



I-70 Floyd Hill to Veterans Memorial Tunnels

Visual Impact Assessment Technical
Report
May 2021

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List of Acronyms

ADA	Americans with Disabilities Act
AVE	Area of Visual Effect
ASA	Areas of Special Attention
Bg	Background
BLM	Bureau of Land Management
CDOT	Colorado Department of Transportation
CMGC	Construction Manager/General Contractor
CR	County Road
CSS	Context Sensitive Solutions
EA	Environmental Assessment
Fg	Foreground
FHWA	Federal Highway Administration
I-70	Interstate 70
LU-1	Landscape Unit 1 - Beaver Brook
LU-2	Landscape Unit 2 - Floyd Hill
LU-3	Landscape Unit 3 - Idaho Springs/ Chicago Creek
Mg	Middle ground
MP	milepost
mph	miles per hour
NEPA	National Environmental Policy Act
PEIS	Programmatic Environmental Impact Assessment
ROD	Record of Decision
SH	State Highway
US 6	US Highway 6
US 40	US Highway 40
USFS	United States Forest Service
VIA	Visual Impact Assessment

1. Introduction and Purpose of this Report

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA), in cooperation with local communities and other agencies, are conducting the Interstate 70 (I-70) Floyd Hill to Veterans Memorial Tunnels Environmental Assessment (EA) to advance a portion of the program of improvements for the I-70 Mountain Corridor identified in the 2011 Tier 1 *Final I-70 Mountain Corridor Programmatic Environmental Impact Statement* (PEIS) and approved in the 2011 *I-70 Mountain Corridor Record of Decision* (ROD). The EA is a Tier 2 National Environmental Policy Act (NEPA) process and is supported by resource-specific technical reports.

The purpose of this technical report is to document the existing conditions, impacts, and mitigation for visual resources and aesthetics. This report also includes a description of applicable laws and regulations and a summary of the resource analysis and mitigation framework from the PEIS and ROD.

2. Proposed Action and Alternatives

2.1. Description of Proposed Action and Alternatives

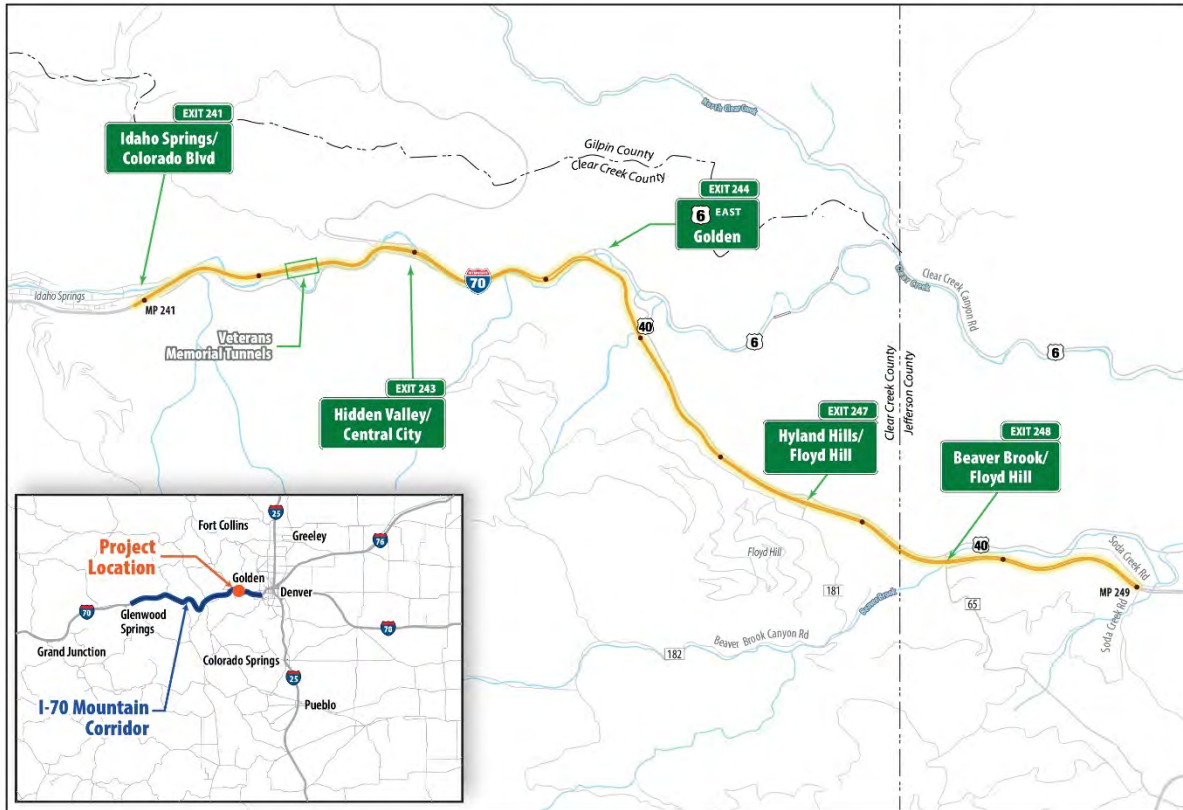
CDOT and FHWA propose improvements along approximately 8 miles of the I-70 Mountain Corridor from the top of Floyd Hill through the Veterans Memorial Tunnels to the eastern edge of Idaho Springs. The purpose of the Project is to improve travel time reliability, safety, and mobility, and address the deficient infrastructure through this area.

The major Project elements include:

- Adding a third westbound travel lane to the two-lane section of I-70 from the current three-lane to two-lane drop (approximately milepost (MP) 246) through the Veterans Memorial Tunnels
- Constructing a new frontage road between the US Highway 6 (US 6) interchange and the Hidden Valley/Central City interchange
- Improving interchanges and intersections throughout the Project area
- Improving design speeds and stopping sight distance on horizontal curves
- Adding an eastbound auxiliary lane to I-70 on Floyd Hill between the US 6 interchange and the Hyland Hills/Floyd Hill interchange
- Improving the multimodal trail (Clear Creek Greenway) between US 6 and the Veterans Memorial Tunnels
- Reducing animal-vehicle conflicts and improving wildlife connectivity with new and/or improved wildlife overpasses or underpasses
- Providing two permanent air quality monitors at Floyd Hill and Idaho Springs to collect data on local air quality conditions and trends
- Coordinating rural broadband access with local communities, including providing access to conduits and fiber in the interstate right-of-way

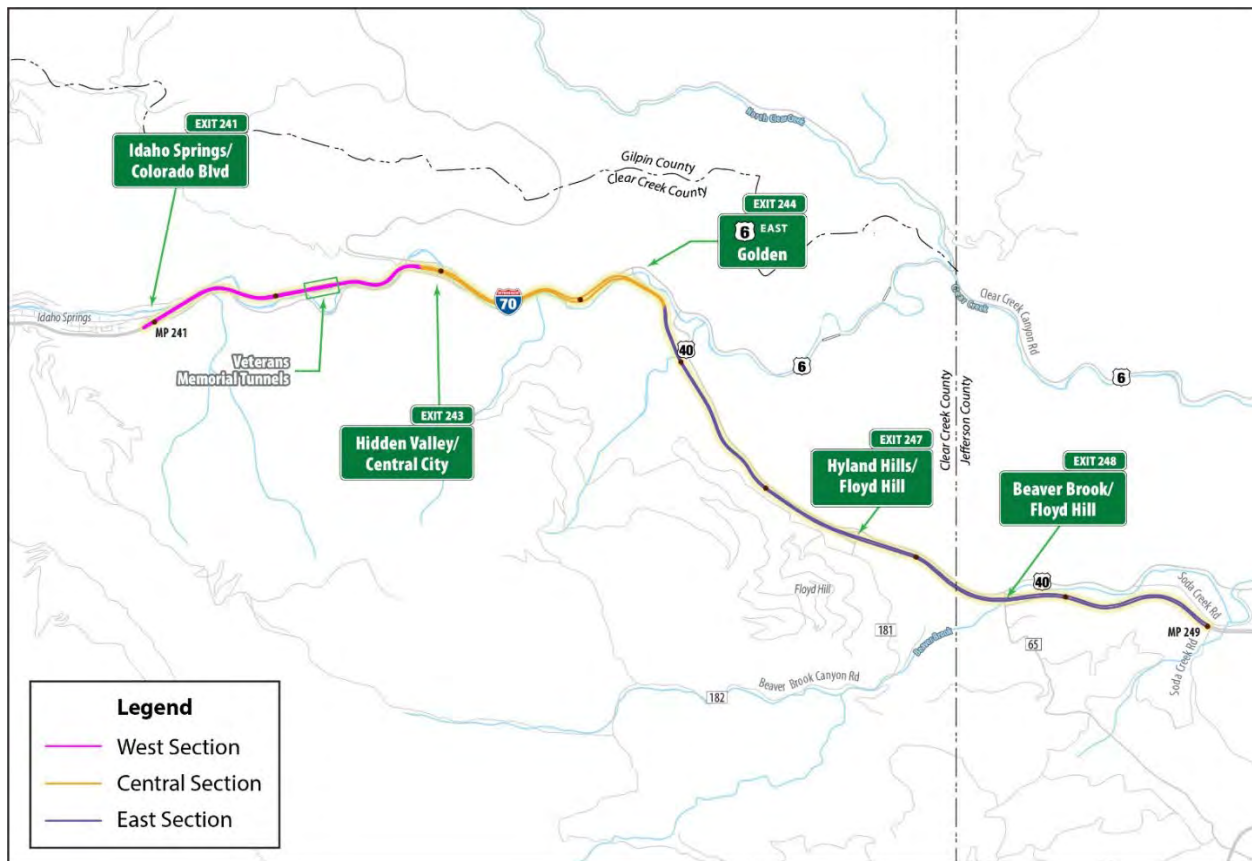
The Project is located on I-70 between MP 249 (east of the Beaver Brook/Floyd Hill interchange) and MP 241 (Idaho Springs/Colorado Boulevard), west of the Veterans Memorial Tunnels. It is located mostly in Clear Creek County, with the eastern end in Jefferson County (see Exhibit 1). The primary roadway construction activities would occur between County Road (CR) 65 (the Beaver Brook/Floyd Hill interchange) and the western portals of the Veterans Memorial Tunnels (MP 247.6 and MP 242.3, respectively), with the Project area extended east and west to account for signing, striping, and fencing.

Exhibit 1. Project Location



Three alternatives are being evaluated in the EA: (1) No Action Alternative, (2) Tunnel Alternative, and (3) Canyon Viaduct Alternative. The Project improvements are grouped into three geographic sections: (1) East Section (top of Floyd Hill to US 6 interchange), (2) Central Section (US 6 interchange to Hidden Valley/Central City interchange), and (3) West Section (Hidden Valley/Central City interchange through Veterans Memorial Tunnels) (see Exhibit 2).

Exhibit 2. East, Central, and West Project Sections



The action alternatives—the Tunnel Alternative and Canyon Viaduct Alternative—include the same improvements in the East Section and West Section to flatten curves, add a third westbound travel lane (the new lane would be an Express Lane), provide wildlife and water quality features.

Through the Central Section between the US 6 interchange and the Hidden Valley/Central City interchange, the action alternatives vary in how they provide for the third westbound I-70 travel lane and frontage road connections as follows:

- The **Tunnel Alternative** would realign westbound I-70 to the north (along the curve between MP 244.3 and MP 243.7) through a new 2,200-foot-long tunnel west of US 6. Eastbound I-70 would be realigned within the existing I-70 roadway template to flatten curves to improve design speed and sight distance. This alternative also would include two design options for the alignment of the new frontage road—north or south of Clear Creek. The Clear Creek Greenway trail would be reconstructed in its current location on the south side of Clear Creek.
- The **Canyon Viaduct Alternative** would realign approximately one-half mile of both the westbound and eastbound I-70 lanes (along the curve between MP 244 and MP 243.5) on viaduct structures approximately 400 feet south of the existing I-70 alignment on the south side of Clear Creek Canyon. Through the realigned area, the frontage road would be constructed under the viaduct on the existing I-70 roadway footprint north of Clear Creek. The Clear Creek Greenway would be reconstructed in its current location on the south side of Clear Creek. The viaduct would cross above Clear Creek and the Clear Creek Greenway twice.

Additional information regarding the alternatives evaluated in the EA can be found in the *I-70 Floyd Hill to Veterans Memorial Tunnels Alternatives Analysis Technical Report* (CDOT, 2020a).

2.2. No Action Alternative

The No Action Alternative includes ongoing highway maintenance. In addition, due to its poor condition, the westbound I-70 bridge at the bottom of Floyd Hill is programmed to be replaced regardless of whether CDOT moves forward with one of the action alternatives. Therefore, replacing the bridge in kind (as a two-lane bridge) is part of the No Action Alternative. Under the No Action Alternative, the bridge would be replaced in its current location but would need to be designed to current standards, with a 55 mile-per-hour (mph) design speed and improved sight distance with wider shoulders.

2.3. Action Alternatives: East Section

In the East Section between the top of Floyd Hill and the US 6 interchange, the action alternatives are the same. Through this section, westbound I-70 would be widened to the south to accommodate a third travel lane, which is planned as an Express Lane. The typical section would include an additional 12-foot travel lane and inside and outside shoulders of varying widths, depending on sight distance needs around curves. The proposed footprint would include a 4-foot buffer between the new Express Lane and the existing (general purpose) lanes.

In the eastbound direction, the three travel lanes would be retained but the roadway would be realigned where needed to accommodate westbound widening or curve modifications to improve sight distance and safety. An approximately one-mile-long eastbound auxiliary (climbing) lane would be added in the uphill direction from the bottom of Floyd Hill to the Hyland Hills/Floyd Hill interchange (Exit 247). Water quality features would be added along the south side of the eastbound lanes.

At the Beaver Brook/Floyd Hill and Hyland Hills/Floyd Hill interchange systems, the split diamond interchange configuration (with on- and off-ramps connected by U.S. Highway 40 [US 40]) would remain, and no new accesses would be provided. However, roundabout intersections constructed on US 40 as part of a separate project address immediate issues with traffic flow and delays at the Floyd Hill neighborhood ingress and egress.

Wildlife fencing would be added along the north and south sides of I-70 between the Hyland Hills/Floyd Hill interchange on the west and Soda Creek Road on the east to reduce wildlife-vehicle collisions.

2.4. Action Alternatives: Central Section

The Central Section of the Project involves the most substantial improvements—including realigning curves, adding a third westbound travel lane, improving the Clear Creek Greenway, and providing the frontage road connection. These improvements occur within the most-constrained section of the Project area, where the existing I-70 footprint and planned roadway improvements are located between canyon rock faces north and south of existing I-70 and Clear Creek. Because of these constraints, the action alternatives within this section include the same improvements but differ with respect to the I-70 mainline and frontage road alignments and the relationship of the roadway improvements to the rock faces and the creek. The Clear Creek Greenway would be reconstructed generally along its existing alignment under both action alternatives, but the Clear Creek Greenway's location to the creek and roadway infrastructure would differ as described below.

2.4.1. I-70 Mainline

The I-70 mainline through this section continues the same roadway typical section from the East Section. Both alternatives would provide an additional westbound 12-foot travel lane; inside and outside shoulders of varying widths, depending on sight distance needs around curves; and a 4-foot buffer between the new Express Lane and the existing (general purpose) lanes.

Under the Tunnel Alternative, approximately one mile of westbound I-70 would be realigned to the north near the US 6 interchange. A portion of the realignment would extend through a 2,200-foot-long tunnel that would tie in to the existing westbound I-70 alignment and elevation just east of the Hidden Valley/Central City interchange. The three eastbound I-70 lanes through this area would remain within the existing roadway prism but would be realigned, moving approximately 100 feet north into the rock face adjacent to the existing westbound lanes to flatten horizontal curves and improve the design speed and sight distance.

Under the Canyon Viaduct Alternative, the westbound I-70 alignment would shift to the south on a new 5,300-foot-long viaduct beginning at approximately MP 245 east of the exit ramp to US 6 and it would rejoin the existing alignment about one-half mile east of the Hidden Valley/Central City interchange at approximately MP 243.5. Through this area, eastbound I-70 also would be realigned on a separate viaduct structure next to westbound I-70 from MP 243.4 east to just beyond MP 244.3. Both viaduct structures would cross Clear Creek and the Clear Creek Greenway twice near MP 243.9 and MP 243.5 (approximately 60 feet above ground level).

2.4.2. Frontage Road

Both alternatives include a new approximately 1.5-mile-long frontage road connection between the Hidden Valley/Central City interchange and the US 6 interchange. The frontage road would run from the intersection of CR 314 and Central City Parkway (south of the I-70 eastbound off-ramp at the Hidden Valley/Central City interchange where CR 314, which acts as a frontage road from east Idaho Springs, terminates) to the US 6/I-70 ramp terminal. The roadway section for the frontage road would consist of two 11-foot lanes (one in the eastbound direction and one in the westbound direction) with consistent 2-foot shoulders. The design speed would be 30 mph and the roadway would be constructed to comply with Clear Creek County local access standards.

The Tunnel Alternative includes two design options for this frontage road:

- **North Frontage Road Option** would provide the new frontage road connection between the two interchanges mostly on the north side of Clear Creek. The I-70 mainline would be realigned north into the mountainside, requiring substantial rock cuts (150 feet high) to make room for the frontage road between the creek and existing I-70. The Clear Creek Greenway would be reconstructed along its current alignment north of Clear Creek. In the Sawmill Gulch area where the existing trail's grade does not meet Americans with Disabilities Act (ADA) standards, the Greenway trail would be lowered to meet grades.
- **South Frontage Road Option** would provide the new frontage road connection between the two interchanges mostly on the south side of Clear Creek. Moving the frontage road to the south side of the creek would require new rock cuts on the south side of Clear Creek Canyon and less substantial rock cuts on the north side of I-70. The Clear Creek Greenway would be reconstructed generally along its current alignment south of Clear Creek; in the Sawmill Gulch area, an approximately 1,500-foot new section of the Greenway trail would be constructed across the creek to the north (with two pedestrian bridge crossings of the creek) to be ADA compliant, and the existing trail would remain in place but not be resurfaced. The Clear Creek

Greenway would be located closer to the frontage road than under the North Frontage Road Option; although the design seeks to maximize horizontal and vertical separation between the facilities and includes a new section of trail to meet ADA compliance, the alignment of the frontage road nearer to the Greenway and between the Greenway and creek is not supported by Clear Creek County, Idaho Springs, community members, or the Project Technical Team because it diminishes the recreational experience.

Under the Canyon Viaduct Alternative, the existing I-70 pavement under the elevated structures would be repurposed for the frontage road; excess right of way would be available for other uses—presumably, creek and recreation access—through this approximately one-mile area of the canyon.

2.5. Action Alternatives: West Section

The West Section between the Hidden Valley/Central City interchange and the Veterans Memorial Tunnels continues the widening of the interstate to add the third westbound travel lane and to flatten the S-curve in this location. Improvements in this section are the same under both action alternatives. The curve modifications require realigning both the I-70 mainline and frontage road through this section. The I-70 mainline alignment would shift south approximately 100 feet around the first curve from the Hidden Valley/Central City interchange, then north around the second curve approximately 50 feet, continuing a slight (25 foot) shift north before tying into the existing alignment at the Veterans Memorial Tunnels. Much of CR 314 would be realigned south between the Doghouse Rail Bridge over Clear Creek near the Veterans Memorial Tunnels east portal and the Hidden Valley/Central City interchange. A small section of CR 314 (between MP 242.6 and MP 242.7) would remain and connect to the reconstructed portions west and east.

These alignment shifts result in substantial rock cuts on both the north and south sides of the canyon. On the north side, rock cuts up to 160 feet high would be required next to the I-70 westbound lanes (along the curve in the area where CR 314 is not reconstructed). To realign CR 314 south, rock cuts from 70 feet to 100 feet high are required on the south side of the canyon. Additionally, a 1,200-foot section of Clear Creek, which is located between I-70 and CR 314, would need to be relocated south near MP 242.5.

The Hidden Valley/Central City interchange would not be reconstructed, and the I-70 bridges would remain because they are wide enough to accommodate the widened I-70 footprint without being replaced. All the on- and off-ramps for the interchange would be reconstructed, but the bridges over Clear Creek for the I-70 westbound off-ramp and I-70 eastbound on-ramp also can be retained. New bridges over Clear Creek to the west would be needed for the I-70 westbound on-ramp and I-70 eastbound off-ramp to accommodate the curve flattening and shift of I-70 to the south in this location. The CDOT maintenance facility would need to be relocated.

No changes are required west of the Veterans Memorial Tunnels. Within the westbound tunnel, the roadway would be restriped for the third lane (the expansion of the tunnel to accommodate the third lane was completed in 2014). After the tunnel, restriping and signing would continue west to the next interchange at Idaho Springs/Colorado Boulevard (Exit 241), where the third lane would terminate. The Express Lane would operate in conjunction with the westbound Mountain Express Lane (MEXL) during peak periods (mostly winter and summer weekends and holidays).

2.6. Construction of Action Alternatives

CDOT is planning to use a Construction Manager/General Contractor (CMGC) delivery method for construction of the Project. This contracting method involves a contractor advising in the design phases to better define Project technical requirements and costs, improve design quality and constructability,

and reduce risks through the construction phase. This method promotes innovation and aligns well with the multidisciplinary Context Sensitive Solutions process. It was used successfully on the Twin Tunnels projects to reduce environmental impacts and accommodate community values in the design and construction project development phases.

Construction of the action alternatives is anticipated to be complex and take four to five years but could occur generally within the proposed right of way. CDOT would work with the CMGC to refine the construction details and develop a plan that promotes safety and minimizes disruption to the traveling public and nearby residents and businesses.

The Tunnel Alternative would take approximately one year longer to build than the Canyon Viaduct Alternative; most of the additional time would be needed for the tunnel rock blasting and construction that could take place without disrupting traffic. However, in addition to the tunnel rock blasting, the Tunnel Alternative has considerable rock cuts at the tunnel portals and along the north side of I-70 to realign curves, widen the highway, and add the frontage road connection. Rock cuts, staging for the excavation of the tunnel portals, and haul of waste rock are major construction activities that are likely to interrupt traffic on I-70 due to increased construction equipment traffic on the highway and the proximity of construction to live traffic, the need for temporary lane closures and detours, and closures for blasting. The North Frontage Road Option has significantly larger (taller and longer) rock cuts than the South Frontage Road Option.

The Canyon Viaduct Alternative has substantially less rock cuts and blasting compared to the Tunnel Alternative but would require more work in the existing highway right of way. Bridge construction over and pier placement within the highway template will need to be carefully coordinated. However, construction of some elements, such as the bench portion of the viaduct, are separated from the existing I-70 alignment and could be constructed offline similarly to the tunnel excavation.

Specific construction methods and phasing will be determined with contractor input and could affect the duration and/or physical requirements for construction activities. The focus of environmental impact analysis during the NEPA process is to identify resources and locations sensitive to construction impacts and incorporate reasonable mitigation measures, including the potential to avoid impacts by avoiding sensitive areas, to inform the contractor's plans. Final design and construction plans will consider changes in resource impacts, and reevaluations will be completed as needed during final design.

3. Visual Impact Assessment Methodology and Scoping

The visual impact assessment (VIA) methodology is carried out in four phases: Establishment/Scoping, Inventory, Analysis, and Mitigation:

- **Establishment/Scoping** - Identifies direction for the initial review of the Proposed Action, landscape context, issues and applicable regulations, policies or guidelines; level of VIA documentation; and area of visual effect (AVE)/landscape units
- **Inventory** - Characterizes the landscape character, viewers, and visual quality of the AVE
- **Analysis** - Evaluates the visual compatibility and impacts of the Proposed Action
- **Mitigation** - Develops visual impact mitigation measures

The VIA Study Team includes CDOT staff and landscape architects and planners from THK Associates, Chinook Landscape Architecture, Peak Consulting Group, and Atkins.

Sections 4–6 of this report document the establishment/scoping and inventory phases of the VIA. Section 7 documents the analysis, and Section 8 documents the mitigation. The establishment/scoping and inventory phases were conducted in 2018 under the guidance of the *FHWA Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA, 2015), prior to the issuance of the *2019 CDOT Visual Impact Assessment Guidelines* (CDOT, 2019). The characterization of the Affected Environment in Section 6 has not been revised to reflect the new tools recommended in the 2019 guidelines. Section 7 Impacts follows the new guidelines.

Data gathering and scoping approaches for this Project included:

- A field visit on November 27, 2018 to photograph the AVE
- Desktop reconnaissance including consulting Google Earth 3-D maps and reviewing federal, state, and local plans to accurately describe the current condition and key views.
- Review of guidelines and policies related to visual resources, including the *FHWA Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA, 2015); applicable federal, state, and local plan and policy documents listed in Section 9 of this report; review of Project Leadership Team, Technical Team, and public meeting notes; and consultation with CDOT's I-70 Mountain Corridor Environmental Manager and Region 1 visual resource specialist
- Stakeholder input
- Completion of FHWA's scoping questionnaire (Appendix A) to identify issues and establish the appropriate level of VIA documentation for this Project (note: the 2019 CDOT VIA guidelines include a new and different scoping questionnaire, but the appropriate level of VIA documentation for this Project is the same, regardless of which questionnaire is used)

Appendix B provides a more detailed overview of the Visual Impact Assessment methodology.

Cumulative visual impacts are described in the *I-70 Floyd Hill to Veterans Memorial Tunnels Cumulative Impacts Assessment Technical Report* (CDOT, 2020b).

4. Applicable Laws, Regulations, and Guidance

Applicable laws and regulations pertinent to visual resources are outlined in Exhibit 3. Some of the guidance documents specific to the Project were derived from a process referred to as Context Sensitive Solutions (CSS). The I-70 Mountain Corridor CSS process and related corridor-specific guidance are described in greater detail in Section 4.1. State and local guidance documents may be found to conflict in some elements of the Project design.

Exhibit 3. Applicable Laws, Regulations, and Guidance¹

Regulation	Agency	Additional Information
Federal Regulations		
National Environmental Policy Act (Section 101 42 USC Section 4331)	FHWA	The National Environmental Policy Act of 1969, as amended, establishes that it is the responsibility of the federal government to "... ensure all Americans safe, healthful, productive, and esthetically [sic] and culturally pleasing surroundings."
State Regulations		
There are no specific State regulations relating to visual resources or VIA procedures.		
Federal, State, and Local Policy and Guidance		
2019 CDOT Visual Impact Assessment Guidelines	CDOT	Provides statewide standard guidelines for assessing visual resources in CDOT's NEPA documentation and decision-making. These guidelines build on FHWA's 2015 visual impact assessment guidelines and provide a comprehensive process for assessing visual impacts and developing effective mitigation, with a goal of achieving visual compatibility with the landscape character, travelers, and viewers. This guidance was not yet available during Project scoping activities and characterization of the Affected Environment, and therefore those activities did not adhere to this guidance.
CDOT NEPA Manual (2020)	CDOT	Section 9.23 of the CDOT <i>NEPA Manual</i> provides guidance on the treatment of visual resources for CDOT's NEPA projects. The manual defers to the FHWA to provide guidance on VIA (see next row), including using the VIA Scoping Questionnaire to determine the appropriate level of effort for assessing the impacts on visual quality that may result from a proposed highway project.
Guidelines for the Visual Impact Assessment of Highway Projects (2015)	FHWA	The FHWA guidelines act as a best practice resource, outlining a practical application of VIA that can be undertaken regardless of the size, scope, complexity, and controversy associated with a project. The guidelines recommend enhanced levels of public engagement, to achieve a better understanding of how people define visual quality and how they interpret changes to it.
CDOT Chief Engineer Policy Memo #26 (2005)	CDOT	This policy memo provides agency-wide direction to use CSS. It explains CSS as a concept, describes CSS implementation vision, provides examples of CSS practices underway within CDOT, and outlines plans for CSS training.

