

# Chapter 17: Visual Resources

## 17.1 Introduction

The visual resources of a community or area include the physical features that make up the visible landscape and vistas—land, water, vegetation, topography, and human-made features such as buildings, roads, utilities, and structures—combined with the viewer response to the area. This chapter focuses on the evaluation of visual resources and the characterization of the visual impacts of the project alternatives.

**Visual Resources Impact Analysis Area.** The visual resources impact analysis area consists of the area within a 0.5-mile buffer on either side of State Route (S.R.) 210 as well as the gravel pit and 9400 South and Highland Drive mobility hub locations (Figure 17.1-1). However, views from outside this buffer were included, where appropriate, based on unique viewing locations not captured within the focused analysis area.

### What is the visual resources impact analysis area?

The visual impact analysis area consists of the area within a 0.5-mile buffer on either side of S.R. 210 as well as the gravel pit and 9400 South and Highland Drive mobility hub locations. Views from outside this buffer were also included where appropriate.

The viewshed is influenced by distinctive and dominant topography, varying vegetation types, urban development, and ski resort infrastructure. The impact analysis area covers Little Cottonwood Canyon and the Wasatch Range from the entrance of Little Cottonwood Canyon to the Alta resort and urbanized residential areas surrounding Wasatch Boulevard from Fort Union Boulevard to North Little Cottonwood Road.

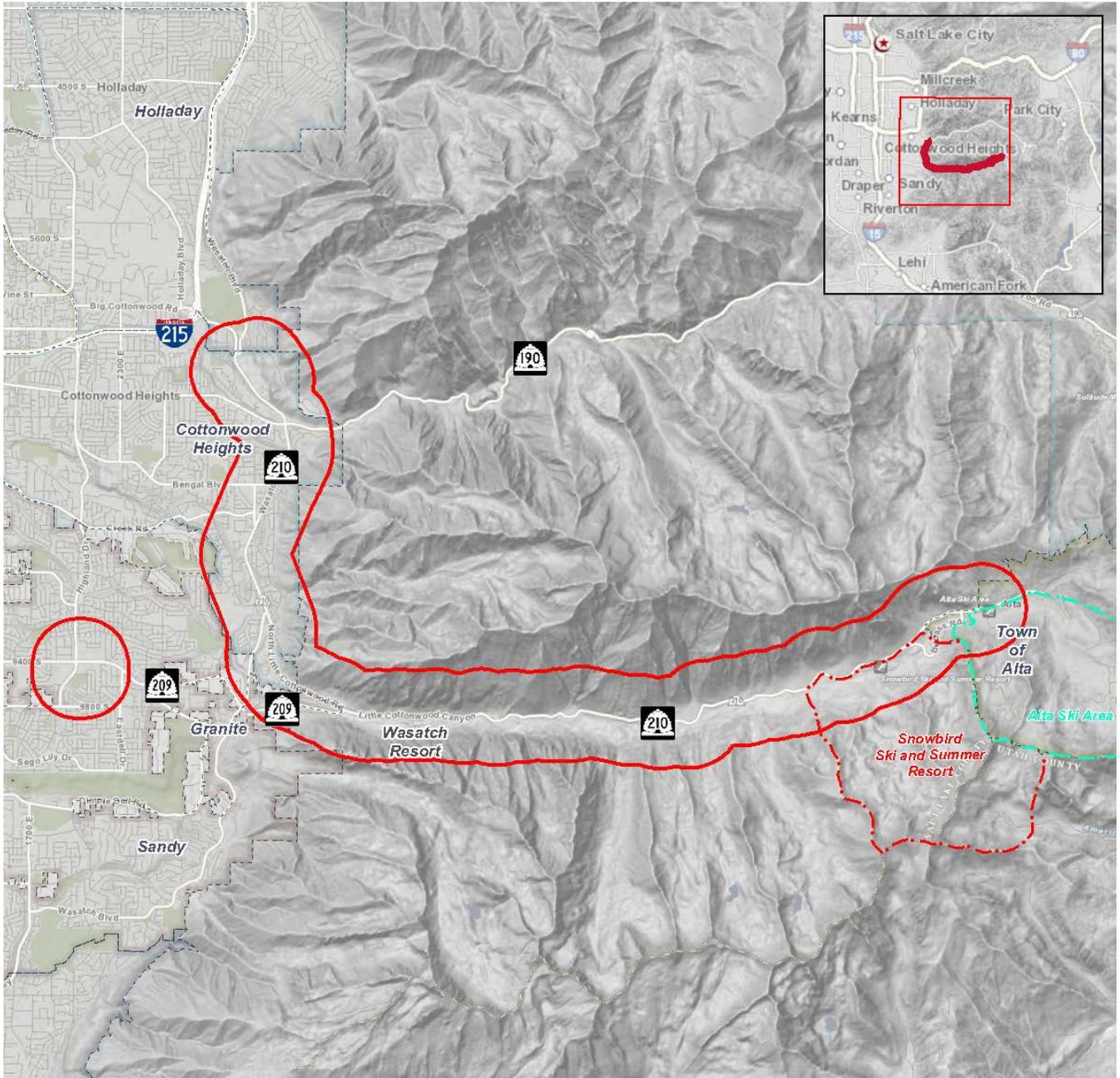
## 17.2 Regulatory Setting

This section summarizes applicable regulations, policies, and procedures that pertain to visual resources as well as the construction and operation of the action alternatives. In addition to guidance from the Federal Highway Administration (FHWA), this Environmental Impact Statement (EIS) applies the visual assessment guidance and principles of the U.S. Department of Agriculture (USDA) Forest Service because some project components would be in the Uinta-Wasatch-Cache National Forest and a USDA Forest Service special-use authorization or easement might be required. Formal guidelines for managing visual resources on private, state, and municipal land in the visual resources impact analysis area are not established.

### 17.2.1 Federal Highway Administration

FHWA Technical Advisory T 6640.8A requires that an EIS analyze a project's impacts to visual resources (FHWA 1987). FHWA has developed visual assessment guidance, *Guidelines for the Visual Impact Assessment for Highway Projects* (FHWA 2015), which were adapted and applied as appropriate for the analysis in this EIS, as described more fully in this chapter.

Figure 17.1-1. Visual Resources Impact Analysis Area



LEGEND

Visual Resources Impact Analysis Area



## 17.2.2 USDA Forest Service

Regulations pertaining to special-use authorizations (easements and special-use permits) on USDA Forest Service lands primarily address the administrative and procedural aspects of the permitting process, although guidance on terms and conditions for such authorizations includes stating that damage to scenic and aesthetic values should be minimized (36 Code of Federal Regulations [CFR] Section 251.56). The USDA Forest Service's consideration of visual resource issues associated with special-use authorizations is generally based on the visual resource provisions of standard USDA Forest Service policies and procedures for land use planning and National Environmental Policy Act (NEPA) compliance.

The USDA Forest Service has developed a formal system to inventory visual resources on the lands under its jurisdiction, evaluate visual changes in the landscape, and manage visual resources under its jurisdiction. Visual resource management approaches for the USDA Forest Service are discussed in Section 17.4.1, Methodology.

## 17.2.3 Revised Forest Plan for the Wasatch-Cache National Forest

The impact analysis area includes lands managed by the USDA Forest Service under the guidance of the *Revised Forest Plan: Wasatch-Cache National Forest (Forest Plan)* (USDA Forest Service 2003). The Uinta-Wasatch-Cache National Forest (UWCNF) uses the Scenery Management System (SMS) as presented in *Landscape Aesthetics: A Handbook for Scenery Management* (USDA Forest Service 1995) to provide direction for arranging, planning, and designing landscape attributes relative to the appearance of places and expanses in outdoor settings. The SMS is integrated with ecosystem management and addresses landscape character, constituent preferences, scenic integrity, and landscape visibility as key aesthetic considerations. The UWCNF uses SMS as a guideline intended to assist managers and help the public understand the scenic resource management framework for project-level decisions and larger area analyses. The *Forest Plan* details the desired future condition of scenery in Little Cottonwood Canyon as an area that "will continue to be a valuable and pleasurable natural backdrop for the urban area" and states that the views "will be carefully managed to sustain scenic resources" (USDA Forest Service 2003, page 4-163).

## 17.3 Affected Environment

This section describes the existing visual character of the visual resources impact analysis area for assessing visual resources. This section provides information about the character of the regional landscape and the land use patterns that have modified the natural landscape.

### 17.3.1 Geographic Setting

The visual resources impact analysis area is located within northern Utah's Great Salt Lake Basin along the eastern edge of the Basin and Range topographic region, which is characterized by a series of linear fault-block mountain ranges that trend from north to south. Directly to the east, the Wasatch Range extends from north to south and consists of uplifted, fault-block mountains that form the western edge of the Rocky Mountains and the dramatic, abrupt, wall-like Wasatch Front that rises over 6,000 feet above the eastern edge of the Salt Lake Valley floor. The Wasatch Range is the most distinct element in the region and dominates the eastern horizon. Other obvious topographic features are the benches of Lake Bonneville, a great inland freshwater lake that covered about 20,000 square miles 10 to 30 million years ago.

The most dominant natural features in the Salt Lake Valley viewed are the Wasatch Range east of S.R. 210, the entrance of Little Cottonwood Canyon, Little Cottonwood Canyon along S.R. 210, and the Salt Lake Valley and the Oquirrh Mountains to the west. Roads, as well as single-family homes and neighborhoods, are the dominant human-made features in the viewshed along Wasatch Boulevard.

#### What is a viewshed?

A viewshed is all of the views that can be seen from a given location.

Little Cottonwood Canyon runs west to east and was carved by a massive glacier over thousands of years, beginning 30,000 years ago. The boulder-strewn ridge south of the canyon mouth is the left-lateral moraine; the right-lateral moraine is pushed up against the hillside on the north. As one moves up the canyon, additional glacial evidence can be seen, including hanging valleys on the south side of the canyon and moraine remnants. Repeated large earthquakes that occurred tens of thousands of years ago created the long, steep slope cutting across the canyon mouth. The Salt Lake Valley and the Oquirrh Mountains, another mountain range that trends from north to south, are to the west.

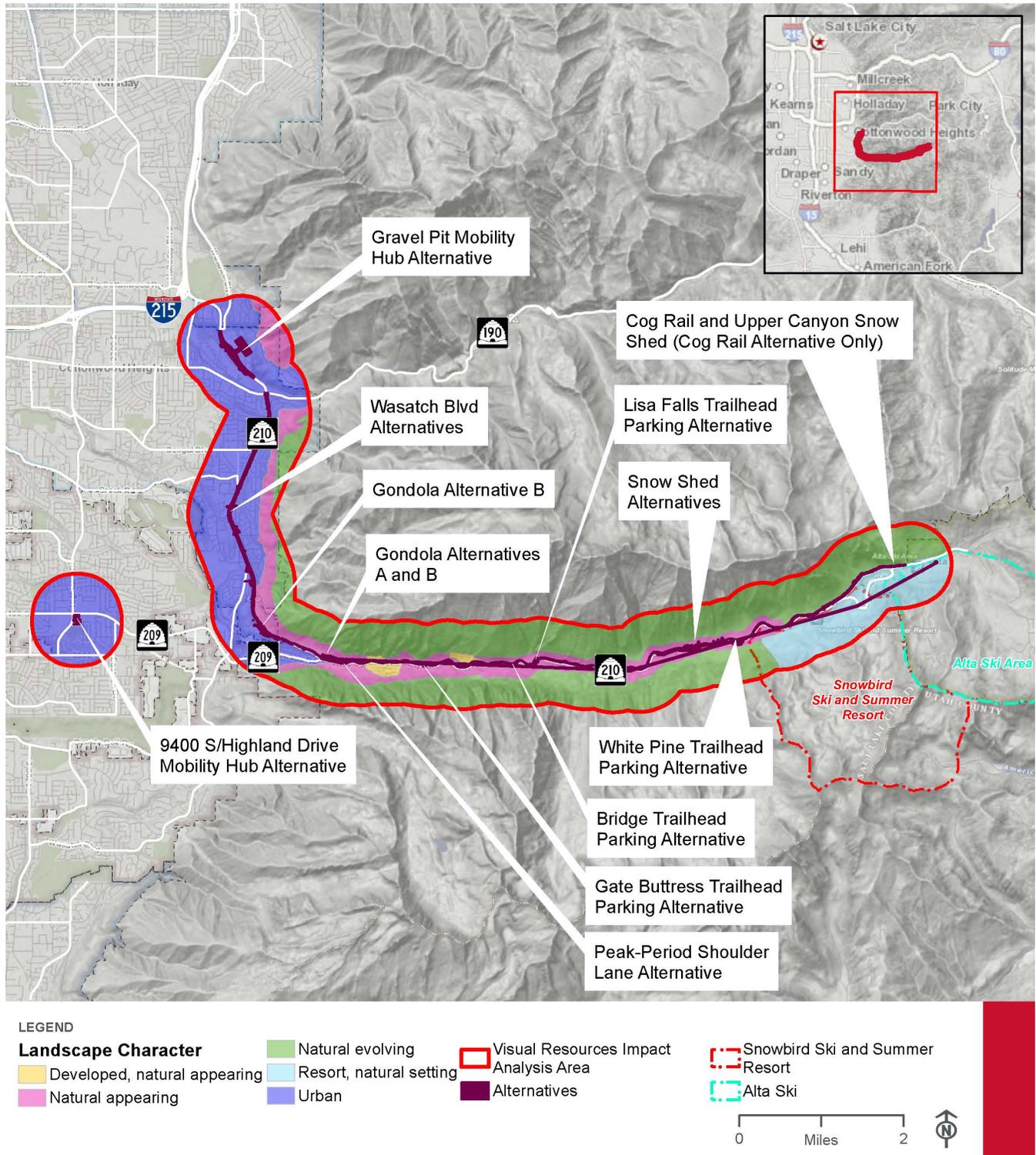
### 17.3.2 Landscape Character

The visual resources impact analysis area's landscape character consists of the physical, biological, and cultural attributes that make the landscape identifiable or unique or give it a memorable sense of place (USDA Forest Service 1995). To develop and delineate landscape character units (LCUs), this analysis implemented an approach consistent with the USDA Forest Service SMS direction, using the attributes of landform, rock form, water form, vegetation, and cultural features, and drew on the landscape character themes identified in the *Forest Plan* (USDA Forest Service 2003). A similar concept, landscape units, is described in FHWA's *Guidelines for the Visual Impact Assessment for Highway Projects* (FHWA 2015); landscape units are defined by viewsheds and landscape type. These LCUs were refined within the impact analysis area to better represent the current landscape character that could be affected by the project alternatives (Figure 17.3-1). The Urban LCU was developed to provide consistency in describing LCUs; the urban characterization was not identified within the impact analysis area as part of the current UWCNF SMS inventory. Impacts to landscape character were determined using scenic integrity inventory data, project contrast ratings, reviews of aerial images, and field verification.

#### 17.3.2.1 Urban

The Urban LCU includes both residential and urban developments and is located along the Wasatch Front. It runs from north to south along Wasatch Boulevard and North Little Cottonwood Road to the entrance of Little Cottonwood Canyon where recreation and parking also occur. Developments in this unit intermix with the foothills of the Wasatch Front and have a view of those foothills as well as of Salt Lake City. This transition area is more natural-appearing than the residential areas farther from the canyon entrance and exhibits rural-like qualities, including large-acre properties, dense vegetation, and minimal industrial and commercial development. The existing landscape character has been influenced heavily by human activities, even in those rural-like areas. Remaining natural elements include the native shrubs and grasses that cover the foothills to the east of Wasatch Boulevard. Transmission line infrastructure consisting primarily of wooden single poles is present throughout this unit. Residential areas are continuous along the west side of Wasatch Boulevard and inconsistent along the east side, with varied vegetation heights and coverage.

Figure 17.3-1. Landscape Character Units in the Visual Resources Impact Analysis Area



### **17.3.2.2 Developed Natural Appearing**

The Developed Natural Appearing LCU exists in small pockets along S.R. 210. The existing landscape character in this unit is characteristic of National Forest scenic byways with developed recreation facilities, concentrated use areas, and undeveloped recreation impacts within the immediate foreground of the viewshed (less than 0.25 mile). In these areas, the roadway, recreation amenities, and development are anticipated features in the landscape. For users, these amenities are part of the valued natural-appearing landscape. In some cases, users of these amenities are attracted to the natural-appearing landscape but desire moderate-to-easy access to the natural landscape through the use of these amenities. Campgrounds, group sites, picnic areas, and signs are present but harmonize with the surrounding landscape. Parking lots, trailheads, and residential development are present in this LCU, including in the town of Alta.

### **17.3.2.3 Natural Appearing**

The Natural Appearing LCU runs along S.R. 210 and the Wasatch Front and is directly east of Wasatch Boulevard. The existing landscape character of this LCU has been influenced by both direct and indirect human activities but appears natural to most viewers. Natural elements such as native trees, shrubs, grasses, rounded foothills, and rocky canyon walls dominate the views. Although there is evidence of human influence from historic use, recreation, and management activity, these are part of the valued built environment in the landscape. Parking lots, trailheads, and restrooms are present but are constructed in a way that borrows from the form, line, color, and texture of the surrounding landscape. Road cuts are present throughout this unit but are shaped, contoured, and constructed so that the landscape is interrupted by only the track of road.

### **17.3.2.4 Natural Evolving**

The Natural Evolving LCU extends north and south along S.R. 210 in Little Cottonwood Canyon. The evolving nature of this LCU originates primarily from natural disturbances and succession of plants, with subtle changes due to indirect human activities. The existing landscape character in this unit generally continues to change gradually over time through natural processes. This unit includes bold, trapezoidal cliff faces with sloped spines, scree fields, and upright broken rock faces that range from gray to pale yellow. Dominant vegetation includes evergreens and aspens at higher elevations giving way to shrubs and indistinct grasses in the foreground. This unit does not include any large structural developments and consists primarily of the Lone Peak and Twin Peaks Wilderness Areas.

### **17.3.2.5 Resort Natural Setting**

The Resort Natural Setting LCU is in the eastern portion of the visual resources impact analysis area and includes the Alta and Snowbird resorts. In these areas, recreation amenities are the main attraction for people and are the reason they come to an area. Facilities are designed and constructed to harmonize with the natural setting. Although the form of the base-area facilities dominates the immediate foreground views, the domination of the view declines as a resort area transitions into the mountain and becomes subordinate in the foreground and middleground views. Likewise, recreation opportunities provided in base areas rely more heavily on constructed facilities, whereas those higher on the mountain become increasingly oriented toward the natural setting. Parking lots follow contours of the land and are visually broken to reduce their dominance. Ski trails are subordinate to adjacent landscapes by repeating openings found in the surrounding landscape.

Trams and ski lifts blend with vegetation or lines and colors found in the resort scene. In addition, the scattered pockets of vegetation that pattern this landscape provide screening for land use patterns and partially limit the visibility of modifications. The unit has unique landforms with open areas that are atypical of landscapes in the impact analysis area. Land use patterns dominated by recreation-related activities are compatible with the landscape setting and are generally screened by or consistent with the topography.

### 17.3.2.6 Viewer Sensitivity

The term *sensitive viewers* has been used to refer to what the USDA Forest Service SMS terms “constituents” (USDA Forest Service 1995). Sensitive viewers typically include the viewing public who visit recreation sites in a National Forest or have views of USDA Forest Service land outside a forest’s designated boundary. Travel routes, recreation areas, and residences are the principal viewer types that have been identified in the visual resources impact analysis area.

*Viewer sensitivity*, termed “concern levels” in the USDA Forest Service SMS, pertains to viewers’ degree of concern for changes to the landscape setting or a particular viewshed. The *Forest Plan* does not define viewer sensitivity levels. In this analysis, viewer sensitivity ratings are based on USDA Forest Service SMS guidance and consideration of the volume of use, viewing duration, concern for aesthetics, scenic or historic status, and type of use (travelers, tourists and recreation users, or residents). In general, viewers who have a high concern for aesthetics are associated with areas of national importance that have a high sensitivity to changes in the landscape. Those viewers who have a moderate concern for aesthetics are generally associated with areas of local importance. Scenic or historic status could increase the amount of use and duration of use for viewers, thereby increasing their concern for changes to the landscape. There might also be a higher concern for aesthetics in special management areas or designations.

