Buffalo Overlook (milepost 254). Denver metropolitan area development, including Genesee and Lookout Mountain, extends to this part of the Corridor and gives this last segment of the Corridor a more developed character. The Corridor culminates in the Rooney Valley, where the sharp ridgeline of the Hogback/Dinosaur Ridge formation serves as a gateway into the Denver metropolitan area.

Figure 3.11-3. Western View at Buffalo Overlook

Figure 3.11-4 and **Figure 3.11-5** illustrate the limits of the 27 scenery analysis units or landscape units and the key viewpoints throughout the Corridor.

Figure 3.11-4. Scenery Analysis Units: Garfield to Summit Counties

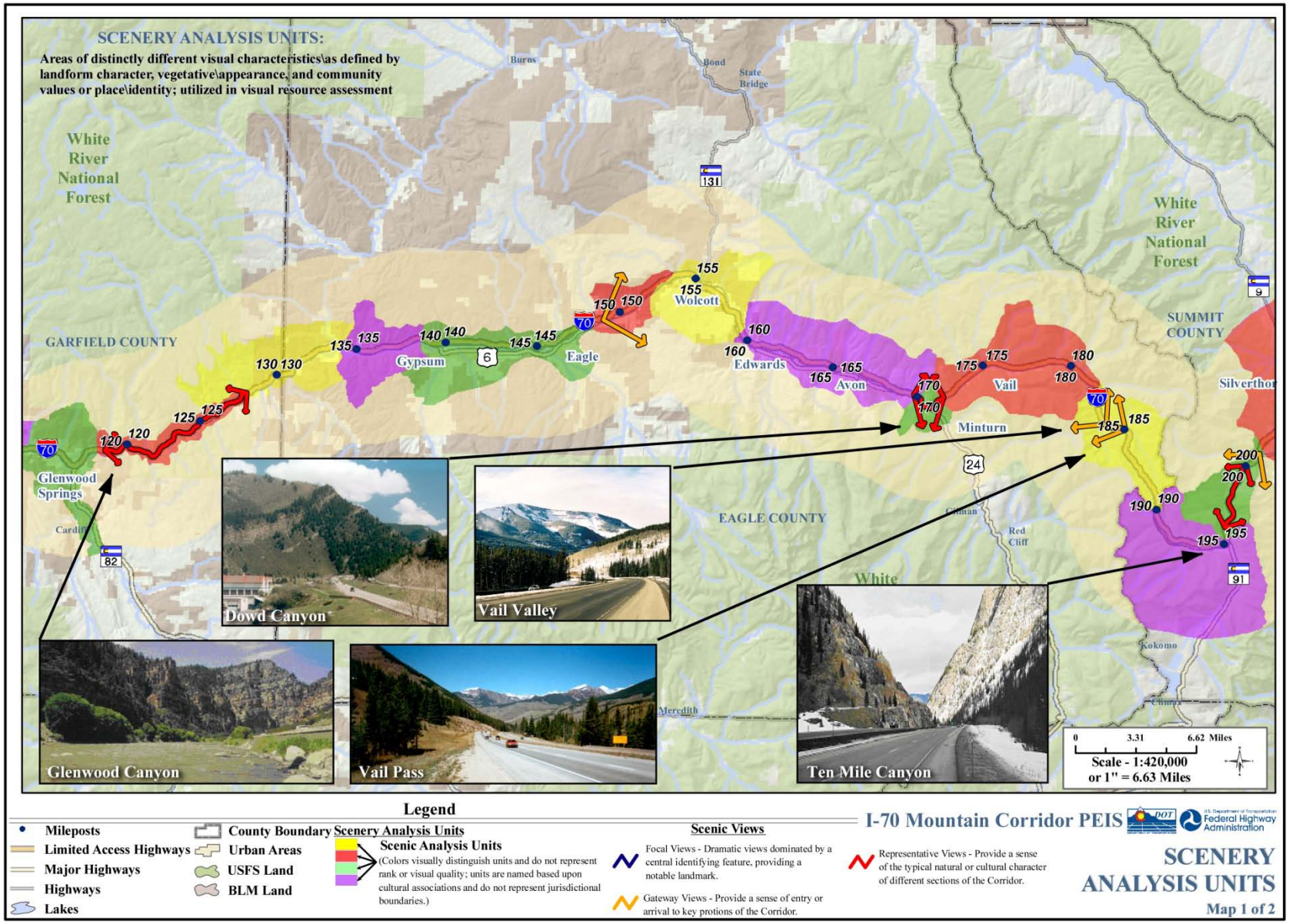
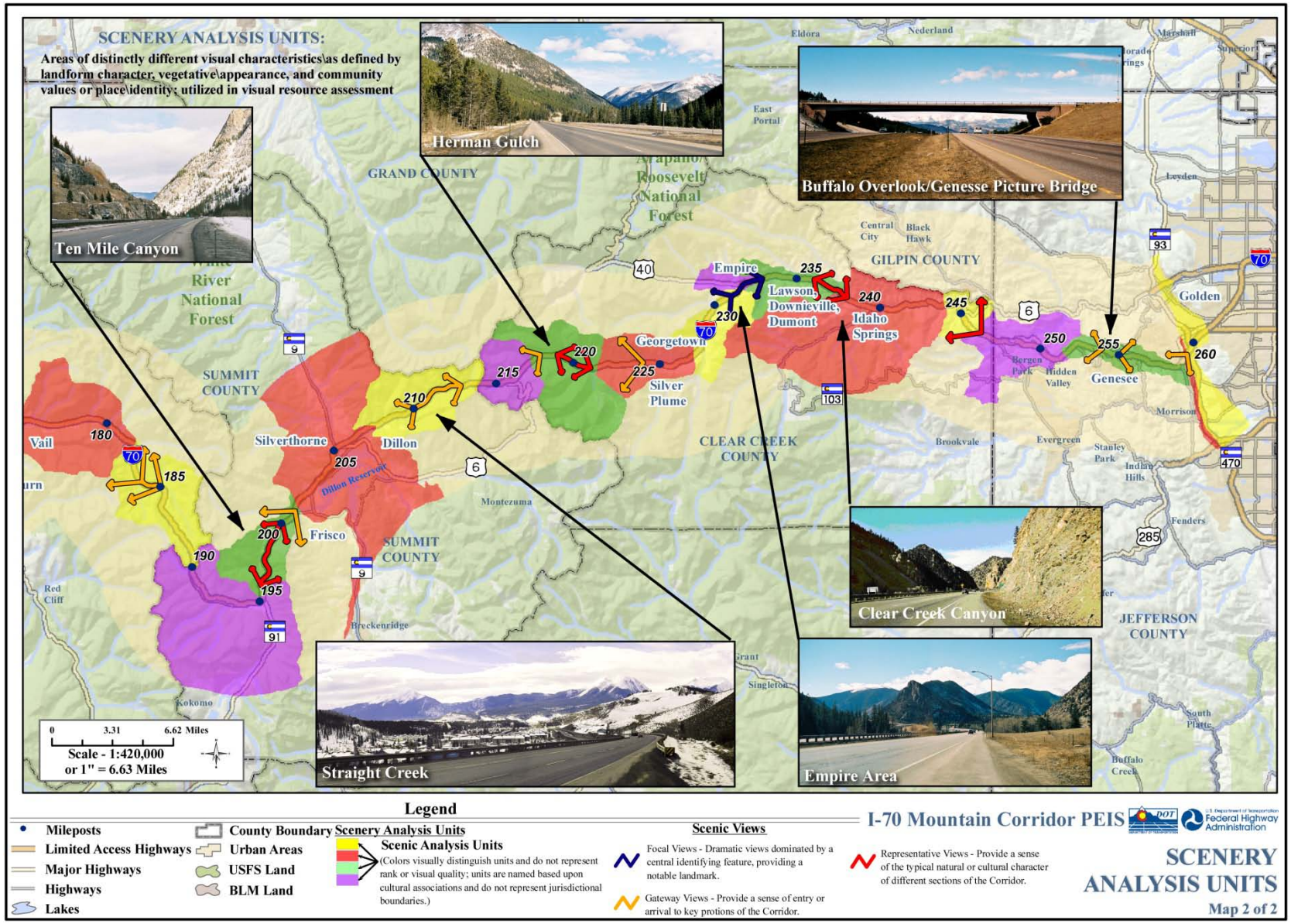


Figure 3.11-5. Scenery Analysis Units: Summit to Jefferson Counties



3.11.5 How do the alternatives potentially affect visual resources?

Impacts on visual resources are generally localized given that the length of the Corridor and the mountainous terrain breaks up any continuous or extended views in the Corridor. Induced growth changes development in the Corridor and could indirectly affect the visual landscape.