Exhibit 3. Applicable Laws, Regulations, and Guidance¹

Regulation	Agency	Additional Information
CDOT Landscape Architecture Manual (2014)	CDOT	<p>The CDOT <i>Landscape Architecture Manual</i> aims to aid transportation design decision-making beyond strictly functional and engineering criteria within a CSS approach. The manual provides designers of highway facilities a guide for the desired environmentally responsible and aesthetic outcomes of individual projects.</p> <p>The manual designates five 'Design Zones' throughout Colorado which have been selected to help ensure a consistent design approach throughout Colorado's roadways. The purpose of these zones is to promote consistency between road alignments with the dominant landform of the zone, and landscaping elements such as plant palettes should be derived from plant species native to the zone and micro-climatic conditions.</p> <p>The I-70 Mountain Corridor is located within the Southern Rocky Mountains Zone, a zone with more than 50 mountains exceeding 14,000 feet and 300 peaks over 13,000 feet. Notable topographic features include hogbacks, mesas, rocky outcrops, and rugged canyons. Additional studies have been undertaken for this corridor, resulting in the <i>I-70 Mountain Corridor Aesthetics Guidance</i> (see next row).</p>
I-70 Mountain Corridor Aesthetics Guidance (2015)	CDOT	<p>The <i>I-70 Mountain Corridor Aesthetics Guidance</i> provides an aesthetic vision for the entire I-70 Mountain Corridor that aims to guide the design of future projects and improvements. As part of the CSS process, aesthetic principles and a Regional Functional Context were produced, which resulted in four geographic Design Segments, as well as Areas of Special Attention (ASA), which are areas identified by stakeholders as having multiple or unique issues.</p> <p>This Project resides in the <i>Mountain Mineral Belt Design Segment</i> of this guidance manual, which includes historic towns and their associated mining past, such as Idaho Springs and Georgetown, and offers scenic views, lush forests, rocky hillsides, waterways, and access to local and regional destinations and recreational opportunities. Section 5.2 summarizes the aesthetic guidance for features prominent in this Project, such as bridge structures and retaining walls.</p> <p>Additionally, the <i>Mountain Mineral Belt Design Segment</i> contains five ASAs, three of which lie within the Study Area: the Floyd Hill ASA, Twin Tunnels ASA, and Idaho Springs ASA. Further information on these ASAs is provided in subsection 4.1.1.</p>
Envision Idaho Springs (2017) (part of the <i>City of Idaho Springs Comprehensive Plan</i>)	City of Idaho Springs	<p>The <i>City of Idaho Springs Comprehensive Plan</i> aims to guide harmonious development in the City and its environs and achieve its vision for the community. The Land Use and Community Character Element seeks to preserve Idaho Springs' mountain community character, including maintaining the sense of place that is afforded to Idaho Springs due to the steep, narrow, and winding streets, its rich mining history, its mountain topography, and historic main street which is listed on the National Register of Historic Places.</p> <p>Of particular interest to the Study Area is the land use and character map, which identifies land adjacent to the I-70 at the eastern gateway to Idaho</p>

Exhibit 3. Applicable Laws, Regulations, and Guidance¹

Regulation	Agency	Additional Information
		Springs as being suitable for regional commercial, multifamily, park/open space, and mixed use and/or park land. Within the Hidden valley area, the land is suitable for mixed residential density to the south of I-70 and parks/open space to the north along with regional commercial.
Clear Creek County I-70 Visioning Plan (2014)	Clear Creek County	The <i>Clear Creek County I-70 Visioning Plan</i> was organized to review CDOT projects but also provide advanced identification of opportunities to create a positive impact to protect small town communities, enhance the vibrant local economy, preserve the natural, healthy environment, and identify and protect local nationally recognized historic assets. It established measures for evaluating implementation of CSS on the Project, design guidelines, and whether it would protect or enhance existing views from key viewing areas.
Floyd Hill Gateway Sub-regional Master Plan (2009)	Clear Creek County	This master plan recognizes Floyd Hill as the ‘gateway’ or the eastern entry point to Clear Creek County along I-70, a primary travel route for the movement of the County’s residents, goods, and services of this area. I-70 is recognized as an important center, and development surrounding I-70 should include aesthetic qualities harmonious with its low density, rural mountain residential community setting. The plan includes guidelines for transportation facilities to minimize hillside cuts and light pollution among other objectives to maintain the natural and rural feeling.
Clear Creek County Open Space Plan (2017)	Clear Creek County	The <i>Clear Creek County Open Space Plan</i> features a section on important features and views and identifies I-70 as not being utilized to its full potential. The plan also notes that “The ridges along I-70 and Clear Creek itself are a major part of the visual image of the corridor. The meadow and ridges at Floyd Hill serve as a gateway to the County. Unfortunately, development and road building threaten some of the other key ridges.”
Clear Creek County Greenway Plan (2005)	Clear Creek County	The Clear Creek Greenway was first identified in the adopted 1990 <i>Clear Creek County Inter-county Non-Motorized Corridor Master Plan</i> . The purpose of the <i>Clear Creek Greenway Plan</i> is to provide a common vision for a Greenway along Clear Creek that all stakeholders share and combine resources to achieve. The goals include rehabilitating the main channel of Clear Creek and prohibit further filling of the creek. The plan includes enhancements within the Project study area. Design guidelines for the Greenway trail include aesthetic and functional designs and, relevant to this Project, how to position the trail next to roads and guidance for trail underpasses, trail surface, trail bridge designs, retaining walls, restoration, and trail heads with or without parking.
Clear Creek County 2017 Community Master Plan	Clear Creek County	The <i>Clear Creek County 2017 Community Master Plan</i> aims to ensure suitability and compatibility with environmental characteristics and community character of the County. The master plan notes that I-70 has a profound impact on the County, both positive through serving as access in/out of the County, but also negative, by creating noise and congestion. The image of I-70 is also identified as a challenge for creating an economically healthy community.

Exhibit 3. Applicable Laws, Regulations, and Guidance¹

Regulation	Agency	Additional Information
I-70 Mountain Corridor PEIS Visual Resources Technical Report (2011)	CDOT	The <i>I-70 Mountain Corridor PEIS Visual Resources Technical Report</i> supports the information contained in Chapter 3, Section 3.11 of the PEIS. In addition to providing a description of the visual resources in the I-70 Mountain Corridor, it also includes considerations for Tier 2 processes. Further information from the PEIS is provided in Section 5 of this VIA technical report.

¹ Many of the applicable laws and regulations use terms specific to visual resource analyses that are further described in Section 5.

4.1. I-70 Mountain Corridor Context Sensitive Solutions and Aesthetic Guidance

CSS is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist. CSS principles include the employment of early, continuous and meaningful involvement of the public and all stakeholders throughout the project development process. CDOT committed to use the principles of CSS on all projects on the I-70 Mountain Corridor and developed the I-70 Mountain Corridor CSS process to guide future studies, designs, and construction projects. The *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) provides an aesthetic vision for the entire corridor to guide future projects and ensure that individual projects would have continuity in design elements, but also contain geographically specific sensitivities to preserve community, environmental, scenic, historic, and natural resource values. The Floyd Hill Project resides in the Mountain Mineral Belt Design Segment of the *I-70 Mountain Corridor Aesthetics Guidance*. Additional context for the Mountain Mineral Belt Design Segment and the ASAs and corresponding area maps (see Exhibits 4 and 5) for this segment are provided below.

4.1.1. Mountain Mineral Belt Design Segment

The mandatory application of aesthetics guidance for the Mountain Mineral Belt Design Segment helps avoid visual impacts early in the design process. The aesthetics guidance has already benefitted from stakeholder and public input. The guidelines direct the designers to bear in mind that the natural and built environment are viewed by the neighbors, travelers (drivers and passengers), and recreationalists and would be affected by the proposed changes.

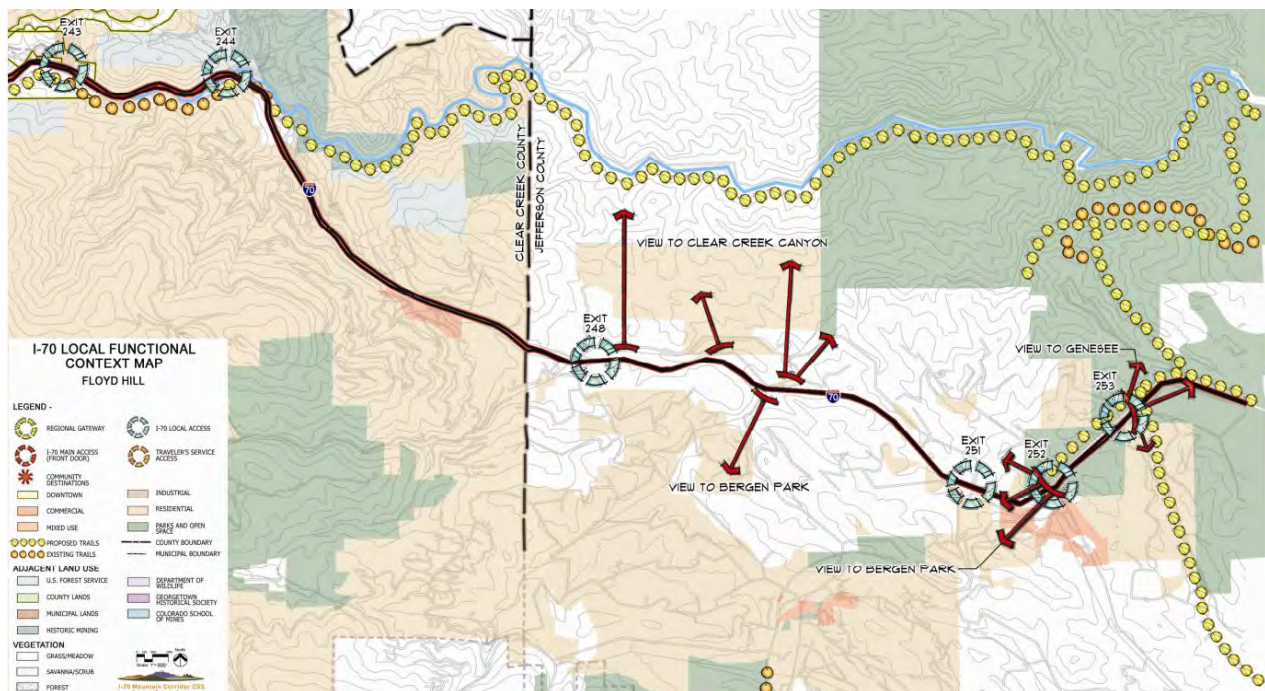
As stated in Exhibit 3, the Mountain Mineral Belt Design Segment contains five ASAs, three of which lie within the Study Area: Floyd Hill ASA, Twin Tunnels (known since September 11, 2015 as the Veterans Memorial Tunnels) ASA, and Idaho Springs ASA. ASAs are areas identified by stakeholders as having multiple or unique visual and aesthetic issues. The following sections provide more specifics on the context and sensitivities that must be considered in design elements and sensitivity towards visual resources.

4.1.1.1. Floyd Hill ASA

The Floyd Hill ASA is bound between MP 253 to MP 244, with Genesee on the east and the interchange of US 6 on the west. The Floyd Hill ASA report (CDOT, 2011a) states that “Floyd Hill is the first step incline when traveling east to west along I-70, it is the connection between Jefferson and Clear Creek Counties, and it is in proximity to Clear Creek on the west with dense forest and dramatic views of Clear Creek Canyon.” Exhibit 4 displays the functions and views that should be considered in this ASA; none of the key views fall within the Project limits.

The Floyd Hill ASA report lists the following goals and objectives applicable to this Project: mitigate unfavorable visual impacts from both the community and roadway perspectives with the use of buffers and transitions between community uses, allow no further encroachment into Clear Creek, minimize the use of cut and fill embankment, improve consistency in design and color schemes for roadway structures, and preserve areas of high visual value or recreational value.

Exhibit 4. Floyd Hill ASA Functional Context Map



4.1.1.2. Twin Tunnels ASA

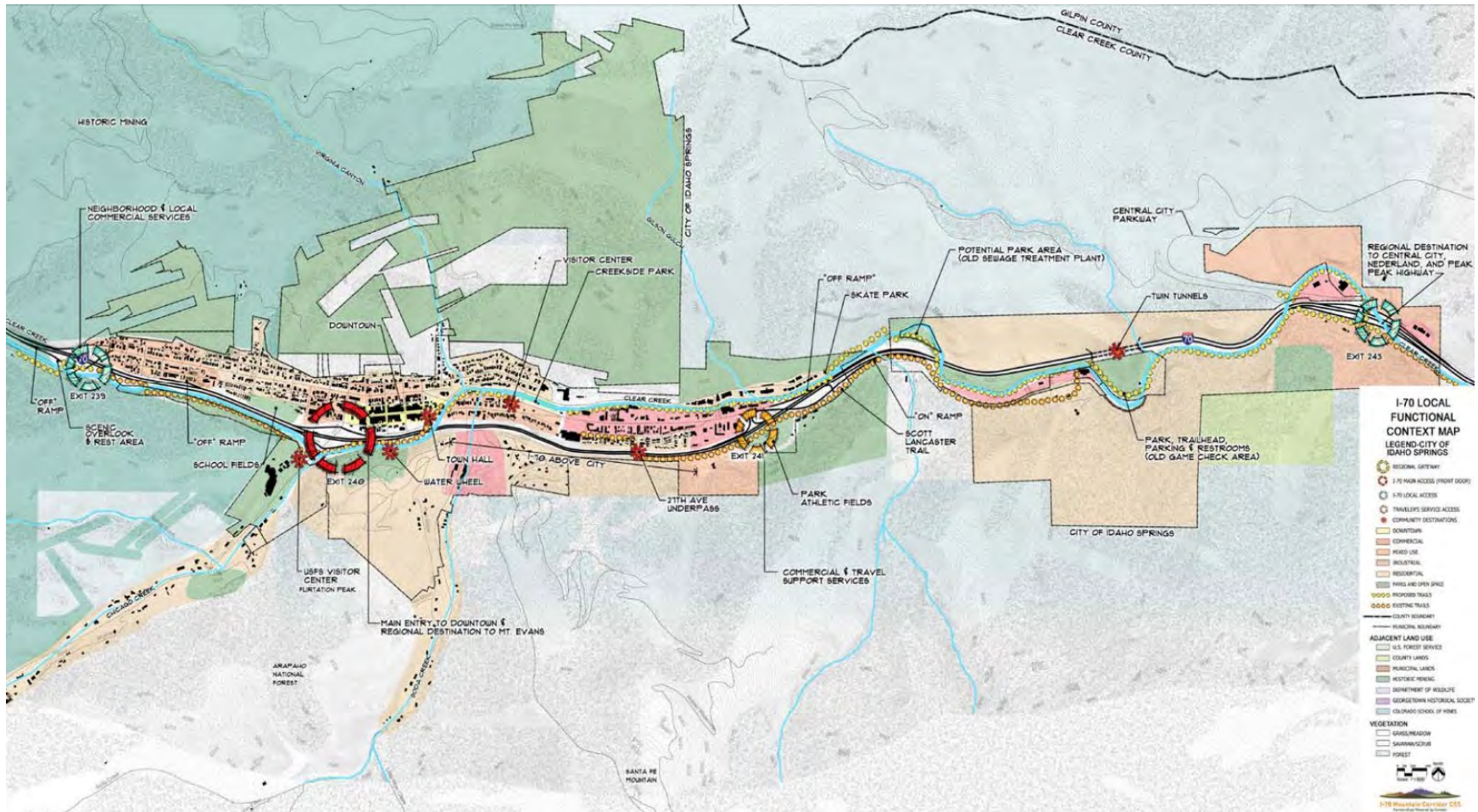
The Twin Tunnels ASA focuses on the tunnels (currently known as Veterans Memorial Tunnels) and extends between MP 243, near the Hidden Valley/Central City interchange, and MP 242, near the interchange at the east end of Idaho Springs. The ASA was selected because the tunnels are proximal to Clear Creek, and act as a landmark going into and coming out of Idaho Springs. They are the first tunnel that is passed through traveling westbound on I-70.

The main goals and objectives relating to visual resources are to mitigate unfavorable visual impacts from both the community and roadway perspectives with the use of buffers and transitions between community uses, restore existing rock faces and unstable slopes in Clear Creek, and allow no further encroachment into Clear Creek (CDOT, 2011c). Exhibit 5 displays the functions and views that should be considered in this ASA.

4.1.1.3. Idaho Springs ASA

The Idaho Springs ASA was selected due to Idaho Springs being the first historic mining town west of Denver on I-70. The limits of this ASA extend from MP 242 to MP 239. Several important contextual features and places add to the unique character of this area, including the Charlie Tayler Waterwheel, the Argo Mill and Newhouse Tunnel, National Historic Commercial District, plus over a dozen buildings and homes that have National Register of Historic Places status. Exhibit 5 displays the functions and views that should be considered in this ASA. The Project limits do not reach these notable historic features. The main goals and objectives relating to visual resources regarding design is the contrast between the highway and historic Idaho Springs and consideration of lighting impacts. (CDOT, 2010)

Exhibit 5. Idaho Springs and Twin Tunnels Areas of Special Attention Functional Context Map



5. Visual Resources and Aesthetics in the Tier 1 PEIS

5.1. Context

The PEIS and accompanying *Visual Resources Technical Report* (CDOT, 2011b) considered all views and viewers located within the northern and southern ridgelines through which the interstate passes. These visual boundaries defined the limits of the area of influence,¹ or that portion of the landscape observable by the highway user, and captured areas with visibility of the highway. CDOT inventoried the existing visual environment by examining the character of the landscape and identifying potential viewers within the viewshed of the I-70 Mountain Corridor. Viewers include residents, motorists, or recreationalists with a view of the I-70 highway or from the I-70 highway.

The PEIS described the visual characteristics of distinct areas along the I-70 Mountain Corridor in terms of natural context (landforms and vegetation types) and cultural context (built environment as well as community values or sense of place). The areas were rated in terms of the existing visual conditions and the landscape scenic attractiveness of the area as derived through applicable community and United States Forest Service (USFS) plans, and community input. Because major portions of the I-70 Mountain Corridor are under federal land management, the approach for the visual resource assessment was coordinated with federal land managers from the Bureau of Land Management (BLM) and the USFS and is consistent with both agencies' visual analysis methodologies.

CDOT organized landscape characteristics and sensitive receptor locations into 27 distinct scenery analysis units or landscape units throughout the I-70 Mountain Corridor, three of which are located within the Study Area for the Floyd Hill Project. These landscape units are specifically:

- Beaver Brook (MP 246 to MP 252)
- Floyd Hill (MP 243 to MP 246)
- Idaho Springs/Chicago Creek (MP 237 to MP 243)

As illustrated in Exhibit 6, the Floyd Hill Project is shorter in length than the landscape units' area evaluated in the PEIS. As a result, the limits of the Beaver Brook and Idaho Springs/Chicago Creek landscape units differ for the Floyd Hill Project, with the Beaver Brook landscape unit extending between MP 246 to MP 249 and Idaho Springs/Chicago Creek landscape unit extending between MP 237 and MP 241.

The PEIS inventoried visual resources and identified gateway views, focal views, and canyon views. These are defined as:

- **Gateway views** provide a sense of entry or arrival to key portions of the I-70 Mountain Corridor
- **Focal views or dramatic views** are dominated by a central identifying feature that provides a notable landmark
- **Canyon views** are outstanding examples of canyon environments in the I-70 Mountain Corridor. These areas provide a sense of enclosure and dramatic settings.

¹ In the 2015 FHWA Guidance, Study Area, or in this case, the 'area of influence' is referred to as the Area of Visual Effect (AVE). The Guidance was not available at the time the PEIS was being prepared and therefore the terminology has changed slightly, but the area of analysis remains consistent.

Exhibit 6. Boundaries of PEIS Landscape Units in Project Area

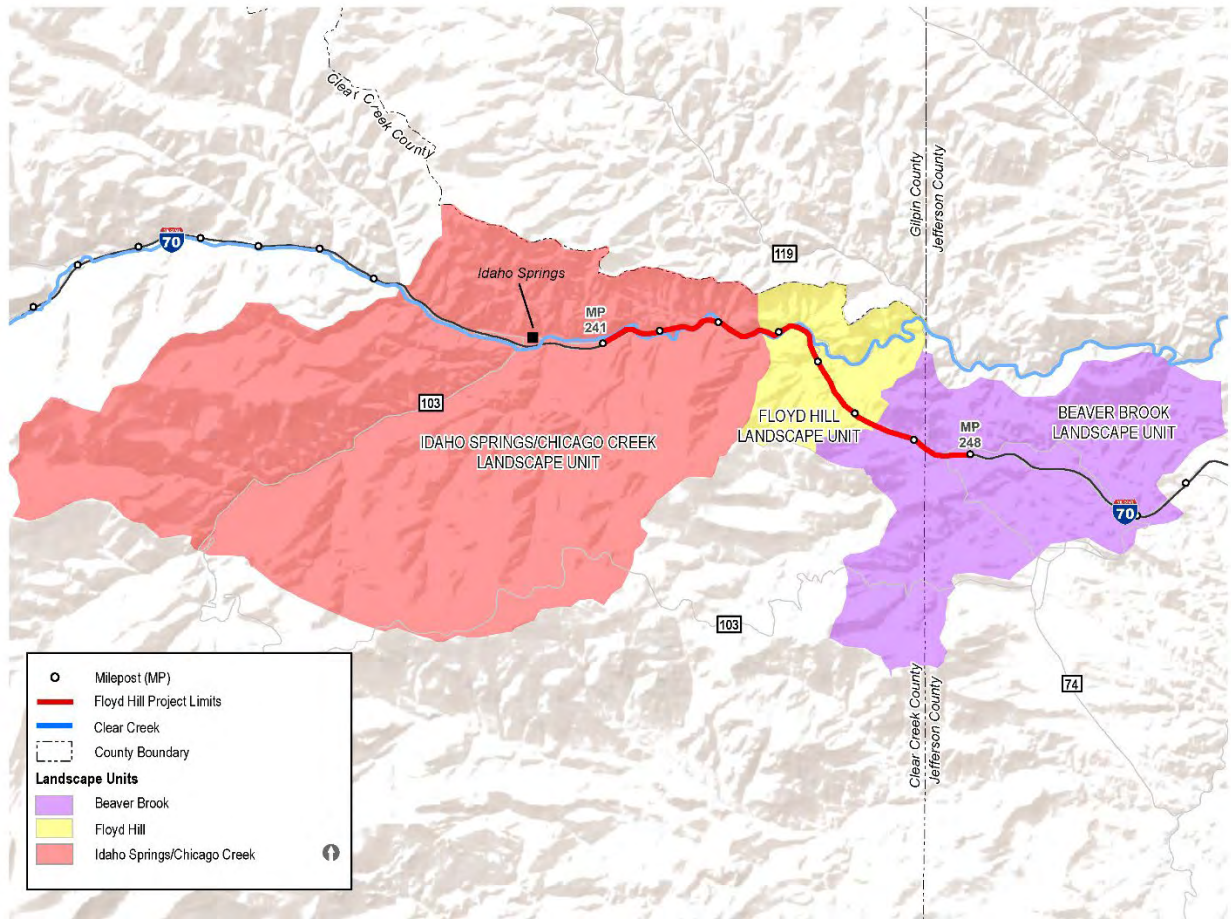


Exhibit 7 summarizes the visual character within the three landscape units evaluated for the PEIS. Visual character is described in terms of natural and cultural context and key views noted in the *I-70 Mountain Corridor PEIS Visual Resources Technical Report* (CDOT, 2011b).

Exhibit 7. Visual Resources Summary and Key Views by Landscape Unit as Recorded in the I-70 Mountain Corridor PEIS Visual Resources Technical Report

Landscape Unit	Natural Context	Cultural Context	Key Views
Beaver Brook (MP 246 to MP 252)	Open woodland montane with wetland complex; a mix of ponderosa pine and Douglas fir on north- and south-facing slopes	A mountain residential community located east of historic mining districts of Clear Creek and west of suburban development of Jefferson County	Bergen Park; Elk Meadow Park; Fillius Park; Genesee Park; Jefferson County Open Space; Painters Pause Park
Floyd Hill (MP 243 to MP 246)	Steep canyon terrain, rock outcroppings, and a mix of ponderosa pine and Douglas fir on north- and east-facing slopes, interruptions from quarry and roadways	Dispersed residential development, a quarry (Albert Frei & Sons Quarry), Two Bears Tap & Grill, and rafting/trail, and rock/slope cuts associated with the I-70 highway, US 40, and US 6	Scott Lancaster Memorial Trail
Idaho Springs/Chicago Creek (MP 237 to MP 243)	Steep canyon terrain, rock outcroppings, variable density montane zone, north- and east-facing slopes contain dense lodgepole pine, and riparian floodplain along Clear Creek	Historic mining, a major electric power line, and the I-70 highway and State Highway (SH) 103 Corridors	Town of Idaho Springs; Citizens Park; Clear Creek Metropolitan District Recreation Center; Cooper Park; Courtney Ryley Cooper Park, East End Ballfields

The PEIS classified existing visual conditions and scenic attractiveness for each landscape unit by collecting input from community plans and by applying USFS ratings. Exhibit 8 illustrates those classifications by the three landscape units within the Floyd Hill Study Area. Percentages provided in the Exhibit 8 indicate the extent to which the highway is visible within each landscape unit (whether in foreground, middle ground, or background views) cumulatively from the various key viewpoints. Where there is overlap between various views, closer proximity is considered. For example, where foreground and middle ground views from various key viewpoints occur along the same location of the road, that area is recorded as foreground. Where middle ground and background views from various key viewpoints occur along the same location of the road, that area is recorded as middle ground.

Exhibit 8. Visual Conditions and Scenic Attractiveness by Landscape Unit

Landscape Unit		Landscape Qualities and Scenery Concepts for Consistent and Quantifiable Visual Resource Assessment				
		Existing Visual Condition ²	Landscape Scenic Attractiveness ³	Amount that I-70 Occupies views from viewpoints		
				Foreground (Fg) ⁴	Middleground ⁴ (Mg)	Background ⁴ (Bg)
Clear Creek County	Beaver Brook (MP 246 to MP 252)	III	B	87%	13%	0%
	Floyd Hill (MP 243 to MP 246)	II	B	100%	0%	0%
	Idaho Springs/Chicago Creek (MP 237 to MP 243)	III	B	100%	0%	0%

¹ PEIS results for Jefferson County are not reported because improvements included in the Floyd Hill Proposed Action in this area are negligible.

² Rating of existing disturbances related to community development and I-70 and their effect on the integrity of the landscape setting, regardless of scenic attractiveness.

I = Natural landscapes that appear untouched by human activities

II = Natural appearance of landscape remains dominant; evidence of human activities is minor or resembles natural patterns

III = Developed areas or town sites

³ Shared USFS and BLM classification of the natural landscape setting.

Class A = Rare example of landscape type in the region

Class B = Areas in which there is a combination of some outstanding features and some that are common to the region

Class C = Areas of homogeneous features occurring for many miles without variation

⁴ Fg = Foreground: views within 0 to 0.5 mile from the observer

Mg = Middle ground: views between 0.5 to 3 miles away from the observer

Bg = Background: views beyond 3 miles

The *I-70 Mountain Corridor Visual Resources Technical Report* (CDOT, 2011b) analyzed the potential for the Preferred Alternative components to change or contrast with the existing condition environment.