Sensitive viewer groups are categorized as the following:

- **Travelers:** Travelers who use roads from which the landscape is viewed
- **Tourists and recreation users:** Local and seasonal residents engaged in recreation activities, and tourists and recreation users visiting from outside the local area
- **Residents:** People who live and work in the impact analysis area and generally view the landscape from their properties and homes, and often from places of employment while engaged in daily activities

Travel routes associated with travelers include scenic routes, interstate routes, U.S. highways, state highway routes, and recreation routes. These routes include various levels of concern for aesthetics and viewing durations. Travelers along the Little Cottonwood Canyon State Scenic Byway (that is, S.R. 210), which extends along the entire length of the canyon, are considered to have a high sensitivity rating and concern for aesthetic and scenic values. Further information related to the Little Cottonwood Canyon State Scenic Byway can be found in the *Cottonwood Canyons Scenic Byways Corridor Management Plan* (UDOT 2008).

#### What are sensitive viewers?

Sensitive viewers typically include the viewing public who visit recreation sites in a National Forest or have views of USDA Forest Service land outside a forest’s designated boundary.

#### What is viewer sensitivity?

Viewer sensitivity pertains to viewers’ degree of concern for changes to the landscape setting or a particular viewshed.

Tourist and recreation user areas encompass a variety of viewer types including users of trails, picnic areas, trailheads, overlooks, and a variety of backcountry, solitude-oriented recreation activities. Those users of the recreation areas evaluated through a USDA Forest Service inventory process have different levels of concern for aesthetics and viewing durations. Communities with a view of project construction and the operation of project elements would have a high level of sensitivity with high-use duration and concern for aesthetics.

During the preliminary scoping and alternatives development periods for the S.R. 210 Project, viewers stated that they were concerned about the prominence and dominance of large-scale project infrastructure (such as the gondola towers) in Little Cottonwood Canyon as well as large-scale project infrastructure (such as gondola towers) near neighboring communities. Commenters stated that those project elements would not match the natural character of Little Cottonwood Canyon and would detract from recreational users' experience. Residents who live near the proposed improvements along Wasatch Boulevard also said that project road improvements and pedestrian overpass would detract from the community feeling and association along Wasatch Boulevard.

#### What is scoping?

Scoping is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

### 17.3.3 Key Observation Points

Key observation points (KOPs) represent viewing locations from which the sensitive viewer types would typically view the project elements from either stationary locations (for example, residential areas or recreation sites) or linear locations (for example, highways and major roads). The Utah Department of Transportation (UDOT) identified 25 KOPs (Table 17.3-1 and Figure 17.3-2) according to locations in the visual resources impact analysis area that would have views of the project elements and that represent the most critical viewpoints.

#### What are key observation points (KOPs)?

Key observation points represent viewing locations from which the sensitive viewer types would typically view the project elements from either stationary or linear locations.

As part of the analysis, based on FHWA's *Guidelines for the Visual Impact Assessment for Highway Projects* (FHWA 2015), UDOT considered views of the project elements from the perspective of adjacent areas (residents) as well as views from the perspective of travelers using the highway (travelers). KOPs were selected in coordination with UWCNF staff to represent sensitive viewers who have the highest sensitivity, particularly in residential areas, from important travel routes or from recreation areas. In the context of this analysis, UDOT identified several KOPs to represent typical viewing conditions associated with sensitive viewers. Representative photographs of existing conditions at each KOP are provided in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Views from the Twin Peaks and Lone Peak Wilderness Areas were not specifically assessed in this analysis in accordance with Section 303 of the Utah Wilderness Act of 1984 (Public Law 98-428). This section clarifies that the creation of these wilderness areas was not intended to create buffers to preclude non-wilderness activities beyond their boundaries. The KOP selection process did include a review of KOP locations along trails traversing these wilderness areas, including from the Red Pine Trail, to assess the impacts of the project alternatives on views from USDA Forest Service–managed trails.

Table 17.3-1. Key Observation Points and Rationales for Their Locations

| KOP No.         | KOP Name                                  | Viewer Group(s)                      | Rationale for Location   |
|-----------------|---|--------------------------------------|--|
| 1               | Gravel Pit Mobility Hub                   | Travelers                            | This KOP represents typical views from Wasatch Boulevard in the area of the gravel pit mobility hub.   |
| 2               | Fort Union Boulevard                      | Residents, travelers                 | This KOP represents typical views from residential areas adjacent to Wasatch Boulevard, as well as views from travelers on the road.               |
| 3               | Daneborg Drive                            | Residents, travelers                 | This KOP represents typical views from residential areas adjacent to Wasatch Boulevard, as well as views from travelers on the road.               |
| 4               | Quarry Trailhead                          | Residents, tourists and recreational | This KOP represents typical views from a popular trailhead at the entrance to Little Cottonwood Canyon.  |
| 5               | Wasatch Resort                            | Residents, tourists and recreational | This KOP represents typical views from a residential area in Little Cottonwood Canyon and an adjacent popular trail.                               |
| 6               | Gate Buttress Trailhead                   | Tourists and recreational            | This KOP represents typical views from a popular trailhead.  |
| 7               | Bridge Trailhead                          | Tourists and recreational            | This KOP represents typical views from a popular trailhead.  |
| 8               | Lisa Falls Trailhead                      | Tourists and recreational            | This KOP represents typical views from a popular trailhead.  |
| 9               | Tanner's Flat Group Site C                | Tourists and recreational            | This KOP represents typical views from a popular campsite.   |
| 10 <sup>a</sup> | First Snow Shed                           | Tourists and recreational            | This KOP represents typical views from a popular campsite looking toward S.R. 210.   |
| 11              | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | This KOP represents typical views from travelers on S.R. 210.  |
| 12              | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | This KOP represents typical views from travelers on S.R. 210.  |
| 13              | Third Snow Shed (S.R. 210)                | Tourists and recreational, travelers | This KOP represents typical views from travelers on S.R. 210.  |
| 14 <sup>a</sup> | Red Pine Trail Low                        | Tourists and recreational            | This KOP represents typical views near the base of a popular trail.  |
| 15              | Red Pine Trail Mid                        | Tourists and recreational            | This KOP represents typical views from a viewpoint near the top of a popular trail looking down on S.R. 210 and toward the entrance to the canyon. |
| 16              | White Pine Trailhead                      | Tourists and recreational            | This KOP represents typical views from a popular trailhead.  |
| 17              | White Pine Lake Trail                     | Tourists and recreational            | This KOP represents typical views from a viewpoint near the top of a popular trail looking down on S.R. 210.                                       |
| 18              | Snowbird Entry 1                          | Tourists and recreational            | This KOP represents typical views from travelers on S.R. 210 and recreation users or tourists at the Snowbird resort.                              |
| 19              | Catherine's Pass                          | Tourists and recreational            | This KOP represents typical views from recreation users at the Alta resort.  |
| 20              | La Caille Base Station                    | Residents, tourists and recreational | This KOP represents typical views from North Little Cottonwood Road and adjacent residential areas in the area of the mobility hub at La Caille.   |

(continued on next page)

Table 17.3-1. Key Observation Points and Rationales for Their Locations

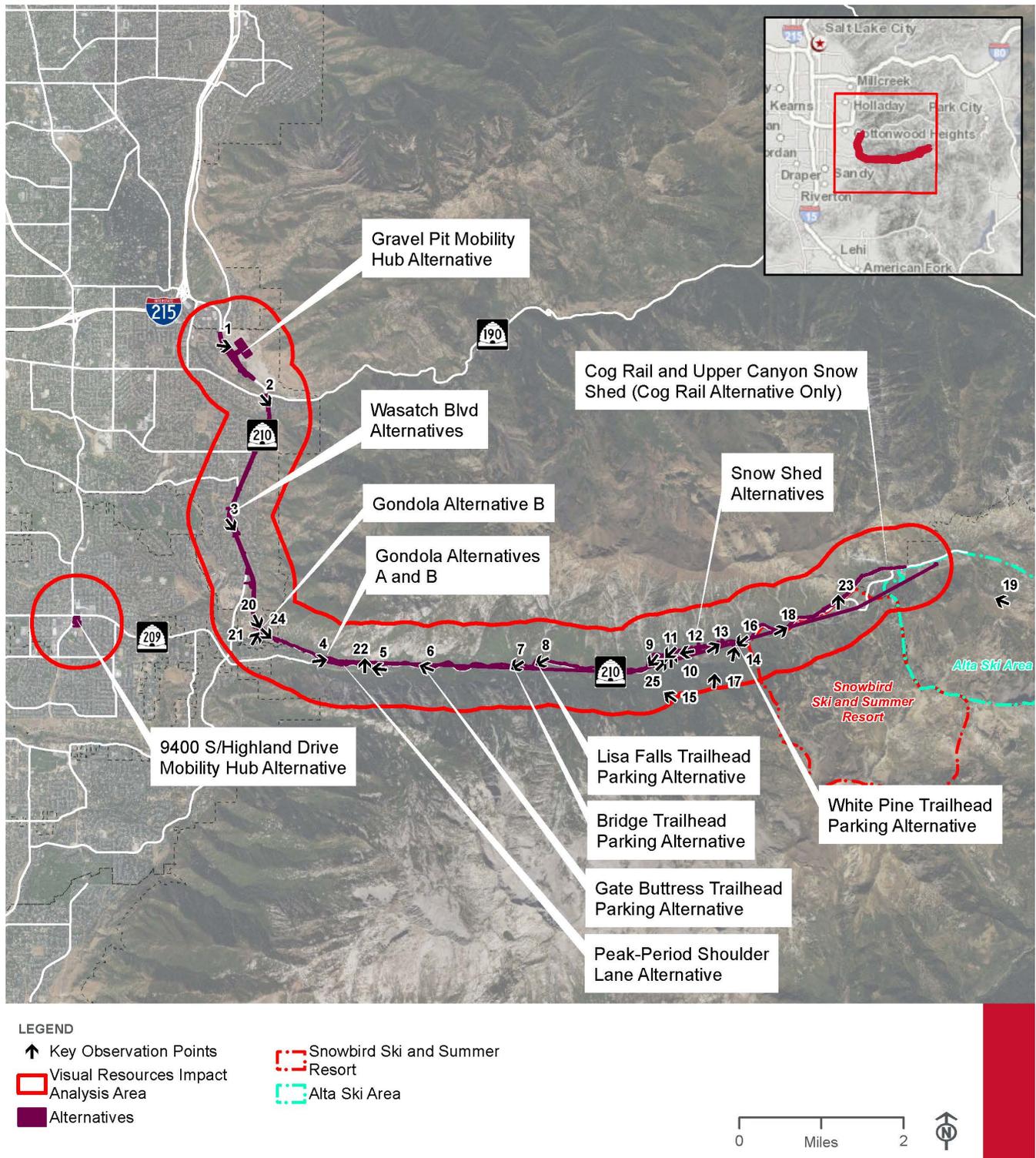
| KOP No.         | KOP Name                   | Viewer Group(s)           | Rationale for Location  |
|-----------------|----------------------------|---------------------------|---|
| 21              | La Caille Residential Area | Residents                 | This KOP represents typical views from residential areas south of North Little Cottonwood Road.                       |
| 22 <sup>b</sup> | Grit Mill Trailhead        | Tourists and recreational | This KOP represents typical views from travelers on S.R. 210 and recreation users or tourists at a popular trailhead. |
| 23 <sup>b</sup> | Upper Canyon Snow Sheds    | Tourists and recreational | This KOP represents typical views from travelers on S.R. 210 and recreation users or tourists at the Snowbird resort. |
| 24 <sup>b</sup> | Cog Rail Overpass          | Tourists and recreational | This KOP represents typical views from North Little Cottonwood Road.  |
| 25 <sup>c</sup> | Tanners Flat Campground    | Tourists and recreational | This KOP represents typical views from a popular campsite.  |

<sup>a</sup> This KOP was not carried forward into detailed analysis because views from this location would be completely obstructed by vegetation.

<sup>b</sup> This KOP is associated with the Cog Rail Alternative only.

<sup>c</sup> This KOP is associated with the enhanced bus service alternatives only.

Figure 17.3-2. Key Observation Point Locations in the Visual Resources Impact Analysis Area



### 17.3.4 Determining Conformance with Scenic Integrity Objectives and Forest Plan

UDOT determined the project alternatives' conformance with the USDA Forest Service's Scenic Integrity Objectives (SIOs), which are goals for maintaining the scenic integrity of the forest landscape as described in the *Revised Forest Plan: Wasatch-Cache National Forest*. UDOT evaluated the SIOs identified in the *Forest Plan* with the project alternatives' contrast, impacts to landscape character, and impacts to sensitive viewers.

#### What are Scenic Integrity Objectives?

Scenic Integrity Objectives are goals set in the *Forest Plan* for maintaining the scenic integrity of the forest landscape.

Scenic integrity is a measure of the intactness associated with the visual elements that define a particular LCU and can range from very high to unacceptably low. LCUs with minimal visual disruption are considered to have high scenic integrity. LCUs occupied by discordant landscape features modify the landscape character of a particular unit and have diminished scenic integrity. Other landscape features can be compatible with the landscape character (for example, trails, campgrounds, and picnic areas) and can contribute to or enhance scenic integrity.

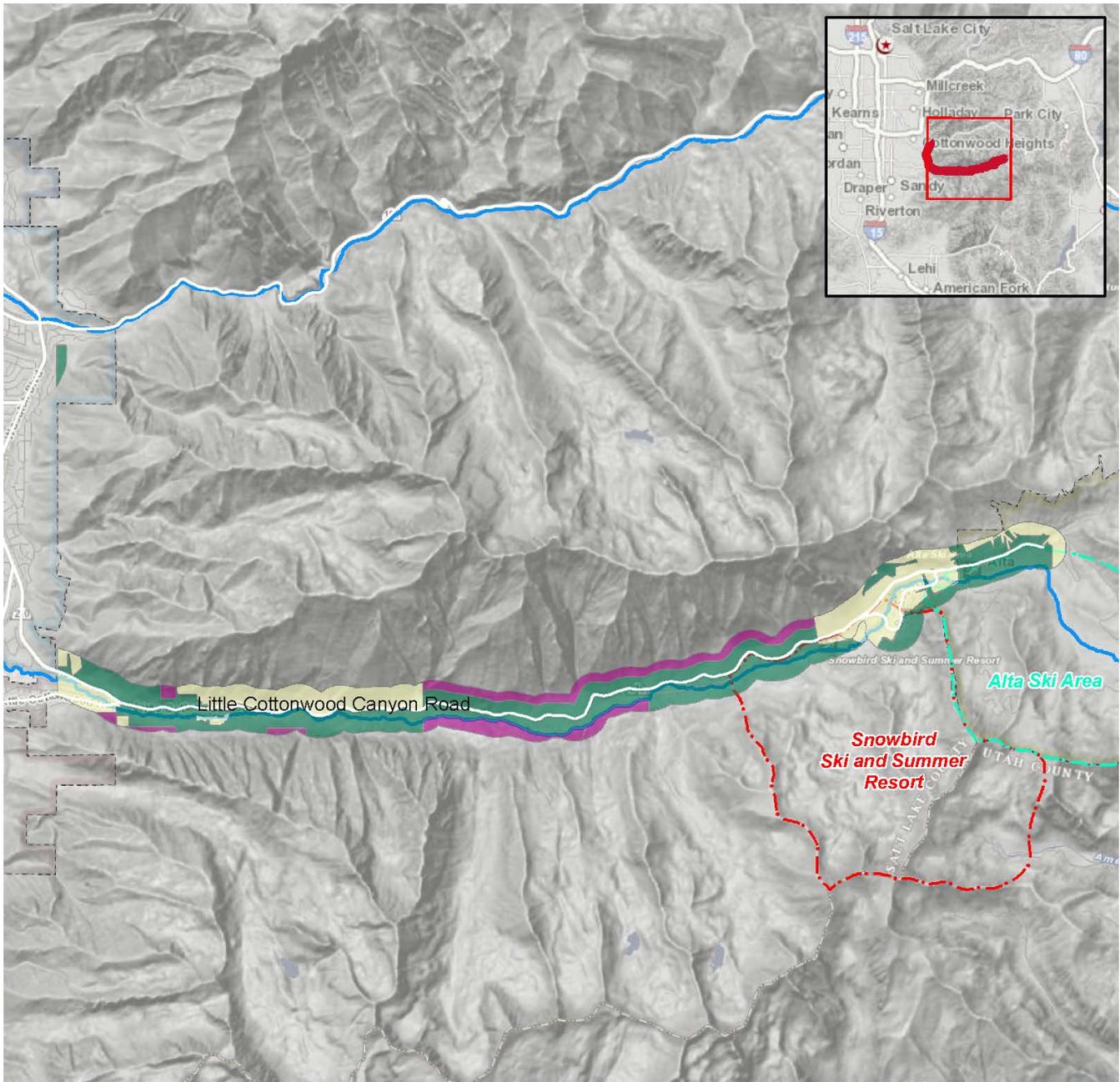
Scenic integrity and the corresponding management objectives are expressed by the USDA Forest Service as very high, high, moderate, low, very low, and unacceptably low. Table 17.3-2 and Figure 17.3-3 present the range of SIO levels and their associated definitions against which the project alternatives were evaluated.

Table 17.3-2. USDA Forest Service Scenic Integrity Objectives

| SIO Level        | Description   |
|------------------|---|
| Very High        | The valued landscape character is intact with only subtle, if any, deviations. Generally provides for ecological change only.   |
| High             | Landscapes where the valued landscape character appears intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely, and at such scale, that they are not evident.  |
| Moderate         | Refers to landscapes where the described landscape character appears slightly intact. Noticeable deviations must remain visually subordinate to the landscape character being viewed.   |
| Low              | Activities must remain visually subordinate to the attributes of the described landscape character. Activities may repeat form, line, color, or texture common to the landscape character, but changes in quality of size, number, intensity, direction, pattern, and so on, must remain visually subordinate to the described landscape character. |
| Very Low         | Activities of vegetation and landform alterations may dominate the described landscape character but should appear as valued occurrences when viewed at background distances.   |
| Unacceptably Low | Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need rehabilitation. This level should be used only to inventory existing integrity; it must not be used as a management objective.                                    |

Sources: USDA Forest Service 1995, 2003

Figure 17.3-3. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area



LEGEND

- |                                    |                                |
|------------------------------------|--------------------------------|
| <b>Scenic Integrity Objectives</b> | Snowbird Ski and Summer Resort |
| Private Land                       | Alta Ski Area                  |
| High Scenic Integrity              |                                |
| Very High Scenic Integrity         |                                |

0 Miles 1



## 17.4 Environmental Consequences and Mitigation Measures

This section discusses the methodology that UDOT developed to assess impacts to landscape character and sensitive viewers, as well as the project alternatives' compliance with *Forest Plan* SIOs. The results of this assessment, the expected impacts, and compliance with SIOs are described for each alternative and are organized by the alternatives' elements (for example, roadway improvements, snow sheds, and gondola infrastructure).

### 17.4.1 Methodology

This analysis evaluates visual resources that would be affected by the project alternatives using guidance and methods derived from *Guidelines for the Visual Impact Assessment for Highway Projects* (FHWA 2015), *Landscape Aesthetics: A Handbook for Scenery Management* (USDA Forest Service 1995), and Bureau of Land Management (BLM) Handbook H-8431-1, *Visual Resource Contrast Rating* (BLM 1986). In accordance with these guidelines and methods, the existing visual character and scenic quality of the affected environment, as well as the viewer response to those resources, provide the framework for assessing the changes in visual character that would be caused by the project alternatives. The results of this analysis provide the foundation for the visual mitigation measures discussed in Section 17.4.8, Mitigation Measures.

The methodology that UDOT used to evaluate and analyze visual resources was derived from and is consistent with the USDA Forest Service SMS as described in *Landscape Aesthetics: A Handbook for Scenery Management* (USDA Forest Service 1995). Evaluation data and information were obtained from aerial photographs, the *Forest Plan*, a digital elevation model, and field reconnaissance. The evaluation and subsequent analysis were conducted on all lands, including public and private, regardless of jurisdiction.