How do the alternatives directly affect visual resources?

The result of the Action Alternative components may produce a more or less visually dominant effect because the landscape character varies within each landscape unit. Typically, more diverse landscapes are able to absorb more change before added elements become dominant. A combination of large and multiple project components result in higher visual contrast than components fewer in number, low in diversity, and smaller in size. The level of visual contrast associated with the Action Alternatives is combined with the number of viewers to fully gauge the visual impacts. The amount of visual contrast created by the project features are related to the distance of the feature from the viewers.

Based on these considerations, alternatives with larger footprints or more elevated features have higher levels of visual impact than those that add fewer new transportation components. The No Action and Minimal Action alternatives therefore create the least visual impact. The Minimal Action Alternative provides improvements to 30 existing interchanges and adds climbing lanes and auxiliary lanes. The Rail with Intermountain Connection and Advanced Guideway System Alternatives add new modes to the landscape and have the greatest single-mode impact. The Advanced Guideway System Alternative generates a larger visual impact than the Rail with Intermountain Connection Alternative because it is capable of being elevated through the Corridor, with supporting piers spaced every 80 feet to 100 feet and a lattice structure underneath the guideway deck.

Options that build on the existing highway and increase the footprint of the highway, including the Highway alternatives, further degrade the visual landscape by increasing man-made features but result in lesser landform contrast and lesser visual impact than the Rail with Intermountain Connection and Advanced Guideway System Alternatives. The Six-Lane Highway 65 miles per hour (mph) Alternative creates a larger impact than the 55 mph option because the former requires three new tunnel bores to accommodate the higher speed through the Corridor canyons.

Visual Contrast

The levels of visual contrast range from weak to strong, denoting the extent of change to the landscape experienced by viewers. Weak contrast is associated with changes that can be seen but do not attract attention and are subordinate to the setting. Moderate contrast is associated with changes that are noticeable but are still subordinate to the setting. Moderate to strong contrast is associated with changes that attract attention and begin to dominate the setting. Strong contrast is associated with changes that attract attention and dominate the setting. Very strong contrast is associated with changes that demand attention, will not be overlooked by the average observer, and dominate the setting.

The Combination alternatives and the Preferred Alternative result in the greatest adverse visual impact by adding both the Six-Lane Highway capacity with curve safety improvements and the above-grade Advanced Guideway System. The range of visual impact differences between the Minimum Program of Improvements and Maximum Program of Improvements for the Preferred Alternative is relatively minor given that the majority of all visual changes occur under both programs, with minimal additional impacts occurring under the Maximum Program of Improvements, if it is implemented.

Chart 3.11-1 illustrates the total miles of impacts across the Corridor associated with each of the Action Alternatives. The *I-70 Mountain Corridor PEIS Visual Resources Technical Report* (CDOT, March 2011) provides detailed analysis of the visual contrast and visual impacts for each landscape unit. Locations of

these specific elements and their corresponding visual impacts beyond the general landscape unit will be developed during Tier 2 processes.

How do the alternatives indirectly affect visual resources?

Mining and recreation shaped settlement patterns in the Corridor, and today the transportation network is unable to support current travel demand. The Action Alternatives all affect development in the Corridor pertaining to growth patterns and rates and will affect visual resources. Currently, 13 percent of the land within the Corridor viewshed is developed, and according to adopted land use plans, an additional 19 percent of land will be converted from vacant undeveloped land to developed land. Corridor improvements under all Action Alternatives are expected to strongly influence existing and future development trends and potentially alter the existing visual character and quality. Transit alternatives could cause planned future growth to develop in concentrated patterns surrounding proposed transit stations in existing urban areas in Eagle County. Highway alternatives could relieve Corridor congestion and facilitate growth into rural areas beyond current population projections instead of suppressing growth in Eagle County. Combination alternatives result in increased pressure in both urban and rural areas in Eagle and Summit counties. The Preferred Alternative initially induces growth in a manner similar to the Transit alternatives and concentrates growth in urban areas surrounding transit centers, primarily in Eagle County. If the Preferred Alternative is fully implemented, it induces growth pressures in both urban and rural areas of Eagle and Summit counties. **Section 3.7, Land Use and Right-of-Way,** provides an expanded discussion of indirect impacts relating to land use conversion.