Visual contrast elements were expected to result from:

- Highway widening and associated retaining walls
- Roadside cut-and-fill slopes
- Tunnel portals
- Structured lanes
- Median treatment

The analysis found that these elements would result in changes to the form, line, color, and texture of the landscape to viewers, and the surrounding viewshed, including the traveler’s perspective, nearby communities, recreation resources, and historic properties. Within the Tier 2 Study Area, the primary area affected was expected to be the foreground distance zones (88 percent) from sensitive community and recreation viewpoints, while middle ground and background distance zones would represent a relatively minimal portion (6 percent each).

Specific to the Floyd Hill Project, the creation of a six-lane highway through the Floyd Hill area was expected to result in approximately 6 miles of high visual impact, 20 miles of moderate-to-high visual

impact, and 5 miles of moderate visual impact. However, the exact lengths do not directly correspond to Floyd Hill because the three landscape units analyzed in the PEIS are slightly longer than the Project under evaluation in this Tier 2 process, as discussed above in Section 5.1.

5.2. Analysis in Tier 2 Processes

As a Tier 2 NEPA process, the I-70 Floyd Hill to Veterans Memorial Tunnels EA is analyzing visual resources within the parameters and guidance outlined in the Tier 1 process. In the ROD, FHWA and CDOT committed to the following with regards to visual resources in project-specific Tier 2 analyses, all of which are being included in the EA visual analysis:

- 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
- CDOT will consider creating visual simulations during Tier 2 processes to accurately illustrate the visual change at specific locations
- CDOT 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 Aesthetics Guidance* (CDOT, 2015)

The aesthetics guidelines prepared as a part of the I-70 Mountain Corridor CSS process will serve as Tier 2 guidance in the development of the Project design. The aesthetic vision describes how the overall corridor will look and describes the aesthetic approach to unique places in the corridor. The guidelines define the corridor as a whole, rather than defining it in construction phases or funding increments. This ensures that future projects do not become separate and disconnected from the entire corridor.

The guidance focuses on blending infrastructure elements into the landscape in a naturalistic manner, and creating a simple, elegant, and consistent aesthetic for structures that do not easily blend into the landscape, such as bridges and retaining walls, so that they complement the natural landscape. The guidelines are designed to reduce visual clutter, which occurs when many elements of the natural and cultural landscape compete for visual attention and do not allow the eye to rest or take the landscape in as a cohesive whole.

As part of the CSS process, aesthetic design is integrated with engineering rather than tagged on as a decorative afterthought applied to predetermined solutions. The *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.) includes aesthetic requirements for major engineering design elements, and these criteria must be followed in the design of Tier 2 projects.

The aesthetic guidance provides guidelines for the infrastructure elements proposed by this Project, including transportation and land relationships, bridge structures, retaining walls, guardrails and other edge delineation, sound attenuation walls, transportation lighting, signage, color selection, earthwork, grading, and cuts, hydrologic features, landscape planting and revegetation, and wildlife corridors and fencing. Engineering criteria and aesthetic guidance of particular import to this Project concern the design and appearance of retaining walls, bridge structures, tunnel portals, rock cuts, and grading for cut and fill slopes. For example:

- Retaining walls greater than 12' in height must be constructed below the elevation of the roadway rather than above, per the engineering design criteria. Where possible, landscape

screening treatments should buffer the view of retaining walls visible from the roadway or adjacent communities, and earthwork and grading should minimize the height of retaining walls.

- Bridge design should be simple and elegant, with deliberate shadow patterns and adhere to the segment's color palette.
- Tunnel portals should be flared and extended out from the rock cut face, and they should blend with other roadway structures to create a unified visual element.
- New rock cuts should be naturalized with custom shaping and coloration to reduce the contrast between new cuts and existing rock faces.
- Site grading should use landforms that reflect the patterns and diversity naturally occurring in the segment. Earthen embankments should mimic the patterns found in the natural landscape, for example, having a varied slope and a natural and irregular edge. The engineering design criteria require that cut and fill embankment must not exceed a slope of 2.5:1 (horizontal:vertical), and the farthest edge of cut or fill slopes must be less than 40 vertical feet from the top of the pavement.

The *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.) and *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) provide detailed requirements and guidance for these and other Project elements.

6. Affected Environment

This Affected Environment section was prepared under the guidance of the FHWA *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA, 2015). The *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.) documents were also used to identify specific views and features for resource analysis. As noted in Section 3, CDOT has since prepared the *2019 CDOT Visual Impact Assessment Guidelines* (CDOT, 2019), which recommends new tools for documenting the affected environment. This Affected Environment section has not been revised to reflect the new tools.

6.1. Study Area

For visual resources, the Study Area is defined as the area of project visibility or area of visual effect (AVE). The AVE for the Project adheres to the *I-70 Mountain Corridor Aesthetics Guidance Visual Context Map* (CDOT, 2015) shown in Exhibit 9. Exhibit 9 also indicates locations of contextual photos (a number in a circle with a black arrow depicting the direction the photo was taken), which are displayed in Exhibit 10. The Project AVE is loosely defined as views seen both from and of I-70 Mountain Corridor. The area represented in the Visual Context Map shown in Exhibit 9 (Genesee to Idaho Springs) encompasses the AVE for this project and illustrates the views, viewshed limits, points of interest, and landscape buffers applicable to the project.

Exhibit 9. Genesee to Idaho Springs Visual Context Map

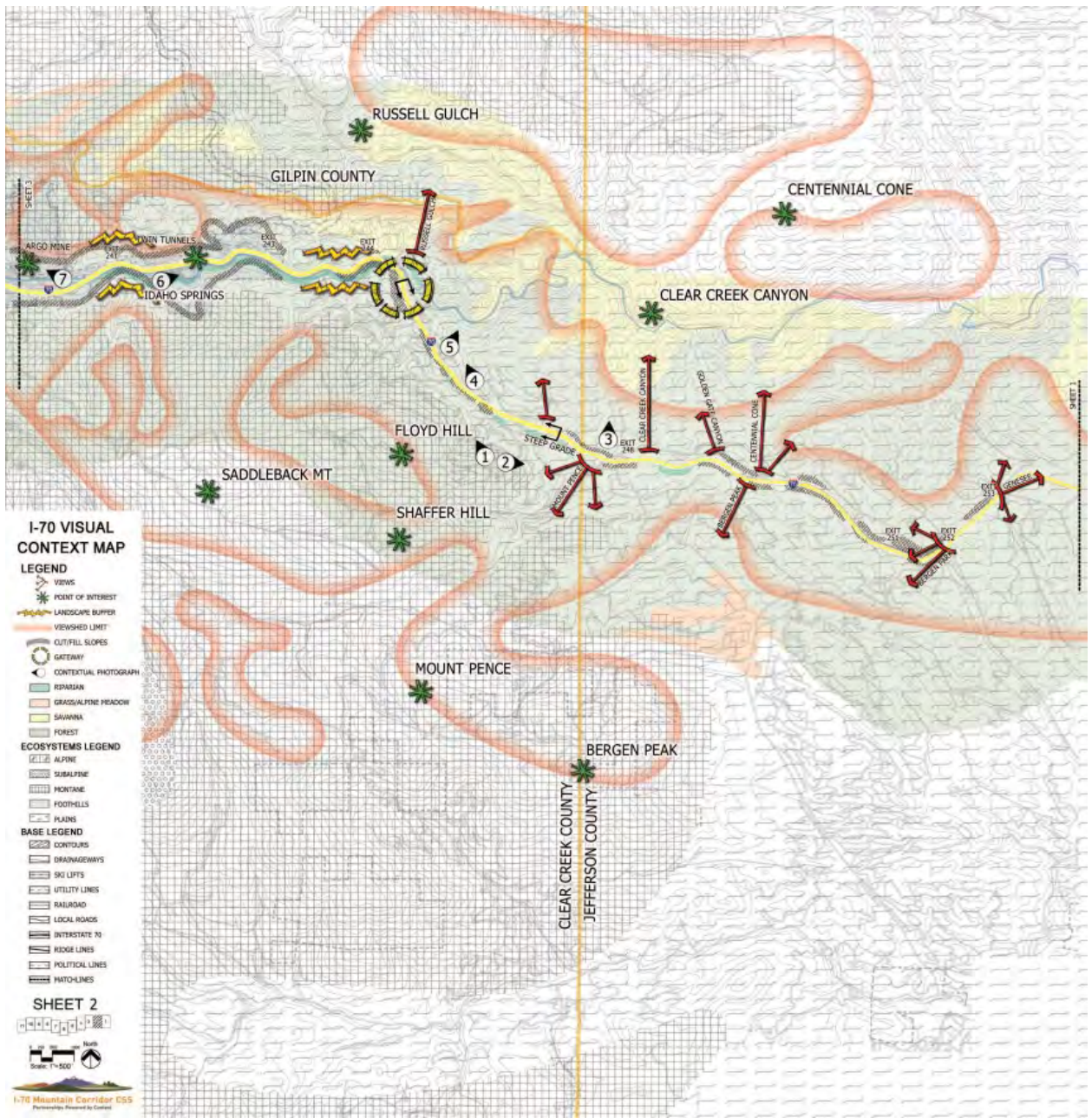


Exhibit 10. Genesee to Idaho Springs Photo Board



1. Looking west at Floyd Hill



2. View east from Floyd Hill



3. View north at savanna landscape



4. View west from I-70



5. View north towards mountains



6. View east towards Idaho Springs



7. View north to Argo Gold Mine

I-70 Visual Context
Board 2

As summarized in Section 4.1 of this report, the identification of visual resources within the AVE was previously undertaken for the PEIS. Consistent with the PEIS, the AVE for this Project is divided into three landscape units, specifically:²

- Beaver Brook (MP 246 to MP 249)
- Floyd Hill (MP 243 to MP 246)
- Idaho Springs/Chicago Creek (MP 241 to MP 243)

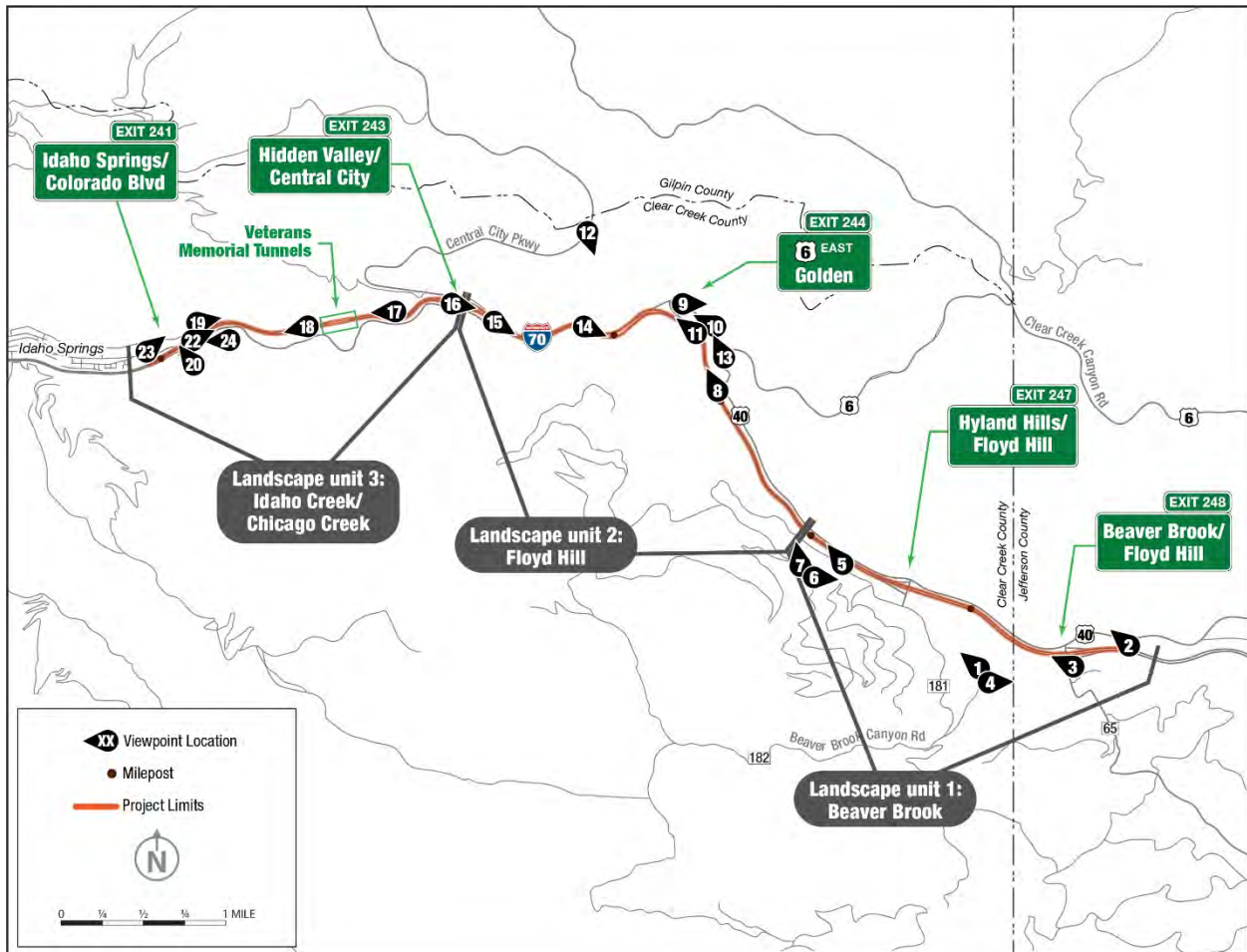
The visual conditions and scenic attractiveness for the landscape units as defined in the PEIS, along with percentages indicating the extent to which the highway is visible within each landscape unit (whether in foreground, middle ground, or background views) are updated for the Project to reflect the FHWA *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA, 2015) and provide the additional project-specific detail that is consistent with a Tier 2 NEPA process. As such, new viewpoints have been identified and analyzed in preparing the existing visual character described in Section 6.2.1. These viewpoints are listed in Exhibit 11. The location of viewpoints is shown on the map in Exhibit 12. Photos of each viewpoint and associated visual character descriptions are included in Appendix C.

² The Project AVE does not include the full extent of Landscape Units 1 and 3 defined in the PEIS, which extend from MP 252 (rather than the project limit of MP 249) to MP 237 (rather than the project limit of MP 241).

Exhibit 11. Viewpoints Listed by Landscape Units

Landscape Units (LU)	Viewpoints
<p>LU-1: Beaver Brook (MP 246 to 249)¹</p>	<p><u>Viewpoints 1 through 6:</u> View 1: West view of I-70 from Evergreen Lane north of Beaver Brook/Floyd Hill interchange View 2: Northwest view from I-70 near Exit 248 View 3: Northwest view from CR 65 View 4: Eastward view of wildlife crossing from the Clear Creek High School parking lot View 5: Northbound view from I-70 near MP 247 View 6: Eastward view from Saddle Ridge Drive</p>
<p>LU-2: Floyd Hill (MP 243 to 246)</p>	<p><u>Viewpoints 7 through 16:</u> View 7: Northward view from Saddleback Drive/Saddle Ridge Drive View 8: Westbound view of US 40 and US 6 (Albert Frei & Sons Quarry) View 9: Eastward view from US 6 off-ramp over Clear Creek View 10: Northbound view from US 6, east of US 40 intersection - proposed Greenway parking area View 11: Westbound view of US 6 off-ramp (new tunnel approach) View 12: Southeast view from Central City Parkway View 13: Southbound view of US 6 off-ramp towards I-70 from near the quarry on US 6 View 14: Eastbound view of the mountain area (where westbound lanes will be in new tunnel) View 15: Westbound view of mountain side east of Hidden Valley/Central City interchange View 16: Eastbound view from top of Hidden Valley/Central City interchange</p>
<p>LU-3: Idaho Springs / Chicago Creek (MP 241 to 243)²</p>	<p><u>Viewpoints 17 through 23:</u> View 17: Westbound view of Veterans Memorial Tunnels View 18: Westbound view just west of Veterans Memorial Tunnels View 19: Eastward view from Idaho Springs Skatepark View 20: Northward view from Scott Lancaster Memorial Trail and Bridge View 21: Eastbound view from Colorado Boulevard View 22: Northeast view from I-70 on-ramp at Exit 241a View 23: Westbound view of Greenway, Clear Creek, and I-70</p>
<p>¹Project limits are shorter by 3 miles compared with landscape unit defined in the PEIS (current Project limit stops at MP 249 as compared to MP 252 for PEIS) ²Project limits are shorter by 2 miles compared with landscape unit defined in the PEIS (current Project limit stops at MP 241 as compared to MP 243 for PEIS)</p>	

Exhibit 12. Contextual Photograph Locations



After the original existing conditions inventory was conducted, the Project team identified additional views to help illustrate the visual changes of the refined Proposed Action, including drone footage that showed the interaction of Project elements better than views from the ground. The following views are included in Section 7 to illustrate visual differences between the existing conditions and the Proposed Action:

- Central Section: Southbound view of I-70 from Clear Creek Greenway (south bank of Clear Creek) east of US 6 interchange (Exhibit 23, at end of table)
- Central Section: Northbound view of Clear Creek Greenway, frontage road, and I-70, from above Sawmill Gulch (Exhibit 20)
- West Section: Westbound view of I-70, CR 314, and Clear Creek realignment, from above I-70 east of Veterans Memorial Tunnels (Exhibit 30)
- West Section: Eastbound view of I-70, CR 314, and Clear Creek realignment, from above east portal of Veterans Memorial Tunnels (Exhibit 31)

6.2. Environmental Conditions

This section provides a description of the visual character for each landscape unit divided by natural and cultural context. It also defines sensitive natural and cultural features as identified through the review of plans and policies or previously recorded in the PEIS. Exhibit 12 illustrates the physical limits of the landscape units within the Project, identifiable I-70 landmarks (Exits 248, 247, 244, 243 and 241), and provides a key to the views used to characterize the AVE. The views have been identified where viewer sensitivity is likely highest. Some views are included to provide perspective of distant views or convey overall existing conditions. LU-1 and LU-3 within the Study Area are shorter with potentially fewer physical changes as compared with LU-2. The details found in Appendix C support the visual character description summarized at the landscape unit level that follows in Section 6.2.1.

6.2.1. Visual Character

6.2.1.1. LU-1, Beaver Brook: MP 246 to 249

The AVE for the Beaver Brook landscape unit begins 1 mile east of the Beaver Brook/Floyd Hill interchange, which connects with US 40 and CR 65,³ and continues west approximately 2 miles past the Floyd Hill/Hyland Hills interchange. Access to many of the local residential areas and community facilities is provided by the Floyd Hill/Hyland Hills interchange (Homestead Road), where CR 181 and CR 182 connect and US 40 parallels I-70 on the north side.

Natural Context. Heading west, LU-1 represents the beginning of a steeper incline into the Rocky Mountains and is, therefore, referred to as the “gateway.” The westward direction begins with an open V-shaped valley that characterizes the landscape. The vegetation in this area is characterized by open woodland montane zone with wetland complex that contains a mix of ponderosa pine and Douglas fir on north- and south-facing slopes.

In accordance with the shared BLM and USFS classification, the scenic attractiveness of lands within the Beaver Brook unit consists of Class B, indicating that lands have some distinctive features but overall are typical examples of the landscape. This landscape unit is harmonious but without unique natural landscape elements.

Cultural Context. The Beaver Brook area is characterized by a mountain residential community located between the historic mining districts of Clear Creek and the more suburban development of Jefferson County located to the east, beyond the Project. In addition to residential development, modifications to the natural landscape character include a major electric power line, billboards, and I-70. Near MP 246, the six-lane freeway is divided with a grassy median separation between the oncoming traffic lanes; the median narrows and westbound and eastbound traffic lanes are separated by a concrete barrier after the Floyd Hill/Hyland Hills interchange (Homestead Road bridge).

In this stretch, a few commercial uses and the hillside Floyd Hill neighborhood are visible from I-70. Within this landscape unit, cut and fill slopes in the foreground along I-70 block more distant views to either side of the freeway in several areas. Many views from the residential communities toward I-70 are filtered through trees, while some residences, commercial uses, and community facilities have uninhibited views toward I-70. West of the Floyd Hill/Hyland Hills interchange, the community development is not visible from I-70.

³ The Beaver Brook landscape unit defined in the PEIS extends beyond the Project AVE east to Evergreen Parkway (Exit 252).

In LU-1, the built environment surrounding I-70 is generally aesthetically integrated through color and compatible architectural design with the natural surroundings with few exceptions (such as a few industrial buildings). The visible environment is orderly and coherent, displaying common mountain architectural themes, colors, and materials. The landscape is typical of the incline landscape transition into mountainous terrain with no memorable views or points of interest. This landscape unit has an overall moderate to high cultural order.

Key Viewpoints and the I-70 Highway Views. Sensitive viewpoints within this unit include dispersed residences in the Floyd Hill neighborhood, dispersed and designated recreation within Genesee Park, and vista views from the Homestead Road bridge over I-70 at the Floyd Hill/Hyland Hills interchange. There are views from I-70 toward Black Hawk Mountain, Guy Hill, and Ely Hill, and some smaller views from Saddleback Mountain. Views along I-70 are characterized by open woodland setting and dispersed residential and commercial development.

6.2.1.2. LU-2, Floyd Hill

The Floyd Hill landscape unit continues west from LU-1 for three miles to the Hidden Valley/Central City interchange. In this landscape unit, US 40 operates as a frontage road along the north side of I-70 on the eastern end of the landscape unit to US 6. The I-70/US 6 off-ramp provides access to the Albert Frei & Sons quarry and access to the Clear Creek Greenway and a popular rafting pull out along Clear Creek.

Natural Context. LU-2 begins at MP 246, where the open valley of LU-1 quickly becomes more enclosed, with evergreen forest becoming sparser and the terrain becoming increasingly rocky and jagged. The Albert Frei & Sons open pit gravel quarry to the north of I-70 underscores the presence of shale and loose rock gravel. Throughout this landscape unit, the undulations in topography include steep ravines and canyons with numerous peaks. This steep terrain dominates the views from I-70 and prevents views beyond the foreground and middle ground distances. This landscape unit is a relatively enclosed landscape. The steep slopes centered along Clear Creek limit views from the highway.

The Scott Lancaster Memorial Trail, part of the Clear Creek Greenway (Greenway), follows Clear Creek from LU-3 - Idaho Springs/Chicago Creek into LU-2. This resource provides views of the creek and I-70 surroundings. It is a recreational magnet for walkers, bicyclers, and rafters.

This area is characterized by dense cover montane zone with a mix of ponderosa pine and Douglas fir on north- and east-facing slopes. South- and west-facing slopes are rocky with open juniper and mountain scrub. This landscape unit has distinct natural landscape visual elements; however, disturbances and built environment elements within LU-2 are inharmonious with the natural context.

In accordance with the shared BLM and USFS classification, the scenic attractiveness of lands within the Floyd Hill unit consists of Class B, indicating that lands have some distinctive features but overall are typical examples of the landscape.

Cultural Context. This landscape unit has remnants from historic mining periods, such as the rail grade of the former Central Colorado Railroad (now the alignment of the Greenway), which was developed to support mining operations in Idaho Springs. The creek channel has been greatly modified over time, with recent efforts to naturalize and return some of the previous bends, curves, and benches into the river channel. From I-70, curves in the roadway provide northward peek-a-boo views of Clear Creek and US 6 located north and below the highway.

A dispersed residential development is located at the east end of this unit, high on the hillsides above the highway; however, views from this area toward I-70 are few, if at all, due to the slope's direction and forested areas. The built environment elements are I-70, US 6 and ramps, and a few commercial establishments such as the Two Bears Tap & Grill and the Albert Frei & Sons Quarry. Within this

landscape unit, US 6 travels parallel to and crosses under I-70 to access the Greenway and rafting access points.

From Clear Creek and US 6, views include I-70 cut into the hillside and bridge structures that traverse the creek. US 6 and US 40 are two-lane undivided highways with narrow shoulders. Near its intersection with I-70, US 6 includes wide areas in the shoulders for temporary parking and raft pull-outs. The I-70 bridges over Clear Creek in this area and the quarry are massive elements and evident to the viewers. The I-70 bridges shade Clear Creek. The mass, scale, and cuts into the hillsides from these built environments are evident and contrast with the rugged and natural terrains. The bridges are large concrete structures with piers within the Clear Creek canyon. The protection barriers are solid concrete (K-rail type) or standard timber and steel, and parking areas are open areas of gravel or dirt.

The canyon around Clear Creek is the area of highest concern in the Floyd Hill ASA. In this landscape unit, the built environment surrounding I-70 generally does not include color and textures compatible with the dominant natural landscape. The built elements are somewhat incoherent within the natural setting. The views have the potential to be dramatic, but the built environment detracts from this potential. This landscape unit has an overall moderate to low cultural order.

Key Viewpoints and the I-70 Highway Views. The I-70 highway, US 40, and US 6 through Clear Creek Canyon and views into Russell Gulch are the vantage points from which most people experience this unit. Views along I-70 in this unit transition from open panoramic views at the top of Floyd Hill to enclosed views within a canyon environment at the bottom of Floyd Hill. Recreationalists view I-70 from Clear Creek and the Greenway. Central City Parkway offers travelers short duration views into this landscape unit.

6.2.1.3. Landscape Unit 3 - Idaho Springs/ Chicago Creek (LU-3)

LU-3 begins at the Hidden Valley/Central City interchange which connects with Central City Parkway and CR 314. Past the Hidden Valley/Central City interchange, the valley narrows again, and I-70 crosses Clear Creek before turning around a mountain slope on the approach toward the Veterans Memorial Tunnels. In the approach to the tunnels, I-70 travelers looking south see Clear Creek sandwiched between I-70 eastbound lanes and CR 314 with the Greenway and large overhead transmission lines. The AVE within this landscape unit ends at the Idaho Springs/Colorado Boulevard Interchange (Exit 241), which is the first access point into Idaho Springs from I-70 in the westbound direction and the end of the Project. (The Idaho Springs landscape unit as defined in the PEIS extends beyond the Study Area through Idaho Springs to MP 237.)

Natural Context. For a short portion of I-70, the landscape is open with rolling terrain around the Hidden Valley/Central City interchange. Otherwise, the mountain landscape consists of steep V-shaped valleys with evergreen forests. Surrounding hillsides include variable density montane zone with rock and eroded slopes. South- and west-facing slopes include open montane scrub with intermittent barren slopes. North- and east-facing slopes are dominated by dense lodgepole pine. A large riparian floodplain along Clear Creek is lined with narrowleaf cottonwood. There is a dominant rock wall to the north approaching the Veterans Memorial Tunnels, and on the other side of the tunnels, the valley opens gradually to a flat area, revealing the town of Idaho Springs. This landscape unit has distinct natural landscape visual elements with harmonious and inharmonious changes to the natural context.

In accordance with the shared BLM and USFS classification, the scenic attractiveness of lands within this unit consists of Class B, indicating that lands have some distinctive features but are overall typical of the landscape.

Cultural Context. In addition to the community development associated with Idaho Springs, deviations from the naturally appearing landscape within this unit include evidence of historic mining, a major

electric power corridor, and I-70 and SH 103. Due to the historic significance of much of the development, as well as the evidence of historic mining, these mining properties have become valued elements within this unit. Visible from I-70 are views of Central City Parkway, CR 314, and a fenced CDOT maintenance yard on the north side of the I-70 east of the Hidden Valley/Central City interchange. At the Hidden Valley/Central City interchange off-ramps there is a gas and small market station in a box architectural form.

Panoramic views of the mountains from Central City Parkway include views of I-70. The Veterans Memorial Tunnels are a distinctive element within the AVE in this landscape unit. The tunnels represent the first tunnels on I-70; they were recently (2014) expanded to accommodate a three-lane cross section. The new design was developed in accordance with the *I-70 Mountain Corridor Aesthetic Guidance* (CDOT, 2015), and therefore includes textures and colors that match the rock within which they were carved, except for the recent rock cuts are lighter in color than the surrounding rock formation. On the east side, widening the tunnel required increasing a steep rock cut on the north (south-facing slope). Rockfall protection fencing hangs approximately 20 feet high on the cut to protect vehicles from falling rocks.