The following sections focus on identifying and characterizing visual impacts from the construction, operation, and maintenance of the project alternatives. Impacts to landscape character, impacts to sensitive viewers, and compliance with SIOs have been evaluated to identify and characterize impacts. UDOT's impact assessment methodology is consistent with the USDA Forest Service's SMS procedures and concepts as well as other recent visual studies associated with linear projects conducted in comparable settings. Visual impacts resulting from the project alternatives were identified in part by measuring the level of visual change to the landscape (in which the alternatives would be located) in context with landscape character, sensitive viewers, and the definitions associated with the designated SIOs. The impact assessment was conducted through field investigation and consultation with UWCNF staff.

Some of the project alternatives would not be in conformance with the *Forest Plan* SIO guidelines. FHWA may appropriate the land needed for the project alternatives from the USDA Forest Service for transfer to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317, or UDOT would obtain an easement or other special-use authorization from the USDA Forest Service to allow construction, operation, and maintenance of the Selected Alternative. If FHWA appropriates the USDA Forest Service lands, the *Forest Plan* and its SIO standards and guidelines would no longer apply to those lands. If UDOT obtains an easement or other special-use authorization from the USDA Forest Service, the *Forest Plan* and its SIO standards and guidelines would still apply, and the USDA Forest Service might need to amend the *Forest Plan* to address the nonconformance to the SIO standards and guidelines (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

### 17.4.1.1 Project Contrast

Project contrast is a measure of the overall visual change to existing features of the landscape (including landscape character, landform/slope, and vegetation) resulting from the construction and operation of a given project. UDOT assessed project contrast by comparing the visual elements of the landscape in terms of form, line, color, and texture to the visual elements associated with the construction and operation of the project alternatives in relation to viewers in the landscape by applying the methodology in BLM Handbook H-8431-1, *Visual Resource Contrast Rating* (BLM 1986).

#### What is project contrast?

Project contrast is a measure of the overall visual change to existing features of the landscape (including landscape character, landform/slope, and vegetation) resulting from the construction and operation of a given project.

The BLM contrast rating process is a widely used analysis tool regardless of jurisdiction and provides a consistent approach to evaluating project elements within the landscape and how those elements could be perceived by viewers. The ability to discern change in the landscape depends primarily on distance. For this analysis, the immediate foreground area is defined as the area up to 0.25 mile from the action alternatives, and the foreground area is defined as the area 0.25 to 0.5 mile from the action alternatives. The middle ground is beyond 0.5 mile.

A landform (slope) analysis was conducted using a 30-meter digital elevation model to determine topographical categories in the visual resources impact analysis area that influence project contrast related to the gondola alternatives. Other project elements were analyzed using design footprints and the area identified to be disturbed to construct and maintain those elements (for example, road widening and parking lot improvements).

Vegetation types and densities were confirmed through field investigation and incorporated into project contrast analysis as appropriate. In addition, proximity to similar facilities and incongruent landscape features were also identified. The elements of landform/slope, vegetation, and existing conditions were photographed and were detailed on Contrast Form Rating Sheets. Photosimulations were developed for KOPs where there would be a large contrast between the existing conditions and the conditions with a project alternative. Photosimulations were also developed for KOPs where a project alternative would conflict with a use (such as camping) (see Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives, and Appendix 17B, Key Observation Points for the Cog Rail Alternative).

Project contrast was used as the baseline for assessing impacts to landscape character and sensitive viewers and determining conformance with designated SIOs. Table 17.4-1 provides descriptions for each impact level, associated with the project contrast rating, on views and landscape character. As described in Section 17.3.2, Landscape Character, each LCU has an existing landscape character with an expectation of what types of development would continue to meet that existing character (for example, a parking structure would be expected in an urban LCU but would be visually dominant in a natural appearing LCU). Because of this additional consideration, impacts to landscape character and viewers (KOPs) might not directly correspond, especially along the urban/natural boundary between the Salt Lake Valley and the Wasatch Range.

Table 17.4-1. Criteria for Assessing Level of Impacts to Visual Resources

| Level of Impacts | Contrast Perceived by Viewers (KOPs)  | Magnitude of Change to Landscape Character  |
|------------------|---|---|
| None/negligible  | <ul style="list-style-type: none"> <li>• Project elements would repeat elements and/or patterns common in the landscape.</li> <li>• Project elements would not be visually evident.</li> </ul>  | <ul style="list-style-type: none"> <li>• Landscape would appear to be intact, and project elements would not attract attention.</li> <li>• Project elements would repeat the form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast).</li> <li>• Would meet a very high SIO: Landscape character is intact with only minor, if any, deviations.</li> </ul>   |
| Low              | <ul style="list-style-type: none"> <li>• Project elements would introduce elements and/or patterns common in the landscape that would be visually subordinate.</li> <li>• Project elements would create weak contrast compared with other features in the landscape.</li> </ul>                       | <ul style="list-style-type: none"> <li>• Landscape would be noticeably altered, and project elements would begin to attract attention.</li> <li>• Project elements would introduce the form, line, color, texture, or scale common in the landscape and would be visually subordinate (weak contrast).</li> <li>• Would meet a high SIO: Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely, and at such scale, that they are not evident.</li> </ul>  |
| Moderate         | <ul style="list-style-type: none"> <li>• Project elements would introduce elements and/or patterns not common in the landscape.</li> <li>• Project elements would be visually prominent in the landscape and would create moderate contrast compared with other features in the landscape.</li> </ul> | <ul style="list-style-type: none"> <li>• Landscape would appear to be substantially altered, and project elements would begin to dominate the visual setting.</li> <li>• Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape (moderate contrast).</li> <li>• Would meet a moderate SIO: Noticeable deviations must remain visually subordinate to the landscape character being viewed.</li> </ul>   |
| High             | <ul style="list-style-type: none"> <li>• Project elements would introduce elements and/or patterns that would be visually dominant and create strong contrast compared with other features in the landscape.</li> </ul>   | <ul style="list-style-type: none"> <li>• Landscape would appear to be severely altered, and project elements would dominate the visual setting.</li> <li>• Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast).</li> <li>• Would meet a low SIO: Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, edge effect, and pattern of natural openings; vegetation type changes; or architectural styles outside the landscape being viewed.</li> <li>• Would meet a very low SIO: Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect, and the landscape being viewed.</li> </ul> |

## 17.4.2 No-Action Alternative

This section describes the visual impacts of the No-Action Alternative in the Wasatch Boulevard segment of S.R. 210, in the segment of S.R. 210 from North Little Cottonwood Road to the town of Alta, at the gravel pit, and at the park-and-ride lot at 9400 South and Highland Drive.

### 17.4.2.1 S.R. 210 – Wasatch Boulevard

With the No-Action Alternative, the S.R. 210 Project would not be implemented, so the visual resources impact analysis area would not be affected by the project. Because no major roadway improvements would be made as part of the S.R. 210 Project, there would be no topographic changes or disturbances associated with the project, and the views in the impact analysis area would be similar to the existing conditions.

### 17.4.2.2 S.R. 210 – North Little Cottonwood Road to Alta

With the No-Action Alternative, the S.R. 210 Project would not be implemented, and the visual resources impact analysis area would remain in its current condition. Because no major roadway improvements would be made or gondola or cog rail elements constructed as part of the S.R. 210 Project, there would be no topographic changes or disturbances associated with the project, and the views in the impact analysis area would be similar to the existing conditions. This similarity includes no impacts to the visitor experience or the management of the Little Cottonwood Canyon State Scenic Byway.

### 17.4.2.3 Mobility Hubs

#### 17.4.2.3.1 Gravel Pit

With the No-Action Alternative, the mobility hub at the gravel pit location would not be constructed. However, Cottonwood Heights City is planning to develop the gravel pit with a mix of residential and commercial uses. This development would change the visual character of this location from an industrial aggregate mine to more typical urban uses.

#### 17.4.2.3.2 9400 South and Highland Drive

With the No-Action Alternative, there would be no change to the existing park-and-ride lot at 9400 South and Highland Drive. The visual character would continue to be urban.

#### What is a mobility hub?

A mobility hub is a location where users can transfer from their personal vehicle to a bus.

#### What is the gravel pit?

The gravel pit is an existing aggregate (gravel) mine located on the east side of Wasatch Boulevard between 6200 South and Fort Union Boulevard.

### 17.4.3 Enhanced Bus Service Alternative

This section describes the visual impacts of the Enhanced Bus Service Alternative, which includes improvements to the Wasatch Boulevard segment of S.R. 210, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

The impact levels associated with the Enhanced Bus Service Alternative are based on project contrast and magnitude of change resulting from the introduction of project elements in the characteristic landscape, or as viewed from KOP locations, by applying the criteria identified above in Table 17.4-1, Criteria for Assessing Level of Impacts to Visual Resources.

#### 17.4.3.1 S.R. 210 – Wasatch Boulevard

This section describes the visual impacts of the Imbalanced-lane Alternative and the Five-lane Alternative, which would both widen the Wasatch Boulevard segment of S.R. 210. More-detailed design information including proposed areas of cut and fill is included in Appendix 2B, Wasatch Boulevard Imbalanced-lane Alternative Plans, and Appendix 2C, Wasatch Boulevard Five-lane Alternative Plans, for Chapter 2, Alternatives.

##### 17.4.3.1.1 Imbalanced-lane Alternative

The impacts from the Imbalanced-lane Alternative would be similar to those from the Five-lane Alternative but would, in general, be less intense because fewer acres would be modified in the Urban LCU and viewed as modified (visual contrast) from KOP locations.

##### 17.4.3.1.2 Five-lane Alternative

Table 17.4-2 describes the magnitude of change in landscape character associated with the improvements to Wasatch Boulevard with the Five-lane Alternative.

Table 17.4-2. Impacts to Landscape Character Units from the Five-lane Alternative

| LCU   | Level of Impact | Impact Description   |
|-------|-----------------|--|
| Urban | Negligible      | Landscape would appear intact, and project elements would not attract attention within the urban setting. Project elements would repeat form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast). <b>About 38 acres of project elements (roadway improvements) would be within this LCU.</b> |

Three KOPs representing travelers and residents were identified to describe impacts to views resulting from the roadway improvements with the Five-lane Alternative. Table 17.4-3 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, distance from the roadway improvements, viewer position, and visibility. The table identifies the resulting impact level as low, with a short narrative describing the types of impacts the alternative would have on these views. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Table 17.4-3. Impacts to Viewers (KOPs) from Wasatch Boulevard Improvements with the Five-lane Alternative and the Enhanced Bus Service Alternative

| KOP No. | KOP Name                | Sensitive Viewer Groups | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position | Level of Impact | Impact Description   |
|---------|-------------------------|-------------------------|--------------------|---|-----------------|-----------------|--|
| 1       | Gravel Pit Mobility Hub | Travelers               | Moderate           | Adjacent  | Neutral         | Low             | Widening Wasatch Boulevard would be visually subordinate and similar to other infrastructure in the area. Views toward Wasatch Boulevard would be unobstructed.  |
| 2       | Fort Union Boulevard    | Residents, travelers    | High               | Adjacent  | Neutral         | Low             | Project elements, such as a widened Wasatch Boulevard, a pedestrian bridge, and a shared-use path, would be visually subordinate and similar to other infrastructure in the area. Views toward Wasatch Boulevard would be intermittently screened by vegetation, topography, and existing development. |
| 3       | Daneborg Drive          | Residents, travelers    | High               | Adjacent  | Neutral         | Low             | Project elements, such a widened Wasatch Boulevard, a pedestrian bridge, and a shared-use path, would be visually subordinate and similar to other infrastructure in the area. Views toward Wasatch Boulevard would be intermittently screened by vegetation, topography, and existing development.    |

### 17.4.3.2 S.R. 210 – North Little Cottonwood Road to Alta

With the Enhanced Bus Service Alternative, no roadway improvements would be made along S.R. 210 between North Little Cottonwood Road and the town of Alta (Little Cottonwood Canyon State Scenic Byway). There would be no topographic changes or disturbances associated with this alternative, and the views in the visual resources impact analysis area would be similar to the existing conditions. Impacts to the visitor experience or the management of the scenic byway would be mostly associated with the avalanche mitigation described in Section 17.4.3.4, Avalanche Mitigation Alternatives.

For tolling, a gantry (single pole over the westbound travel lane) immediately adjacent to the travel lane just west of Snowbird Entry 1 might be required depending on the final tolling technology selected. The tolling gantry would likely be placed immediately adjacent to the roadway next to the existing S.R. 210 emergency roadway closure gates just west of Snowbird Entry 1. Because the tolling gantry would be placed next to the existing road closure gates and near the developed Snowbird resort, the overall landscape character would not be severely altered. The tolling gantry would span a single travel lane, similar to the closure gates, and would not dominate the visual setting in the immediate foreground and foreground areas. The overall level of impact would be moderate.

### 17.4.3.3 Mobility Hubs Alternative

The Enhanced Bus Service Alternative includes two mobility hubs: a mobility hub at the gravel pit and a mobility hub at the park-and-ride lot at 9400 South and Highland Drive.

#### 17.4.3.3.1 Gravel Pit

Table 17.4-4 describes the magnitude of change in landscape character associated with the gravel pit mobility hub.

Table 17.4-4. Impacts to Landscape Character Units from the Gravel Pit Mobility Hub with the Enhanced Bus Service Alternative

| LCU   | Level of Impact | Impact Description   |
|-------|-----------------|--|
| Urban | Negligible      | Landscape would appear intact, and project elements would not attract attention within the urban setting. Project elements would repeat form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast). <b>About 39 acres of project elements (mobility hub) would be within this LCU.</b> |

One KOP representing travelers along Wasatch Boulevard was identified to describe impacts to views resulting from the mobility hub parking structure. Table 17.4-5 lists the criteria used to determine the impact level from this KOP, including viewer sensitivity, distance from the mobility hub, viewer position, and visibility. The table identifies the resulting impact level as moderate, with a short narrative describing the type of impacts the mobility hub parking structure would have from this location. For more detail regarding this KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Table 17.4-5. Impacts to Viewers (KOPs) from the Gravel Pit Mobility Hub with the Enhanced Bus Service Alternative

| KOP No. | KOP Name                | Sensitive Viewer Groups | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position | Level of Impact | Impact Description  |
|---------|-------------------------|-------------------------|--------------------|---|-----------------|-----------------|---|
| 1       | Gravel Pit Mobility Hub | Travelers               | Moderate           | 900 feet  | Neutral         | Moderate        | Project elements, such as the parking structure, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |

#### 17.4.3.3.2 9400 South and Highland Drive

The impacts to landscape character from the 9400 South and Highland Drive mobility hub would be similar to those from the gravel pit mobility hub. The 9400 South and Highland Drive mobility hub would be located entirely within the urban environment of the Sandy metropolitan area and would be consistent with the character of the Urban LCU. There are no KOPs at this location because it is in an urban, commercial location with few adjacent sensitive receptors.

#### 17.4.3.4 Avalanche Mitigation Alternatives

The Enhanced Bus Service Alternative includes two alternatives for avalanche mitigation: the Snow Sheds with Berms Alternative and the Snow Sheds with Realigned Road Alternative.

##### 17.4.3.4.1 Snow Sheds with Berms Alternative

Table 17.4-6 describes the magnitude of change in landscape character from the Snow Sheds with Berms Alternative.

Table 17.4-6. Impacts to Landscape Character Units from the Snow Sheds with Berms Alternative with the Enhanced Bus Service Alternative

| LCU               | Level of Impact | Impact Description  |
|-------------------|-----------------|---|
| Natural Appearing | High            | The landscape would appear severely altered, and the snow shed infrastructure with berms would dominate the visual setting in the immediate foreground and foreground areas of the LCU. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 13 acres of project elements within this LCU are associated with the Snow Sheds with Berms Alternative.</b> |

UDOT identified six KOPs representing tourists and recreational users along S.R. 210 and within the area of the snow sheds to describe impacts to views from this alternative. Table 17.4-7 lists, by KOP, the criteria used to determine impact levels at these KOPs, including viewer sensitivity, distance from the snow sheds and berms, viewer position, and visibility for this alternative. Additionally, the table identifies the resulting impact levels (from none to high), with a short narrative describing the type of impacts the alternative would have from these locations. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Impacts to the Little Cottonwood Canyon State Scenic Byway visitor experience would include views of three snow sheds (at KOPs 11, 12, and 13) in the upper portion of Little Cottonwood Canyon between Tanner's Flat and the Snowbird resort. These elements would be visually dominant compared to the existing landscape as visitors drive this approximately 1.5-mile section of the overall 7-mile-long scenic byway.

As stated in the *Cottonwood Canyons Corridor Management Plan*, the vision for the scenic byway is to "offer outstanding scenery, access to year-round developed and undeveloped recreation, and visitor education and information, creating an enjoyable and satisfying experience for visitors to the byways and their destinations" (UDOT 2008). Specifically, the plan identifies a strategy to protect scenic vistas under the goal of protecting the canyon's watershed and natural resources. The snow sheds would be focused in one area where avalanches limit year-round access along the scenic byway due to occasional road closures. For

this reason, these elements would diminish but not limit the management of the scenic byway by the USDA Forest Service to protect scenic vistas and intrinsic scenic qualities.

Table 17.4-7. Impacts to Viewers (KOPs) from the Snow Sheds with Berms Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description   |
|---------|---|--------------------------------------|--------------------|---|---------------------|-----------------|--|
| 10      | First Snow Shed                           | Tourists and recreational            | High               | 215 feet  | Inferior            | None            | Project elements associated with the Snow Sheds with Berms Alternative would not be visually evident.  |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | High               | Adjacent  | Neutral to inferior | High            | Project elements, such as alterations to slope and a snow shed, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational            | High               | Adjacent  | Neutral to inferior | High            | Project elements, such as alterations to slope and a snow shed, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational            | High               | 225 feet  | Neutral to inferior | High            | Project elements, such as alterations to slope and a snow shed, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |
| 17      | White Pine Lake Trail                     | Tourists and recreational            | Moderate           | 260 feet  | Superior            | Moderate        | Project elements, such as snow sheds and berms, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape.                                       |
| 25      | Tanners Flat Camp-ground                  | Tourists and recreational            | Moderate           | 350 feet  | Inferior            | Moderate        | Project elements, such as retaining walls, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape.  |

17.4.3.4.2 Snow Sheds with Realigned Road Alternative

Table 17.4-8 describes the magnitude of change in landscape character from the Snow Sheds with Realigned Road Alternative.

Table 17.4-8. Impacts to Landscape Character Units from the Snow Sheds with Realigned Road Alternative with the Enhanced Bus Service Alternative

| LCU               | Level of Impact | Impact Description   |
|-------------------|-----------------|--|
| Natural Appearing | High            | The landscape would appear severely altered, and the snow shed infrastructure with the realigned road would dominate the visual setting in the immediate foreground and foreground areas of the LCU. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 19 acres of project elements within this LCU would be associated with the Snow Sheds with Realigned Road Alternative.</b> |

UDOT identified six KOPs representing tourists and recreational users along S.R. 210 and within the area of the snow sheds to describe impacts to views resulting from this alternative. Table 17.4-9 lists, by KOP, the criteria used to determine impact levels at these KOPs, including viewer sensitivity, distance from the snow sheds and realigned road, viewer position, and visibility for this alternative. Additionally, the table identifies the resulting impact levels (from none to high), with a short narrative describing the type of impacts the alternative would have from these locations. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

The impacts to the visitor experience and management of the scenic byway would be similar to those from the Snow Sheds with Berms Alternative.