The majority of Corridor municipalities and counties have development review design standards that are considered during the development review process. Many of these standards include preserving ridgelines, encouraging cluster development, and maintaining distinct buffers between towns. Municipalities and counties will be principally responsible for the manner in which future development is constructed and the way in which it interacts with the natural landscapes.

How does construction of the alternatives affect visual resources?

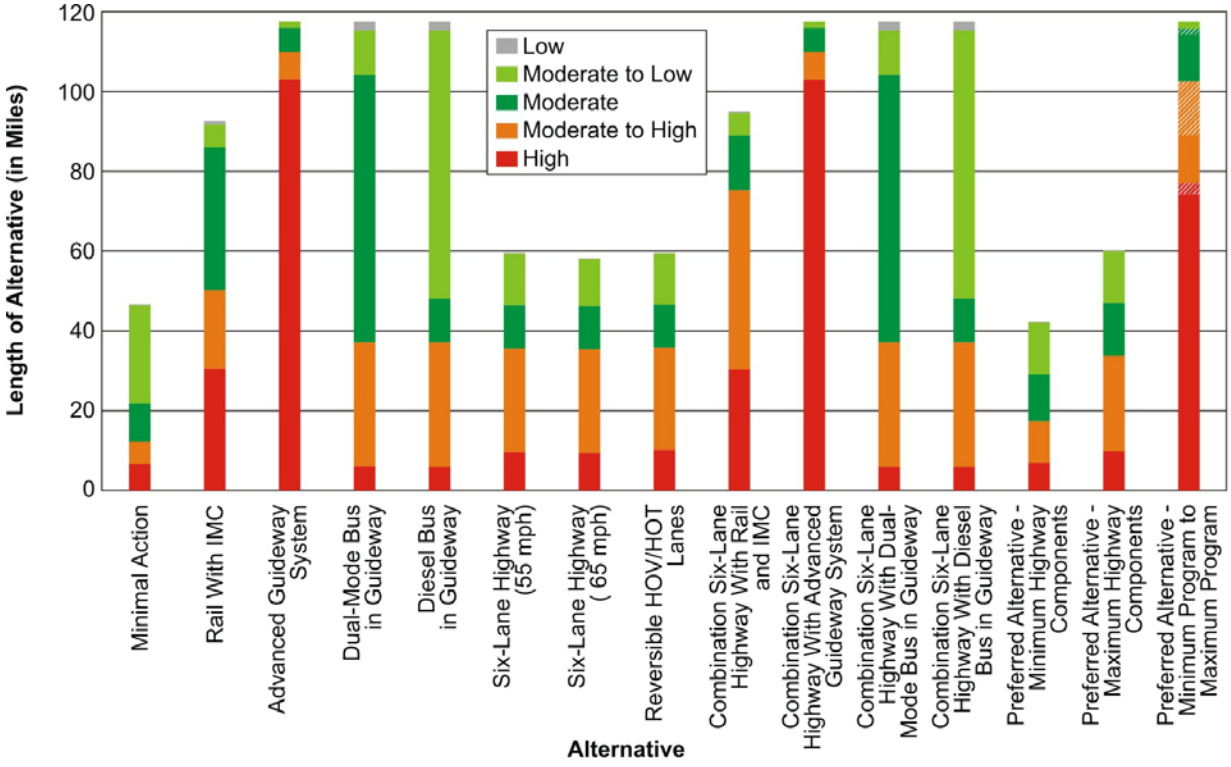
During the construction phase of the project, a temporary construction easement extends approximately 15 feet beyond the permanent highway footprint. In this easement area, existing vegetation is removed, and construction staging areas and equipment storage areas are established. Existing construction scars are likely to be altered during future construction phases.

What are the project effects on visual resources in 2050?

Development is a principal cause of visual change in the I-70 Mountain Corridor; the Action Alternatives impact visual resources based on the degree to which they accommodate or suppress growth pressures. The No Action Alternative and Minimal Action Alternative both decrease the demand for growth in Corridor communities, which presumably reduces the amount of undeveloped lands being converted to new urban development. The other Action Alternatives increase demand for growth in Corridor communities, which likely results in pressures to convert undeveloped land to developed land. However, the visual impact of new development varies greatly, depending on the policies communities implement to guide or control growth. Effective planning policies consider the context of the landscape.