On the west side of the Veterans Memorial Tunnels, views from the roadway open up and signs of urbanization appear. The tunnels act as a gateway to and from Idaho Springs. Immediately following the tunnels, large power distribution lines appear and cross from the north to the south side of I-70 farther west of the tunnels. The Idaho Springs/Colorado Boulevard interchange and overcrossing announce the developed portions of Idaho Springs. A closed skate park and a few residential units are visible to the north immediately following the interchange, and a two-diamond baseball park with tall light stands is visible to the south. Most of the town's development, including freeway-oriented commercial development, is visible to the north of I-70. There are views of I-70 from these facilities to and from the multi-family housing units and from Colorado Boulevard. This is the beginning of Idaho Springs.

The buildings visible in LU-3 are mixed in architectural design. The power corridor contrasts with the rural and mountainous landscape. The Veterans Memorial Tunnels are a point of interest. Much of the slope cuts in LU-3 have been made to appear natural, with the exception at the east entry into the tunnels. At the east entry, rock cuts to the north of the tunnels are nearly vertical and clad with chain-link rock fall netting that diverts falling rocks from the roadway. The short views into Clear Creek are luring and inviting, but there is a sense that the environment is constrained against the freeway. This is true again when walking the Greenway (originally a historic railroad bed) and gazing upon the creek and I-70 in the same viewshed. LU-3 has several culturally sensitive and distinctive features, but there is only moderate cultural order.

This landscape unit encompasses the Twin Tunnels ASA. The Idaho Springs ASA limits also overlap into this area, but the Idaho Springs ASA concentrates on historic areas farther west of the Project.

Key Viewpoints and the I-70 Highway Views. Sensitive viewpoints include residences and recreation areas. The I-70 highway in this area is bordered by the Greenway, including the Scott Lancaster Memorial Trail. Other sensitive viewpoints include community parks and recreation sites both within Idaho Springs and in the Arapahoe and Roosevelt National Forest lands located south of I-70 in this landscape unit. Views from I-70 in this unit are dominated by rugged mountain terrain.

6.2.2. Viewer Groups

People experience their surrounding landscapes differently. Some viewers are sensitive to changes in their environment and others may vary in sensitivity, but due to the duration (static or slow duration versus dynamic views, such as speeding by on the freeway), the relative visual experience may be

diminished or heightened. This section describes three primary viewer groups: Travelers/Vehicle, Neighbors/Community, and Recreationalists; their typical experiences; and a generalization of their sensitivity to changes, regardless of whether the changes would be adverse or beneficial.

6.2.2.1. Travelers/Vehicle Viewer Group

Viewers from the road include commuters, tourists, and cargo movers that drive through but are not destined for the Study Area. Most viewers experience the views of the Study Area from I-70 and fewer from adjacent roadways, such as US 6, US 40, and local roadways (such as Saddleback Road in the Floyd Hill neighborhood).

Travelers' sensitivities tend to vary with the reason for their travel. As tourists, they may be sensitive to aesthetic changes, but because they are commonly not familiar with the existing conditions, Project changes may not be as notable. Other travelers, such as commuters and cargo movers, may view the environment from a practical perspective - by placing most of the aesthetic value and enjoyment of the travel corridor on the functionality and smooth movement. Commuters regularly travel the same route, whether for work or leisure, and because the trips are repeated, they become routine rather than novel; aesthetic changes that reduce visual coherence will be highly noticeable to commuters because of their familiarity with the landscape. Travelers are generally interested in the aesthetics of the route, but potentially less sensitive than neighbors/community viewers or recreationalists.

The I-70 traveler's view, whether as a driver or passenger, is of short duration because they are generally traveling at speeds of 50 to 65 mph and oriented primarily to the interstate itself. The foreground is dominant, consisting of the roadway, the sides of the roadway, and adjacent steep canyon walls. Travelers have limited visual access to the background distances, and even middle ground views are often limited from the traveler's perspective, due to the steep terrain, density of the forest, or nearby cut and fill adjacent to the freeway. However, due to the curves in the roadway, the traveler is afforded forward vistas of the ridges, peaks, and nearby canyons approximately 30 to 50 percent of the time throughout the AVE. As autonomous vehicles or new transit options are developed, the traveler's focus may shift more from the roadway to the surrounding environment; these views are still relatively fleeting due to high travel speeds and terrain. This group is a major viewer group throughout the Project.

6.2.2.2. Neighbors/ Community Viewer Group

The neighbors/community viewers are those with views of the Project including residents and commercial and industrial workers. Neighboring communities have a vested interest in keeping the high-quality views along the I-70 Mountain Corridor. The neighboring households and businesses have a permanent view of the interstate; however, certain views may be filtered by vegetation, and businesses and residences are varying distances from the Project, and not all are likely to experience direct views of the new infrastructure.

Although this group's sensitivity to change is generally greater than travelers, these groups not only have views from their property, but they are also frequent users of the interstate, which often serves as a part of their access to their property. Therefore, their views engulf the highway route common to the vehicle viewer group. Depending on the viewer's locale (work versus residential), these groups range from major to moderate sensitivity to changes in visual resources. These views tend to be habitual and static views, and therefore, these viewers can watch the evolution of changes as they occur. Residents may gaze at their views as an extension of their living environment and therefore concern themselves with whether changes would degrade or improve the aesthetic experience and, by extension, affect the value of their residence. Workers may appreciate views from their windows at work, but there is rarely an expectation of an aesthetic as a requirement of their place of employment and therefore, residents tend to be more sensitive to visual changes than workers.

There are approximately 500 households and businesses in the Floyd Hill neighborhood that may be impacted by changes resulting from the Project in LU-1 (Beaver Brook) and fewer numbers in LU-3, (Idaho Springs/Chicago Creek). In LU-2, Floyd Hill, the only viewers are workers at the Two Bears Tap and Grill, the quarry, and the freeway-oriented businesses in the Floyd Hill/Hyland Hills interchange.

6.2.2.3. Recreationalist Viewer Group

Recreationalists use the outdoor resources within the Study Area for longer durations at slower speeds than those in a vehicle group and at closer proximity than the neighbor/community group. The recreationalist viewer group includes pedestrians, bicyclists, and other recreationalists (e.g., rafters, hikers, anglers, rock climbers). Their views are more intensely experienced because their activity is explicitly linked to the outdoor and aesthetic experience, which occurs at a slower and more detailed level than vehicle travelers or those looking upon the environment from their residence or place of work. Pedestrians and anglers are the most sensitive recreationalist viewers because they move through the landscape at the slowest pace. Bicyclists are somewhat less sensitive to visual change because they move through the landscape more quickly. Rafters are the least sensitive recreationalist viewers because they move through the landscape quickly and are focused on executing their activity as well as the surrounding landscape.

The recreationalist viewer group may include people from the other viewer groups, but due to their activities and interest, it is anticipated that this group has a highly vested interest in the aesthetic treatments of the natural and cultural environments and high sensitivity to changes.

This group is important in LU-2, Floyd Hill, because the proximity of the activities (trail, rafting, and fishing portions of the river) are intertwined with the Project within an area of highest potential for change. This group is likely to be less sensitive to changes in LU-1 and LU-3 because fewer changes are proposed and because the recreational opportunities are more distant from the Project. The exception within LU-3 is Clear Creek and the Greenway facilities, including the Scott Lancaster Bridge and Memorial Trail, east of the Veterans Memorial Tunnels; this area is highly valued for its recreational uses.

6.3. Visual Quality of Existing Conditions

This section summarizes the visual quality of the Project area based on the visual character and viewer group preferences described in Sections 6.2.1 and 6.2.2 above. Visual quality is described in terms of:

- **Natural Harmony:** Natural Harmony is how the composition of the existing visual character—made up of land, water, vegetation, animals, and atmospheric conditions—are visually harmonious or inharmonious.
- **Cultural Order:** Cultural Order is determined if the ‘built environment’ (e.g., buildings, infrastructure, structure, artifacts, and works of art) and its composition is orderly or disorderly within the natural environment or in combination within the built environment within which the Project is located.

The visual quality ratings in Exhibit 13 are based on the laws, regulations, policies, and guidance concerning visual resources within the Project AVE that have been adopted by the stakeholders, which collectively are viewers of and from the Project. This report has also recorded specific viewer groups and their sensitivity to their environment. The visual character is then interpreted through the lens of these preferences and to analyze natural harmony and cultural order on a range of low, moderate-to-low, moderate-to-high, and high.

Exhibit 13 summarizes each landscape unit's viewers' sensitivity and visual character in terms of natural harmony and cultural order. The resulting visual quality is the degree of visual coherence when

combining natural harmony and cultural order with the viewers’ preference. The greater the degree to which the visual resources of the project environment meet the viewers’ preferred concept of project coherence, the higher value the viewer places on those visual resources.

Exhibit 13. Summary of Landscape Units’ Visual Quality

Landscape Unit	Viewer Groups in this Landscape Unit	Viewer Group Sensitivity	Visual Character	Visual Quality
<u>LU-1: Beaver Brook</u>	Travelers	Moderate	<u>Natural context:</u> moderate harmony <u>Cultural Context:</u> moderate to high order	Moderate visual coherence
	Residential/Community	High		
<u>LU-2: Floyd Hill</u>	Travelers	Moderate	<u>Natural context:</u> moderate harmony with some inharmonious elements <u>Cultural Context:</u> moderate to low order	Moderate-to-low visual coherence
	Recreationalists	High		
<u>LU-3: Idaho Springs</u>	Travelers	Moderate	<u>Natural context:</u> moderate harmony with some inharmonious elements <u>Cultural Context:</u> moderate order	Moderate visual coherence
	Residential/Community	High		
	Recreationalists	High		

Visual quality of the landscape units varies from moderate-to-low to moderate visual coherence. The natural and cultural elements environments are generally strong in each landscape unit, but as the character descriptions share (Section 6.2.1), they have been altered with elements that are not harmonious with the natural landscape or do not adhere to cultural order. The high sensitivity for these environments is not only apparent from the types of viewers, but from the development of visual/aesthetics guidance established through intense stakeholder involvement to improve the overall visual coherence of the Project within its surroundings.

7. Impacts

This section evaluates visual impacts of the Proposed Action to the landscape character, viewers, and visual quality of landscape compositions within the AVE. For this impact analysis, the impacts are evaluated by the three geographic Project sections (East, Central, and West) rather than by landscape unit. The East Section is split between LU-1 and LU-2, but because Project elements are consistent in type and appearance throughout the East Section, they would have the same visual impacts throughout the East Section, despite the differences in visual character between LU-1 and LU-2. Similarly, LU-2 is split between the East Section and the Central Section, but because Project elements in the Central section are vastly different than those in the East Section, the Project would have substantially different visual impacts in the Central Section portion of LU-2 than the East Section portion of LU-2.

Both action alternatives would result in moderate visual impacts for I-70 travelers in all Project sections and high visual impacts for recreationalists in the Central and West Sections. Project elements such as large rock cuts, retaining walls, and cut and fill slopes and associated vegetation removal would have moderate to strong visual contrast with natural features of the landscape, and would be particularly incompatible with natural features for recreationalists. Recreationalists have high sensitivity to visual changes because of the duration of their views and their high interest in the aesthetics of the natural and cultural environment around them. Elements such as structures and tunnel portals would be designed to meet engineering design criteria and aesthetic guidance. These elements would cause visual change but would be designed as unique structural elements to complement the landscape.

Under the Tunnel Alternative, the South Frontage Road Option would have a greater degree of adverse visual effect than the North Frontage Road Option due to the presence of more visually dominant Project features in recreationalists' views. Visual impacts would be less severe under the Canyon Viaduct Alternative than the Tunnel Alternative because it would have more riparian restoration north of Clear Creek, and it would not have the extensive rock cuts, retaining walls, or cut and fill slopes and associated vegetation removal surrounding the Greenway that the Tunnel Alternative would have. The Canyon Viaduct Alternative would be able to meet the aesthetics guidance better than the Tunnel Alternative because it would not require any I-70 roadway infrastructure in the bottom of the canyon between MP 244.3 and MP 243.5, whereas the Tunnel Alternative would add new elements to the existing roadway infrastructure in this topographically constrained area.

7.1. No Action Alternative Impacts

Replacement of the bridge at the bottom of Floyd Hill would have minimal visual impact for I-70 travelers, workers, and recreationalists in the Central Section, and possibly a beneficial visual impact for these viewers, as the new bridge would comply with the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and would thus improve the consistency in design and color schemes for roadway structures within this landscape unit (consistent with the Floyd Hill ASA goals and objectives).

7.2. Tunnel and Canyon Viaduct Alternative Impacts

The Tunnel and Canyon Viaduct alternatives would be the same in the East Section and the West Section. The alternatives are analyzed together for these sections because their visual impacts would

be the same. The alternatives and their visual impacts would differ in the Central Section, and each alternative is analyzed individually for the Central Section.

7.2.1. East Section

East of MP 246, the East Section is located in LU-1; west of MP 246, the East Section is located in LU-2. All of the East Section lies within the Floyd Hill ASA. In the East Section, three viewer types have views to and from I-70:

- I-70 travelers, who move through at high speed and have low sensitivity to visual change;
- Residents in adjacent neighborhoods, who have high sensitivity to visual change but limited views of the Project area; and
- Workers adjacent to the highway, who have low sensitivity to visual change.

In the East Section, Project elements of both the Tunnel Alternative and the Canyon Viaduct Alternative would be the same, comprising a new Express Lane and associated signage in the westbound direction of I-70, a new auxiliary climbing lane in the eastbound direction of I-70, associated cut and fill slopes and retaining walls, and wildlife fencing. The Tunnel Alternative and the Canyon Viaduct Alternative would result in moderate visual impacts for I-70 travelers and minimal to no visual impacts for workers and residents in the East Section.

7.2.1.1. Direct Impacts

The *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) identifies several goals and objectives for the Floyd Hill ASA, described in Section 4.1.1 of this report, that are applicable to the East Section: mitigate adverse visual impacts using buffers and transitions, avoid encroachments into Clear Creek, minimize cut and fill slopes, improve aesthetic consistency of roadway structures, and preserve major site resources and features. Consistent with these goals and objectives, this analysis considers the visual effects of Project elements, including cut and fill slopes, on sensitive views and viewers to understand the impacts on visual resources and features. The Project design should adhere to the *I-70 Mountain Corridor Aesthetics Guidance* and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.) (see Section 8), which would improve aesthetic consistency of roadway structures within the East Section, and the Project will not encroach on Clear Creek.

The first step in the assessment process is to evaluate the visual compatibility of the alternatives based on the level of change or contrast that Project elements would have with the visual character of the natural environment, cultural environment, and roadway. The landscape in LU-1 is an open V-shaped valley, with primarily foreground views and some middle ground views, and the landscape in LU-2 within the East Section has open panoramic views from Floyd Hill, dominated by steep terrain and views of peaks on the south side of Clear Creek canyon in the middle ground (see Exhibit 7 and Section 6.2). The built environment is generally aesthetically integrated with the natural surroundings except for some industrial buildings. The presence of I-70 has modified the natural landscape character, and the roadway infrastructure blocks more distant views from I-70 in several areas.

Exhibit 14 identifies the visual contrast of the major elements of the Tunnel and Canyon Viaduct alternatives in the East Section and highlights their visual compatibility (compatible or incompatible) with natural, cultural, and roadway features. The form, line, color, texture, and scale of the Project elements should follow the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.), which are designed to minimize visual clutter, promote visual cohesion among infrastructure elements and the surrounding landscape, and promote continuity of design and aesthetics throughout the Mountain Corridor, as described in Section 5.2.

The steep grades on Floyd Hill, with a steep drop-off north of the westbound I-70 lanes and tall hillsides south of the eastbound I-70 lanes, may result in difficulty meeting some of the engineering criteria and aesthetics guidance related to horizontal and/or vertical separation of highway lanes, cut and fill slope grading and appearance, and landscape buffers in front of retaining walls. Continued consultation will occur with stakeholders during design, using the CSS process, to address these issues, and design variances will be required for any engineering design criteria that cannot be met.

The majority of the Project elements would have weak or moderate visual contrast with the landscape character—meaning they would not attract attention away from the existing landscape features, or they may begin to attract attention but would remain subordinate to the landscape features—and would be visually compatible with the surrounding natural, cultural, and roadway features. The signage for the new Express Lane would have strong-moderate visual contrast due to its form, color, scale, and location in the space above the highway, and would be visually incompatible with the landscape character.

Exhibit 14. Tunnel and Canyon Viaduct Alternatives - Landscape Character Compatibility Matrix, East Section

Legend		Tunnel and Canyon Viaduct Alternatives East Section			
	Visually Compatible				
	Visually Incompatible				
S	Strong Visual Contrast				
M	Moderate Visual Contrast				
W	Weak Visual Contrast				
N	No Visual Contrast	Natural, Cultural, & Roadway Features			
Visual Attributes	Project Elements	Landforms	Vegetation	Development Patterns & Structures	Roadway Character
	Roadway surface	M	M	W	N
	Retaining walls	M	M	W	W
	Cut and fill slopes	M	M	W	W
	Signage	M	M	W	W
	Wildlife fencing	W	W	W	W

The second step in the assessment process is to determine the degree of impacts to viewers and the visual quality of landscape compositions within the AVE, by evaluating visual compatibility (Exhibit 14), viewer sensitivity (Section 6.2.2), distance zones (Exhibit 8), visibility, and visual quality (Exhibit 13 and Section 6.3). Of the three viewer types in the East Section, only I-70 travelers would experience adverse impacts due to visual change. Retaining walls and cut slopes into the hillside above I-70, on the south side of the highway, and signage for the new Express Lane would have moderate visual contrast

with the surrounding landscape, attracting attention but remaining subordinate to the surrounding landscape features. I-70 travelers have low sensitivity to visual change because they are traveling through the landscape at high speed. Project elements would have weak or no visibility and contrast for workers, because they have low sensitivity to visual change, and for residents, because their views of the Project are distant and/or screened by vegetation. Therefore, these viewer groups would experience no visual impact in the East Section.

The visual character and quality of the existing landscape would remain moderate because, other than the Express Lane signage, the Project elements would be visually compatible with the surrounding character of the natural, cultural, and roadway environment. Exhibit 15 highlights the findings from the assessment process.

Exhibit 15. Tunnel and Canyon Viaduct Alternatives - Visual Impact Assessment Summary, East Section

Tunnel and Canyon Viaduct Alternatives East Section														
Viewers (See Exhibit 12 for viewpoint locations)		Project Elements												
		Roadway surface (additional lanes)	Retaining walls south of I-70	Retaining walls north of I-70	Cut slopes south of I-70	Signage for Express Lane	Wildlife fencing							
Travelers														
1. I-70 travelers Sensitivity Level Low, Distance Zone Fg		W	M		M	M	W							
Neighbors														
1. Floyd Hill neighborhoods Sensitivity Level High, Distance Zone Mg		W				W								
2. Workers Sensitivity Level Low, Distance Zone Mg		W				W	W							
Legend														
Visual Impacts					Visibility and Contrast Levels (See Exhibit 14. Landscape Character Compatibility Matrix)									
	Adverse Impact	Beneficial Impact	No Visual Impact	Not Visible	S	Strong	M	Moderate	W	Weak	N	None		

7.2.1.2. Indirect Impacts

The Project would not cause indirect changes that could alter the visual character of the surrounding landscape in the East Section, such as induced growth within the AVE or changes to the implementation

of the local plans and policies described Exhibit 3. Therefore, no indirect impacts to visual resources are anticipated.

7.2.2. Central Section

The Central Section is located in LU-2 and is within the Floyd Hill ASA. In the Central Section, three viewer types have views to and from I-70:

- I-70 travelers, who move through at high speed and have low sensitivity to visual change;
- Workers adjacent to the highway, who have low sensitivity to visual change; and
- Recreationalists using Clear Creek and the Clear Creek Greenway, who have high sensitivity to visual change in the surrounding natural and cultural environment.

In the Central Section, the Tunnel and Canyon Viaduct alternatives are different from each other and would cause different visual impacts.

7.2.2.1. Direct Impacts

As described in Section 7.2.1.1 in the East Section direct impacts analysis, this visual analysis considers the visual effects of Project elements on sensitive views and viewers to understand the impacts on visual resources and features, consistent with the Floyd Hill ASA goals and objectives. The Project design should adhere to the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.) (see Section 8), which would improve aesthetic consistency of roadway structures within the Central Section.

The visual compatibility of the Project is evaluated based on the level of change or contrast that Project elements would have with the visual character of the natural environment, cultural environment, and roadway. The landscape in the Central Section consists of enclosed, foreground views in a canyon environment, with steep slopes of rocky, jagged terrain to the north and dense cover pine and fir forest to the south (see Exhibit 7 and Section 6.2). The built environment elements are somewhat incoherent within the natural setting, with the Albert Frei & Sons open pit gravel quarry and massive roadway infrastructure and associated cuts into the hillsides contrasting with the natural landscape features.

TUNNEL ALTERNATIVE

In the Central Section, Project elements of the Tunnel Alternative comprise a new Express Lane and associated signage in the westbound direction of I-70, bridges and structures, rock cuts associated with roadway realignment and tunnel portals, cut and fill slopes and associated vegetation removal, retaining walls, a flyover for the US 6 to I-70 westbound on-ramp, and in the case of the South Frontage Road Option, riparian restoration along the north bank of Clear Creek. The Tunnel Alternative would result in moderate visual impacts for I-70 travelers and workers and high visual impacts for recreationalists in the Central Section.

Exhibit 16 identifies the visual contrast of the major elements of the Tunnel Alternative in the Central Section and highlights their visual compatibility (compatible or incompatible) with natural, cultural, and roadway features. The form, line, color, and texture of the Project elements should follow the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.), which are designed to minimize visual clutter, promote visual cohesion among infrastructure elements and the surrounding landscape, and promote continuity of design and aesthetics throughout the Mountain Corridor, as described in Section 5.2.

However, the design of the Tunnel Alternative within the narrow and steep canyon surrounding Clear Creek would have substantial difficulty meeting some of the engineering design criteria and aesthetics guidance and would encounter more challenges in meeting these criteria and guidance than the Canyon Viaduct Alternative. Fully adhering to the criteria and guidance would be challenging because adding a third lane to westbound I-70 in the areas of its existing alignment, improving the geometry of curves on I-70, and adding a new frontage road connection adjacent to either I-70 or the Clear Creek Greenway would:

- Require tall retaining walls with minimal horizontal space to tier the walls or add landscape buffers in front of them
- Require earthwork slopes with minimal horizontal space to meet the naturalistic grading guidelines
- Leave limited room to achieve the desired horizontal or vertical separation between the I-70 lanes
- Require rock cuts that could not be terraced nor stained to effectively match the surrounding weathered rock; the Twin Tunnels expansion projects discovered that the most effective rock blasting technique for these steep slopes creates vertical half-column depressions in the mountainside, and these depressions take the stain differently than the surrounding blasted rock, resulting in highly visible vertical lines throughout the rock blast area

Continued consultation will occur with stakeholders during design to address these issues, using the CSS process in a manner similar to the previous Twin Tunnels and Westbound Peak Period Shoulder Lanes Tier 2 projects. Lessons learned from construction on these two projects, particularly in regard to tall rock cuts, will inform this Project. Design variances will be required for any engineering design criteria that cannot be met.

The scale of Project elements within the enclosed canyon environment would generally have moderate to strong visual contrast and be visually incompatible with natural features (landforms, vegetation, and water). However, structures and tunnel portals would be designed to meet engineering design criteria and aesthetic guidance and would be designed as unique structural elements to complement the landscape. Project elements would have weak visual contrast and be visually compatible with the cultural and roadway features.

Exhibit 16. Tunnel Alternative - Landscape Character Compatibility Matrix, Central Section

Legend		Tunnel Alternative Central Section				
	Visually Compatible					
	Visually Incompatible					
S	Strong Visual Contrast					
M	Moderate Visual Contrast					
W	Weak Visual Contrast					
N	No Visual Contrast	Natural, Cultural, & Roadway Features				
Visual Attributes	Project Elements	Landforms	Vegetation	Water	Development Patterns & Structures	Roadway Character
	Roadway surface	M	M	W	W	N
	Retaining walls	S	S	S	W	W
	Rock cuts	S	S	M	W	W
	Cut and fill slopes	S	S	M	W	W
	Bridges/structures	S	S	S	M	M
	Signage	M	M	M	M	W

The degree of impacts to viewers and the visual quality of landscape compositions within the AVE is assessed by evaluating visual compatibility (Exhibit 16), viewer sensitivity (Section 6.2.2), distance zones (Exhibit 7), visibility, and visual quality (Exhibit 13 and Section 6.3).

Of the three viewer types in the Central Section, I-70 travelers and workers would experience moderate adverse impacts due to visual change. Although these viewers have low sensitivity to visual change in the Project area, the form and scale of the retaining walls and rock cuts to accommodate the tunnel portals, realigned I-70 lanes, and frontage road would dominate the landscape features and cause a noticeable adverse visual effect.

Recreationalists using Clear Creek and the Clear Creek Greenway would experience high adverse impacts due to visual change. These viewers have high sensitivity to visual changes because of the duration of their views and their high interest in the aesthetics of the natural and cultural environment around them. From the Greenway, tall retaining walls, large rock cuts, cut and fill slopes and associated vegetation/tree removal, and bridges crossing the Greenway would dominate views and cause a highly noticeable adverse visual effect. While roadway infrastructure currently exists in recreationalists' views, the additional infrastructure and its strong contrast with the natural landscape would not match the context of the Greenway nor meet users' anticipated experience of a natural environment. The Frontage Road Options section below provides details about the visual experience of recreationalists as they move through the Greenway corridor.

The overall visual character and quality of the existing landscape would remain moderate to low, as the existing landscape is currently dominated by roadway infrastructure and other development in the foreground views. Exhibit 17 highlights the findings from the assessment process.

Exhibit 17. Tunnel Alternative - Visual Impact Assessment Summary, Central Section

Tunnel Alternative Central Section														
Viewers (See Exhibit 12 for viewpoint locations)	Project Elements													
	Roadway surface (additional lanes)	Retaining walls	Rock cuts	Cut and fill slopes	Bridges/structures	US 6 to I-70 Westbound On-Ramp Flyover	Signage for Express Lane	SFRO ¹ only - Riparian restoration, north bank of Clear Creek						
Travelers														
1. I-70 travelers Sensitivity Level Low, Distance Zone Fg	W	S	S	M	W	M	M	W						
Neighbors														
1. Workers Sensitivity Level Low, Distance Zone Fg	W	M		M	S									
Recreationalists														
1. Greenway and creek users Sensitivity Level High, Distance Zone Fg	W	S	S	S	S	S	M	S						
Legend														
Visual Impacts					Visibility and Contrast Levels (See Exhibit 16 Landscape Character Compatibility Matrix)									
	Adverse Impact	Bene-ficial Impact	No Visual Impact		Not Visible	S	Strong	M	Moderate	W	Weak	N	None	

¹ SFRO = South Frontage Road Option

Frontage Road Options

While both frontage road options would have adverse visual effects, the South Frontage Road Option would have a greater degree of adverse visual effects than the North Frontage Road Option due to the greater amount of Project elements visible to recreationalists, who are the most sensitive viewers. Two additional bridges would cross Clear Creek and the Greenway in locations where no bridges currently exist; the US 6 to I-70 westbound on-ramp flyover structure would be longer; and the south frontage



road would result in new roadway infrastructure, retaining walls, cut and fill slopes, and associated vegetation removal on the south side of the canyon between US 6 and Hidden Valley.