Table 17.4-9. Impacts to Viewers (KOPs) from the Snow Sheds with Realigned Road Alternative with the Enhanced Bus Service Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description   |
|---------|---|--------------------------------------|--------------------|---|---------------------|-----------------|--|
| 10      | First Snow Shed                           | Tourists and recreational            | High               | 215 feet  | Inferior            | None            | Project elements associated with this alternative would not be visually evident.   |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | High               | Adjacent  | Neutral to inferior | High            | Project elements, such as alterations to slope and a snow shed, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational            | High               | Adjacent  | Neutral to inferior | High            | Project elements, such as alterations to slope and a snow shed, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational            | High               | Adjacent  | Neutral to inferior | High            | Project elements, such as alterations to slope and a snow shed, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. |
| 17      | White Pine Lake Trail                     | Tourists and recreational            | Moderate           | Adjacent  | Superior            | Moderate        | Project elements, such as snow sheds, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape.   |
| 25      | Tanners Flat Camp-ground                  | Tourists and recreational            | Moderate           | 350 feet  | Inferior            | Moderate        | Project elements, such as retaining walls, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape.  |

### 17.4.3.5 Trailhead Parking Alternatives

The Enhanced Bus Service Alternative includes three alternatives to address trailhead parking:

- Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative
- Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative
- No Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative

#### 17.4.3.5.1 Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative

Table 17.4-10 describes the magnitude of change in landscape character from the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative.

Table 17.4-10. Impacts to Landscape Character Units from the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative with the Enhanced Bus Service Alternative

| LCU               | Level of Impact | Impact Description   |
|-------------------|-----------------|--|
| Natural Appearing | Low             | Landscape would appear noticeably altered, and project elements would begin to attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate (weak contrast) and similar to existing trailhead parking infrastructure found within the LCU. <b>About 7 acres of trailhead improvements would be located within this LCU.</b> |

UDOT identified four KOPs representing tourists and recreational users to describe impacts to views resulting from the trailhead improvements throughout Little Cottonwood Canyon. Table 17.4-11 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, approximate distance from the improvements, viewer position, and visibility. The table identifies the resulting impact level as low, with a short narrative describing the types of impacts the improvements would have from these locations. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Table 17.4-11. Impacts to Viewers (KOPs) from the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative with the Enhanced Bus Service Alternative

| KOP No. | KOP Name                | Sensitive Viewer Groups   | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|-------------------------|---------------------------|--------------------|---|---------------------|-----------------|---|
| 6       | Gate Buttress Trailhead | Tourists and recreational | Moderate           | 140 feet  | Neutral to inferior | Low             | Project elements, such as cut slopes, a restroom structure, and parking lot improvements, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.       |
| 7       | Bridge Trailhead        | Tourists and recreational | Moderate           | Adjacent  | Neutral to inferior | Low             | Project elements, such as a retaining wall, a restroom structure, and parking lot improvements, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate. |
| 8       | Lisa Falls Trailhead    | Tourists and recreational | Moderate           | 290 feet  | Neutral to inferior | Low             | Project elements, such as signs, restrooms, and parking lot improvements, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                       |
| 16      | White Pine Trailhead    | Tourists and recreational | Moderate           | 70 feet   | Neutral to inferior | Low             | Project elements, such as parking lot improvements and an exit ramp, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                            |

*17.4.3.5.2 Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative*

The impacts of this alternative would be similar to those from the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative except for additional No Parking signs along S.R. 210. The additional signs would be visually subordinate in the setting and would not attract attention from KOPs.

*17.4.3.5.3 No Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative*

The impacts to landscape character and on views from KOPs from this alternative would be limited to additional No Parking signs along S.R. 210 that would be visually subordinate in the setting and would not attract attention from KOPs. No additional topographic changes or disturbances associated with this alternative would occur.

#### 17.4.3.6 No Winter Parking Alternative

Impacts to landscape character, and on views from KOPs, would be minor with the No Winter Parking Alternative because no topographic changes or disturbances associated with the alternative would occur.

#### 17.4.3.7 Conformance with USDA Forest Service Scenic Integrity Objectives – Enhanced Bus Service Alternative

The USDA Forest Service has developed measurable standards for managing the scenic resources of USDA Forest Service lands through the SMS. This analysis determined whether the Enhanced Bus Service Alternative and its associated elements would be in conformance with the established objectives in the *Forest Plan*. On the basis of the respective SIO levels, the stated management objectives were compared with the alternative regarding magnitude of change in visual character and inherent scenic integrity, viewer sensitivity, and visual contrast within the existing landscape.

Table 17.4-6 through Table 17.4-11 above identify impacts to landscape character and viewers in the visual resources impact analysis area associated with snow shed and trailhead improvement infrastructure. In the areas that have a high SIO in relation to the snow shed locations and trailhead improvements (Figure 17.4-1 through Figure 17.4-3 below) and where the impact determination is moderate to high (Table 17.4-12 on page 17-31), the high SIO would not be met and would not be in conformance with the following SIO guidelines identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

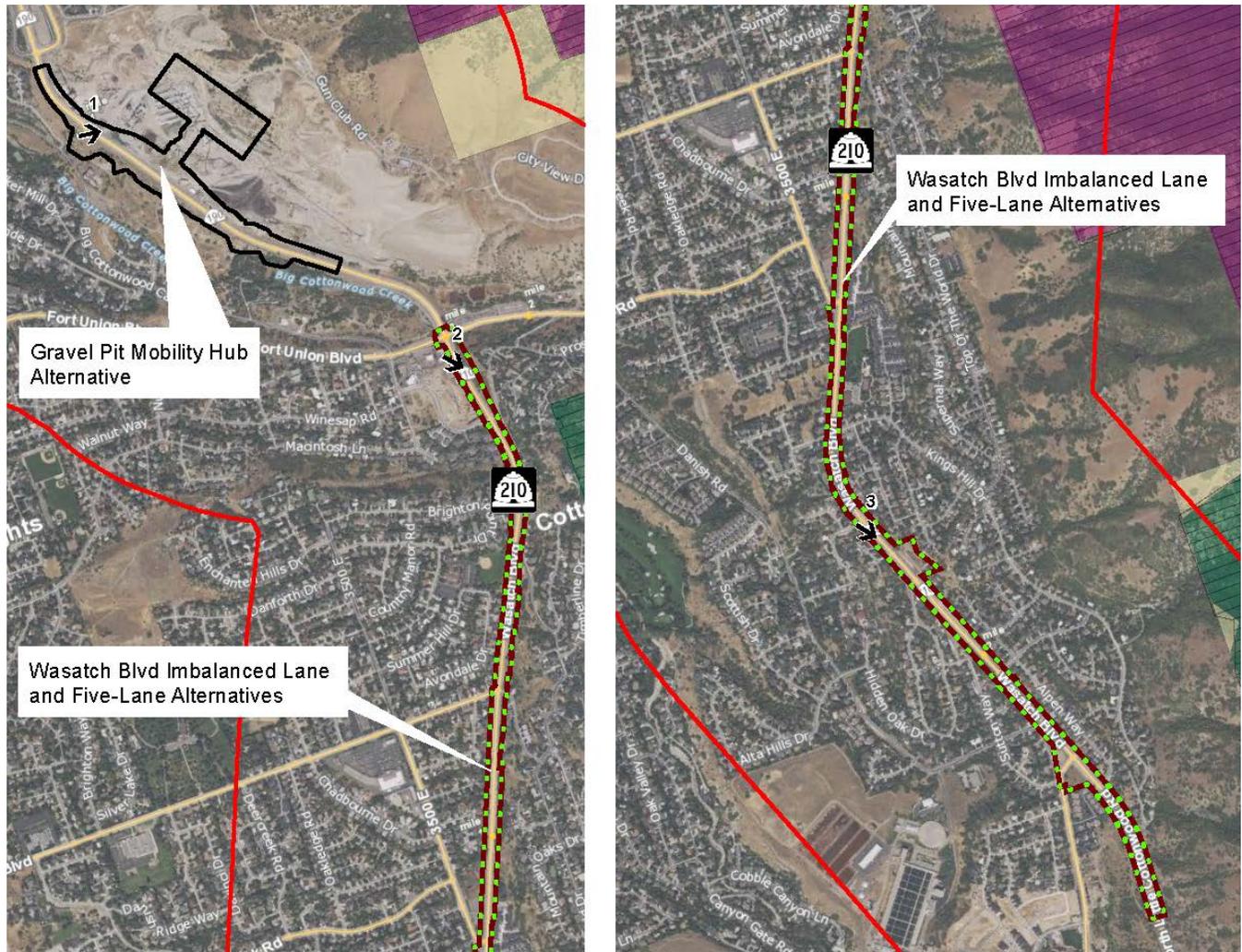
- **G59:** Manage forest landscapes according to landscape character themes, and SIOs as mapped (USDA Forest Service 2003, page 4-48).
- **G60:** Resource management activities should not be permitted to reduce scenic integrity below objectives stated for management prescription categories (USDA Forest Service 2003, page 4-48).

In areas where trailhead improvements would be made as part of the Enhanced Bus Service Alternative and where the impact determination is low, those elements would conform to the *Forest Plan* SIO designation of high.

UDOT anticipates that these areas of nonconformance with SIO guidelines would be in conformance with the following SIO standard identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

- **S22:** Management actions that would result in a scenic integrity level of Unacceptably Low are prohibited in all landscape character themes (USDA Forest Service 2003, page 4-48).

Figure 17.4-1. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Enhanced Bus Service Alternative (1 of 3)



↑ Key Observation Points **Scenic Integrity Objectives**

- Visual Resources Impact Analysis Area
- Uinta-Wasatch-Cache National Forest Boundary

- Private Land
- High Scenic Integrity
- Very High Scenic Integrity

**Alternatives**

- Gravel Pit Interchange
- Wasatch Blvd - Imbalanced Lane
- Wasatch Blvd - Five Lane



0 2,500 Feet

Figure 17.4-2. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Enhanced Bus Service Alternative (2 of 3)



- ↑ Key Observation Points**
- Visual Resources Impact Analysis Area
  - Uinta-Wasatch-Cache National Forest Boundary
- Scenic Integrity Objectives**
- Private Land
  - High Scenic Integrity
  - Very High Scenic Integrity
- Alternatives**
- 9400 S/Highland Drive Mobility Hub
  - Trailhead Parking

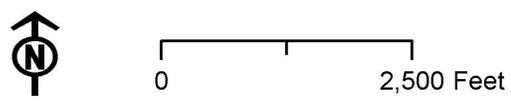
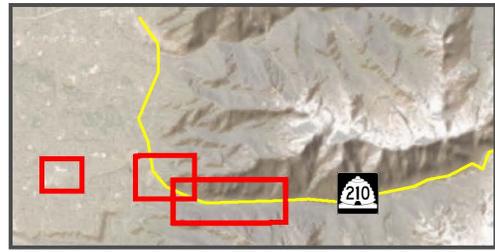


Figure 17.4-3. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Enhanced Bus Service Alternative (3 of 3)

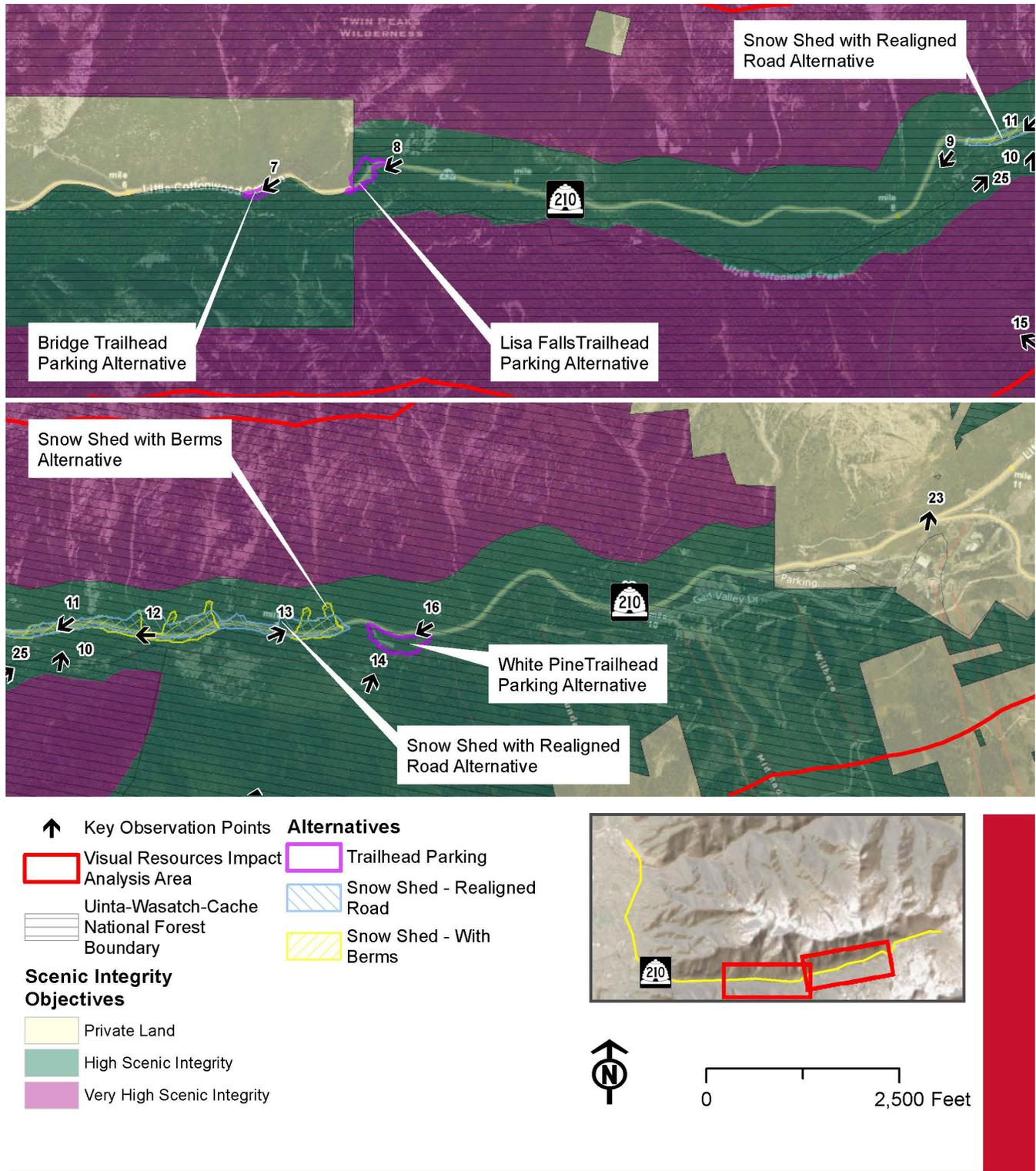


Table 17.4-12. Conformance with SIO Guidelines at KOP Locations Associated with the Enhanced Bus Service Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Position     | Level of Impact | SIO Level | Conformance with SIO Guidelines? |
|---------|---|--------------------------------------|---------------------|-----------------|-----------|----------------------------------|
| 6       | Gate Butress Trailhead                    | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 7       | Bridge Trailhead                          | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 8       | Lisa Falls Trailhead                      | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 10      | First Snow Shed                           | Tourists and recreational            | Inferior            | None            | High      | Yes                              |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | Neutral to inferior | High            | High      | No                               |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational            | Neutral to inferior | High            | High      | No                               |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational            | Neutral to inferior | High            | High      | No                               |
| 16      | White Pine Trailhead                      | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 17      | White Pine Lake Trail                     | Tourists and recreational            | Superior            | Moderate        | High      | No                               |
| 25      | Tanners Flat Campground                   | Moderate                             | Inferior            | Moderate        | High      | No                               |

#### 17.4.4 Enhanced Bus Service in Peak-period Shoulder Lane Alternative

This section describes the visual impacts of the Enhanced Bus Service in Peak-period Shoulder Lane Alternative, which includes improvements to the Wasatch Boulevard segment of S.R. 210, improvements to the segment of S.R. 210 from North Little Cottonwood Road to the town of Alta, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative. More-detailed design information including proposed areas of cut and fill is included in Appendix 2D, Enhanced Bus Service in Peak-period Shoulder Lane Alternative Plans, for Chapter 2, Alternatives.

The impact levels of the elements associated with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative are based on project contrast and magnitude of change resulting from the introduction of this alternative's elements within the characteristic landscape, or as viewed from KOP locations, by applying the criteria identified in Table 17.4-1 above, Criteria for Assessing Level of Impacts to Visual Resources.

##### 17.4.4.1 S.R. 210 – Wasatch Boulevard

The impacts from the improvements to Wasatch Boulevard with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

#### **17.4.4.2 S.R. 210 – North Little Cottonwood Road to Alta**

Table 17.4-13 describes the magnitude of change in landscape character associated with improvements to S.R. 210 (Little Cottonwood Canyon State Scenic Byway) with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative.

UDOT identified 17 KOPs representing travelers, tourists, and recreational users along S.R. 210 (Little Cottonwood Canyon State Scenic Byway) and within the impact analysis area of Little Cottonwood Canyon to describe impacts to views from those locations resulting from the introduction of roadway improvements along S.R. 210. Table 17.4-14 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, approximate distance from the roadway improvements, viewer position, and visibility. The table identifies the resulting impact levels as none to moderate, with a short narrative describing the type of impacts the roadway improvements would have from these locations. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Impacts to the Little Cottonwood Canyon State Scenic Byway visitor experience would include views of road improvements. These improvements would be visually subordinate to the existing landscape as visitors drive the 7-mile-long scenic byway. In a few areas, such as the area adjacent to KOP 7 (Bridge Trailhead), proposed cut-and-fill slopes would be visually prominent in the landscape and would attract the attention of visitors driving the scenic byway. The visual simulation from this location depicts the larger earthwork proposed and is characteristic of other areas where additional cut-and-fill slopes would be required for the peak-period shoulder lane. Since the road improvements including associated earthwork would be visually subordinate along most of the scenic byway, except for views of areas where more-extensive earthwork would be required, the proposed improvements would not diminish or limit the management of the scenic byway by the USDA Forest Service to protect scenic vistas and intrinsic scenic qualities. The impacts from the potential tolling gantry would be the same as with the Enhanced Bus Service Alternative.