The Action Alternatives will have sustaining effects on the visual landscape into 2050. Community controls on growth and land use planning will also play a large part in changes to the visual landscape, as will effects of the implementation of Bureau of Land Management and United States Forest Service visual resource management plans. Local land use decisions could have either positive or negative impacts on visual resources. The Bureau of Land Management and United States Forest Service visual resource management plans manage visual impacts on these federal lands. **Chapter 4, Cumulative Impacts Analysis,** provides additional analysis of the alternatives in relation to past and current trends and other reasonably foreseeable future actions and events.

Chart 3.11-1. Summary of Miles of Visual Impact by Alternative



** The Preferred Alternative is presented as range overall because the adaptive management component of the Preferred Alternative allows it to be implemented based on future needs and associated triggers for further action. Chapter 2, Section 2.7 of the PEIS describes the triggers for implementing components of the Preferred Alternative. The highway components of the Preferred Alternative are presented in this chart separately because the transit component of the Preferred Alternative (for both the Minimum and Maximum Programs) is the same. The only difference, therefore, between the Minimum and Maximum Programs is in the highway components, which differ only in Clear Creek County where the Minimum and Maximum Programs contain different highway elements.*

Key to Abbreviations/Acronyms

AGS = Advanced Guideway System
HOT = High Occupancy Toll
HOV = High Occupancy Vehicle
IMC = Intermountain Connection

3.11.6 What will be addressed in Tier 2 processes?

The Colorado Department of Transportation will use the visual inventory developed in the first tier analysis to focus attention during Tier 2 processes on visual elements that have either Corridorwide or local importance. Additionally, CDOT will conduct a more detailed and localized analysis of visual resources in individual jurisdictions and segments along the Corridor to further define important visual elements and assess potential effects of Tier 2 processes. Additional analysis of direct impacts to visual resources during Tier 2 processes may determine the impact type (temporary or permanent) and description. The Colorado Department of Transportation will consider creating visual simulations during Tier 2 processes to accurately illustrate the visual change at specific locations. The Colorado Department of Transportation will continue to coordinate with all jurisdictions regarding direct and indirect impacts to visual resources. Mitigation options (such as design modifications) that could minimize disruption to or interference with the Corridor's historic towns and mountain scenery will be explored using the I-70 Mountain Corridor Context Sensitive Solutions Aesthetic Design Guidelines.

The lead agencies will develop specific and more detailed mitigation strategies and measures, as well as establish best management practices specific to each project during Tier 2 processes. The lead agencies will also adhere to any new laws and regulations that may be in place when Tier 2 processes are underway.

3.11.7 What are the approaches to programmatic mitigation planning for visual resources?

Mitigation strategies for visual resources will be defined in Tier 2 processes in coordination with Corridor communities and will focus on reducing visual contrast associated with implementation of Action Alternatives. Any Tier 2 process involving transit will impact the entire Corridor. Because visual contrast is most closely associated with the addition of structural elements and changes to landform characteristics, mitigation measures will consider efforts to minimize impacts related to both landform and structures.

Development of mitigation strategies will involve the review of United States Forest Service, Bureau of Land Management, and other jurisdictions' visual standards. The Colorado Department of Transportation will refer to the I-70 Mountain Corridor Context Sensitive Solutions Aesthetic Guidelines and create a site-specific Tier 2 Aesthetic Plan and Lighting Plan. Additionally, CDOT will consider creation of a Visual Impact and Mitigation Plan for each Tier 2 process that addresses the following items:

- Past visual impacts and scarring
- Project-related visual impacts
- Consideration of mitigation strategies for both that includes:
  - Review and consideration of all United States Forest Service, Bureau of Land Management, and other jurisdictions' visual standards (or as otherwise agreed to or amended)
  - Non-obstructed views of items like narrow canyons to valleys, rivers, etc.
- Adoption of rockfall mitigation measures
- Minimal use of signage, light poles, guard rails, or other infrastructure elements, where safety permits
- Use of vertical and horizontal alignments to preserve views of items such as rivers, canyons, etc.
- Use of minimum amounts of road cuts, fills, turnarounds, etc.

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