The South Frontage Road Option would have lesser visual impacts on the north side of the canyon, due to lower rock cuts and walls; however, the north side of the canyon is less visible to recreationalist viewers than the new frontage road infrastructure on the south side of the canyon. Therefore, the overall level of visual impact would be higher for the South Frontage Road Option.

The South Frontage Road Option would improve approximately 5 acres of riparian vegetation on the north bank of Clear Creek, which would have a beneficial visual impact for recreationalist viewers; but this beneficial impact would not substantially offset the adverse impact of other Project elements of the South Frontage Road Option. The overall visual character and visual quality in the Central Section would remain moderate to low under both options.

Exhibits 18–20 illustrate the potential impacts of the frontage road options when viewed from the air above Sawmill Gulch, in between the US 6 and Hidden Valley/Central City interchanges.

- The existing conditions photo (Exhibit 18) shows Clear Creek, I-70, and the mountainside on the north side of Clear Creek Canyon.
- The North Frontage Road Option visual simulation (Exhibit 19) shows the west tunnel portal and associated rock cut, the rock cuts north of the realigned I-70 lanes, the tall bench supporting the westbound I-70 lanes as they descend from the tunnel portal, and the realigned eastbound I-70 lanes and new frontage road immediately north of Clear Creek.
- The South Frontage Road Option visual simulation (Exhibit 20) shows the west tunnel portal and associated rock cut, the smaller rock cuts (than the North Frontage Road Option) north of the realigned I-70 lanes, the shorter (than the North Frontage Road Option) bench supporting the westbound I-70 lanes as they descend from the tunnel portal, the realigned eastbound I-70 lanes, the new frontage road as it crosses over Clear Creek to run along the south side of Clear Creek, and new vegetation on the north bank of Clear Creek in the area where existing I-70 lanes would be removed.

Exhibit 18. Existing Condition - I-70 and Clear Creek viewed from above Sawmill Gulch; Looking North



Exhibit 19. Tunnel Alternative, North Frontage Road Option - I-70 and Clear Creek viewed from above Sawmill Gulch; Looking North



Exhibit 20. Tunnel Alternative, South Frontage Road Option - I-70 and Clear Creek viewed from above Sawmill Gulch; Looking North



The sections below describe and illustrate the progression of views that would occur in the Central Section under each frontage road option of the Tunnel Alternative, and the Canyon Viaduct Alternative for comparison, as recreationalists move east through the Greenway, which is the direction of rafters’ views as they move downstream. Pedestrians and anglers are the most sensitive viewers because they move through the Greenway slowly and have the longest duration views. Bicyclists and rafters, while still sensitive to visual change, are less sensitive viewers because they move through the Greenway quickly and have shorter duration views. Rafters in particular are less sensitive because their attention is heavily focused on their activity.

The illustrations below are screen captures from a three-dimensional computer model. The computer model was developed based on a digital terrain model translated from LiDAR⁴ and a roadway engineering model in ConceptStation, and it was created to study the general massing and location of Project elements in the existing Clear Creek canyon topography. The Project elements shown in these screen captures do not accurately portray colors, aesthetics, guardrails, barriers, pier locations, textures, etc., as these elements have not yet been fully designed. The model shows existing topography, with the horizontal lines representing 2-foot contour intervals, and the outlines of existing roadway infrastructure; the model does not show most of the existing natural features in the landscape, including trees, vegetation, and the creek bed. Trees are shown only on the south side of the canyon in the Sawmill Gulch area to better understand impacts associated with ADA compliance for the Greenway trail in this area. In areas where the alternatives would grade and cut into the existing topography, the model’s wireframe of the existing topography remains visible to help illustrate the difference between the existing and proposed conditions.

⁴ LiDAR stands for Light Detection and Ranging and is a remote sensing method that uses light in the form of a pulsed laser to measure distances from the earth.

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives

Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>Starting just east of the Hidden Valley/US 6 interchange, recreationalists would see a shallow retaining wall on the north bank of Clear Creek, topped by guardrail or a barrier, extending into the distance, and beyond that, large rock cuts in the north canyon wall. The rock cuts would be larger than those of the South Frontage Road Option, but not as prominent in the view as the forested slope on the south side of the creek next to the Greenway trail. The existing forested hillside sloping up from the Greenway trail, and the Clear Creek channel to the left, is in the immediate foreground and would be more prominent in the view than the rock cuts farther away to the north. On the north bank of the creek after the retaining wall ends, guardrail would be visible along the south edge of the new frontage road.</p>	<p>Starting just east of the Hidden Valley/US 6 interchange, recreationalists would see a shallow retaining wall on the north bank of Clear Creek, topped by guardrail or a barrier, extending for a short distance, and beyond that, large rock cuts in the north canyon wall. The rock cuts would be smaller than those of the North Frontage Road Option, but not as prominent in the view as the frontage road infrastructure on the south side of the creek. On the south side of the creek, recreationalists would see the new frontage road and associated cuts and retaining walls in the hillside south of the frontage road. Moving east, the new frontage road would rise in elevation and shift south to provide vertical and horizontal separation from the Greenway trail. Greenway users would see a shallow retaining wall supporting the frontage road, with a solid barrier and/or guardrail on top; this infrastructure would be in the immediate foreground and would be more prominent in their view than the rock cuts farther away to the north.</p>	<p>Starting east of the Hidden Valley/US 6 interchange, recreationalists would see a shallow retaining wall on the north bank of Clear Creek, topped by guardrail or a barrier, extending into the distance, and beyond that, large rock cuts in the north canyon wall. The rock cuts would be smaller than those of the Tunnel Alternative. On the south side of the creek, recreationalists would see the existing forested hillside sloping up from the Greenway trail; this hillside is in the immediate foreground and would be more prominent in their view than the rock cuts farther away to the north. On the north bank of the creek after the retaining wall ends, guardrail would be visible along the south edge of the new frontage road, and viewers would begin to see the retaining wall supporting the eastbound I-70 lanes as they touch down from the viaduct.</p>
<p>Looking east just east of Hidden Valley interchange (MP 243.1)</p>	<p>Looking east just east of Hidden Valley interchange (MP 243.1)</p>	<p>Looking east just east of Hidden Valley interchange (MP 243.1)</p>

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives

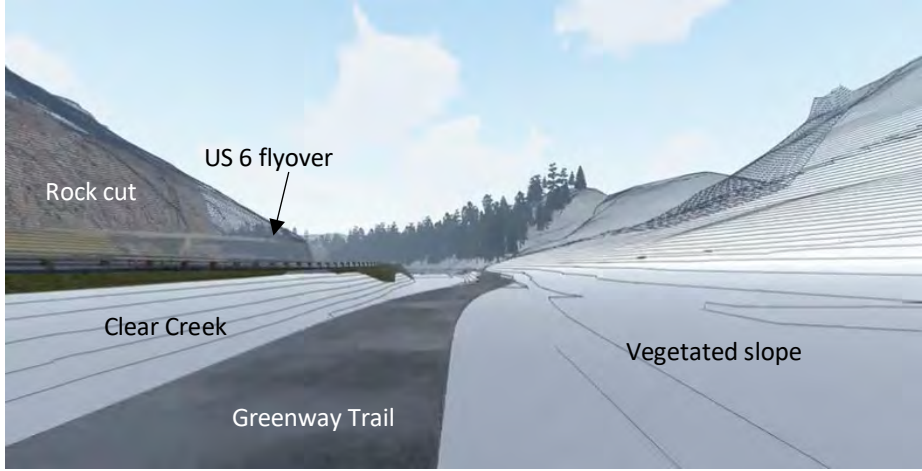
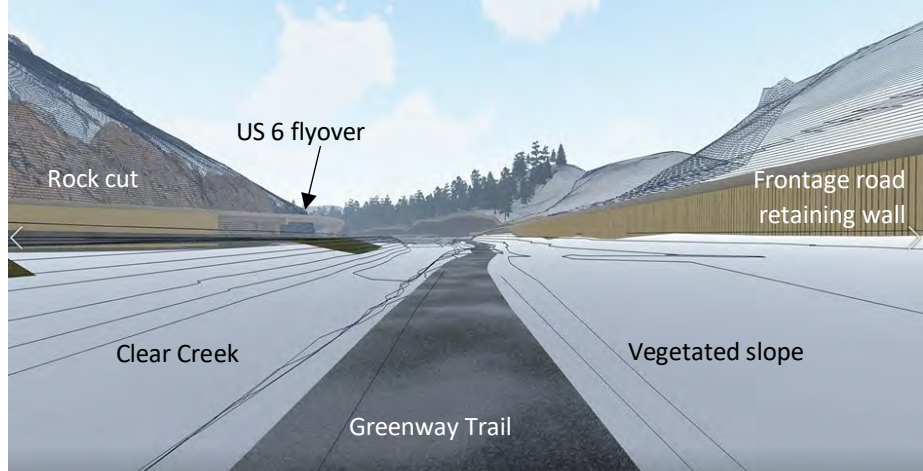

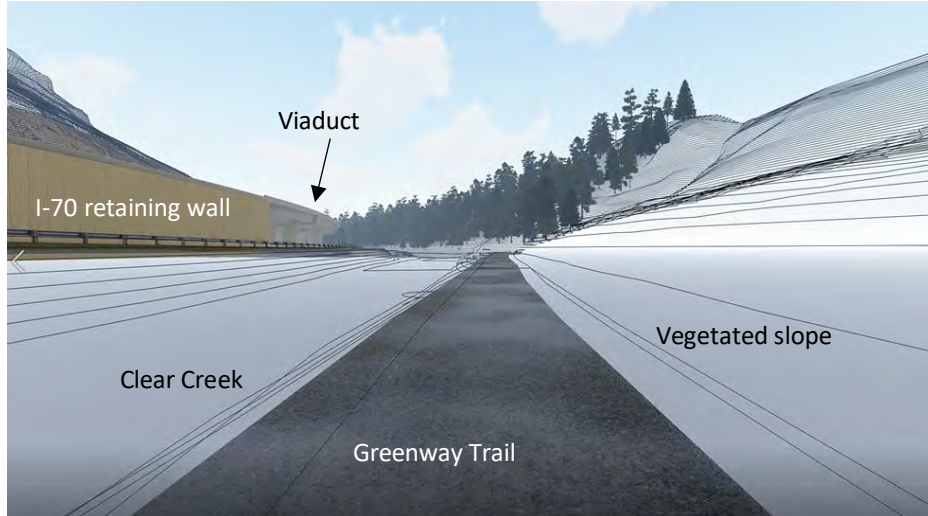
Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>As viewers move east, the flyover US 6 westbound entrance ramp to I-70 would become visible in the distance, elevated above the I-70 lanes. The flyover would be less visible to recreationalists than the South Frontage Road Option because the flyover would not need to cross Clear Creek. The rock cuts in the north canyon wall would be larger than the South Frontage Road Option, however, the cuts and retaining walls south of Clear Creek associated with the South Frontage Road Option would not exist in the North Frontage Road Option. As the canyon curves north in the distance, recreationalists would see the natural forested slope on the south side of the canyon, rather than the major cuts and retaining walls associated with the South Frontage Road Option. The guardrail or barrier along the frontage road would continue to be visible above the north bank of Clear Creek.</p> <p>Looking east ¼-mile east of Hidden Valley interchange (MP 243.2)</p> 	<p>As viewers move east, two major infrastructure elements would become visible in the distance: the flyover US 6 westbound entrance ramp to I-70, elevated above the I-70 lanes, and major cuts and retaining walls on the south side of the frontage road as the canyon curves back to the north in the distance. The flyover would be more visible to recreationalists than the North Frontage Road Option because the flyover would cross Clear Creek, although the rock cuts in the north canyon wall would be smaller than the North Frontage Road Option. The cuts and retaining walls in the forested slope on the south side of the new frontage road would not exist in the North Frontage Road Option. The retaining wall supporting the new frontage road, and barrier or guardrail on top, would continue to be present in the foreground view on the south side of the Greenway trail.</p> <p>Looking east ¼-mile east of Hidden Valley interchange (MP 243.2)</p> 	<p>As viewers move east, the retained fill supporting I-70 would become more visible on the north side of the canyon. As the canyon curves north in the distance, recreationalists would see the natural forested slope on the south side of the canyon. The guardrail or barrier along the frontage road would continue to be visible above the north bank of Clear Creek.</p> <p>Looking east ¼-mile east of Hidden Valley interchange (MP 243.2)</p>  <p>Where the I-70 lanes transition from retained fill onto the viaduct structure, the mass of the viaduct would not be as visually dominant as the mass of the retained fill.</p> <p>Looking east ¼-mile east of Hidden Valley interchange (MP 243.3)</p> 

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives





Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>As viewers move east to where the canyon curves back to the north, the US 6 flyover ramp would be visible, but to a lesser degree than under the South Frontage Road Option. The existing forested hillside south of the Greenway trail would remain unchanged from existing conditions and would be prominent in the view, in contrast to the substantial infrastructure of the south frontage road that would dominate this view in the South Frontage Road Option. The rock cuts in the north canyon wall would be visible, but the creek bed and the forested slope south of Clear Creek would dominate the view due to their presence in the immediate foreground.</p>	<p>As viewers move east to where the canyon curves back to the north, the view would become dominated by tall retaining walls in the hillside south of the frontage road, the retaining wall and barrier at the north edge of the frontage road, and the US 6 flyover ramp crossing Clear Creek ahead. Recreationalists' views here would be much more heavily impacted by new infrastructure than under the North Frontage Road Option.</p> <p>Looking east ½-mile east of Hidden Valley interchange (MP 243.35)</p>  <p>The rock cuts in the north canyon wall would be smaller than under the North Frontage Road Option, but the larger US 6 flyover and the walls surrounding the frontage road south of Clear Creek would be much more visually prominent features, and those features would not be present in the North Frontage Road Option. Rafters would pass under the new US 6 flyover bridge as they continue east down Clear Creek.</p>	<p>As viewers move east to where the canyon curves back to the north, the viaduct would remain a dominant feature of the view as recreationalists approach its crossing of Clear Creek. The existing forested hillside south of the Greenway trail would remain unchanged from existing conditions and would be prominent, along with the Clear Creek channel, in the foreground view.</p>
<p>Looking east ½-mile east of Hidden Valley interchange (MP 243.4)</p> 	<p>Looking east ½-mile east of Hidden Valley interchange (MP 243.4)</p> 	<p>Looking east ½-mile east of Hidden Valley interchange (MP 243.4)</p>  <p>As recreationalists continue east, existing mature trees are present between Clear Creek and the Greenway trail, and they would partially screen the views of the viaduct and the north side of the canyon for Greenway trail users. On the north side of the canyon, the only roadway infrastructure would be the new frontage road, and riparian habitat restoration would occur in the area where the existing I-70 lanes would be removed. In this area, new trees and shrubs would create a more natural landscape on the north side of the creek.</p>

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives

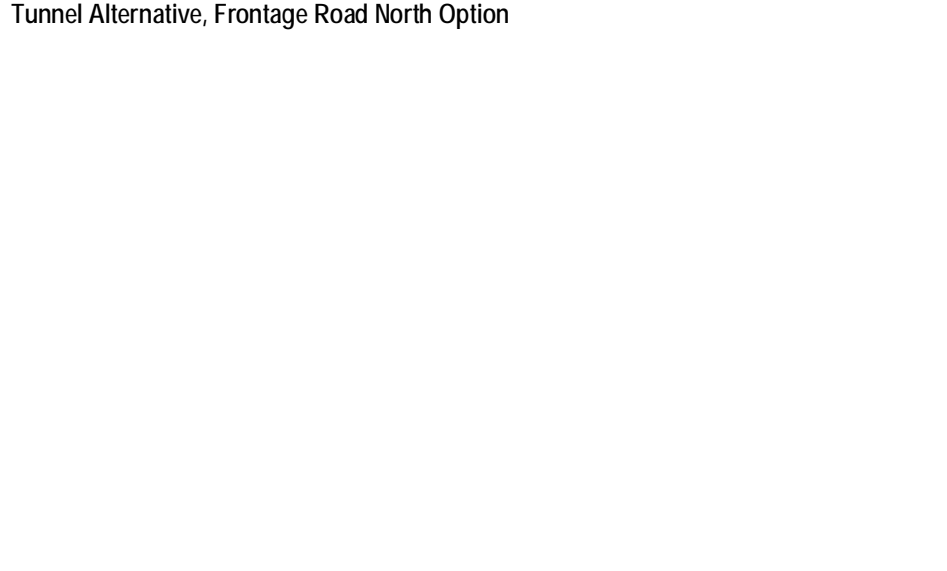
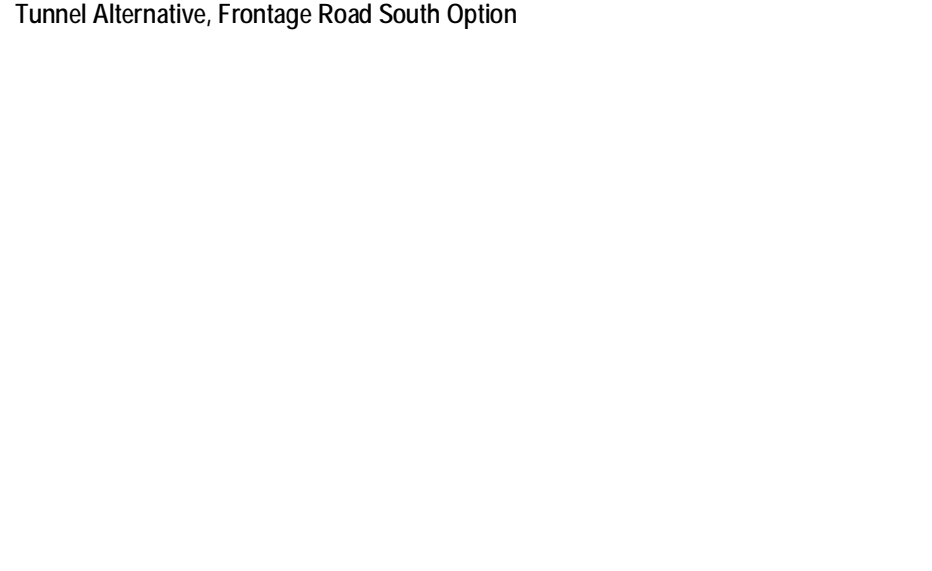




<p>Tunnel Alternative, Frontage Road North Option</p> 	<p>Tunnel Alternative, Frontage Road South Option</p> 	<p>Canyon Viaduct Alternative Looking east ½-mile east of Hidden Valley interchange (~MP 243.5)</p> 
<p>Around the location where the South Frontage Road Option and Canyon Viaduct Alternative's westernmost new pedestrian bridge would be located, recreationalists' view in the North Frontage Road Option would be dominated by the mature trees surrounding the Greenway trail. Trees on the north side of the trail would partially screen the view of the new rock cuts, guardrail/barrier, and other roadway infrastructure on the north side of Clear Creek.</p> <p>Looking east ½-mile east of Hidden Valley interchange (MP 243.5)</p> 	<p>When Greenway trail users reach the location where the US 6 flyover ramp has crossed Clear Creek and would shortly cross the trail, a new pedestrian bridge would carry trail users across Clear Creek to a new ADA-compliant trail segment on the north side of the Creek. Near the entrance to the pedestrian bridge, viewers would see the retaining wall supporting the new south frontage road and barrier/guardrail on top, along with the bridge structure supporting the US 6 flyover above the creek and trail, and the new pedestrian bridge structure. The flyover would be 12—14 feet overhead and would appear visually more dominant than the Canyon Viaduct Alternative's viaduct, which would be 60—70 feet overhead. Rafters would have passed under the US 6 flyover by this point and would pass under the new pedestrian bridge. The bridge structure and aesthetics have not yet been designed, and the model screen capture below shows the general location of the structure, but the design and pier location are not accurate.</p> <p>Looking east ½-mile east of Hidden Valley interchange (MP 243.5)</p> 	<p>When Greenway trail users reach the location where the viaduct would cross the trail, a new pedestrian bridge would carry trail users across Clear Creek to a new ADA-compliant trail segment on the north side of the creek. Near the entrance to the pedestrian bridge, viewers would see the viaduct structure 60—70 feet above the trail and the new pedestrian bridge structure. The viaduct would be less visually dominant than the South Frontage Road Option US 6 flyover structure, because it would be much higher overhead. Rafters would have passed under the viaduct by this point, and they would pass under the new pedestrian bridge. The viaduct structure and aesthetics have not yet been designed, and the model screen capture below shows the general location of the structure, but the piers and design are not accurate.</p> <p>Looking east ½-mile east of Hidden Valley interchange (MP 243.5)</p> 

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives




Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>As trail users continue east, their view would change from existing conditions in the location where the trail would be lowered to comply with ADA standards. A cut slope south of the lowered trail would remove mature trees; replanted trees would eventually mature and fill in the forested slope again, but the replanted area would be visually different for many years. Some existing trees north of the trail would remain in place and would continue to partially screen the view of the tall rock cuts, elevated westbound I-70 lanes, and new tunnel portal on the north side of the canyon. River rafters and anglers would be down in the creek bed, lower than the trail. Their views of the infrastructure on the north side of the canyon would not be screened the way trail users' views would be, and the new Project elements would be more visually dominant for rafters and anglers.</p>	<p>Trail users who wish to stay on the existing non-ADA-compliant trail would continue east on the existing trail. They would continue to have views of the shallow retaining wall supporting the new frontage road, topped by barrier or guardrail, in the foreground to their right. To their left, existing trees north of the trail would continue to partially screen their view of the roadway infrastructure north of Clear Creek.</p> <p>Trail users who cross Clear Creek on the pedestrian bridge to continue on the ADA-compliant section of the trail would have views of the eastbound I-70 lanes immediately north of the trail. The I-70 lanes would be separated from the trail by landscaping and guardrail or barrier (not illustrated in the view below). Trail users would have partial views of the new frontage road retaining wall through the trees on the south side of Clear Creek. River rafters and anglers would be down in the creek bed, lower than the trail, and the Project elements would not be as visually dominant as they would be for trail users.</p>	<p>Trail users who wish to stay on the existing non-ADA-compliant trail would continue east on the existing trail. They would continue to have views of the forested hillside to their right and tree-screened views of the creek bed to their left. Trail users who cross Clear Creek on the pedestrian bridge to continue on the ADA-compliant section of the trail would have views of a natural canyon landscape, with the only visible infrastructure being the new frontage road north of the trail. The frontage road would be separated from the trail by landscaping and guardrail or barrier (which are not illustrated in the view below). In this location, the elevated I-70 lanes would no longer be visible from the Greenway; I-70 would be cut into the top of the hillside high above the south side of Clear Creek, hidden back behind the hilltop. River rafters and anglers would be down in the creek bed, lower than the trail, and would have limited views of the new frontage road infrastructure north of the creek.</p>
<p>Looking east approaching Sawmill Gulch (MP 243.7)</p>  <p>Greenway Trail</p> <p>Revegetated cut slope</p>	<p>Looking east approaching Sawmill Gulch (MP 243.7)</p>  <p>Tunnel portal & rock cut</p> <p>Retaining wall</p> <p>Westbound I-70 retaining wall</p> <p>Eastbound I-70</p> <p>Clear Creek</p> <p>New section of Greenway Trail</p>	<p>Looking east approaching Sawmill Gulch (MP 243.7)</p>  <p>US 6 Frontage Road</p> <p>Clear Creek</p> <p>New section of Greenway Trail</p>

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives

Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>For a small portion of the reconstructed Greenway trail, a shallow retaining wall may be required to minimize the amount of cut slope and tree removal, as shown below. As the trail rounds the southern curve in the canyon it would move closer to Clear Creek, and fewer trees would be present to screen the view of the north side of the canyon. The view of the tunnel portal and associated rock cut and the elevated westbound I-70 lanes would be more visually dominant in this area, along with the newly graded slope immediately south of the Greenway trail.</p>	<p>As recreationalists continue east and the canyon begins to curve back to the south, they would have a view of the tunnel portal and associated rock cut and the pedestrian bridge that would bring the trail back to the south side of Clear Creek. Riparian restoration with new trees and shrubs on the north bank of Clear Creek would provide a more natural landscape than currently exists. The restoration is not visible in the model screen capture below; it is illustrated in the visual simulation in Exhibit 20. Rock cuts to the north and a tall retaining wall supporting the frontage road south of Clear Creek would be highly visible to recreationalists in this view.</p>	<p>As recreationalists continue east and the canyon begins to curve back to the south, recreationalists would begin to see the I-70 viaduct in the distance as it curves back to the north side of the canyon, along with the pedestrian bridge that would bring the Greenway trail back to the south side of Clear Creek. The mountainside to the left of the Greenway would remain unchanged from its existing condition, and recreationalists would not see the large rock cuts and tunnel portal that would be associated with the Tunnel Alternative in this location.</p>
<p>Looking east near Sawmill Gulch (MP 243.8)</p>	<p>Looking east near Sawmill Gulch (MP 243.8)</p>	<p>Looking east near Sawmill Gulch (MP 243.8)</p>
<p>Greenway trail users would cross back to the south side of Clear Creek underneath the new bridge carrying the new frontage road across Clear Creek. The placement of the pedestrian bridge in this location would minimize the visual change for recreationalists by consolidating the structures crossing Clear Creek into one location. Rafters would pass under both structures as they continue downstream.</p>	<p>Greenway trail users would cross back to the south side of Clear Creek underneath the new bridge carrying the new frontage road across Clear Creek. The placement of the pedestrian bridge in this location would minimize the visual change for recreationalists by consolidating the structures crossing Clear Creek into one location. Rafters would pass under both structures as they continue downstream.</p>	<p>Greenway trail users would cross back to the south side of Clear Creek on the new pedestrian bridge. As they cross the bridge, the forested hillside would be most prominent in their view, and trees would partially screen the view of the viaduct structure as it emerges from the hillside to continue east. Rafters would pass under the pedestrian bridge as they continue downstream, and the viaduct crossing Clear Creek would become increasingly visible to both rafters and anglers as they move downstream of the pedestrian bridge.</p>
<p>Looking east, east of Sawmill Gulch (MP 243.85)</p>	<p>Looking east, east of Sawmill Gulch (MP 243.85)</p>	<p>Looking east, east of Sawmill Gulch (MP 243.85)</p>

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives





Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>As recreationalists move east and the reconstructed portion of the Greenway trail ends, views would be generally the same under both the North Frontage Road Option and the South Frontage Road Option. Trail users' views of the new, larger rock cuts on the north side of the canyon would be partially screened by mature trees south of the trail. The rock cuts would be more dominant in the views by rafters and anglers, and the rock cuts would be larger under the North Frontage Road Option than the South Frontage Road Option. However, the cuts would be less visually dominant than the immediate foreground views of the creek and forested slope around the Greenway trail.</p>	<p>After river users cross under the structures, and after trail users rejoin the existing Greenway trail on the south side of Clear Creek, views would be generally the same under both the North Frontage Road Option and the South Frontage Road Option. Trail users' views of the new, larger rock cuts on the north side of the canyon would be partially screened by mature trees south of the trail. The rock cuts would be more dominant in the views by rafters and anglers, and the rock cuts would be smaller under the South Frontage Road Option than the North Frontage Road Option. However, the cuts would be less visually dominant than the immediate foreground views of the creek and forested slope around the Greenway trail.</p>	<p>After trail users rejoin the existing trail on the south side of Clear Creek, the viaduct crossing overhead would be highly visible. Existing mature trees surrounding the Greenway trail would be retained except for in the location of the piers supporting the viaduct, and the trees would reduce the level of visual contrast associated with the viaduct structure.</p>
<p>Looking east, east of Sawmill Gulch (MP 243.9)</p> 	<p>Looking east, east of Sawmill Gulch (MP 243.9)</p> 	<p>Looking east, east of Sawmill Gulch (MP 243.9)</p> 
		<p>After trail users cross under the viaduct, trees north of the trail would partially screen the view of Clear Creek and the viaduct.</p> <p>Looking east, east of Sawmill Gulch (MP 243.95)</p>  <p>The viaduct would be more prominent in the views of rafters and anglers down in the creek bed, as it would remain elevated above grade along the north side of the creek through the entirety of this relatively straight stretch of Clear Creek.</p> <p>Looking east from Clear Creek, west of US 6 interchange (MP 244.1)</p>