Table 17.4-13. Impacts to Landscape Character Units from S.R. 210 Improvements with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative

| LCU                         | Level of Impact | Impact Description   |
|-----------------------------|-----------------|--|
| Urban                       | Negligible      | Landscape would appear intact, and project elements would not attract attention within the urban setting. Project elements would repeat form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast). <b>About 18 acres of project elements (roadway improvements) would be located within this LCU.</b>   |
| Developed Natural Appearing | Low             | Landscape would appear noticeably altered in some areas where cut-and-fill slopes are not as prevalent, and landform modifications would attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape, would be visually subordinate (weak contrast), and would be similar to existing roadway landform modifications found within the LCU. <b>About 9 acres of roadway improvements would be located within this LCU.</b>  |
| Natural Appearing           | Low             | Landscape would appear noticeably altered in some areas where cut-and-fill slopes are not as prevalent, and landform modifications would attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape, would be visually subordinate (weak contrast), and would be similar to existing roadway landform modifications found within the LCU. <b>About 70 acres of roadway improvements would be located within this LCU.</b> |
| Natural Evolving            | Low             | Landscape would appear noticeably altered in some areas where cut-and-fill slopes are not as prevalent, and landform modifications would attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape, would be visually subordinate (weak contrast), and would be similar to existing roadway landform modifications found within the LCU. <b>About 2 acres of roadway improvements would be located within this LCU.</b>  |
| Resort Natural Setting      | Low             | Landscape would appear noticeably altered in some areas where cut-and-fill slopes are not as prevalent, and landform modifications would attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape, would be visually subordinate (weak contrast), and would be similar to existing roadway landform modifications found within the LCU. <b>About 12 acres of roadway improvements would be located within this LCU.</b> |

Table 17.4-14. Impacts to Viewers (KOPs) from S.R. 210 Improvements with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description   |
|---------|---|--------------------------------------|--------------------|---|---------------------|-----------------|--|
| 4       | Quarry Trailhead                          | Residents, tourists and recreational | Moderate           | Adjacent  | Neutral to inferior | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                                       |
| 5       | Wasatch Resort                            | Residents, tourists and recreational | Moderate           | 235 feet  | Neutral to inferior | None            | Project elements associated with the roadway improvements would not be visually evident.   |
| 6       | Gate Buttress Trailhead                   | Tourists and recreational            | Moderate           | Adjacent  | Neutral to inferior | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                                       |
| 7       | Bridge Trailhead                          | Tourists and recreational            | Moderate           | Adjacent  | Neutral to inferior | Moderate        | Project elements, such as cut-and-fill slopes up to 70 feet wide, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. |
| 8       | Lisa Falls Trailhead                      | Tourists and recreational            | Moderate           | Adjacent  | Neutral to inferior | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                                       |
| 9       | Tanner's Flat Group Site C                | Tourists and recreational            | Moderate           | 270 feet  | Inferior            | None            | Project elements associated with the roadway improvements would not be visually evident.   |
| 10      | First Snow Shed                           | Tourists and recreational            | High               | 230 feet  | Inferior            | None            | Project elements associated with the roadway improvements would not be visually evident.   |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | High               | Adjacent  | Neutral to superior | None            | Project elements associated with the roadway improvements would not be visually evident.   |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | High               | Adjacent  | Neutral to inferior | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                                       |

(continued on next page)

Table 17.4-14. Impacts to Viewers (KOPs) from S.R. 210 Improvements with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative

| KOP No. | KOP Name                   | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|----------------------------|--------------------------------------|--------------------|---|---------------------|-----------------|---|
| 13      | Third Snow Shed (S.R. 210) | Tourists and recreational, travelers | High               | Adjacent  | Neutral to inferior | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                |
| 14      | Red Pine Trail Low         | Tourists and recreational            | Moderate           | 770 feet  | Inferior            | None            | Project elements associated with the roadway improvements would not be visually evident.  |
| 15      | Red Pine Trail Mid         | Tourists and recreational            | Moderate           | 0.50 mile   | Superior            | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                |
| 16      | White Pine Trailhead       | Tourists and recreational            | Moderate           | Adjacent  | Neutral to inferior | Low             | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                |
| 17      | White Pine Lake Trail      | Tourists and recreational            | Moderate           | 0.40 mile   | Superior            | None            | Project elements associated with the roadway improvements would not be visually evident.  |
| 18      | Snowbird Entry 1           | Tourists and recreational            | Moderate           | Adjacent  | Neutral             | Moderate        | Project elements, such as cut-and-fill slopes, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                |
| 19      | Catherine's Pass           | Tourists and recreational            | Moderate           | 1.95 miles  | Superior            | None            | Project elements associated with the roadway improvements would not be visually evident.  |
| 25      | Tanners Flat Campground    | Tourists and recreational            | Moderate           | 350 feet  | Inferior            | Moderate        | Project elements, such as retaining walls, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. |

#### 17.4.4.3 Mobility Hubs Alternative

The impacts from the mobility hub parking structures with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.4.4 Avalanche Mitigation Alternatives

The impacts from the avalanche mitigation alternatives with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.4.5 Trailhead Parking Alternatives

The impacts from the trailhead parking alternatives with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.4.6 No Winter Parking Alternative

The impacts from the No Winter Parking Alternative with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.4.7 Conformance with USDA Forest Service Scenic Integrity Objectives – Enhanced Bus Service in Peak-period Shoulder Lane Alternative

The USDA Forest Service has developed measurable standards for managing the scenic resources of USDA Forest Service lands through the SMS. On the basis of the respective SIO levels, the stated management objectives were compared with the alternative regarding magnitude of change in visual character and inherent scenic integrity, viewer sensitivity, and visual contrast within the existing landscape.

In addition to the impacts to landscape character and viewers associated with the snow shed and trailhead improvement infrastructure described for the Enhanced Bus Service Alternative, Table 17.4-13 and Table 17.4-14 above identify impacts to landscape character and viewers in the visual resources impact analysis area associated with improvements to S.R. 210. In the areas that have a high SIO in relation to the improvements to S.R. 210, snow shed locations and trailhead improvements (Figure 17.4-4 through Figure 17.4-6 below) and where the impact determination is moderate to high (Table 17.4-15 below), the high SIO would not be met and would not be in conformance with the following SIO guidelines identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

- **G59:** Manage forest landscapes according to landscape character themes, and SIOs as mapped (USDA Forest Service 2003, page 4-48).
- **G60:** Resource management activities should not be permitted to reduce scenic integrity below objectives stated for management prescription categories (USDA Forest Service 2003, page 4-48).

UDOT anticipates that some of these areas of nonconformance with SIO guidelines might not be in conformance with the following SIO standard identified in the *Forest Plan* for scenery management (USDA Forest Service 2003), which would require a plan amendment as described in Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments.

- **S22:** Management actions that would result in a scenic integrity level of Unacceptably Low are prohibited in all landscape character themes (USDA Forest Service 2003, page 4-48).

Table 17.4-15. Conformance with SIO Guidelines at KOP Locations Associated with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Position     | Level of Impact | SIO Level | Conformance with SIO Guidelines? |
|---------|---|--------------------------------------|---------------------|-----------------|-----------|----------------------------------|
| 4       | Quarry Trailhead                          | Residents, tourists and recreational | Neutral to inferior | Low             | High      | Yes                              |
| 5       | Wasatch Resort                            | Residents, tourists and recreational | Neutral to inferior | None            | High      | Yes                              |
| 6       | Gate Buttress Trailhead                   | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 7       | Bridge Trailhead                          | Tourists and recreational            | Neutral to inferior | Moderate        | High      | No                               |
| 8       | Lisa Falls Trailhead                      | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 9       | Tanner's Flat Group Site C                | Tourists and recreational            | Inferior            | None            | High      | Yes                              |
| 10      | First Snow Shed                           | Tourists and recreational            | Inferior            | None            | High      | Yes                              |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | Neutral to superior | High            | High      | No                               |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | Neutral to inferior | High            | High      | No                               |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational, travelers | Neutral to inferior | High            | High      | No                               |
| 14      | Red Pine Trail Low                        | Tourists and recreational            | Inferior            | None            | High      | Yes                              |
| 15      | Red Pine Trail Mid                        | Tourists and recreational            | Superior            | Low             | High      | Yes                              |
| 16      | White Pine Trailhead                      | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 17      | White Pine Lake Trail                     | Tourists and recreational            | Superior            | Moderate        | High      | No                               |
| 18      | Snowbird Entry 1                          | Tourists and recreational            | Neutral             | Moderate        | High      | No                               |
| 19      | Catherine's Pass                          | Tourists and recreational            | Superior            | None            | High      | Yes                              |
| 25      | Tanners Flat Campground                   | Tourists and recreational            | Inferior            | Moderate        | High      | No                               |

Figure 17.4-4. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Enhanced Bus Service in Peak-period Shoulder Lane Alternative (1 of 3)



↑ Key Observation Points **Scenic Integrity Objectives**

- Visual Resources Impact Analysis Area
- Uinta-Wasatch-Cache National Forest Boundary

- Private Land
- High Scenic Integrity
- Very High Scenic Integrity

**Alternatives**

- Gravel Pit Interchange
- Wasatch Blvd - Imbalanced Lane
- Wasatch Blvd - Five Lane



0 2,500 Feet

Figure 17.4-5. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Enhanced Bus Service in Peak-period Shoulder Lane Alternative (2 of 3)

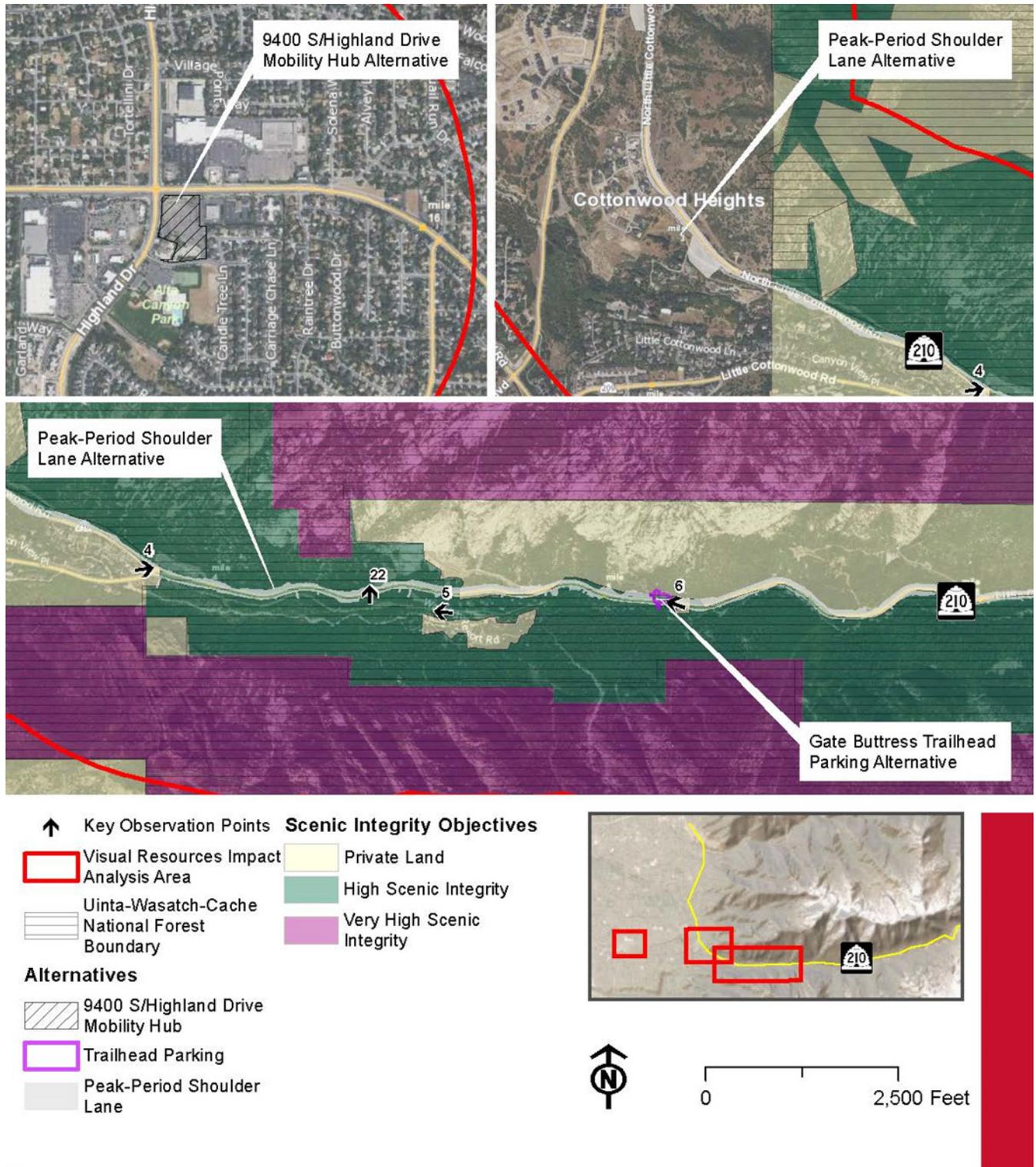
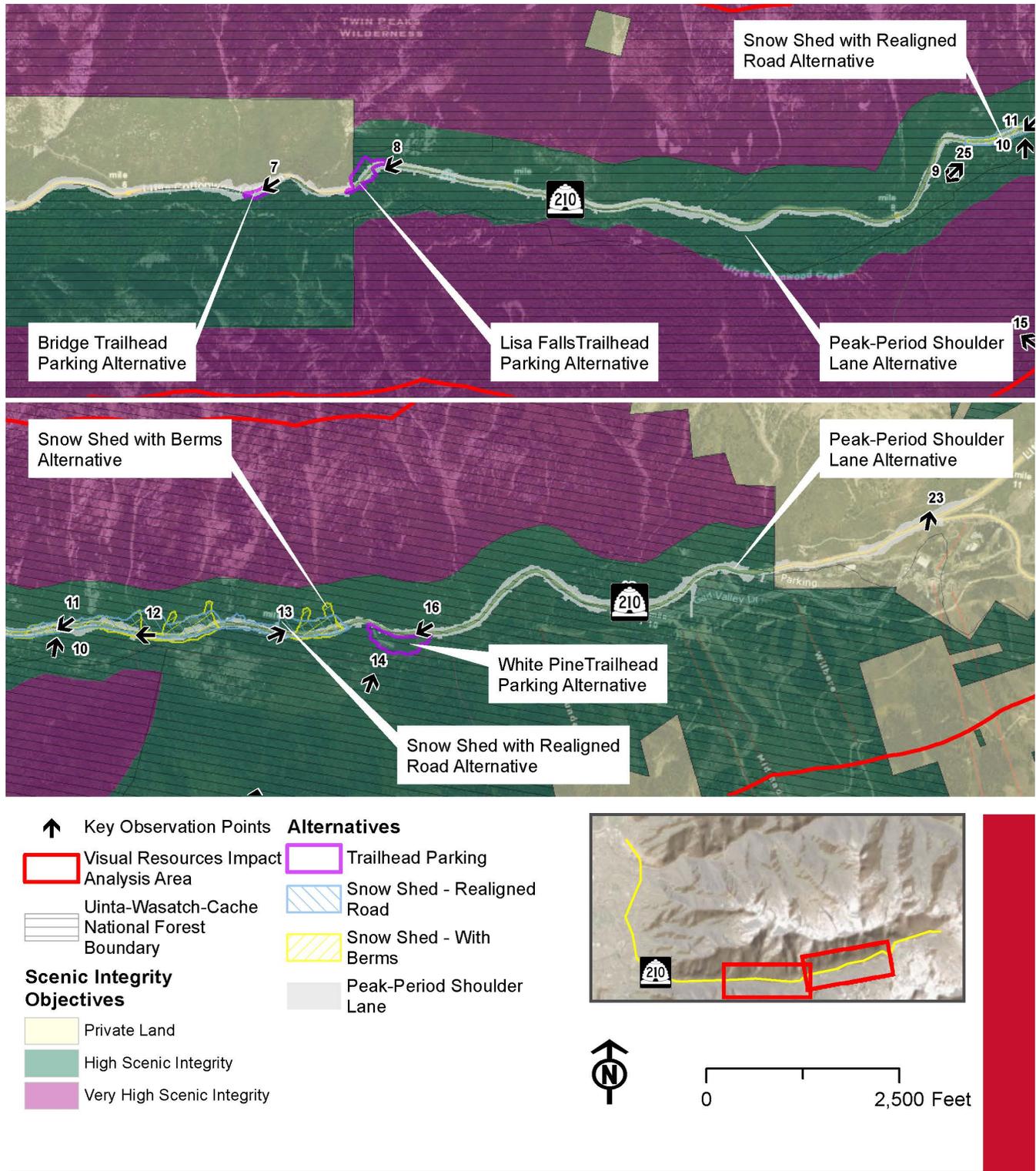


Figure 17.4-6. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Enhanced Bus Service in Peak-period Shoulder Lane Alternative (3 of 3)



## 17.4.5 Gondola Alternative A (Starting at Canyon Entrance)

This section describes the visual impacts of Gondola Alternative A, which includes a gondola alignment from the entrance to Little Cottonwood Canyon to the Snowbird and Alta resorts, improvements to the Wasatch Boulevard segment of S.R. 210, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative. More-detailed design information including proposed areas of cut and fill is included in Appendix 2E, Gondola Alternatives Plans, for Chapter 2, Alternatives.

### 17.4.5.1 S.R. 210 – Wasatch Boulevard

The impacts from the improvements to Wasatch Boulevard with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

### 17.4.5.2 S.R. 210 – North Little Cottonwood Road to Alta

The impact levels of the elements associated with Gondola Alternative A are based on the contrast and magnitude of change resulting from the introduction of this alternative's elements within the characteristic landscape, or as viewed from KOP locations, by applying the criteria identified in Table 17.4-1 above, Criteria for Assessing Level of Impacts to Visual Resources. An additional analysis component related to the influence of the degree of slope has been applied for the gondola infrastructure. Slopes greater than 15% are anticipated to require more grading and vegetation clearing to access and construct the gondola towers, thus resulting in greater contrast with existing landform and vegetative patterns.

Movement associated with the large, elevated gondola cabins would further dominate the visual setting and attract attention from KOP locations. This movement would be most apparent closest to the gondola alignment where the gondola cabins would demand attention as they move through the landscape. Additionally, depending on local lighting conditions, the gondola cabins would introduce moving shadows, thereby generating increased motion in the visual setting near the alignment. Views from more-distant KOPs would include several gondola cabins moving up and down the canyon at the same time in the KOPs' viewshed, especially KOPs with a panoramic view of Little Cottonwood Canyon, such as KOP 15.

Impacts to the Little Cottonwood Canyon State Scenic Byway visitor experience would include views of the gondola infrastructure (gondola base station, towers, and moving gondola cabins) along most of the 7-mile-long scenic byway. Due to tall vegetation adjacent to the scenic byway, views of the gondola infrastructure would be intermittently screened in some locations, but where the gondola infrastructure is visible it would be visually dominant and would demand the attention of visitors, especially where the gondola alignment crosses over the scenic byway. Since views along the scenic byway would be dominated by gondola infrastructure, the visitor experience would be degraded and would therefore limit the USDA Forest Service's

#### What are gondola base, angle, and terminal stations?

As used in this chapter, the term *terminal station* refers to the first and last stations on a passenger's gondola trip. Passengers board and disembark the gondola cabins at the terminal stations.

The *base station* is the terminal station at the bottom of the canyon, and a *destination station* is a terminal station at the top of the canyon.

The gondola alternatives also include *angle stations*, which are needed to adjust the horizontal direction of the cabin; passengers remain in the cabin as it passes through an angle station.

A *tower* supports the gondola cable.

ability to manage the scenic byway to protect scenic vistas and intrinsic scenic qualities. Impacts from the potential tolling gantry would be the same as with the Enhanced Bus Service Alternative.

To avoid collisions between aircraft and the gondola towers and cables, the Federal Aviation Administration (FAA) requires structures greater than 200 feet above ground level to have obstruction lighting. Given the enclosed nature of Little Cottonwood Canyon, and for analysis purposes, obstruction lighting might be required for all gondola towers for safe operation of aircraft in the area. Red FAA warning lights, similar to warning lights on wind turbine generators, would simultaneously flash about 20 to 40 times per minute, introducing a string of flashing lights up Little Cottonwood Canyon. Night skies in much of the canyon are relatively dark, especially mid-canyon between the light dome of Salt Lake City and local nighttime lighting near the Snowbird and Alta resorts. Although Gondola Alternative A would follow FAA's obstruction marking and lighting requirements as defined by Advisory Circular No. 70/7460-1L (FAA 2016), UDOT would coordinate with FAA regarding the feasibility of implementing an aircraft detection lighting system (ADLS) to reduce the impacts of nighttime lighting.

An ADLS (or a similar system) would remain off until it detects nearby aircraft. It would then turn on and would turn off again after the aircraft leaves the area. Implementing an ADLS depends on several factors including flight paths, proximity of airports, commercial availability, technical feasibility, and agency review and approval. The synchronized flashing of the ADLS, if implemented, would cause strong, shorter-duration night sky impacts to the surrounding landscape. If an ADLS is approved during the FAA permit and process, the short-duration synchronized flashing of the ADLS would have substantially fewer visual impacts at night than the standard continuous, medium-intensity, red-strobe FAA warning system, so it would help to reduce the impacts of nighttime lighting. Because there is little air traffic in Little Cottonwood Canyon at night, and such air traffic is generally limited to emergency evacuations or heli-skiing flights, the ADLS would activate infrequently, further reducing the intensity of visual impacts compared to the standard FAA warning system.

The magnitude of change in landscape character associated with Gondola Alternative A would be none to high within the immediate foreground and foreground areas of the LCUs where the alternative's elements would be located. Table 17.4-16 further identifies impacts associated with each LCU.

Table 17.4-16. Impacts to Landscape Character Units from Gondola Infrastructure with Gondola Alternative A

| LCU                         | Level of Impact | Slopes Where Project Elements Would Be Located (Percent) | Impact Description  |
|-----------------------------|-----------------|--|---|
| Urban                       | Negligible      | 0% to 15%  | Landscape would appear to be intact, and project elements would not attract attention within the urban setting. Project elements would repeat form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast). <b>About 3 acres of project elements would be located within this LCU.</b>  |
| Developed Natural Appearing | High            | 15% to 30%   | The landscape would appear to be severely altered, and the gondola infrastructure would dominate the visual setting. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>Less than 1 acre of project elements would be located within this LCU.</b>                         |
| Natural Appearing           | High            | 15% to 30%   | The landscape would appear to be severely altered, and the gondola infrastructure would dominate the visual setting. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 7 acres of project elements would be located within this LCU.</b>                            |
| Natural Evolving            | Moderate        | 15% to 30%   | Landscape would appear substantially alternated, and project elements would begin to dominate the visual setting at the edge of this LCU. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape (moderate contrast). <b>Less than 1 acre of project elements would be located within this LCU.</b> |
| Resort Natural Setting      | Negligible      | 0% to > 30%  | Landscape would appear to be intact, and project elements would not attract attention within the ski resort setting. Project elements would repeat form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast). <b>About 2 acres of project elements would be located within this LCU.</b>   |

UDOT identified 16 KOPs representing different sensitive viewer groups to describe impacts to views, including along S.R. 210 (Little Cottonwood Canyon State Scenic Byway), resulting from the gondola infrastructure. Table 17.4-17 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, approximate distance from the gondola infrastructure, viewer position, and visibility. The table identifies the resulting impact levels as none to high, with a short narrative describing the types of impacts the infrastructure would have on these views. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Table 17.4-17. Impacts to Viewers (KOPs) from Gondola Infrastructure with Gondola Alternative A

| KOP No. | KOP Name                | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|-------------------------|--------------------------------------|--------------------|---|---------------------|-----------------|---|
| 4       | Quarry Trailhead        | Residents, tourists and recreational | Moderate           | 300 feet  | Neutral to inferior | High            | Project elements, such as the gondola base station and towers, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography. |
| 5       | Wasatch Resort          | Residents, tourists and recreational | Moderate           | 440 feet  | Neutral to inferior | Low             | Project elements, such as overhead gondola cables, would be visually subordinate and similar to other infrastructure in the area. Views toward the gondola infrastructure would be heavily screened by vegetation and topography.   |
| 6       | Gate Buttress Trailhead | Tourists and recreational            | Moderate           | 200 feet  | Neutral to inferior | High            | Project elements, such as the gondola towers, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography.                  |
| 7       | Bridge Trailhead        | Tourists and recreational            | Moderate           | 160 feet  | Neutral to inferior | Moderate        | Project elements, such as the gondola towers, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography.  |
| 8       | Lisa Falls Trailhead    | Tourists and recreational            | Moderate           | 480 feet  | Neutral to inferior | None            | Project elements associated with the gondola would not be visually evident. Views toward the gondola infrastructure would be partially screened by vegetation and topography.   |

(continued on next page)

Table 17.4-17. Impacts to Viewers (KOPs) from Gondola Infrastructure with Gondola Alternative A

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|---|--------------------------------------|--------------------|---|---------------------|-----------------|---|
| 9       | Tanner's Flat Group Site C                | Tourists and recreational            | Moderate           | 125 feet  | Inferior            | Low             | Project elements, such as overhead gondola cables, would be visually subordinate. Views toward the gondola infrastructure would be heavily screened by vegetation and topography.   |
| 10      | First Snow Shed                           | Tourists and recreational            | High               | 150 feet  | Inferior            | None            | Project elements associated with the gondola would not be visually evident. Views toward the gondola infrastructure would be entirely screened by vegetation and topography.  |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | High               | 470 feet  | Neutral to superior | Low             | Project elements, such as overhead gondola cables and towers, would be visually subordinate and mostly obstructed by vegetation.  |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | High               | 200 feet  | Neutral to inferior | None            | Project elements associated with the gondola would not be visually evident. Views toward the gondola infrastructure would be partially screened by vegetation and topography.   |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational, travelers | High               | 70 feet   | Neutral to inferior | Low             | Project elements, such as overhead gondola cables and towers, would be visually subordinate and obstructed by vegetation. Views toward the gondola infrastructure would be partially screened by vegetation and topography. |
| 14      | Red Pine Trail Low                        | Tourists and recreational            | Moderate           | 700 feet  | Inferior            | None            | Project elements associated with the gondola would not be visually evident. Views toward the gondola infrastructure would be entirely screened by vegetation and topography.  |

(continued on next page)

Table 17.4-17. Impacts to Viewers (KOPs) from Gondola Infrastructure with Gondola Alternative A

| KOP No. | KOP Name              | Sensitive Viewer Groups   | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|-----------------------|---------------------------|--------------------|---|---------------------|-----------------|---|
| 15      | Red Pine Trail Mid    | Tourists and recreational | Moderate           | 0.48 mile   | Superior            | High            | Project elements, such as the gondola angle station <sup>a</sup> and towers, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography. |
| 16      | White Pine Trailhead  | Tourists and recreational | Moderate           | Adjacent  | Neutral to inferior | High            | Project elements, such as the gondola towers, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography.                                |
| 17      | White Pine Lake Trail | Tourists and recreational | Moderate           | 0.40 mile   | Superior            | Moderate        | Project elements, such as the gondola tower and tower pad, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography.   |
| 18      | Snowbird Entry 1      | Tourists and recreational | Moderate           | 70 feet   | Neutral             | High            | Project elements, such as the gondola towers, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography.                                |

(continued on next page)

Table 17.4-17. Impacts to Viewers (KOPs) from Gondola Infrastructure with Gondola Alternative A

| KOP No. | KOP Name         | Sensitive Viewer Groups   | Viewer Sensitivity | Distance from Closest Project Element (approximate) | Viewer Position | Level of Impact | Impact Description  |
|---------|------------------|---------------------------|--------------------|---|-----------------|-----------------|---|
| 19      | Catherine's Pass | Tourists and recreational | Moderate           | 1 mile  | Superior        | None            | Project elements associated with the gondola would not be visually evident. Views toward the gondola infrastructure would be heavily screened by vegetation and topography. |

<sup>a</sup> The gondola alternatives include angle stations, which are needed to adjust the horizontal direction of the cabin; passengers remain in the cabin as it passes through an angle station.

### 17.4.5.3 Mobility Hubs Alternative

The impacts from the mobility hub parking structures with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

### 17.4.5.4 Avalanche Mitigation Alternatives

The impacts from the avalanche mitigation alternatives with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

### 17.4.5.5 Trailhead Parking Alternatives

The impacts from the trailhead parking alternatives with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

### 17.4.5.6 No Winter Parking Alternative

The impacts from the No Winter Parking Alternative with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.5.7 Conformance with USDA Forest Service Scenic Integrity Objectives – Gondola Alternative A

The USDA Forest Service has developed measurable standards for managing the scenic resources of USDA Forest Service lands through the SMS. This analysis determined whether Gondola Alternative A and its associated elements would be in conformance with the established objectives in the *Forest Plan*. On the basis of the respective SIO levels, the stated management objectives were compared with the alternative regarding magnitude of change in visual character and inherent scenic integrity, viewer sensitivity, and visual contrast within the existing landscape.

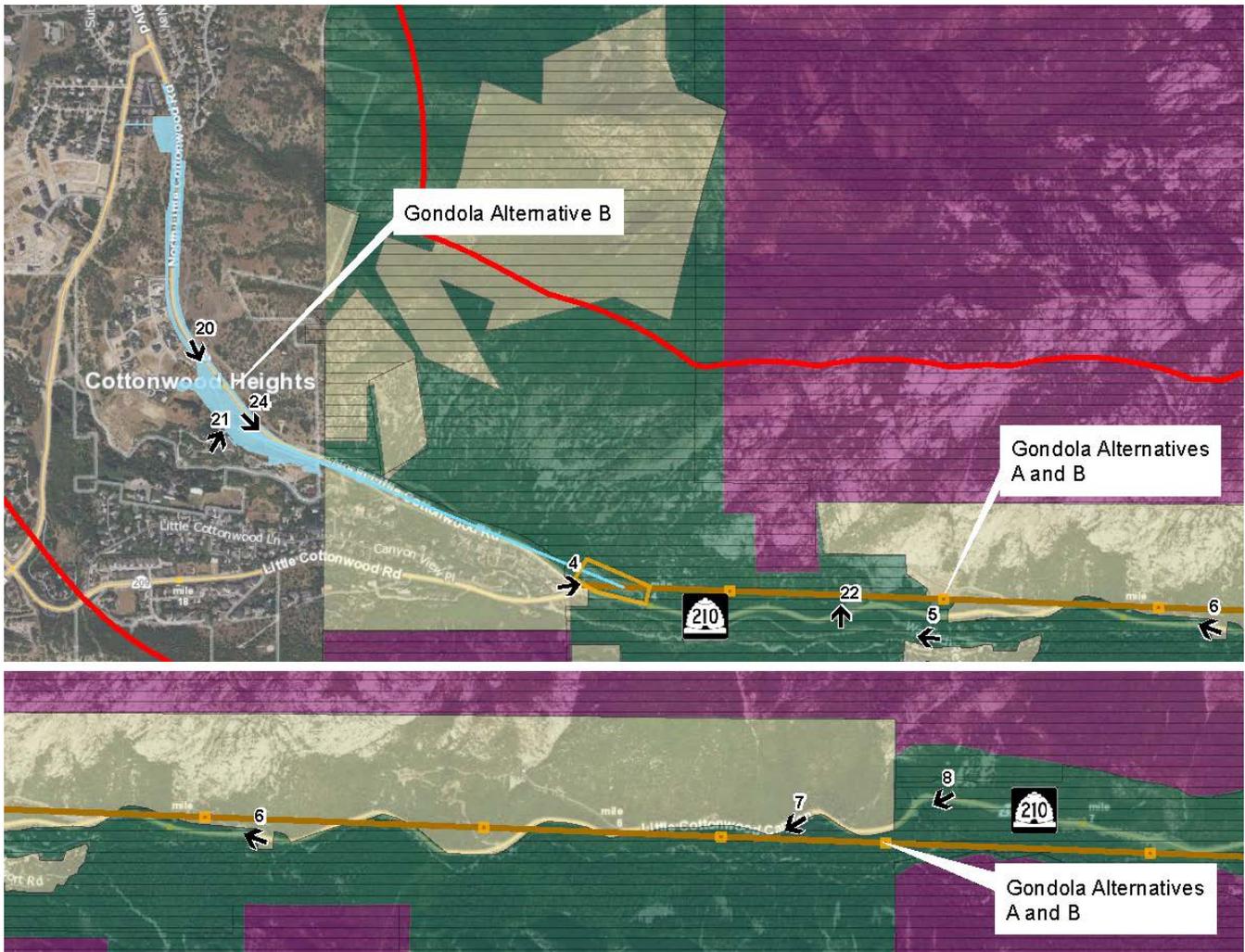
Table 17.4-16 and Table 17.4-17 above identify impacts to landscape character and viewers in the visual resources impact analysis area associated with gondola infrastructure. In the areas that have a high SIO and where the impact determination is either moderate or high where the gondola infrastructure would be located and a new right of way would be established (Figure 17.4-7 and Figure 17.4-8 below), the high SIO would not be met (Table 17.4-18 on page 17-51) and would not be in conformance with the following SIO guidelines identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

- **G59:** Manage forest landscapes according to landscape character themes, and SIOs as mapped (USDA Forest Service 2003, page 4-48).
- **G60:** Resource management activities should not be permitted to reduce scenic integrity below objectives stated for management prescription categories (USDA Forest Service 2003, page 4-48).

UDOT anticipates that these areas of nonconformance with SIO guidelines would be in conformance with the following SIO standard identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

- **S22:** Management actions that would result in a scenic integrity level of Unacceptably Low are prohibited in all landscape character themes (USDA Forest Service 2003, page 4-48).

Figure 17.4-7. Scenic Integrity Objectives in the Visual Resources Impact Analysis Areas for the Gondola Alternatives (1 of 2)



↑ Key Observation Points    Scenic Integrity Objectives

- Visual Resources Impact Analysis Area
- Uinta-Wasatch-Cache National Forest Boundary

- Private Land
- High Scenic Integrity
- Very High Scenic Integrity

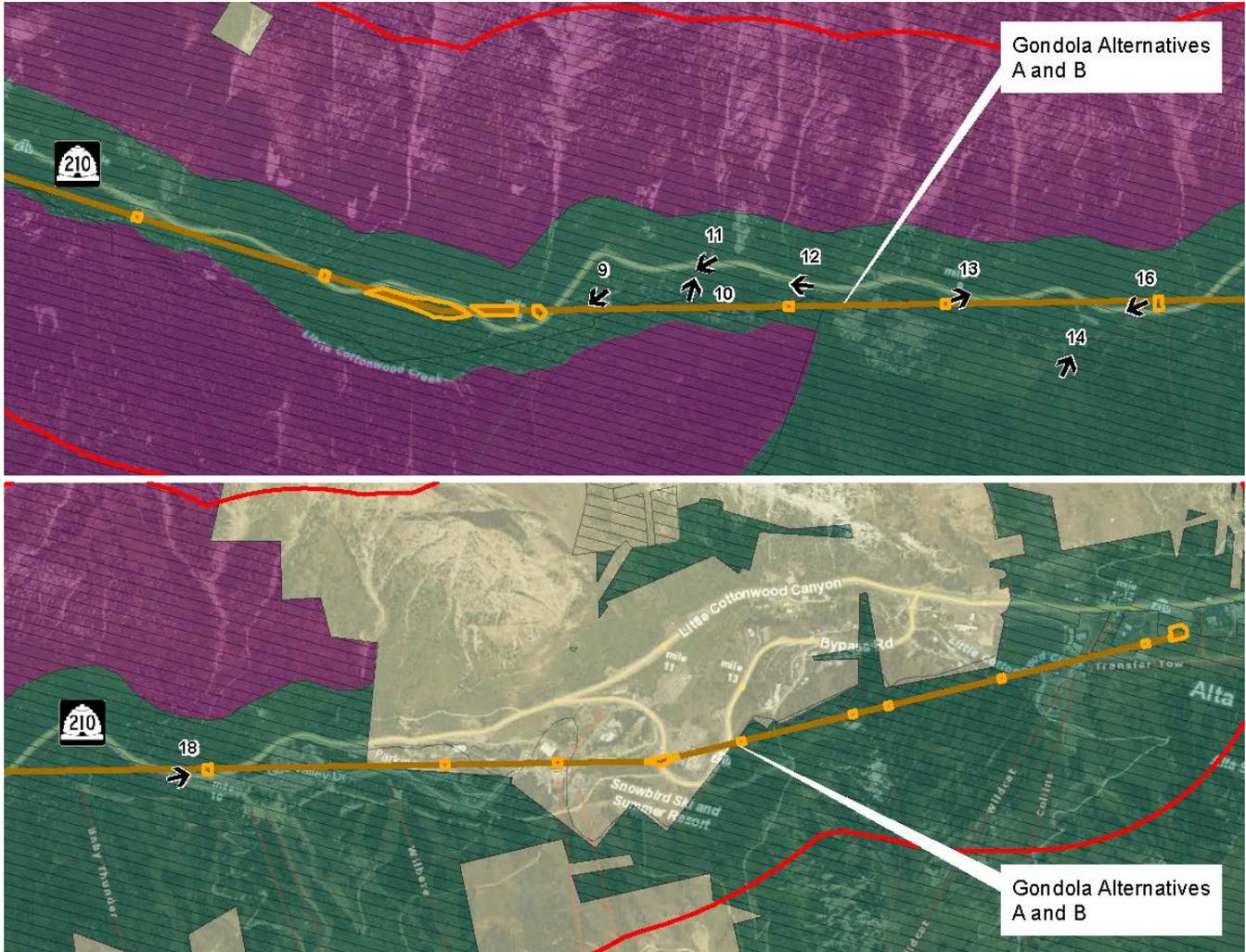
**Alternatives**

- Gondola Alternatives A and B
- Gondola Alternative B



0 2,500 Feet

Figure 17.4-8. Scenic Integrity Objectives in the Visual Resources Impact Analysis Areas for the Gondola Alternatives (2 of 2)



↑ Key Observation Points    Scenic Integrity Objectives

- Visual Resources Impact Analysis Area
- Uinta-Wasatch-Cache National Forest Boundary

- Private Land
- High Scenic Integrity
- Very High Scenic Integrity

**Alternative**

- Gondola Alternatives A and B



0 2,500 Feet

Table 17.4-18. Conformance with SIO Guidelines at KOP Locations Associated with Gondola Alternative A

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Position     | Level of Impact | SIO Level | Conformance with SIO Guidelines? |
|---------|---|--------------------------------------|---------------------|-----------------|-----------|----------------------------------|
| 4       | Quarry Trailhead                          | Residents, tourists and recreational | Neutral to inferior | High            | High      | No                               |
| 5       | Wasatch Resort                            | Residents, tourists and recreational | Neutral to inferior | Low             | High      | Yes                              |
| 6       | Gate Buttress Trailhead                   | Tourists and recreational            | Neutral to inferior | High            | High      | No                               |
| 7       | Bridge Trailhead                          | Tourists and recreational            | Neutral to inferior | Moderate        | High      | No                               |
| 8       | Lisa Falls Trailhead                      | Tourists and recreational            | Neutral to inferior | Low             | High      | Yes                              |
| 9       | Tanner's Flat Group Site C                | Tourists and recreational            | Inferior            | Low             | High      | Yes                              |
| 10      | First Snow Shed                           | Tourists and recreational            | Inferior            | None            | High      | Yes                              |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | Neutral to superior | High            | High      | No                               |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | Neutral to inferior | High            | High      | No                               |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational, travelers | Neutral to inferior | High            | High      | No                               |
| 14      | Red Pine Trail Low                        | Tourists and recreational            | Inferior            | None            | High      | Yes                              |
| 15      | Red Pine Trail Mid                        | Tourists and recreational            | Superior            | High            | High      | No                               |
| 16      | White Pine Trailhead                      | Tourists and recreational            | Neutral to inferior | High            | High      | No                               |
| 17      | White Pine Lake Trail                     | Tourists and recreational            | Superior            | Moderate        | High      | No                               |
| 18      | Snowbird Entry 1                          | Tourists and recreational            | Neutral             | High            | High      | No                               |
| 19      | Catherine's Pass                          | Tourists and recreational            | Superior            | None            | High      | Yes                              |

## 17.4.6 Gondola Alternative B (Starting at La Caille)

This section describes the visual resource impacts of Gondola Alternative B, which includes a gondola alignment from La Caille to the Snowbird and Alta resorts, improvements to the Wasatch Boulevard segment of S.R. 210, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative. More-detailed design information including proposed areas of cut and fill is included in Appendix 2E, Gondola Alternatives Plans, for Chapter 2, Alternatives.

### 17.4.6.1 S.R. 210 – Wasatch Boulevard

The impacts from the improvements to Wasatch Boulevard with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

### 17.4.6.2 S.R. 210 – North Little Cottonwood Road to Alta

The impacts to visual resources from Gondola Alternative B would be the same as with Gondola Alternative A except for the additional 0.75 mile of gondola infrastructure from the entrance to Little Cottonwood Canyon to La Caille. The visual resource impacts of the additional 0.75 mile of infrastructure are discussed in this section.

The magnitude of change in landscape character associated with Gondola Alternative B would be none to moderate within the immediate foreground and within foreground areas of the LCUs where the alternative's elements would be located. Table 17.4-19 further identifies impacts associated with each LCU.