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives


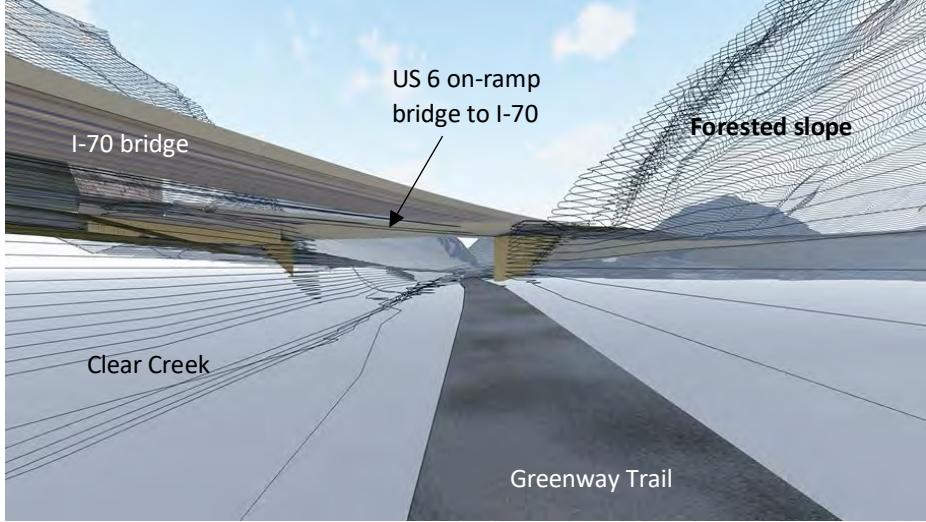
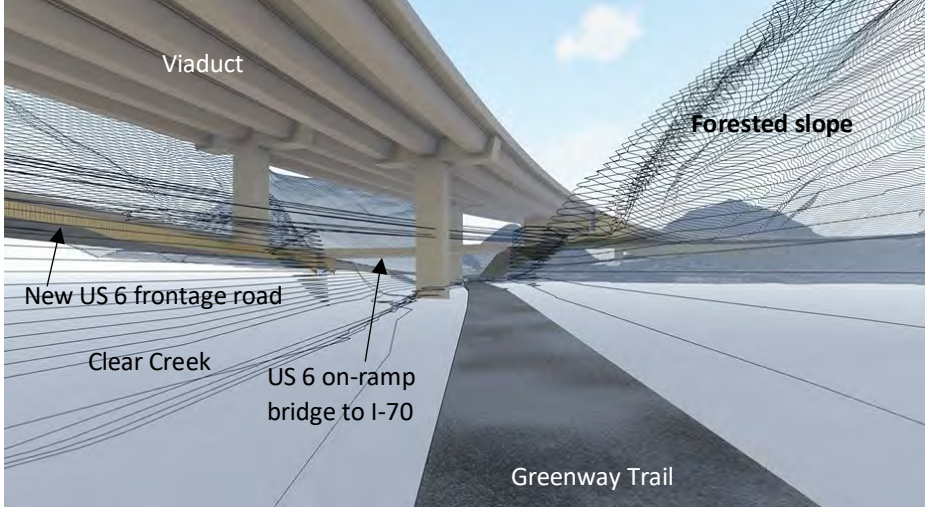


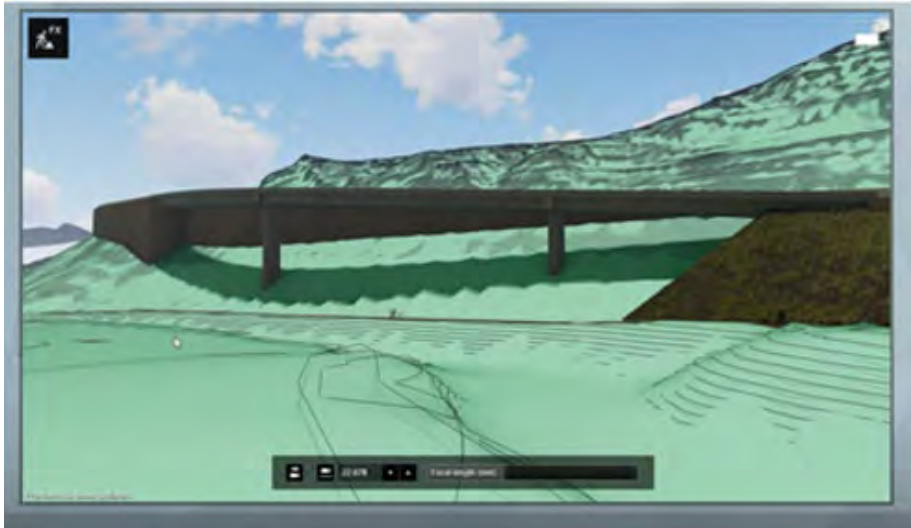

<p>Tunnel Alternative, Frontage Road North Option</p>	<p>Tunnel Alternative, Frontage Road South Option</p>	<p>Canyon Viaduct Alternative</p> 
<p>Between this point and the US 6 interchange, the Tunnel Alternative would cause minimal visual changes for recreationalists. Upon reaching the US 6 interchange, a new bridge structure would cross Clear Creek, carrying the new US 6 eastbound on-ramp to I-70. The bridge structure would be located under the reconstructed bridge carrying the eastbound I-70 lanes over Clear Creek; it would not create a highly noticeable visual change for recreationalists, whose existing views are dominated by the existing bridge structures carrying the I-70 lanes over Clear Creek. The new bridge structures would adhere to the <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015), which would create a more consistent aesthetic across the corridor and improve the visual compatibility of the US 6 interchange bridges with the surrounding cultural and roadway features.</p> <p>Looking east, west of US 6 interchange (MP 244.2)</p> 	<p>For the remainder of the Central Section, the South Frontage Road Option would have the same visual impacts as the North Frontage Road Option, and the visual impacts of the Project elements are described under the North Frontage Road Option text.</p> <p>Same view as North Frontage Road Option</p>	<p>As recreationalists approach the US 6 interchange, the viaduct would cross Clear Creek and, underneath the viaduct, a new bridge structure would carry the new US 6 eastbound on-ramp to I-70 across Clear Creek as well. The new structures would not create a highly noticeable visual change for recreationalists in this location, because the existing views are dominated by the existing bridge structures carrying the I-70 lanes over Clear Creek. The new structures would be more visually dominant than the structures of the Tunnel Alternative, however, because all six lanes of I-70 would be on structure in this location, whereas the westbound I-70 lanes would be in a tunnel and not visible in this view for the Tunnel Alternative. The new structures would adhere to the <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015), which would create a more consistent aesthetic across the corridor and improve the visual compatibility of the US 6 interchange structures with the surrounding cultural and roadway features.</p> <p>Looking east, west of US 6 interchange (MP 244.2)</p> 
<p>At the east end of the Central Section, the following visual simulations illustrate the alternatives when viewed from the south bank of Clear Creek, near the Greenway trail, above the rafting put in/take out area immediately east of the US 6 interchange. The existing condition photo at top shows the tall fill slope on which the existing I-70 lanes are built. The Tunnel Alternative design would be the same for both frontage road options in this location. The initial Tunnel Alternative design, at bottom left, placed the widened highway on fill with a very tall retaining wall, which created a substantial visual impact. The Tunnel Alternative design was revised to minimize visual impacts in this area by eliminating the large wall and replacing it with a bridge structure with open piers for the westbound lanes and a shorter retaining wall beyond the structure to support the eastbound lanes, illustrated in concept in bottom middle; the revised design would be similar to the Canyon Viaduct Alternative, shown in simulation in the bottom right. The scale and form of the structure and shorter retaining wall would have less the contrast with the surrounding landscape than the single</p>		

Exhibit 21. Progression of Recreationalists' Views through the Central Section, from West to East - Tunnel and Canyon Viaduct Alternatives

Tunnel Alternative, Frontage Road North Option	Tunnel Alternative, Frontage Road South Option	Canyon Viaduct Alternative
<p>large retaining wall. For the Canyon Viaduct Alternative, the visual simulation at bottom right shows 1) the structure for the I-70 to US 6 westbound off ramp, 2) the structure that would support the viaduct for the westbound I-70 lanes (above and behind the off ramp), and 3) the wall behind that would support the eastbound I-70 lanes.</p>		
<p>Looking south from Greenway, east of US 6 interchange</p>		
		
<p>Initial Tunnel Alternative design - looking south from Greenway, east of US 6 interchange</p>	<p>Revised Tunnel Alternative design - looking south from Greenway, east of US 6 interchange (same for both frontage road options)</p>	<p>Canyon Viaduct Alternative design - looking south from Greenway, east of US 6 interchange</p>
		

CANYON VIADUCT ALTERNATIVE

In the Central Section, Project elements of the Canyon Viaduct Alternative comprise a new Express Lane and associated signage in the westbound direction of I-70, a viaduct elevating both directions of I-70 through Clear Creek canyon from east of the US 6 interchange to east of the Hidden Valley/Central City interchange, bridges, rock cuts, cut and fill slopes and associated vegetation removal, retaining walls, and riparian restoration along the north bank of Clear Creek. The Canyon Viaduct Alternative would result in moderate visual impacts for I-70 travelers and workers and high visual impacts for recreationalists in the Central Section.

Exhibit 22 identifies the visual contrast of the major elements of the Canyon Viaduct Alternative in the Central Section and highlights their visual compatibility (compatible or incompatible) with natural, cultural, and roadway features. The form, line, color, and texture of the Project elements would follow the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.), which is designed to minimize visual clutter, promote visual cohesion among infrastructure elements and the surrounding landscape, and promote continuity of design and aesthetics throughout the Mountain Corridor, as described in Section 5.2.

The Canyon Viaduct Alternative would be able to meet the engineering design criteria and aesthetics guidance better than the Tunnel Alternative. Because the I-70 alignment would be elevated on a viaduct through the majority of the Central Section, the Canyon Viaduct Alternative would not require any I-70 roadway infrastructure in the bottom of the canyon between MP 244.3 and MP 243.5; whereas the Tunnel Alternative would add new elements to the existing roadway infrastructure in this topographically constrained area and would have substantial difficulty meeting aesthetic guidelines related to the height, location, and visual buffering of retaining walls, cut and fill slope grading and appearance, and horizontal and/or vertical separation of highway lanes. Continued consultation will occur with stakeholders during design to examine the integration of the aesthetic guidance into the Project design, using the CSS process. Design variances will be required for any engineering design criteria that cannot be met.

The scale of Project elements would generally have moderate to strong visual contrast and be visually incompatible with natural features (landforms, vegetation, and water). However, the viaduct and bridge structures would be designed to meet engineering design criteria and aesthetic guidance and would be designed as unique structural elements to complement the landscape. Project elements would generally have weak visual contrast and be visually compatible with the cultural and roadway features.

Exhibit 22. Canyon Viaduct Alternative - Landscape Character Compatibility Matrix, Central Section

Legend		Canyon Viaduct Alternative Central Section				
	Visually Compatible					
	Visually Incompatible					
S	Strong Visual Contrast					
M	Moderate Visual Contrast					
W	Weak Visual Contrast					
N	No Visual Contrast	Natural, Cultural, & Roadway Features				
Visual Attributes	Project Elements	Landforms	Vegetation	Water	Development Patterns & Structures	Roadway Character
	Roadway surface	W	W	W	W	N
	Retaining walls	M	M	M	W	W
	Rock cuts	S	S	M	W	W
	Cut and fill slopes	M	M	M	W	W
	Bridges/structures	S	S	S	M	M
	Signage	M	M	M	M	W

The degree of impacts to viewers and the visual quality of landscape compositions within the AVE is assessed by evaluating visual compatibility (Exhibit 16), viewer sensitivity (Section 6.2.2), distance zones (Exhibit 7), visibility, and visual quality (Exhibit 13 and Section 6.3).

Of the three viewer types in the Central Section, I-70 travelers and workers would experience low to moderate adverse impacts due to visual change. These viewers have low sensitivity to visual change in the Project area. For workers east of the US 6 interchange, the new viaduct carrying the westbound I-70 lanes would attract attention and dominate the landscape features.

I-70 travelers would travel on top of the viaduct, which would result in moderate visual impacts, as the viaduct would be visually noticeable but subordinate to the surrounding landscape features. The visual experience for travelers on the viaduct would be more comfortable than the experience of travelers in both the No Action and the Tunnel Alternative: travelers on the viaduct would have open views of the natural landscape, whereas travelers in the No Action Alternative would continue to have limited views constrained by tight curves around tall rock cuts in the mountain side, and travelers in the Tunnel Alternative would have enclosed views within the tunnel and tall rock cuts would dominate their view immediately next to the I-70 lanes outside of the tunnel. The length and height of the Canyon Viaduct Alternative rock cuts east of the Hidden Valley/Central City interchange, to accommodate highway widening, would be smaller and less noticeable than those of the Tunnel Alternative.



Recreationalists using Clear Creek and the Clear Creek Greenway would experience moderate adverse impacts due to visual change. These viewers have high sensitivity to visual changes because of the duration of their views and their high interest in the aesthetics of the natural and cultural environment around them. From portions of the Greenway, the height, size, and length of the viaduct and the piers supporting the viaduct would highly noticeable. At the Greenway trail and Clear Creek crossings, the piers may block views from some locations along the trail and creek. The viaduct structure would shade landforms and vegetation below the structure—in different locations depending on the season—and potentially affect the viability of some vegetation and the visual quality of shaded areas.

However, in some portions of the Greenway, the viaduct would not be visible, and the existing I-70 lanes adjacent to the Greenway would be removed. Riparian restoration on the north bank of Clear Creek—due to the relocation of the I-70 lanes onto the viaduct—would improve the view in the immediate foreground for much of the Greenway length. In addition, the Canyon Viaduct Alternative would not have the extensive rock cuts, retaining walls, or cut and fill slopes and associated vegetation removal surrounding the Greenway that the Tunnel Alternative would have. Therefore, visual impacts would be less severe under the Canyon Viaduct Alternative than the Tunnel Alternative. Exhibit 21 (in the Tunnel Alternative section above) provides detail about the visual experience of recreationalists as they move through the Greenway corridor.

The overall visual character and quality of the existing landscape would remain moderate to low, as the existing landscape is currently dominated by roadway infrastructure and other development in the foreground views. Exhibit 23 highlights the findings from the assessment process.

Exhibit 23. Canyon Viaduct Alternative - Visual Impact Assessment Summary, Central Section

Canyon Viaduct Alternative Central Section													
Viewers <small>(See Exhibit 12 for viewpoint locations)</small>	Project Elements												
	Roadway surface (additional lanes)	Retaining walls	Rock cuts	Cut and fill slopes	Bridges/ structures	Viaduct structures	Signage for Express Lane	Riparian restoration, north bank of Clear Creek					
Travelers													
1. I-70 travelers <small>Sensitivity Level Low, Distance Zone Fg</small>	W	W	S	M	W	W	M	S					
Neighbors													
1. Workers <small>Sensitivity Level Low, Distance Zone Mg</small>	W	M		M	S	S							
Recreationalists													
1. Greenway and creek users <small>Sensitivity Level High, Distance Zone Fg</small>	W	S	W	S	S	S	M	S					
Legend													
Visual Impacts				Visibility and Contrast Levels <small>(See Exhibit 22. Landscape Character Compatibility Matrix)</small>									
	Adverse Impact		Bene-ficial Impact	No Visual Impact	Not Visible	S	Strong	M	Moderate	W	Weak	N	None

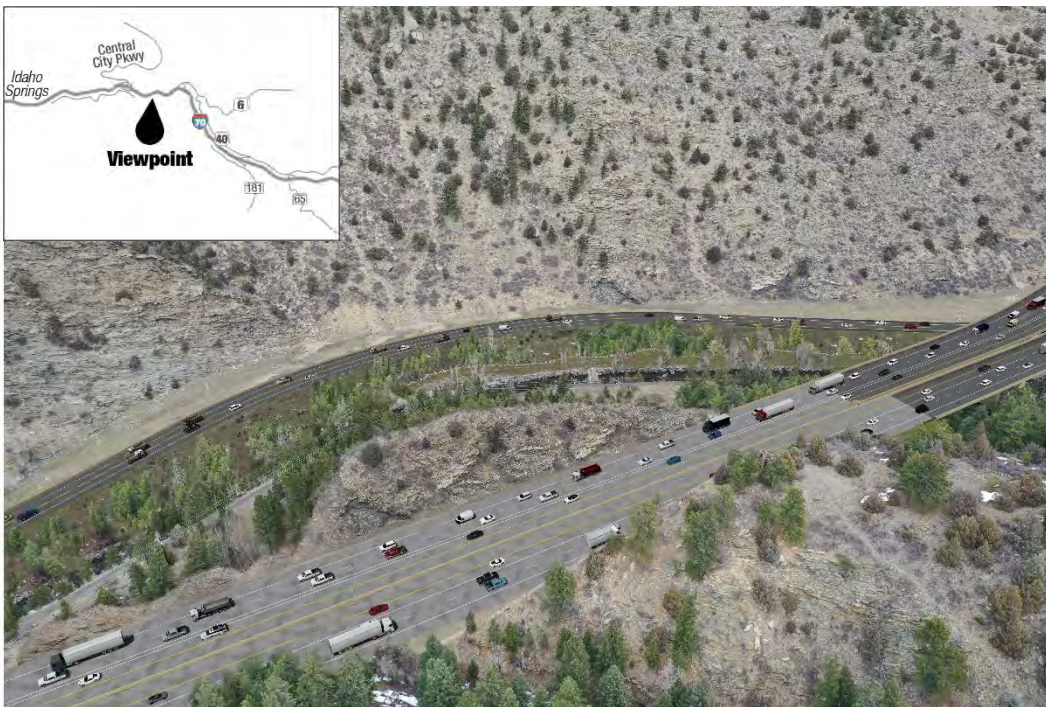
Exhibit 24 and Exhibit 25 illustrate the potential impacts of the Canyon Viaduct Alternative when viewed from the air above Sawmill Gulch, in between the US 6 and Hidden Valley/Central City interchanges. The existing conditions photo (Exhibit 24) shows Clear Creek, I-70, and the mountainside on the north side of Clear Creek Canyon. The visual simulation (Exhibit 25) shows the viaduct on the right as it approaches the mountain saddle near Sawmill Gulch, the I-70 lanes as they cut through the mountain saddle, the new frontage road north of Clear Creek, and new vegetation on the north bank of Clear Creek in the area where existing I-70 lanes would be removed.

These changes would result in a beneficial visual impact to recreationalists in this particular stretch of the Central Section, as roadway infrastructure would be almost completely removed from the bottom of the canyon in this area, and riparian restoration on the north bank of Clear Creek would improve the natural features of the landscape. These changes would result in a moderate impact for I-70 travelers due to the widened highway and cut slopes through the mountain saddle.

Exhibit 24. Existing Condition - I-70 and Clear Creek viewed from above Sawmill Gulch; Looking North



Exhibit 25. Canyon Viaduct Alternative - I-70 and Clear Creek viewed from above Sawmill Gulch; Looking North



7.2.2.2. Indirect Impacts

Neither action alternative would cause indirect changes that could alter the visual character of the surrounding landscape in the Central Section, such as induced growth within the AVE or changes to the implementation of the local plans and policies described Exhibit 3. Therefore, no indirect impacts to visual resources are anticipated.

7.2.3. West Section

The West Section is located in LU-3 and is within the Twin Tunnels ASA and the eastern end of the Idaho Springs ASA. In the West Section, four viewer types have views to and from I-70:

- I-70 travelers, who move through at high speed and have low sensitivity to visual change;
- Residents adjacent to I-70, who have high sensitivity to visual change;
- Workers adjacent to the highway, who have low sensitivity to visual change; and
- Recreationalists using Clear Creek and the Clear Creek Greenway, who have high sensitivity to visual change in the surrounding natural and cultural environment.

In the West Section, Project elements of the Tunnel and Canyon Viaduct alternatives would be the same, comprising a new Express Lane and associated signage in the westbound direction of I-70, bridges, rock cuts, cut slopes, and fill slopes and associated vegetation removal, retaining walls, and a noise wall west of the Veterans Memorial Tunnels. The Tunnel Alternative and the Canyon Viaduct Alternative would result in moderate visual impacts for most viewer types in the West Section.

7.2.3.1. Direct Impacts

The I-70 Mountain Corridor Aesthetics Guidance identifies goals and objectives for the Twin Tunnels and Idaho Springs ASAs, described in Section 4.1.1 of this report. Within the Twin Tunnels ASA, applicable goals and objectives comprise mitigating adverse visual impacts using buffers and transitions, restoring existing rock faces and unstable slopes in Clear Creek, and avoiding encroachments in Clear Creek. The Idaho Springs ASA goals are not applicable to the Project elements within the Idaho Springs ASA, which consist of roadway striping and a proposed noise wall at the far east end of Idaho Springs. Consistent with the Twin Tunnels ASA goals and objectives, the analysis below considers the visual effects of Project elements, including elements in and around Clear Creek, on sensitive views and viewers to understand the impacts on visual resources and features. The Project design should adhere to the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.) (see Section 8), which will improve aesthetic consistency of roadway structures within the West Section.

The visual compatibility of the Project is evaluated based on the level of change or contrast that Project elements would have with the visual character of the natural environment, cultural environment, and roadway. East of the Veterans Memorial Tunnels, the landscape in the West Section consists primarily of enclosed, foreground views in a canyon environment, with steep rock walls to the north and dense cover pine and fir forest to the south (see Exhibit 7 and Section 6.2). The cultural order of the built environment is moderate, with the Veterans Memorial Tunnels as a distinctive visual element, and the presence of roadway infrastructure associated with I-70, CR 314, and Central City Parkway, along with several commercial buildings and a fenced CDOT maintenance yard near the Hidden Valley/Central City interchange. West of the tunnels, views from the roadway open up, and signs of urbanization begin to appear between the tunnels and Idaho Springs.

Exhibit 26 identifies the visual contrast of the major elements of the Tunnel and Canyon Viaduct alternatives in the West Section and highlights their visual compatibility (compatible or incompatible) with natural, cultural, and roadway features. The visual changes related to the realignment of Clear Creek are caused by retaining walls; therefore, the realignment of Clear Creek is not evaluated as a separate element, but rather as part of the evaluation of retaining walls. The form, line, color, and texture of the Project elements would follow the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015) and *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.), which are designed to minimize visual clutter, promote visual cohesion among infrastructure elements and the surrounding landscape, and promote continuity of design and aesthetics throughout the Mountain Corridor, as described in Section 5.2.

The steep and constrained canyon surrounding Clear Creek between the Hidden Valley/Central City interchange and the Veterans Memorial Tunnels would cause difficulty for the Tunnel and Canyon Viaduct alternatives to meet some of the engineering design criteria and aesthetics guidance. Difficulties would be primarily related to:

- Guidelines for the height, location, and visual buffering of retaining walls and cut and fill slope grading and appearance on the south side of the canyon adjacent to CR 314
- Horizontal and/or vertical separation of highway lanes
- Rock cuts that would be difficult to terrace and/or stain to effectively match the surrounding weathered rock; the Twin Tunnels expansion projects discovered that the most effective rock blasting technique for these steep slopes creates vertical half-column depressions in the mountainside, and these depressions take the stain differently than the surrounding blasted rock, resulting in highly visible vertical lines throughout the rock blast area

Continued consultation will occur with stakeholders during design to address these issues, using the CSS process in a manner similar to the previous Twin Tunnels and Westbound Peak Period Shoulder Lanes Tier 2 projects. Lessons learned from construction on these two projects, particularly in regard to tall rock cuts, will inform this Project. Design variances will be required for any engineering design criteria that cannot be met.

The scale of Project elements within the enclosed canyon environment would generally have moderate to strong visual contrast and be visually incompatible with natural features (landforms, vegetation, and water). Project elements would have weak visual contrast and be visually compatible with the cultural and roadway features.

Exhibit 26. Tunnel and Canyon Viaduct Alternatives - Landscape Character Compatibility Matrix, West Section

Legend		Tunnel and Canyon Viaduct Alternatives West Section				
	Visually Compatible					
	Visually Incompatible					
S	Strong Visual Contrast					
M	Moderate Visual Contrast					
W	Weak Visual Contrast					
N	No Visual Contrast	Natural, Cultural, & Roadway Features				
Visual Attributes	Project Elements	Landforms	Vegetation	Water	Development Patterns & Structures	Roadway Character
	Roadway surface	M	M	W	W	N
	Retaining walls	S	S	S	W	W
	Rock cuts	S	S	M	W	W
	Cut and fill slopes	S	S	M	W	W
	Bridges/Structures	W	W	M	M	M
	Signage	M	M	M	M	W
	Noise wall	M	M	S	M	M

The degree of impacts to viewers and the visual quality of landscape compositions within the AVE is assessed by evaluating visual compatibility (Exhibit 16), viewer sensitivity (Section 6.2.2), distance zones (Exhibit 7), visibility, and visual quality (Exhibit 13 and Section 6.3).

Of the four viewer types in the West Section, workers would experience minimal impacts due to visual change; I-70 travelers and nearby residents would experience moderate adverse impacts due to visual change; and recreationalists would experience high adverse impacts due to visual change:

- Workers near the Hidden Valley/Central City interchange would see limited differences in their view from their work locations, and only highway striping would change in the views by workers west of the Veterans Memorial Tunnels.
- I-70 travelers have low sensitivity to visual change in the Project area, but the form and scale of the retaining walls and rock cuts to accommodate the realigned I-70 lanes, on both the north and south side of the canyon, and the removal of part of the forested slope south of the canyon would dominate the landscape features and cause a noticeable adverse visual effect.
- Residents adjacent to the Hidden Valley/Central City interchange would not experience highly noticeable visual changes because the Tunnel and Canyon Viaduct alternatives would not



construct new elements with high visual contrast in this area. Some residents' views of roadway infrastructure are partially screened by trees. Residents adjacent to the noise wall in east Idaho Springs would experience a moderate adverse visual impact because the noise wall would block the lower portion of their view of the south side of Clear Creek Canyon. However, the noise wall would also block their view of the roadway infrastructure, which would be a visual benefit, while leaving the view of mountain ridges to the south intact.

- Recreationalists using Clear Creek and the Clear Creek Greenway would experience high adverse impacts due to visual change. These viewers have high sensitivity to visual changes because of the duration of their views and their high interest in the aesthetics of the natural and cultural environment around them. From the Greenway, tall retaining walls, large rock cuts, cut and fill slopes and associated vegetation/tree removal would dominate views and cause a highly noticeable adverse visual effect.

The overall visual character and quality of the existing landscape would remain moderate, as the existing landscape is currently dominated by roadway infrastructure and other development in the foreground views, and the middle ground views would not change. Exhibit 27 highlights the findings from the assessment process.

Exhibit 27. Tunnel and Canyon Viaduct Alternatives - Visual Impact Assessment Summary, West Section

Tunnel and Canyon Viaduct Alternatives West Section														
Viewers <small>(See Exhibit 12 for viewpoint locations)</small>	Project Elements													
	Roadway surface (additional lanes)	Retaining walls	Rock cuts	Cut and fill slopes	Bridges/ structures	Signage for Express Lane	Noise Wall							
Travelers														
1. I-70 travelers <small>Sensitivity Level Low, Distance Zone Fg</small>	W	S	S	M	W	M	M							
Neighbors														
1. Residents <small>Sensitivity Level High, Distance Zone Fg</small>	W		M	M	W	M	S							
2. Workers <small>Sensitivity Level Low, Distance Zone Fg</small>	W	W		W	W	W								
Recreationalists														
1. Greenway and creek users <small>Sensitivity Level High, Distance Zone Fg</small>	W	S	S	S	W	M	W							
Legend														
Visual Impacts					Visibility and Contrast Levels <small>(See Exhibit 26. Landscape Character Compatibility Matrix)</small>									
	Adverse Impact	Bene-ficial Impact	No Visual Impact	Not Visible	S	Strong	M	Moderate	W	Weak	N	None		

Exhibits 28 - 30 illustrate the potential impacts of the Tunnel and Canyon Viaduct alternatives in the area of the Clear Creek realignment, east of the Veterans Memorial Tunnels. To accommodate curve flattening and highway widening, the I-70 lanes, Clear Creek, CR 314, and the Greenway trail would all shift to the south. The forested slope shown in Exhibit 28, south of Clear Creek, would be heavily cut back to accommodate the realigned roadway infrastructure, removing many mature trees and replacing them with a tall retaining wall. Retaining walls along the banks of Clear Creek would be similar under both existing conditions and the Proposed Action. The Tunnel and Canyon Viaduct alternatives would cause a moderate adverse impact to the views by I-70 travelers and recreationalists in this location; the existing views in this narrow, constrained portion of the canyon are dominated by roadway infrastructure, which would continue to be the case under the two alternatives.

Exhibit 28. Tunnel and Canyon Viaduct Alternatives - I-70, Clear Creek realignment, and CR 314 east of Veterans Memorial Tunnels; Looking West



Exhibit 29. Existing Condition - I-70, Clear Creek, and CR 314 east of Veterans Memorial Tunnels; Looking East



Exhibit 30. Tunnel and Canyon Viaduct Alternatives - I-70, Clear Creek realignment, and CR 314 east of Veterans Memorial Tunnels; Looking East



7.2.3.2. Indirect Impacts

The Project would not cause indirect changes that could alter the visual character of the surrounding landscape in the West Section, such as induced growth within the AVE or changes to the implementation of the local plans and policies described Exhibit 3. Therefore, no indirect impacts to visual resources are anticipated.

7.3. Construction Impacts

7.3.1. No Action Alternative

In the Central Section, I-70 travelers, workers, and recreationalists would experience adverse visual effects from replacement of the bridge at the bottom of Floyd Hill. Impacts would include visual disorder due to the presence of large equipment, temporary signage, equipment for detours such as barriers and cones, dust and debris, temporary fencing, material stockpiles, staging areas, and barren landforms during earthwork activities.

7.3.2. Tunnel Alternative

Visual effects from construction would include visual disorder due to the presence of large equipment, temporary signage, equipment for detours such as barriers and cones, dust and debris, temporary fencing, material stockpiles, staging areas, and barren landforms during earthwork activities such as grading and rock cutting.

The East Section has moderate visual order and coherence and would remain moderate during construction, because the balance of views in the middle ground would continue to draw some viewer attention and because construction activities would create a lower level of visual disorder in this section than in the other Project sections.

The most intense visual impacts would occur in the Central Section and West Section, where the most grading and rock blasting activities would occur, along with the Clear Creek channel realignment. The Central Section landscape has moderate to low visual order and coherence, and the West Section landscape has moderate visual order and coherence. Construction activities would reduce the visual order and coherence in both Project sections to low.

In the Central Section, the North Frontage Road Option would concentrate most of the visual disruption on the north side of Clear Creek, with only the Greenway trail resurfacing and small area of reconstruction for ADA compliance occurring on the south side of Clear Creek. However, substantially more rock blasting would occur under the North Frontage Road Option than the South Frontage Road Option because rock cuts would be much higher and deeper into the mountainside. The South Frontage Road Option would have visual disruption on both sides of Clear Creek because of the new frontage road construction south of the creek. Visual disruption due to construction would therefore be greater for recreationalists under the South Frontage Road Option than the North Frontage Road Option.

The Tunnel Alternative would take one year longer to construct than the Canyon Viaduct Alternative, resulting in an additional year of visual impacts than the Canyon Alternative. Rock cut construction requires a large amount of equipment, activities, and staging area that would cause substantial visual disruption: drill rigs, large areas of ground disturbance, shotcrete (a type of sprayed concrete) on various surfaces, and many trucks to haul away blasted rock. This would create more visual impact than the Canyon Viaduct Alternative construction activities.

7.3.3. Canyon Viaduct Alternative

Similar to the Tunnel Alternative, visual effects from construction would include visual disorder due to the presence of large equipment, temporary signage, equipment for detours such as barriers and cones, dust and debris, temporary fencing, material stockpiles, staging areas, and barren landforms during earthwork activities such as grading and rock cutting.

Impacts in the East and West Sections would be the same as described for the Tunnel Alternative. In the Central Section the new viaduct and frontage road construction activities would reduce the visual order and coherence to low, but for one year less than the Tunnel Alternative, and to a lesser extent than the Tunnel Alternative. The viaduct could be constructed using a segmental construction technique, where gantries on an already-built section of the viaduct build the next section up in the air. With this construction technique, visual disturbance on the ground could potentially be limited to pier locations only. If traditional girders are used for the viaduct, instead of a segmental bridge approach, access roads would have to be constructed for cranes to place the girders and trucks delivering the girders. This would cause a visual impact during construction and potentially after construction if the forest is impacted by the activities.

8. Mitigation

Throughout this project, interdisciplinary coordination has occurred as the potential for adverse visual impacts has been considered. In accordance with Section 5.2 of CDOT's Visual Impact Assessment Guidelines (CDOT, 2019), the team has considered options to minimize and compensate for visual impacts:

- CDOT developed the Tunnel Alternative South Frontage Road Option to minimize the size of rock cuts on the north side of Clear Creek canyon; shifting the frontage road to the south side of Clear Creek allowed the I-70 lanes to shift farther south, minimizing the rock cuts. While this option would minimize the visual impact of rock cuts north of the creek and visually improve portions of the north bank of Clear Creek through restoration, further analysis determined this option would result in higher visual impacts for recreationalists than the North Frontage Road Option because of the visibility of substantial new roadway infrastructure on the south side of the creek.
- The Tunnel Alternative design originally included a large retaining wall on the north side of I-70, east of US 6. CDOT prepared a visual simulation to analyze the visual impact of this wall and subsequently revised the design to carry the westbound I-70 lanes on structure rather than a retaining wall in order to minimize the visual impact in this location.
- Reconstructing a portion of the Clear Creek Greenway trail for ADA compliance in the area of Sawmill Gulch would require cut slopes and the associated removal of mature trees. To avoid the visual effects of the cut slope and tree removal, the Tunnel Alternative South Frontage Road Option and the Canyon Viaduct Alternative were revised to include a new ADA-compliant section of trail north of Clear Creek, instead of reconstructing the existing trail south of the creek. This revision is possible because these alternatives have enough room north of Clear Creek to add a new trail section.
- The original Canyon Viaduct Alternative design across Sawmill Gulch required a culvert to carry the gulch underneath the roadway. In order to maintain the natural drainage system of the gulch, including the existing natural vegetation and grading, the roadway profile was raised approximately 15 feet higher to provide a bridge over the gulch rather than a culvert.
- The Canyon Viaduct Alternative would require earthen fill or a retaining wall south of the viaduct in the hillside west of Sawmill Gulch. The original alternative design proposed earthen fill in this area, which would have required removal of many mature trees. The design was revised to use retaining walls through the majority of this area, which would be screened from the canyon bottom by the surrounding trees and which would minimize the removal of trees and associated visual impact.

Impacts identified in Section 7 are summarized in tabular format, by alternative, in this section to align with recommended mitigation.

8.1. Relevant Tier 2 Mitigation

The phased approach of the I-70 PEIS Preferred Alternative allows for ongoing opportunities to avoid and minimize impacts to visual resources, establish mitigation, and employ I-70 Mountain Corridor CSS. The PEIS indicates that mitigation strategies for visual resources will be defined in Tier 2 processes in

coordination with corridor communities. The mitigation approaches will focus on reducing visual contrast associated with implementation of the I-70 PEIS Preferred Alternative. The lead agencies will follow the *I-70 Mountain Corridor Design Criteria* (CDOT, n.d.), refer to the *I-70 Mountain Corridor CSS Aesthetics Guidance* (CDOT, 2015), and create a site-specific Tier 2 Aesthetic Plan and Lighting Plan.

Tier 2 projects must also consider creation of a Visual Impact and Mitigation Plan that may address the following items:

- Past visual impacts and scarring
- Project-related visual impacts
- Consideration of mitigation strategies for both that include:
 - Review and consideration of other jurisdictions' visual standards
 - Non-obstructed views of items like narrow canyons to valleys
- 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.

8.2. Tunnel Alternative: North Frontage Road Design Option

8.2.1. Mitigation for Permanent Adverse Impacts

Exhibit 31 summarizes the direct and indirect impacts of the Tunnel Alternative, North Frontage Road Design Option.

Exhibit 31. Recommended Mitigation Measures for Permanent Impacts of the Tunnel Alternative: North Frontage Road Design Option

Location	Activity	Impact	Mitigation
Throughout Project length	Retaining walls, cut and fill slopes, bridges and structures, tunnel portals, rock cuts, noise wall	Introduction of additional built elements into the landscape, causing additional disruption of visual coherence in the landscape and strong visual contrast with natural features	<ul style="list-style-type: none"> • Follow <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.), and consult with stakeholders during design to address design aesthetics and exceptions, using the CSS process, in a manner similar to the previous Twin Tunnels and Westbound Peak Period Shoulder Lanes Tier 2 projects • Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan • Conduct rock blasting activities in a manner adhering to <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.): use naturalized custom cut methods, use scatter blasting techniques, and provide for adequate rockfall area at the base
Throughout Project length	Express Lane signage	Introduction of new built element into the landscape, causing additional disruption	<ul style="list-style-type: none"> • Conduct a study of views during final design so that Express Lane signage placement minimizes blockage of views while also complying with the

		of visual coherence in the landscape and strong visual contrast with natural features	<p><i>Manual on Uniform Traffic Control Devices for Streets and Highways.</i></p> <ul style="list-style-type: none"> The designer will work with the CDOT Landscape Architect during final design to determine signage placement
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8.2.2. Mitigation for Temporary Impacts

Exhibit 32 summarizes the temporary impacts that are anticipated during construction of the Tunnel Alternative, North Frontage Road Design Option.

Exhibit 32. Recommended Mitigation Measures for Temporary Impacts of the Tunnel Alternative: North Frontage Road Design Option

Location	Activity	Impact	Mitigation
Throughout Project length	Construction work activities and staging areas	Visual disorder due to presence of equipment, dust and debris, temporary fencing, material stockpiles, barren landforms, nighttime construction lighting, etc.	Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan, including plans for construction activities

8.3. Tunnel Alternative: South Frontage Road Design Option

8.3.1. Mitigation for Permanent Adverse Impacts

Exhibit 33 summarizes the direct and indirect impacts of the Tunnel Alternative, South Frontage Road Design Option.

Exhibit 33. Recommended Mitigation Measures for Permanent Impacts of the Tunnel Alternative: South Frontage Road Design Option

Location	Activity	Impact	Mitigation
Throughout Project length	Retaining walls, cut and fill slopes, bridges and structures, tunnel portals, rock cuts, noise wall	Introduction of additional built elements into the landscape, causing additional disruption of visual coherence in the landscape and strong visual contrast with natural features	<ul style="list-style-type: none"> Follow <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.), and consult with stakeholders during design to address design aesthetics and exceptions, using the CSS process, in a manner similar to the previous Twin Tunnels and Westbound Peak Period Shoulder Lanes Tier 2 projects Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan Conduct rock blasting activities in a manner adhering to <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.): use naturalized custom cut methods, use scatter blasting techniques, and provide for adequate rockfall area at the base

Throughout Project length	Express Lane signage	Introduction of new built element into the landscape, causing additional disruption of visual coherence in the landscape and strong visual contrast with natural features	<ul style="list-style-type: none"> Conduct a study of views during final design so that Express Lane signage placement minimizes blockage of views while also complying with the <i>Manual on Uniform Traffic Control Devices for Streets and Highways</i>. The designer will work with the CDOT Landscape Architect during final design to determine signage placement
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8.3.2. Mitigation for Temporary Impacts

Exhibit 34 summarizes the temporary impacts that are anticipated during construction of the Tunnel Alternative, South Frontage Road Design Option.

Exhibit 34. Recommended Mitigation Measures for Temporary Impacts of the Tunnel Alternative: South Frontage Road Design Option

Location	Activity	Impact	Mitigation
Throughout Project length	Construction work activities and staging areas	Visual disorder due to presence of equipment, dust and debris, temporary fencing, material stockpiles, barren landforms, nighttime construction lighting, etc.	Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan, including plans for construction activities

8.4. Canyon Viaduct Alternative

8.4.1. Mitigation for Permanent Adverse Impacts

Exhibit 35 summarizes the direct and indirect impacts of the Canyon Viaduct Alternative.

Exhibit 35. Recommended Mitigation Measures for Permanent Impacts of the Canyon Viaduct Alternative

Location	Activity	Impact	Mitigation
Throughout Project length	Retaining walls, cut and fill slopes, bridges and structures, rock cuts, noise wall	Introduction of additional built elements into the landscape, causing potential for additional disruption of visual coherence in the landscape and strong visual contrast with natural features	<ul style="list-style-type: none"> Follow <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.), and consult with stakeholders during design to address design aesthetics and exceptions, using the CSS process, in a manner similar to the previous Twin Tunnels and Westbound Peak Period Shoulder Lanes Tier 2 projects Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan Conduct rock blasting activities in a manner adhering to <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.); use naturalized custom cut methods, use scatter

			blasting techniques, and provide for adequate rockfall area at the base
Central Section at viaduct crossings of the Greenway trail and Clear Creek	Piers supporting the viaduct	Blocking views from some locations along the Greenway trail and Clear Creek	Conduct a study of views during final design so that pier placement minimizes blockage of views and frames views if possible as trail and creek users move past piers
Central Section under the viaduct	Large overhead viaduct structure	Shading of landforms and vegetation under the viaduct may affect visual quality	Conduct a shading study during final design to understand location of shading impacts by season and adjust design to minimize impacts. For example, the viaduct height may be adjusted to minimize shading in some areas, and the Greenway trail alignment and amenities may be adjusted to avoid shady areas in winter.
Throughout Project length	Express Lane signage	Introduction of new built element into the landscape, causing additional disruption of visual coherence in the landscape and strong visual contrast with natural features	<ul style="list-style-type: none"> Conduct a study of views during final design so that Express Lane signage placement minimizes blockage of views while also complying with the <i>Manual on Uniform Traffic Control Devices for Streets and Highways</i>. The designer will work with the CDOT Landscape Architect during final design to determine signage placement

8.4.2. Mitigation for Temporary Impacts

Exhibit 36 summarizes the temporary impacts that are anticipated during construction of the Canyon Viaduct Alternative.

Exhibit 36. Recommended Mitigation Measures for Temporary Impacts of the Canyon Viaduct Alternative

Location	Activity	Impact	Mitigation
Throughout Project length	Construction work activities and staging areas	Visual disorder due to presence of equipment, dust and debris, temporary fencing, material stockpiles, barren landforms, nighttime construction lighting, etc.	Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan, including plans for construction activities

9. Agency Coordination and Public Outreach

As noted in Sections 3 and 4, Tier 2 projects on the I-70 Mountain Corridor are guided by the *I-70 Mountain Corridor Aesthetics Guidance* (CDOT, 2015). Complying with this guidance and ensuring continuity in design elements for the Project was identified as a core value in the CSS process. The Project held more than 40 CSS team meetings, and the Project Leadership Team, Technical Team, and Issue Task Forces evaluated visual sensitivities and impacts in evaluating the Project alternatives and individual design elements. Although many of the Project elements will be evaluated for compliance with aesthetics guidance in the design phase, the CSS teams recorded visual concerns for the action alternatives from the introduction of roadway infrastructure and walls, particularly effects of this infrastructure in relation to the natural areas along Clear Creek and the Greenway. Rock cuts and the width and scale of the roadway prism in the canyon were also raised as areas of visual interest for the CSS teams.

Due to the complexity of the Project and the need to visualize the Project design from multiple angles, the team used a three dimensional roadway design model that was then refined in an architectural visual model to explain Project elements and illustrate and quantify impacts, such as rock cut quantities. This model was reviewed by the Technical Team and in individual meetings with Clear Creek County staff and Commissioners to show the Project design visually and evaluate visual (and other) changes. Additionally, flythrough videos and design simulations, many shown in this report, were developed for both action alternatives and presented at public meetings and on the Project website. These tools helped clarify the Project design and provided more accurate information for stakeholder comments and input.

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Appendix A. Visual Impact Assessment Scoping Questionnaire



Technical Memorandum

To: Project Staff

From: Atkins

Subject: Visual Impact Assessment Scoping Questionnaire

Date: December 2017 (updated February 2019)

The Federal Highway Administration (FHWA) *Guidelines for the Visual Impact Assessment of Highway Projects* Questionnaire is used to determine the level of effort required for visual impact analysis in federal highway projects. The Guidelines provide a scoping questionnaire that consists of 10 questions, covering two topics: environmental compatibility and viewer sensitivity. Each topic consists of five multiple-choice questions, with a score being assigned for each response, and the sum of these questions resulting in a total score ranging from 6 to 30. The total score helps to determine the type of Visual Impact Assessment (VIA) analysis and documentation required, as displayed in Exhibit 1.

Exhibit 1. Scores and Suggested VIA Documentation Levels

Total Score	Recommended VIA Document
6-9	None Needed
10-14	VIA Memorandum
15-19	Abbreviated VIA
20-24	Standard VIA
25-30	Expanded VIA

However, as per Appendix C of the FHWA VIA guidelines, it is recommended that if visual issues may be a factor in assessing impacts, a VIA should be undertaken regardless of the outcome of the questionnaire.

This VIA Scoping Questionnaire was completed based on the assumption that all design options to the Proposed Action are generally similar in their potential changes to visual setting (e.g., general location, size of structures, etc.).

Visual Impact Assessment Scoping Questionnaire and Rationale

Project Name: I-70 Floyd Hill to Veterans Memorial
Tunnels

Site Visit Date: October 10, 2017

Location: I-70 from Exit 248 to Exit 241

Time: 11:00 a.m.

Special Conditions/Notes: N/A

Conducted By: Atkins Staff

Environmental Compatibility

1. Will the project result in a noticeable change in the physical characteristics of the existing environment? (Consider all project components and construction impacts - both permanent and temporary, including landform changes, structures, noise barriers, vegetation removal, railing, signage, and contractor activities.)

- High level of permanent change (3) Moderate level of permanent change (2)
- Low level of permanent or temporary change (1) No Noticeable Change (0)

Rationale: A high level of permanent change was selected as a response to this question because the Proposed Action will result in the construction of elements that will be highly noticeable in the existing environment. These elements include potential bridge structures, new tunnels, retaining walls, signage, expanded pavement (since a new lane is being added), possible noise barriers, and major landform changes such as slope and rock cutting. While all new roadway infrastructure (bridge structures, tunnels, etc.) will be designed according to existing standards and in line with I-70 Mountain Corridor and Mountain Mineral Belt aesthetics guidance, there will be landform changes and vegetation removal necessary to facilitate the Proposed Action's construction, which will make a noticeable change in the physical characteristics of the existing setting. The Proposed Action will introduce a new through-traffic lane, and, thus, is considered a Type I project by FHWA. This categorization means additional structures, such as noise barriers or berms, to abate any noise increase potentially could be included as part of the project, further adding components into the existing environment and decreasing compatibility with the natural surroundings.

Undertaking design development in accordance with the I-70 Mountain Corridor Design Criteria and Aesthetic Guidance and the I-70 Mountain Corridor Section 106 Programmatic Agreement will help to minimize some of the impacts to the natural and existing built environments. It also will be crucial to consider the existing visual impact assessment undertaken as part of the I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS),

2. Will the project complement or contrast with the visual character desired by the community? (Evaluate the scale and extent of the project features compared to the surrounding scale of the

community. Is the project likely to give an urban appearance to an existing rural or suburban community? Do you anticipate that the change will be viewed by the public as positive or negative? Research planning documents or talk with local planners and community representatives to understand the type of visual environment local residents envision for their community.)

Low Compatibility (3)

Moderate Compatibility (2)

High compatibility (1)

Rationale: Moderate compatibility was selected as a response to this question because the project is not a new roadway in an area where a roadway did not previously exist, so the local community is already accustomed to a highway being part of the visual character of the area. However, the existing highway fits better with the area's topography because it was not built to current design standards; With the introduction of a new roadway designed to 55 miles per hour, it is likely that the new roadway will not fit as well with the existing terrain. As mentioned under the rationale for Question 1, all new roadway infrastructure will be designed according to existing standards and in line with aesthetics guidance. While roadway improvements will introduce new elements into the area, the Proposed Action will not change the visual character to an urban appearance. On this stretch of I-70, the residential area is primarily limited to the subdivisions at the top of Floyd Hill.

The I-70 Mountain Corridor PEIS Visual Resources Technical Report identifies the "Inherent Scenic Attractiveness (ISA)" of this section of roadway as Class B, Typical. The ISA classification (as determined by U.S. Department of Agriculture, Forest Service) determines how visually unique, distinctive, and valued specific scenery is. It is based on commonly held perceptions of beauty related to the existing landscape. It should be noted, however, that the footprint associated with the new roadway layout will result in a change to the existing conditions aesthetics.

3. *What level of local concern is there for the types of project features (e.g., bridge structures, large excavations, sound barriers, or median planting removal) and construction impacts that are proposed? (Certain project improvements can be of special interest to local citizens, causing a heightened level of public concern, and requiring a more focused visual analysis.)*

High concern (3)

Moderate concern (2)

Low concern (1)

Negligible Project Features (0)

Rationale: Moderate concern was selected as a response to this question because of the comments received during public meeting workshops for the Westbound I-70 Mountain Corridor Concept Development Process, which included the Floyd Hill area. There are numerous comments concerning safety, access and egress, noise (from construction and during operation), and impacts to air quality, wildlife, and local businesses and residents associated with the project area. However, there were minimal comments regarding visual concerns. As project design emerges, it is likely stakeholders will express interest in and possibly object to the proposed design, and thus levels of concern are subject to change.

4. *Is it anticipated that to mitigate visual impacts, it may be necessary to develop extensive or novel mitigation strategies to avoid, minimize, or compensate for adverse impacts or will using conventional mitigation strategies, such as landscape or architectural treatment adequately mitigate adverse visual impacts?*

- Extensive Non-Conventional Mitigation Likely (3) Some non-conventional Mitigation Likely (2)
- Only Conventional Mitigation Likely (1) No Mitigation Likely (0)

Rationale: Some non-conventional mitigation likely was selected as the response to this question because all mitigation for the project will comply with the I-70 Mountain Corridor Design Criteria and Aesthetic Guidance, which includes both conventional and non-conventional mitigation for all Tier 2 projects on the I-70 Mountain Corridor.

5. *Will this project, when seen collectively with other projects, result in an aggregate adverse change (cumulative impacts) in overall visual quality or character? (Identify any projects [both state and local] in the area that have been constructed in recent years and those currently planned for future construction. The window of time and the extent of area applicable to possible cumulative impacts should be based on a reasonable anticipation of the viewing public's perception.)*

- Cumulative Impacts likely: 0-5 years (3) Cumulative Impacts likely: 6-10 years (2)
- Cumulative Impacts unlikely (1)

Rationale: Cumulative impacts likely: 0-5 years was selected as a response to this question because the Proposed Action is likely to have both beneficial and adverse impacts in the short term. Known future projects in this area include residential and some commercial development at the top of Floyd Hill (within the next 10 years), a truck staging and distribution center for a new 25 floor casino in Blackhawk at the current Martee parcel (within the next five years), , addition of Greenway (pedestrian/bicycle trail) segments (within the next five years), Westbound

Peak Period Shoulder Lane project between the Veterans Memorial Tunnels and Empire Junction interchange (within the next five years), and an Advanced Guideway System (future project with unknown timing).

The project will improve traffic flow, which could have a positive impact on local air quality and enable improved economic activity. However, regional growth could place pressure on the existing systems (such as utilities and the local transportation network) and may require additional facilities to be constructed. The public comments include concerns regarding the inducement of growth associated with the capacity increase due to the project. Planned development in the region also could impact wildlife potentially.

With mitigation in place, the cumulative impacts will be minimized to the greatest extent possible. Further cumulative impact assessment will be undertaken as a part of the Proposed Action National Environmental Policy Act (NEPA) process.

Viewer Sensitivity

1. *What is the potential that the project proposal may be controversial within the community, or opposed by any organized group? (This can be researched initially by talking with the state DOT and local agency management and staff familiar with the affected community's sentiments as evidenced by past projects and/or current information.)*

High Potential (3)

Moderate Potential (2)

Low Potential (1)

No Potential (0)

Rationale: Moderate potential has been selected as a response to this question because of numerous public comments regarding a wider highway. However, the I-70 Mountain Corridor Context Sensitive Solutions (CSS) process incorporates stakeholders into the decision-making process. The CSS process for this project includes multiple stakeholder groups/meetings, including: Project Leadership Team, Technical Team, and Issue Task Forces. The groups are comprised of local agency representatives, interest groups, state and federal agencies, and community members. In addition, public meetings will be held throughout the entire process, including small group meetings.

2. *How sensitive are potential viewer-groups likely to be regarding visible changes proposed by the project? (Consider among other factors the number of viewers within the group, probable viewer expectations, activities, viewing duration, and orientation. The expected viewer sensitivity level may be scoped by applying professional judgment, and by soliciting information from other DOT staff, local agencies, and community representatives familiar with the affected community's sentiments and demonstrated concerns.)*

High Potential (3)

Moderate Potential (2)

Low Potential (1)

No Potential (0)

Rationale: High potential was selected as the response to this question because, with average daily traffic volumes of more than 42,000 vehicles, most viewers will experience the views from I-70, while there are approximately 500 households and businesses in the vicinity of Floyd Hill that will be impacted by changes resulting from the project. The traveler's view is of low duration and oriented primarily to the interstate itself and foreground and middle ground views of the surrounding forested hillsides. The Visual Resources Technical Report undertaken for the I-70 Mountain Corridor project identifies that Idaho Springs/Chicago Creek (milepost 237 to 243) and Floyd Hill (milepost 243 to 246) areas have 100 percent foreground views, i.e., those views within 0 to 0.5 mile from the observer. Beaver Brook (milepost 246 to 252) has more open views of the middle ground (views between 0.5 to 3 miles away from the observer), but is still dominated by foreground views. The neighboring households and businesses have a permanent view of the interstate; however, certain views may be filtered by vegetation and not all businesses and residences are likely to experience direct views of the new infrastructure, although their sensitivity to change is much greater than transient receptors.

Neighboring communities and travelers have a vested interest in keeping the high-quality views along the Mountain Corridor. The project team will work closely with the local agencies, recreation businesses, and other stakeholders to develop techniques to minimize or mitigate potential visual effects. Adhering to the Mountain Mineral Belt design segment aesthetics guidance and the I-70 Mountain Corridor Design Criteria and Aesthetic Guidance will help incorporate permanent changes into the landscape in a context-sensitive manner.