Table 17.4-19. Impacts to Landscape Character Units from Gondola Infrastructure for Gondola Alternative B

| LCU               | Level of Impact | Slopes Where Project Elements Would Be Located (Percent) | Impact Description   |
|-------------------|-----------------|--|--|
| Urban             | Negligible      | 0% to 15%  | Landscape would appear to be intact, and project elements would not attract attention within the urban setting. Project elements would repeat form, line, color, texture, or scale common in the landscape and would not be visually evident (no contrast). About 25 acres of project elements (including the base station, parking structure, improvements to S.R. 210, and additional gondola towers) would be located within this LCU.  |
| Natural Appearing | Moderate        | 15% to 30%   | The landscape would appear to be substantially altered, and the gondola infrastructure would begin to dominate the visual setting at the forest/urban interface along S.R. 210. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape (moderate contrast). About 6 acres of project elements (including additional gondola towers and improvements to S.R. 210) would be located within this LCU. |

UDOT identified two additional KOPs representing different sensitive viewer groups to describe impacts to views resulting from the addition of 0.75 mile of gondola infrastructure from the entrance to Little Cottonwood Canyon to La Caille. Table 17.4-20 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, approximate distance from the gondola infrastructure, viewer position, and

visibility. The table identifies the resulting impact level as high, with a short narrative describing the types of impacts the alternative would have on these views. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Table 17.4-20. Impacts to Viewers (KOPs) from Gondola Infrastructure with Gondola Alternative B

| KOP No. | KOP Name                   | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Elements (approximate) | Viewer Position | Level of Impact | Impact Description  |
|---------|----------------------------|--------------------------------------|--------------------|--|-----------------|-----------------|---|
| 20      | La Caille Base Station     | Residents, tourists and recreational | Moderate           | 600 feet   | Neutral         | High            | Project elements, such as the gondola base station and towers, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation and topography. |
| 21      | La Caille Residential Area | Residents                            | High               | 150 feet   | Inferior        | High            | Project elements, such as the gondola base station and parking structure, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the gondola infrastructure would be partially screened by vegetation.     |

### 17.4.6.1 Mobility Hubs Alternative

With Gondola Alternative B, the mobility hubs at the gravel pit and 9400 South and Highland Drive would require about 600 and 400 parking spaces, respectively. This is less than the number proposed with the enhanced bus service alternatives and Gondola Alternative A of 1,500 parking spaces at the gravel pit and 1,000 at 9400 South and Highland Drive. The fewer number of parking spaces at these two locations would not reduce the construction footprint of the parking structures but would reduce the height from three to four stories to two to three stories at the gravel pit and from three to four stories to two stories at 9400 South and Highland Drive. Although the parking structures would be about one story less at each mobility hub, the overall impacts to visual resources would be the same as with the Enhanced Bus Service Alternative.

The analysis of the 1,500-space parking structure at the Gondola Alternative B base station is included in Section 17.4.6.2, S.R. 210 – North Little Cottonwood Road to Alta.

#### 17.4.6.2 Avalanche Mitigation Alternatives

The impacts from the avalanche mitigation measures with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.6.3 Trailhead Parking Alternatives

The impacts from the trailhead parking alternatives with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.6.4 No Winter Parking Alternative

The impacts from the No Winter Parking Alternative with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.6.5 Conformance with USDA Forest Service Scenic Integrity Objectives – Gondola Alternative B

The USDA Forest Service has developed measurable standards for managing the scenic resources of USDA Forest Service lands through the SMS. This analysis determined whether Gondola Alternative B and its associated elements would be in conformance with the established objectives in the *Forest Plan*. On the basis of the respective SIO levels, the stated management objectives were compared with the alternative regarding magnitude of change in visual character and inherent scenic integrity, viewer sensitivity, and visual contrast within the existing landscape.

Table 17.4-19 and Table 17.4-20 above identify impacts to landscape character and viewers in the visual resources impact analysis area associated with gondola infrastructure. In the areas that have a high SIO and where the impact determination is either moderate or high where the gondola infrastructure would be located and a new right of way would be established (Figure 17.4-7 and Figure 17.4-8 above), the high SIO would not be met (Table 17.4-21 below) and would not be in conformance with the following SIO guidelines identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

- **G59:** Manage forest landscapes according to landscape character themes, and SIOs as mapped (USDA Forest Service 2003, page 4-48).
- **G60:** Resource management activities should not be permitted to reduce scenic integrity below objectives stated for management prescription categories (USDA Forest Service 2003, page 4-48).

UDOT anticipates that these areas of nonconformance with SIO guidelines would be in conformance with the following SIO standard identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

- **S22:** Management actions that would result in a scenic integrity level of Unacceptably Low are prohibited in all landscape character themes (USDA Forest Service 2003, page 4-48).

Table 17.4-21. Conformance with SIO Guidelines at KOP Locations Associated with Gondola Alternative B (La Caille Base Station to S.R. 209/S.R. 210 Intersection)

| KOP No. | KOP Name                   | Sensitive Viewer Groups              | Viewer Position | Level of Impact | SIO Level    | Conformance with SIO Guidelines? |
|---------|----------------------------|--------------------------------------|-----------------|-----------------|--------------|----------------------------------|
| 20      | La Caille Base Station     | Residents, tourists and recreational | Neutral         | High            | Private land | Not applicable                   |
| 21      | La Caille Residential Area | Residents                            | Inferior        | High            | Private land | Not applicable                   |

### 17.4.7 Cog Rail Alternative (Starting at La Caille)

This section describes the impacts to visual resources from the Cog Rail Alternative, which includes a cog rail alignment from La Caille to the Snowbird and Alta resorts, improvements to the Wasatch Boulevard segment of S.R. 210, improvements to the segment of S.R. 210 on North Little Cottonwood Road, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative. More-detailed design information including proposed areas of cut and fill is included in Appendix 2F, Cog Rail Alternative Plans, for Chapter 2, Alternatives.

The impact levels of the elements associated with the Cog Rail Alternative are based on project component contrast and magnitude of change resulting from the introduction of this alternative's elements within the characteristic landscape, or as viewed from KOP locations, by applying criteria identified in Table 17.4-1 above, Criteria for Assessing Level of Impacts to Visual Resources.

#### What are cog rail base and terminal stations?

As used in this chapter, the term *terminal station* refers to the first and last stations on a passenger's cog rail trip. Passengers board and disembark the cog rail vehicles at the terminal stations.

The *base station* is the terminal station at the bottom of the canyon, and a *destination station* is a terminal station at the top of the canyon.

#### 17.4.7.1 S.R. 210 – Wasatch Boulevard

The impacts from the improvements to Wasatch Boulevard with the Cog Rail Alternative would be the same as those with the Enhanced Bus Service Alternative.

#### 17.4.7.2 S.R. 210 – North Little Cottonwood Road to Alta

Table 17.4-22 describes the magnitude of change in landscape character associated with the Cog Rail Alternative. The change to the landscape character would be low to high within the immediate foreground and foreground areas of the LCUs where the project elements occur. Table 17.4-22 further identifies impacts associated with each LCU. Impacts from the potential tolling gantry would be the same as with the Enhanced Bus Service Alternative.

Table 17.4-22. Impacts to Landscape Character Units from the Cog Rail Infrastructure for the Cog Rail Alternative

| LCU                         | Level of Impact | Impact Description   |
|-----------------------------|-----------------|--|
| Urban                       | Low             | Landscape would appear noticeably altered, and cog rail infrastructure would attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate (weak contrast). <b>About 28 acres of project elements are within this LCU.</b>         |
| Developed Natural Appearing | High            | The landscape would appear severely altered, and the cog rail infrastructure would dominate the visual setting. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 7 acres of project elements are within this LCU.</b>           |
| Natural Appearing           | High            | The landscape would appear severely altered, and the cog rail infrastructure would dominate the visual setting. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 66 acres of project elements are within this LCU.</b>          |
| Natural Evolving            | High            | The landscape would appear severely altered, and the cog rail infrastructure would dominate the visual setting. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 8 acres of project elements are within this LCU.</b>           |
| Resort Natural Setting      | Moderate        | Landscape would appear substantially altered, and project elements would attract attention in the ski resort setting. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape (moderate contrast). <b>About 10 acres of project elements are within this LCU.</b> |

UDOT identified 21 KOPs representing travelers, tourists, and recreational users along S.R. 210 (Little Cottonwood Canyon State Scenic Byway) and within the impact analysis area of Little Cottonwood Canyon to describe impacts to views from those locations resulting from the Cog Rail Alternative. Table 17.4-23 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, approximate distance from the roadway improvements, viewer position, and visibility. The table identifies the resulting impact levels as none to high, with a short narrative describing the type of impacts the roadway improvements would have from these locations. For more detail regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17B, Key Observation Points for the Cog Rail Alternative.

Movement associated with the cog rail vehicles would further dominate the visual setting and attract attention at KOPs. The movement would be most apparent adjacent to the cog rail alignment where, because of the relative scale of the trains compared to vehicles traveling along S.R. 210, the cog rail system would demand attention as the trains move through the landscape. Viewers at distant KOPs might view multiple cog rail trains moving up and down the canyon at the same time in their viewshed; however, because of the slower speed of the trains compared to vehicles traveling along S.R. 210, there would be less additive effect because their movement would not attract as much attention. Unlike the gondola system proposed with the gondola alternatives, the cog rail system would not be elevated and therefore would not cast moving shadows down on adjacent areas.

Impacts to the Little Cottonwood Canyon State Scenic Byway visitor experience would include views of the cog rail infrastructure (cog rail alignment and moving trains) along the entire 7-mile-long scenic byway. Because of the proximity of the cog rail alignment to the scenic byway, with no vegetation to remain between

the two, the cog rail infrastructure would be visually dominant and demand attention of visitors for the entire length of the scenic byway. Additionally, at the base of the canyon, the new parking structure, new operations and maintenance yard and building, and reconfiguration of the park-and-ride lot would further dominate the setting and demand attention of visitors.

As motorists approach the canyon, their views would become constrained and focused between the new parking structure to the south and the elevated cog rail alignment to the north. These effects would be most noticeable at KOP 24 where the proposed rail bridge would cross over the scenic byway and would partially block views of the Wasatch Range as depicted in the visual simulation (Appendix 17B, Key Observation Points for the Cog Rail Alternative). For these reasons, the visitor experience would be degraded, and, because of the level of visual change proposed, the ability to manage the scenic byway to protect scenic vistas and intrinsic scenic qualities would be inhibited.

Table 17.4-23. Impacts to Viewers (KOPs) from Cog Rail Infrastructure for the Cog Rail Alternative

| KOP No. | KOP Name                | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position     | Level of Impact | Impact Description   |
|---------|-------------------------|--------------------------------------|--------------------|---|---------------------|-----------------|--|
| 4       | Quarry Trailhead        | Residents, tourists and recreational | Moderate           | 150 feet  | Neutral to inferior | High            | Project elements, such as the maintenance facility (lights and buildings), rail tracks, and parking lot adjustments, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would be minimally screened by vegetation and topography. |
| 5       | Wasatch Resort          | Residents, tourists and recreational | Moderate           | 210 feet  | Inferior            | None            | Project elements associated with the cog rail would not be visually evident. Views toward the cog rail infrastructure would be entirely screened by vegetation and topography.   |
| 6       | Gate Buttress Trailhead | Tourists and recreational            | Moderate           | 45 feet   | Neutral             | Moderate        | Project elements, such as the parking area improvements and rail tracks, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography.   |

(continued on next page)

Table 17.4-23. Impacts to Viewers (KOPs) from Cog Rail Infrastructure for the Cog Rail Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position | Level of Impact | Impact Description  |
|---------|---|--------------------------------------|--------------------|---|-----------------|-----------------|---|
| 7       | Bridge Trailhead                          | Tourists and recreational            | Moderate           | 80 feet   | Neutral         | High            | Project elements, such as the rail tracks, rail bed, and landform alterations, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography.                  |
| 8       | Lisa Falls Trailhead                      | Tourists and recreational            | Moderate           | 40 feet   | Neutral         | High            | Project elements, such as the rail tracks, landform alterations, and parking area improvements, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography. |
| 9       | Tanner's Flat Group Site C                | Tourists and recreational            | Moderate           | 345 feet  | Inferior        | None            | Project elements associated with the cog rail would not be visually evident. Views toward the cog rail infrastructure would be entirely screened by vegetation and topography.  |
| 10      | First Snow Shed                           | Tourists and recreational            | High               | 210 feet  | Inferior        | None            | Project elements associated with the cog rail would not be visually evident. Views toward the cog rail infrastructure would be entirely screened by vegetation and topography.  |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | High               | Adjacent  | Neutral         | None            | Project elements associated with the cog rail would not be visually evident since views would be screened by the proposed snow shed.  |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | High               | Adjacent  | Neutral         | None            | Project elements associated with the cog rail would not be visually evident since views would be screened by the proposed snow shed.  |

(continued on next page)

Table 17.4-23. Impacts to Viewers (KOPs) from Cog Rail Infrastructure for the Cog Rail Alternative

| KOP No. | KOP Name                   | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|----------------------------|--------------------------------------|--------------------|---|---------------------|-----------------|---|
| 13      | Third Snow Shed (S.R. 210) | Tourists and recreational, travelers | High               | 20 feet   | Neutral             | High            | Project elements associated with the cog rail would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography.                   |
| 14      | Red Pine Trail Low         | Tourists and recreational            | Moderate           | 780 feet  | Neutral to superior | None            | Project elements associated with the cog rail would not be visually evident. Views toward the cog rail infrastructure would be entirely screened by vegetation and topography.  |
| 15      | Red Pine Trail Mid         | Tourists and recreational            | Moderate           | 0.50 mile   | Superior            | Moderate        | Project elements, such as the rail tracks, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. Views toward the cog rail infrastructure would be partially screened by vegetation and topography.                                      |
| 16      | White Pine Trailhead       | Tourists and recreational            | Moderate           | Adjacent  | Neutral             | High            | Project elements, such as the rail tracks and concrete barrier, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography. |
| 17      | White Pine Lake Trail      | Tourists and recreational            | Moderate           | 0.40 mile   | Superior            | Moderate        | Project elements, such as the rail tracks and rail bed would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape where visible.   |

(continued on next page)

Table 17.4-23. Impacts to Viewers (KOPs) from Cog Rail Infrastructure for the Cog Rail Alternative

| KOP No. | KOP Name                   | Sensitive Viewer Groups              | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|----------------------------|--------------------------------------|--------------------|---|---------------------|-----------------|---|
| 18      | Snowbird Entry 1           | Tourists and recreational            | Moderate           | 70 feet   | Neutral             | Moderate        | Project elements, such as the rail tracks, rail bed, and concrete barrier, would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography.              |
| 19      | Catherine's Pass           | Tourists and recreational            | Moderate           | 1.25 miles  | Superior            | None            | Project elements associated with the cog rail would not be visually evident. Views toward the cog rail infrastructure would be heavily screened by vegetation and topography.   |
| 20      | La Caille Base Station     | Residents, tourists and recreational | Moderate           | Adjacent  | Neutral to superior | High            | Project elements, such as the cog rail base station and parking structure, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would be partially screened by topography. |
| 21      | La Caille Residential Area | Residents                            | High               | 65 feet   | Inferior            | High            | Project elements, such as the cog rail base station and parking structure, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would be partially screened by vegetation. |

(continued on next page)

Table 17.4-23. Impacts to Viewers (KOPs) from Cog Rail Infrastructure for the Cog Rail Alternative

| KOP No. | KOP Name                | Sensitive Viewer Groups   | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position     | Level of Impact | Impact Description   |
|---------|-------------------------|---------------------------|--------------------|---|---------------------|-----------------|--|
| 22      | Grit Mill Trailhead     | Tourists and recreational | Moderate           | 30 feet   | Neutral             | Moderate        | Project elements, such as the rail tracks and parking area and trailhead improvements, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography. |
| 23      | Upper Canyon Snow Sheds | Tourists and recreational | Moderate           | 50 feet   | Neutral             | High            | Project elements, such as rail tracks, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography.   |
| 24      | Cog Rail Overpass       | Tourists and recreational | Moderate           | 65 feet   | Neutral to inferior | High            | Project elements, such as the cog rail base station and overpass, would introduce elements and/or patterns that would be visually dominant and would create strong contrast compared with other features in the landscape. Views toward the cog rail infrastructure would not be screened by vegetation and topography.                      |

### 17.4.7.3 Mobility Hubs Alternative

The impacts from the mobility hubs with the Cog Rail Alternative would be the same as with Gondola Alternative B.

## 17.4.7.4 Avalanche Mitigation

### 17.4.7.4.1 Snow Sheds with Berms Alternative

The impacts from the Snow Sheds with Berms Alternative for the mid-canyon snow sheds would be the same as those from the Enhanced Bus Service Alternative except that the inclusion of the cog rail alignment would require slightly wider snow shed structures. However, overall, the impacts would be the same high level of impact to the landscape character and to KOPs as from the Enhanced Bus Service Alternative.

Two additional upper-canyon snow sheds are also proposed with the Cog Rail Alternative (these snow sheds would not include berms and would cover only the cog rail alignment). The magnitude of change in landscape character associated with the additional upper-canyon snow sheds is described in Table 17.4-24. The impacts of the mid-canyon snow sheds would be the same as with the Enhanced Bus Service Alternative.

Table 17.4-24. Impacts to Landscape Character Units for the Snow Sheds with Berms Alternative

| LCU                    | Level of Impact | Impact Description  |
|------------------------|-----------------|---|
| Natural Appearing      | High            | The landscape would appear severely altered, and the snow sheds and berms would dominate the visual setting in the immediate foreground and foreground areas of the LCU. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually dominant in the landscape (strong contrast). <b>About 5 acres of project elements are within this LCU.</b> |
| Resort Natural Setting | Moderate        | The landscape would appear substantially alternated, and project elements would dominate the visual setting at the edge of this LCU. Project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape (moderate contrast). <b>About 4 acres of project elements are located within this LCU.</b>                          |

One additional KOP representing tourists and recreational users along S.R. 210 was identified to describe impacts to views resulting from the upper-canyon snow sheds. Table 17.4-25 identifies the criteria used to determine impact levels from this KOP, including viewer sensitivity, distance from the cog rail alternative, viewer position, and visibility. Additionally, Table 17.4-25 identifies the resulting impact level as high, with a short narrative describing the type of impacts the avalanche mitigation alternatives would have from this location. For more details regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives. The impacts from the mid-canyon snow sheds would be the same as with the Enhanced Bus Service Alternative.

Impacts to the Little Cottonwood State Scenic Byway visitor experience would include views of two new snow sheds in upper Little Cottonwood Canyon in addition to the three snow sheds proposed mid-canyon. These elements would be visually dominant compared to the existing landscape as visitors drive between Tanner's Flat and the Alta resort, which is an approximately 3-mile section of the overall 7-mile-long scenic byway. Because the snow sheds would be focused in two areas, where avalanches limit year-round access along the scenic byway from occasional road closures, the snow shed structures would diminish but not limit the management of the scenic byway to protect scenic vistas and intrinsic scenic qualities.

Table 17.4-25. Impacts to Viewers (KOPs) for the Upper-canyon Snow Sheds

| KOP No. | KOP Name                | Sensitive Viewer Groups   | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position | Level of Impact | Impact Description   |
|---------|-------------------------|---------------------------|--------------------|---|-----------------|-----------------|--|
| 23      | Upper Canyon Snow Sheds | Tourists and recreational | Moderate           | 120 feet  | Neutral         | High            | Project elements, such as the snow sheds, would introduce elements and/or patterns that would be visually dominant and create strong contrast compared with other features in the landscape. Views toward the snow sheds would not be screened by vegetation and topography. |

#### 17.4.7.4.2 Snow Sheds with Realigned Road Alternative

The impacts from the Snow Sheds with Realigned Road Alternative would be the same as those from the Enhanced Bus Service Alternative except where the inclusion of the cog rail alignment for the mid-canyon snow sheds would require slightly wider snow shed structures. However, overall, the impacts would be the same high level of impact to the landscape character and to KOPs as for the Enhanced Bus Service Alternative.

The visual impacts from the upper-canyon snow sheds would be the same from the Snow Sheds with Berms Alternative with the Cog Rail Alternative.

#### 17.4.7.5 Trailhead Parking Alternatives

With the Cog Rail Alternative, the Gate Buttriss, Grit Mill, and Lisa Falls Trailheads would be reconstructed as part of the cog rail design. The visual impacts for those trailheads are discussed in Section 17.4.7.2, S.R. 210 – North Little Cottonwood Road to Alta. Only the White Pine and Bridge Trailheads would be reconstructed as part of the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative and also as part of the Trailhead Improvements and No Roadside Parking from S.R. 209/S.R 210 Intersection to Snowbird Entry 1 Alternative.

17.4.7.5.1 *Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative*

The magnitude of the change in landscape character associated with the trailhead improvements is described in Table 17.4-26.