3. *To what degree does the project's aesthetic approach appear to be consistent with applicable laws, ordinances, regulations, policies, or standards?*

Low Compatibility (3)

Moderate Compatibility (2)

High compatibility (1)

Rationale: High compatibility was selected as a response to this question because the project will be designed in accordance with all applicable policies and standards within the corridor. The project will adhere to Mountain Mineral Belt design segment aesthetics guidance and the I-70 Mountain Corridor Design Criteria and Aesthetic Guidance, along with the goals and objectives of the Floyd Hill and Twin Tunnels Areas of Special Attention reports. Additionally, Clear Creek County's 2017 Community Master Plan identifies that the County will undertake a series of goals and strategies to ensure compatibility with

environmental characteristics and community character (Statement 3) along with addressing challenges associated with the I-70 corridor (Statement 10). Key strategies relevant to the Proposed Action include Economic Development Goal F, Strategy 1: "Improve the image (visual and emotional) of the County along the I-70 corridor" and Transportation Goal C: "Advocate for the County's interests for all future I-70 Corridor projects to ensure they are completed with sensitivity to the communities within the corridor." While the majority of the study area lies within Clear Creek County, the eastern end of the area lies within Jefferson County. The Jefferson County Comprehensive Master Plan also has policies related to protecting visual resources, including consideration of visual buffer strips along I-70. With consideration of these elements, a high compatibility is likely.

4. *Are permits going to be required by outside regulatory agencies (i.e., Federal, State, or local)? (Permit requirements can have an unintended consequence on the visual environment. Anticipated permits, as well as specific permit requirements - which are defined by the permitter, may be determined by talking with the project environmental planner and project engineer. Note: coordinate with the state DOT representative responsible for obtaining the permit prior to communicating directly with any permitting agency. Permits that may benefit from additional analysis include permits that may result in visible built features, such as infiltration basins or devices under a storm water permit or a retaining wall for wetland avoidance or permits for work in sensitive areas such as coastal development permits or on Federal lands, such as impacts to Wild and Scenic Rivers.)*

Yes (3)

Maybe (2)

No (1)

Rationale: Yes was selected as the response to the question because permits will be required from outside regulatory agencies and will be obtained for various elements of the project. These agencies to coordinate with regarding permits include, but are not limited to: The U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and Clear Creek and Jefferson Counties.

5. *Will the project sponsor or public benefit from a more detailed visual analysis in order to help reach consensus on a course of action to address potential visual impacts? (Consider the proposed project features, possible visual impacts, and probable mitigation recommendations.)*

Yes (3)

Maybe (2)

No (1)

Rationale: Yes was selected as the response to this question due to the potential adverse visual impacts caused by adding new elements in the landscape and by the potential for opposition from local stakeholders.

Determining the Level of Visual Impact Assessment

Total the scores of the answers to all 10 questions on the Visual Impact Assessment Scoping Questionnaire. Use the total score from the questionnaire as an indicator of the appropriate level of VIA to perform for the project. Confirm that the level suggested by the checklist is consistent with the project teams' professional judgments. If there remains doubt about whether a VIA needs to be completed, it may be prudent to conduct an Abbreviated VIA. If there remains doubt about the level of the VIA, begin with the simpler VIA process. If visual impacts emerge as a more substantial concern than anticipated, the level of VIA documentation can always be increased.

The level of the VIA can initially be based on the following ranges of total scores:

Score 25-30

An *Expanded VIA* is probably necessary. It is recommended that it should be preceded by a formal visual scoping study prior to beginning the VIA to alert the project team to potential highly adverse impacts and to develop new project alternatives to avoid those impacts. These technical studies will likely receive statewide, even national, public review. Extensive use of visual simulations and a comprehensive public involvement program would be typical.

Score 20-24—24

A *Standard VIA* is recommended. This technical study will likely receive extensive local, perhaps statewide, public review. It would typically include several visual simulations. It would also include a thorough examination of public planning and policy documents supplemented with a direct public engagement processes to determine visual preferences.

Score 15-19

An *Abbreviated VIA* would briefly describe project features, impacts, and mitigation requirements. Visual simulations would be optional. An Abbreviated VIA would receive little direct public interest beyond a summary of its findings in the project's environmental documents. Visual preferences would be based on observation and review of planning and policy documents by local jurisdictions.

Score 10-14

A *VIA Memorandum* addressing minor visual issues that indicates the nature of the limited impacts and any necessary mitigation strategies that should be implemented would likely be sufficient along with an explanation of why no formal analysis is required.

Score 6-9

No noticeable physical changes to the environment are proposed and no further analysis is required. Print out a copy of this completed questionnaire for your project file to document that there is no effect. A *VIA Memorandum* may be used to document that there is no effect and to explain the approach used for the determination.

While the checklist scores totaled identifies that a Standard VIA is recommended, it is likely that due to the potential for concern from local communities, an expanded VIA may be better suited to determine the level of visual impact and to fully address stakeholder apprehension. That said, as specified in the text from the VIA questionnaire, if doubt remains about the level of VIA needed, begin with the simpler VIA process and if visual impacts emerge as a more substantial concern than anticipated, the level of VIA documentation can always be increased. It is suggested, therefore, to begin with the Standard VIA and increase the assessment as necessary.

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Appendix B. Visual Impact Assessment Methodology Overview

The following sections summarize the approach and criteria for each phase based on CDOT's Guidelines, available on CDOT's Landscape Architecture (LA) [website](#).

Establishment/Scoping

Chapter 2 of CDOT's Guidelines addresses VIA scoping to create the framework and context for the VIA, including:

- ▶ Defining the visual resources study area, or Area of Visual Effect (AVE), and landscape unit(s)
- ▶ Determining issues
- ▶ Describing the visual attributes of the Proposed Action

Inventory/Affected Environment

Chapter 3 of CDOT's Guidelines addresses the Inventory Phase. The Inventory Phase describes the landscape character, viewers, and visual quality of the landscape unit(s).

Landscape Character

The landscape character inventory includes descriptions of natural and cultural environment features and existing roadway and right-of-way characteristics. The overall landscape composition is also described and illustrated in the Landscape Character Inventory Table.

Viewer Inventory

Viewer inventory includes a characterization of visibility, distance zone, observer position, and visual sensitivity, as presented on the Viewer Inventory Table.

- ▶ Visibility: The presence of topography, vegetation, or structures/buildings within viewsheds influences the visibility from key viewpoints. Views may be:
 - Open
 - Screened
 - Not visible
- ▶ Distance zones: Distances from viewpoints are categorized into three distance zones:
 - Foreground views (0.25 to 0.5 mile) allow viewers to see the form, line, color, and texture of individual landscape features.
 - Middleground views (3 to 5 miles) are those where individual features are viewed in context to the surrounding landscape.
 - Background views are expansive, where distance typically reduces forms to simple outlines, shapes, and muted colors.

- ▶ The observer's position or location within the landscape (below, normal, or above) also influences visibility:
 - Views from a position *below the horizon line* or within a low point within a valley or a canyon where views are restricted or limited by surrounding topography.
 - Views *at the horizon line* have a level line of sight with the dominant elements of the landscape.
 - Views from ridgeline locations or along slopes *above the horizon line* have opportunities for open or unrestricted views.
- ▶ Viewer sensitivity: The degree of viewer sensitivity is represented by the following hierarchy:
 - *High* level of sensitivity
 - *Moderate* level of sensitivity
 - *Low* level of sensitivity

Visual Quality

The visual quality inventory involves a characterization of the visual harmony and vividness of the landscape unit, as presented on the Viewer Inventory Table.

Visual *harmony* has three levels:

- ▶ *Harmonious* landscape compositions reflect a strong sense of unity and intactness/integrity among the elements of a composition (natural, cultural, and roadway). The roadway fits into the surrounding setting as cohesive elements of the composition. The scale of landscape and roadway appear well-proportioned to the viewer, creating a structured and orderly appearing view.
- ▶ *Moderately harmonious* landscape compositions indicate that there are features within the composition that are out of scale, relative to each other and to the view as a whole; and that the roadway alignment, structures, and footprint are not in unity with the overall composition.
- ▶ *Inharmonious* landscape compositions reflect a disorderly composition, where the roadway does not appear as a cohesive element of the landscape composition. This may result from an imbalance of scale and the lack of unity between the form, line, color, and texture of the roadway and the landscape setting.

Vividness in the landscape is created by visually distinctive or unique focal points and features of interest that attract attention and create a memorable composition. A vivid landscape creates a memorable experience for the viewer.

Analysis Phase/Impact Evaluation

Chapter 4 of CDOT's Guidelines addresses the Analysis Phase. Assessing visual impacts incorporates the visual compatibility and viewer sensitivity assessments to determine the degree of visual impact to visual quality (beneficial or adverse) for each landscape unit, based on evaluations of visual contrast:

- ▶ *Strong* - Proposed Action would attract attention and dominate landscape features.
- ▶ *Moderate* - Proposed Action begins to attract attention but remains subordinate to landscape features.
- ▶ *Weak* - Proposed Action would not attract attention or reduce the diversity and continuity of landscape features.

Determining the visual compatibility of the project with the visual character of the natural environment, cultural environment, and roadway:

- ▶ *Compatible* - Moderate or weak levels of visual contrast to natural environment and cultural environment features are considered compatible with the visual character of the landscape units.
- ▶ *Incompatible* - A strong or moderate-strong levels of contrast to the natural environment and cultural environment features are considered incompatible with the visual character of the landscape units.

The impact assessment determines the degree of impacts to viewers and the visual quality of landscape compositions within the AVE (beneficial, adverse, or cumulative). The process for assessing visual impacts incorporates visual compatibility, viewer sensitivity, distance zones, visibility, and visual quality.

Mitigation

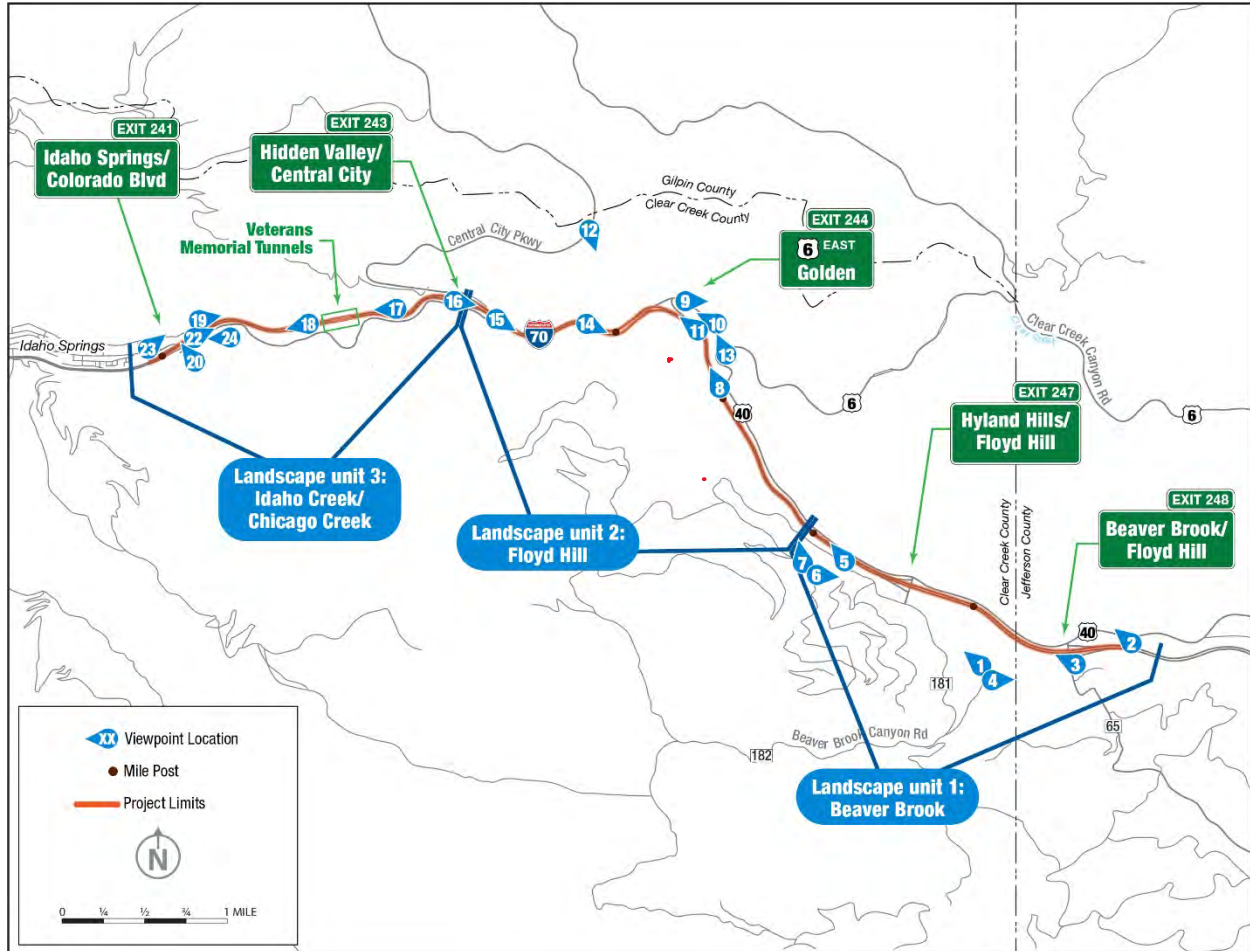
Chapter 5 of CDOT's Guidelines presents visual impact mitigation measures. The visual resource assessment evaluates the visibility and visual contrast of the Proposed Action to the landscape character, viewers, and visual quality of the AVE; and identifies adverse impacts requiring mitigation. The project Mitigation Measures table summarizes visual impacts, mitigation commitments to avoid or reduce the visual contrast of project elements, and temporary construction impacts. For implementation of mitigation commitments, the table identifies the responsible entity and the appropriate timing or project phase (design/construction).

Mitigation should be developed in the context of "SMART" criteria:

- ▶ Focus on mitigation of adverse visual impacts as:
 - **Specific (S)** to the landscape character, viewers, and visual quality of the environment that would be adversely affected, and what is going to be accomplished.
 - **Measurable (M)** compensation for the visual impact, such as replacing or providing substitute resources or environments, in coordination with communities and regulatory agencies.
- ▶ Focus on future potential project design and delivery that is:
 - **Attainable (A)**, meaning technically practical, affordable, and within standard engineering principles.
 - **Realistic (R)** to the community and regulatory agencies, as well as financially feasible.
 - **Timing and Tangible (T)** relative to visual considerations made through design, construction, and maintenance in the transportation project delivery process. The mitigation statement should identify the phase of project delivery at which implementation should occur.

Appendix C. Existing Conditions Views Analysis

Exhibit C1. Viewpoint Locations



9

10 **Landscape Unit 1, Beaver Brook (LU-1)** includes **View 1:** West view of I-70 from Evergreen Lane north of the Beaver Brook/Floyd Hill
 11 interchange; **View 2:** Northwest view from I-70 near Exit 248; **View 3:** Northwest view from County Road 65; **View 4:** Eastward view of wildlife
 12 crossing from the Floyd Hill School parking lot; **View 5:** Northbound view from I-70 near MP 247; **View 6:** Eastward view from Saddle Ridge
 13 Drive

14 **Landscape Unit 2, Floyd Hill (LU-2)** includes **View 7:** Northward view from Saddleback Drive/Saddle Ridge Drive; **View 8:** Westbound view of
 15 US 40 and US 6 (AFS quarry in view); **View 9:** Eastward view from US 6 off ramp over Clear Creek; **View 10:** Northbound view from US 6 east
 16 of US 40 intersection (proposed Greenway parking area); **View 11:** Westbound view of US 6 off ramp (new tunnel approach); **View 12:**
 17 Southeast view from Central City Parkway; **View 13:** Southbound view of US 6 off-ramp towards I-70 from the near the quarry on US 6; **View**
 18 **14:** Eastbound view of the mountainside (where westbound lanes would be in new tunnel); **View 15:** Westbound view of mountainside east of
 19 Hidden Valley/Central City interchange; **View 16:** Eastbound view from top of Hidden Valley/Central City interchange

20 **Landscape Unit 3, Idaho Creek/ Chicago Creek (LU-3)** includes **View 17:** Westbound view of Veterans Memorial Tunnels; **View 18:**
 21 Westbound view just west of the Veterans Memorial Tunnels; **View 19:** Eastward view from Idaho Springs Skatepark; **View 20:** Northward view
 22 from Scott Lancaster Memorial Trail and bridge; **View 21:** Eastbound view from Colorado Boulevard; **View 22:** Northeast view from I-70
 23 onramp at Exit 241a; **View 23:** Westward view from Greenway, Clear Creek and I-70

Exhibit C2. View 1 - West view of I-70 from Evergreen Lane north of Beaver Brook /Floyd Hill interchange (LU-1)



Natural Context	Open valley, dense to sparse forest vegetation, grassy area Foreground and middle ground views
Cultural Context	I-70 roadway, overcrossings, utility lines, rural commercial and residential areas filtered by trees

Exhibit C4. View 3 - Northwest view from County Road 65 (LU-1)



Natural Context	Open valley with mountainous terrain climbing, dense to sparse vegetation, grassy areas Limited to mostly foreground and some middle ground views
Cultural Context	I-70 roadway, utility lines, residential areas filtered by trees

Exhibit C3. View 2 - Northwest view from I-70 near Exit 248 (LU-1)



Natural Context	Open valley, dense forest vegetation, grassy areas Limited to foreground and middle ground with minor background views
Cultural Context	I-70 with wide shoulders, utility lines, residential areas filtered by trees

Exhibit C5. View 4 - Eastward view of wildlife crossing from the Clear Creek High School parking lot (LU-1)



Natural Context	Open valley, dense to open vistas forest vegetation, grassy areas Limited to foreground and middle ground with minor background views
Cultural Context	I-70 and local roads, overcrossing, utility lines, residential areas filtered by trees

Exhibit C6. View 5 - Northbound view from I-70 near Milepost 247 (LU-1)



Natural Context	Mountainous, steep canyons and peaks, dense and open forest vegetation, small grassy areas Limited to foreground and middle ground with minor background views
Cultural Context	I-70 with wide shoulders, freeway barrier railings, freeway signage

Exhibit C8. View 7 - Northward view from Saddleback Drive/Saddle Ridge Drive (LU-2)



Natural Context	Mountainous, dense to sparse forest vegetation, with rocky steep slopes Foreground, middle ground and background views
Cultural Context	I-70, US 6, US 40, residential areas filtered by trees, and the quarry

Exhibit C7. View 6 - Eastward view from Saddle Ridge Drive (LU-1)



Natural Context	Open valley, dense forest vegetation, with open grassy areas Foreground, middle ground and background views
Cultural Context	I-70, frontage and residential roads, utility lines, residential areas filtered by trees, some commercial areas

Exhibit C9. View 8 - Westbound view of US 40 and US 6 (AFS Quarry) (LU-2)



Natural Context	Steep peaks, rugged terrain, sparse vegetation, gravel and canyons Limited to foreground and middle ground views
Cultural Context	Quarry, US 40, railing, K-rail

Exhibit C10. View 9 - Eastward view from US 6 offramp over Clear Creek (LU-2)



Natural Context	Steep peaks, rugged terrain, sparse to dense vegetation, Clear Creek and canyons Limited to foreground and middle ground views
Cultural Context	Quarry, US 6, slope cut, shoulders for parking

Exhibit C12. View 11 - Westbound view of US 6 offramp (new tunnel approach) (LU-2)



Natural Context	Steep peaks, rugged terrain, sparse vegetation, Clear Creek and canyons Limited to foreground and middle ground views
Cultural Context	Bridges, Quarry (to right of image), US 40, railing, K-rail, lighting and small road signs

Exhibit C11. View 10 - Northbound view from US 6 east of US 40 intersection - proposed Greenway parking area (LU-2)



Natural Context	Steep canyon walls, dense to sparse forest vegetation, steep creek banks Limited to foreground and middle ground views
Cultural Context	I-70 on plateau, offramp, US 6, utility lines, minor commercial (Two Bears Tap and Grill and Quarry are outside of immediate view)

Exhibit C13. View 12 - Southeast view from Central City Parkway (LU-2)



Natural Context	Mountainous, dense forest vegetation, with steep slopes descending to Clear Creek canyon Foreground, middle ground and minor background views
Cultural Context	I-70, US 6, and US 40

Exhibit C14. View 13 - Southbound view of US 6 offramp towards I-70 from in front of Quarry on US 6 (LU-2)



Natural Context	Steep canyon walls, dense to sparse forest vegetation, steep creek banks Limited to foreground and middle ground views
Cultural Context	I-70 on bridge, offramp, loose gravel shoulders for informal parking and rafting pull outs, US 6, minor commercial (Two Bears Tap and Grill to far left side)

Exhibit C16. View 15 - Westbound view of mountain side east of Hidden Valley interchange (LU-2)



Natural Context	Steep peaks, vertical jagged natural rock wall, sparse to dense vegetation, Clear Creek canyon to left of image frame. Limited to foreground and middle ground views
Cultural Context	I-70 on bridge, offramp sign, barrier wall and narrow shoulders

Exhibit C15. View 14 - Eastbound view of the mountain area (where WB lanes will be in new tunnel) (LU-2)



Natural Context	Steep peaks, rugged and rocky terrain, sparse to dense vegetation, Clear Creek canyon to right of image frame Limited to foreground and middle ground views
Cultural Context	I-70, railing, drainage ditches and small road signs

Exhibit C17. View 16 - Eastbound view from top of Hidden Valley interchange (LU-2)



Natural Context	Steep peaks, rugged and rocky terrain, sparse to dense vegetation Limited to foreground and middle ground views
Cultural Context	I-70, railing, onramp, maintenance facility building and power corridor and large road signs

Exhibit C18. View 17 - Westbound view approaching Veterans Memorial Tunnels (LU-3)



Natural Context	Steep peaks, vertical jagged natural rock wall, sparse vegetation, Clear Creek canyon to left of image frame. Limited to mostly foreground and some middle ground views
Cultural Context	I-70, VMTs, barrier median and outside barriers, staggered roadway, median lighting, falling gravel fence protection in steep cut areas and freeway signage. Trail is beyond view to the left.

Exhibit C19. View 18 - Westbound view just west of Veterans Memorial Tunnels (LU-3)



Natural Context	Steep peaks, vertical jagged natural rock wall, sparse to dense vegetation, Clear Creek canyon to left of image frame. Fore-,middle- and background views
Cultural Context	I-70, barrier median and outside barriers, medial lighting, paved wide shoulders, freeway signs and power corridor in middle ground. Indications of commercial buildings with pitched roofs. Slightly visible are park lands, frontage and local roads.

Exhibit C20. View 19 - Eastward view from Idaho Springs Skatepark (LU-3)



Natural Context	Steep peaks, Clear Creek channel sparse forest vegetation. Limited to foreground and only slight views of middle ground
Cultural Context	I-70 is not easily visible, covered bridge, park amenities, grasses, paved Greenway, lighting, fencing and community building with pitched roofs.

Exhibit C22. View 21 - Eastbound view from Colorado Boulevard (LU-3)



Natural Context	Steep peaks, sparse to dense mixed conifer and deciduous vegetation, Clear Creek to right of image frame. Limited to foreground and middle ground views
Cultural Context	I-70, grassy median and drainage areas and outside barriers, lighting, freeway signs and local roads.

Exhibit C21. View 20 - Northward view from Scott Lancaster Memorial Trail and bridge (LU-3)



Natural Context	Channelized Clear Creek, dense forest on north facing slopes and spare vegetation. Limited to foreground and middle ground views.
Cultural Context	I-70 in view through covered wood bridge, paved pathway. Path is on the historic mining railway bed.

Exhibit C23. View 22 - Northeast view from I-70 On Ramp at Exit 241a (LU-3)



Natural Context	Steep peaks, dense vegetation. Limited to foreground and middle ground views
Cultural Context	I-70 in distant view, local roadway and refuge islands, street lighting, concrete sidewalks, paved drainage ditches, freeway and local street signs. Structures include mining outbuildings, industrial and commercial buildings (Motel).

Exhibit C24. View 24 - Westbound view from Greenway, Clear Creek and I-70 (LU-3)



Natural Context	Steep peaks, channelized Clear Creek, dense forest on north facing slopes and spare vegetation with rocky south facing slopes. Limited to foreground and middle ground views.
Cultural Context	I-70 in view across creek, paved pathway, overhead power lines, distant signs, barrier walls and railing. Path is on the historic mining railway bed.

Table C2: Visual Coherence of Existing Condition by Viewpoint

Landscape Unit/ Viewpoint#	Description of the view	Viewer groups	Visual Coherence of Existing Condition at the Key Viewpoint
Landscape Unit 1, Beaver Creek			
1	Westward view of I-70 from Evergreen Lane, north of Beaver Brook /Floyd Hill interchange	Travelers, Neighborhood/ Community	Cultural order is harmonious with natural context for an overall moderate visual coherence.
2	Northwest bound view near Exit 248	Travelers, Neighborhood/ Community	Cultural order is harmonious with natural context for an overall moderate visual coherence.
3	Northwest view from CR 65	Travelers, Neighborhood/ Community	Cultural order is harmonious with natural context for an overall moderate visual coherence.
4	Eastward view of wildlife crossing from the Floyd Hill School parking lot	Travelers, Neighborhood/ Community	Cultural order is harmonious with natural context for an overall moderate visual coherence.
5	Northbound view from I-70 near MP 247	Travelers	Cultural order is harmonious with natural context for an overall moderate visual coherence.
6	Eastward view from Saddle Ridge Drive	Travelers, Neighborhood/ Community	Cultural order is harmonious with natural context for an overall moderate visual coherence.
Landscape Unit 2, Floyd Hill			
7	Northward view from Saddleback Drive/Saddle Ridge Drive	Travelers	Cultural order is harmonious with natural context for an overall moderate to high visual coherence.
8	Westbound view of US 40 and US 6 (Quarry)	Travelers, Recreationalists	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
9	Eastward view from US 6 off-ramp over Clear Creek	Travelers, Recreationalist	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
10	Northeast view from US 6 east of US 40 intersection (proposed Greenway parking area)	Travelers, Recreationalist	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
11	Westbound View of US 6 off-ramp/ tunnel approach	Travelers,	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
12	Southeast from Central City Parkway	Travelers,	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
13	Southwest bound view of US 6 off-ramp towards I-70 from in front of Quarry on US 6	Travelers, Recreationalist	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
14	Eastbound view of the mountain area (where WB lanes will be in new tunnel)	Travelers, Recreationalist	Cultural order is slightly inharmonious with natural context for an overall moderate visual coherence.

Landscape Unit/ Viewpoint#	Description of the view	Viewer groups	Visual Coherence of Existing Condition at the Key Viewpoint
15	Westbound view of mountain side east of the Central City/Hidden Valley interchange	Travelers	Cultural order is harmonious with natural context for an overall moderate visual coherence.
16	Eastbound view from top of the Central City/Hidden Valley interchange	Travelers	Cultural order is harmonious with natural context for an overall moderate visual coherence.
Landscape Unit 3, Idaho Springs/ Chicago Creek			
17	Westbound view approaching Veterans Memorial tunnels	Travelers, Recreationalist	Cultural order is harmonious with minor exception (i.e., steep rock cut) with natural context for an overall moderate visual coherence.
18	Westbound view of approach to Idaho Springs	Travelers, Neighborhood/ Community Recreationalist	Cultural order is harmonious with natural context with minor exceptions (i.e., concrete retaining wall) for an overall moderate visual coherence.
19	Eastward view from Idaho Springs Skatepark	Neighborhood/ Community Recreationalist	Cultural order is harmonious with natural context for an overall moderate visual coherence.
20	Northward view from Scott Lancaster Memorial Trail and bridge	Travelers, Recreationalist	Cultural order is harmonious with natural context for an overall moderate visual coherence.
21	Eastbound view from Colorado Boulevard	Travelers, Neighborhood/ Community Recreationalist	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
22	Northeast view from I-70 On Ramp at Exit 241a	Travelers, Neighborhood/ Community	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.
23	Westbound view of Greenway, Clear Creek and I-70	Recreationalist	Cultural order is slightly inharmonious with natural context for an overall low to moderate visual coherence.