Table 17.4-26. Impacts to Landscape Character Units from Trailhead Parking Alternative

| LCU               | Level of Impact | Impact Description   |
|-------------------|-----------------|--|
| Natural Appearing | Low             | The landscape would appear noticeably altered, and project elements would attract attention within the immediate foreground area. Project elements would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate (weak contrast) and similar to existing trailhead parking infrastructure in the LCU. <b>About 4 acres of trailhead improvements are in this LCU.</b> |

UDOT identified two KOPs representing tourists and recreational users to describe impacts to views resulting from the trailhead improvements throughout Little Cottonwood Canyon. Table 17.4-27 lists, by KOP, the criteria used to determine impact levels, including viewer sensitivity, approximate distance from improvements, viewer position, and visibility. Table 17.4-27 identifies the resulting impact level as low, with a short narrative describing the types of impacts the improvements would have from these locations. For more details regarding each KOP, refer to the Contrast Form Rating Sheets in Appendix 17A, Key Observation Points for the Enhanced Bus Service and Gondola Alternatives.

Table 17.4-27. Impacts to Viewers (KOPs) from Trailhead Parking Alternative

| KOP No. | KOP Name             | Sensitive Viewer Groups   | Viewer Sensitivity | Distance from Closest Project Component (approximate) | Viewer Position     | Level of Impact | Impact Description  |
|---------|----------------------|---------------------------|--------------------|---|---------------------|-----------------|---|
| 7       | Bridge Trailhead     | Tourists and recreational | Moderate           | Adjacent  | Neutral             | Low             | Project elements, such as a retaining wall, restroom structure, and parking lot improvements, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate. |
| 16      | White Pine Trailhead | Tourists and recreational | Moderate           | 80 feet   | Neutral to superior | Low             | Project elements, such as parking lot improvements and an exit ramp, would introduce form, line, color, texture, or scale common in the landscape and would be visually subordinate.                          |

17.4.7.5.2 *Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative*

The impacts associated with this trailhead improvement alternative would be the same as those from the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative except for the installation of additional No Parking signs along S.R. 210. The additional signs would be visually subordinate in the setting and would not attract attention from the KOPs.

#### 17.4.7.5.3 No Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative

The impacts of this trailhead parking alternative with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.7.6 No Winter Parking Alternative

The impacts of the No Winter Parking Alternative with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative.

#### 17.4.7.7 Conformance with USDA Forest Service Scenic Integrity Objectives – Cog Rail Alternative

The USDA Forest Service has developed measurable standards for managing the scenic resources of USDA Forest Service lands through the SMS. This analysis determined whether the Cog Rail Alternative and associated project elements would conform with the established objectives in the *Forest Plan*. On the basis of the respective SIO levels, the stated management objectives were compared with the alternative regarding magnitude of change in visual character and inherent scenic integrity, viewer sensitivity, and visual contrast within the existing landscape.

Table 17.4-22 through Table 17.4-27 above identify impacts to landscape character and viewers in the visual resources impact analysis area associated with cog rail alignment and associated facilities, snow sheds, and trailhead improvements. In the areas that have a high SIO in relation to the cog rail infrastructure, snow sheds, and trailhead improvements (Figure 17.4-9 and Figure 17.4-10 below) and where the impact determination is moderate to high (Table 17.4-28 on page 17-68), the high SIO would not be met and would not be in conformance with the following SIO guidelines identified in the *Forest Plan* for scenery management (USDA Forest Service 2003):

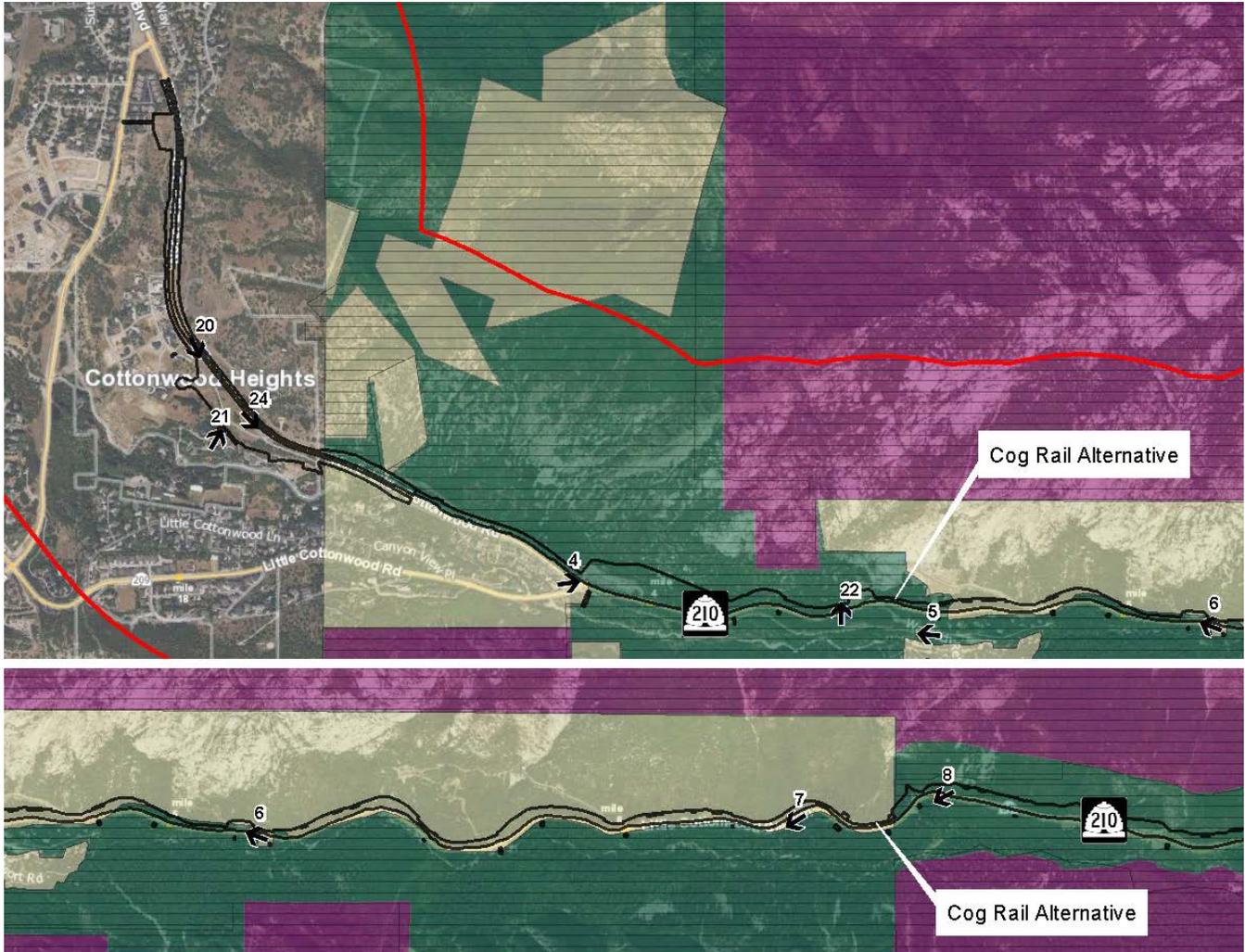
- **G59:** Manage forest landscapes according to landscape character themes, and SIOs as mapped (USDA Forest Service 2003, page 4-48).
- **G60:** Resource management activities should not be permitted to reduce scenic integrity below objectives stated for management prescription categories (USDA Forest Service 2003, page 4-48).

In areas where trailhead improvements would be made as part of the Cog Rail Alternative and the impact determination is low, those project elements would conform to the *Forest Plan* SIO designation of high.

UDOT anticipates that some of these areas of nonconformance with SIO guidelines would not be in conformance with the following SIO standard identified in the *Forest Plan* for scenery management (USDA Forest Service 2003), which would require a plan amendment as described in Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments.

- **S22:** Management actions that would result in a scenic integrity level of Unacceptably Low are prohibited in all landscape character themes (USDA Forest Service 2003, page 4-48).

Figure 17.4-9. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Cog Rail Alternative (1 of 2)



- ↑ Key Observation Points
- Visual Resources Impact Analysis Area
- Uinta-Wasatch-Cache National Forest Boundary
- Private Land
- High Scenic Integrity
- Very High Scenic Integrity
- Cog Rail Alternative Impact Boundary

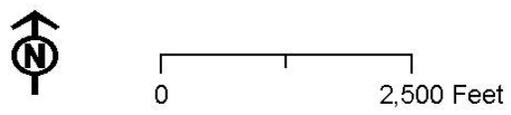
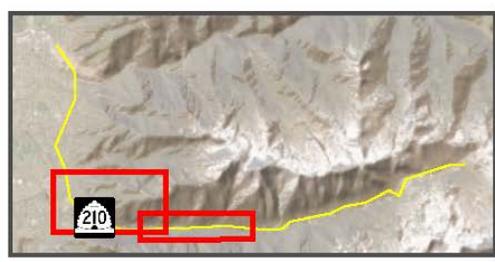


Figure 17.4-10. Scenic Integrity Objectives in the Visual Resources Impact Analysis Area for the Cog Rail Alternative (2 of 2)

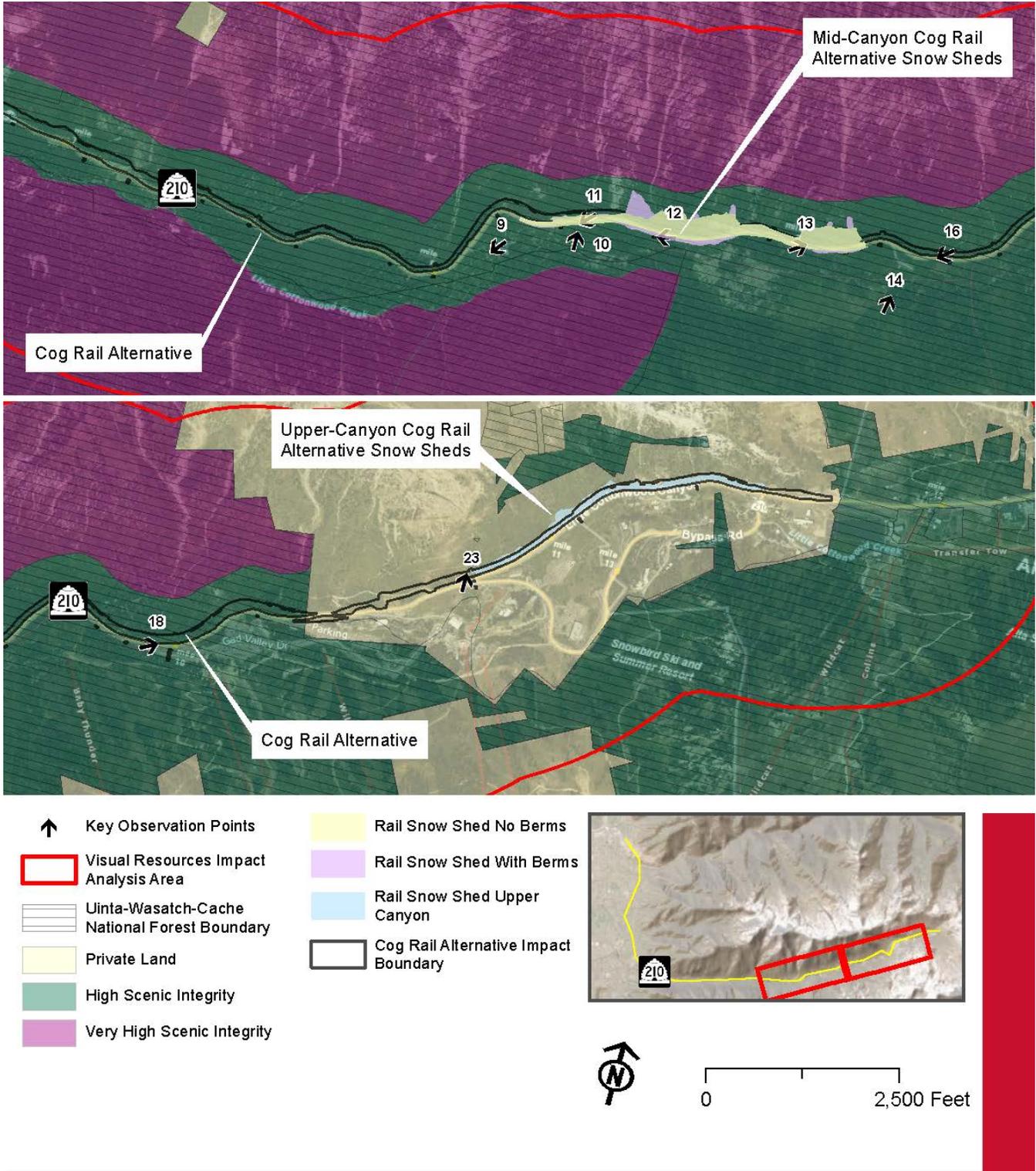


Table 17.4-28. Conformance with SIO Guidelines at KOP Locations Associated with the Cog Rail Alternative

| KOP No. | KOP Name                                  | Sensitive Viewer Groups              | Viewer Position     | Level of Impact | SIO Level    | Conformance with SIO Guidelines? |
|---------|---|--------------------------------------|---------------------|-----------------|--------------|----------------------------------|
| 4       | Quarry Trailhead                          | Residents, tourists and recreational | Neutral to inferior | High            | High         | No                               |
| 5       | Wasatch Resort                            | Residents, tourists and recreational | Inferior            | None            | High         | Yes                              |
| 6       | Gate Buttress Trailhead                   | Tourists and recreational            | Neutral             | Moderate        | High         | No                               |
| 7       | Bridge Trailhead                          | Tourists and recreational            | Neutral             | High            | High         | No                               |
| 8       | Lisa Falls Trailhead                      | Tourists and recreational            | Neutral             | High            | High         | No                               |
| 9       | Tanner's Flat Group Site C                | Tourists and recreational            | Inferior            | None            | High         | Yes                              |
| 10      | First Snow Shed                           | Tourists and recreational            | Inferior            | None            | High         | Yes                              |
| 11      | Southwest Toward Tanner's Flat (S.R. 210) | Tourists and recreational, travelers | Neutral             | High            | High         | No                               |
| 12      | Second Snow Shed (S.R. 210)               | Tourists and recreational, travelers | Neutral             | High            | High         | No                               |
| 13      | Third Snow Shed (S.R. 210)                | Tourists and recreational, travelers | Neutral             | High            | High         | No                               |
| 14      | Red Pine Trail Low                        | Tourists and recreational            | Neutral to superior | None            | High         | Yes                              |
| 15      | Red Pine Trail Mid                        | Tourists and recreational            | Superior            | Moderate        | High         | No                               |
| 16      | White Pine Trailhead                      | Tourists and recreational            | Neutral             | High            | High         | No                               |
| 17      | White Pine Lake Trail                     | Tourists and recreational            | Superior            | Moderate        | High         | No                               |
| 18      | Snowbird Entry 1                          | Tourists and recreational            | Neutral             | Moderate        | High         | No                               |
| 19      | Catherine's Pass                          | Tourists and recreational            | Superior            | None            | High         | Yes                              |
| 20      | La Caille Base Station                    | Residents, tourists and recreational | Neutral to superior | High            | Private land | Not applicable                   |
| 21      | La Caille Residential Area                | Residents                            | Inferior            | High            | Private land | Not applicable                   |
| 22      | Grit Mill Trailhead                       | Tourists and recreational            | Neutral             | Moderate        | High         | No                               |
| 23      | Upper Canyon Snow Sheds                   | Tourists and recreational            | Neutral             | High            | Private land | Not applicable                   |
| 24      | Cog Rail Overpass                         | Tourists and recreational            | Neutral to inferior | High            | High         | No                               |

## 17.4.8 Mitigation Measures

All aesthetic treatments will be coordinated with the USDA Forest Service landscape architect and implemented in accordance with UDOT Policy 08C-03, *Project Aesthetics and Landscaping Plan Development and Review* (UDOT 2014a); the *UDOT Aesthetics Guidelines* (UDOT 2014b); and the guidelines in the *Cottonwood Canyons Scenic Byways Corridor Management Plan* in coordination with the USDA Forest Service and local municipal agencies. UDOT's policy is to set a budget for aesthetics and landscape enhancements based on the aesthetics guidelines. The aesthetic features considered during the final design phase of a project could include lighting; vegetation and plantings; the color of bridges, structures, and retaining walls; and other architectural features, such as railings. UDOT typically evaluates aesthetic treatments during the final design phase of a project after an alternative is selected in the project's Record of Decision and funding has been allocated for the project.

UDOT will consider, on a case-by-case basis and in conjunction with the USDA Forest Service and municipal agencies as appropriate, the following mitigation measures for minimizing the adverse effects of the Selected Alternative on visual resources:

- When siting a facility, incorporate measures to minimize the profile of all facility-related structures, particularly for facilities proposed within the immediate foreground and foreground distance of sensitive viewing locations.
- Use custom-designed gondola structures, buildings, and avalanche-control structures in key areas when such designs would soften the visual impact and blend more effectively with the surroundings.
- Select materials and surface treatments for structures, cog rail, gondola, and roads that repeat and/or blend with the existing form, line, color, and texture of the surrounding landscape. Improvements should consider and be consistent with the visual guidelines in the *Cottonwood Canyons Scenic Byways Corridor Management Plan*. For example, if the elements of the Selected Alternative would be viewed against an earthen or other non-sky background, appropriately colored materials will be selected to help blend structures with the elements' backdrop.
- Identify appropriate colors and textures for facility materials by considering both summer and winter appearance, as well as seasons of peak visitor use.
- On structures, use materials, coatings, or paints that have little or no reflectivity.
- Use variable-length tower legs to reduce the cut and fill needed to form a level tower pad.
- Minimize vegetation clearing to the extent practicable, especially adjacent to S.R. 210 or the locations of other sensitive viewers.
- Where vegetation would be cleared, feather the edges to reduce the creation of geometric clearings incongruent with the existing landscape character.
- Use nonreflective gondola cable infrastructure to reduce glare and reflectiveness.
- Design facilities and structures using natural materials (for example, wood or stone) to blend with the "forest" aesthetic.

## 17.5 References

[BLM] Bureau of Land Management

1986 Visual Resource Contrast Rating. BLM Handbook H-8431-1.

[FAA] Federal Aviation Administration

2016 AC 70/7460-1L: Obstruction Marking and Lighting with Change 2.  
[https://www.faa.gov/regulations\\_policies/advisory\\_circulars/index.cfm/go/document.current/documentnumber/70\\_7460-1](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.current/documentnumber/70_7460-1). October 8.

[FHWA] Federal Highway Administration

1987 Guidance for Preparing and Processing Environmental and Section 4(f) Documents. FHWA Technical Advisory T 6640.8A. [https://www.environment.fhwa.dot.gov/Legislation/NEPA/guidance\\_preparing\\_env\\_documents.aspx#aa](https://www.environment.fhwa.dot.gov/Legislation/NEPA/guidance_preparing_env_documents.aspx#aa). October 30.

2015 Guidelines for the Visual Impact Assessment for Highway Projects. FHWA-HEP-15-029.

[UDOT] Utah Department of Transportation

2008 Cottonwood Canyons Scenic Byways Corridor Management Plan. [https://travel.utah.gov/wp-content/uploads/CMP\\_121608\\_portable.pdf](https://travel.utah.gov/wp-content/uploads/CMP_121608_portable.pdf). December.

2014a UDOT Policy 08C-03: Project Aesthetics and Landscaping Plan Development and Review. <https://www.udot.utah.gov/main/uconowner.gf?n=3388010425887466>.

2014b UDOT Aesthetics Guidelines.  
<https://www.udot.utah.gov/main/uconowner.gf?n=5361113714159942>. November 5.

[USDA Forest Service] U.S. Department of Agriculture Forest Service

1995 Landscape Aesthetics: A Handbook for Scenery Management. Agriculture Handbook No. 701.

2003 Revised Forest Plan: Wasatch-Cache National Forest. South Jordan, Utah: U.S. Department of Agriculture, Forest Service, Intermountain Region, Uinta-Wasatch-Cache National Forest.  
<https://www.fs.usda.gov/detailfull/uwcnf/landmanagement/planning/?cid=stelprdb5076923&width=full>.