



## Record of Decision

# Little Cottonwood Canyon

## S.R. 210 | Wasatch Boulevard to Alta

in Cottonwood Heights, Sandy, the Town of Alta,  
and Salt Lake County, Utah

**Record of Decision,  
Appendix A: Responses to Comments on the Final EIS  
and Supplemental Information Reports, and  
Appendix B: Pertinent Correspondence**

Utah Department of Transportation

UDOT Project No. S-R299(281)

Submitted pursuant to

42 USC 4332(2)(c) and 49 USC 303

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by UDOT pursuant to 23 USC 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.

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## Abbreviations

BMP	best management practice
CFR	Code of Federal Regulations
CLOMR	Conditional Letter of Map Revision
COC	constituent of concern
dBA	A-weighted decibels
DERR	Utah Division of Environmental Response and Remediation
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
<i>Forest Plan</i>	<i>2003 Revised Forest Plan: Wasatch-Cache National Forest</i>
GHG	greenhouse gas
GIS	geographic information systems
ID	identifier
IRA	Inventoried Roadless Area
LCCA	life cycle cost analysis
LDS Church	Church of Jesus Christ of Latter-day Saints
LOMR	Letter of Map Revision
LOS	level of service
Metropolitan Water	Metropolitan Water District of Salt Lake and Sandy
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPC	management prescription category
mph	miles per hour
MUTCD	<i>Manual on Uniform Traffic Control Devices</i>
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFS	National Forest System
O&M	operations and maintenance
PM <sub>10</sub>	particulate matter 10 microns in diameter or less
PM <sub>2.5</sub>	particulate matter 2.5 microns in diameter or less
PPSL	peak-period shoulder lane
RACR	Roadless Area Conservation Rule
RHCA	Riparian Habitat Conservation Area
ROD	Record of Decision
RTP	regional transportation plan
S.R.	state route
Section 4(f)	Section 4(f) of the Department of Transportation Act of 1966
Section 6(f)	Section 6(f) of the Land and Water Conservation Fund Act of 1965

SHPO	State Historic Preservation Office or Officer
SIP	state implementation plan
SLCA	Salt Lake Climbers Alliance
SLCDPU	Salt Lake City Department of Public Utilities
SWPPP	stormwater Pollution prevention plan
TDM	traffic demand management
TDS	total dissolved solids
UDOT	Utah Department of Transportation
UPDES	Utah Pollutant Discharge Elimination System
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
UTA	Utah Transit Authority
WFRC	Wasatch Front Regional Council

## Introduction

This document is the Record of Decision (ROD) for the State Route (S.R.) 210: Wasatch Boulevard through Town of Alta Project [also called the Little Cottonwood Canyon Project or S.R. 210 Project, UDOT Project No. S-R299(281)]. The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the Utah Department of Transportation (UDOT) pursuant to 23 United States Code (USC) Section 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and UDOT. UDOT has fully carried out all responsibilities assumed under the MOU in accordance with the MOU and applicable Federal laws, regulations, and policies.

Little Cottonwood Canyon is along the eastern edge of the Salt Lake City metropolitan area located in Salt Lake County. Salt Lake County has a population of about 1.2 million. Little Cottonwood Canyon is part of the Uinta-Wasatch-Cache National Forest, includes parts of two National Wilderness Areas (Twin Peaks Wilderness and Lone Peak Wilderness), and is home to two internationally renowned ski resorts (Alta and Snowbird).

An Environmental Impact Statement (EIS) was initiated for the project to evaluate alternatives to address decreased mobility in the winter during morning (AM) and afternoon (PM) peak travel periods related to visits to ski areas in Little Cottonwood Canyon; address decreased mobility on Wasatch Boulevard resulting from the projected increase in weekday commuter traffic; address safety and reliability concerns with the avalanche hazards and traffic delays caused by weather-related events and the current avalanche hazard mitigation program in Little Cottonwood Canyon; and address the mobility and safety concerns as well as environmental damage caused by limited parking at trailheads, which causes visitors to park their vehicles on the narrow shoulders of S.R. 210 in Little Cottonwood Canyon.

The high seasonal demand and lack of standard shoulders on S.R. 210 in some parts of the canyon, which prevent motorists' ability to maneuver around incidents—even small incidents such as a broken-down vehicle or a vehicle without snow tires or chains—can cause substantial delays and reduce the road's reliability. Periodic road closures for avalanche mitigation can cause 2-to-4-hour travel delays or longer, which can cause traffic to back up in the neighborhoods at the entrance of the canyon. This delay and congestion also reduces the reliability of access to the canyon; reduces the reliability of access for people traveling to and from their residences off of Wasatch Boulevard, North Little Cottonwood Road, and S.R. 209; and interferes with emergency vehicles' access.

UDOT's purpose for this project is to substantially improve roadway safety, reliability, and mobility on S.R. 210 from Fort Union Boulevard through the town of Alta for all users on S.R. 210.

The major mobility needs in the project study area are a result of, and will be intensified by, a growing population in northern Utah. The planning horizon for the EIS is 2050 and is aligned with the Wasatch Front Regional Council's (WFRC) 2050 regional transportation plan (RTP). UDOT coordinated with WFRC and obtained WFRC's 2050 travel demand model for use in developing the EIS. The model includes the socioeconomic forecast for the greater Salt Lake valley, and the RTP identifies needed projects in WFRC's planning area through 2050. These forecasts show that, by 2050, Salt

### What is a travel demand model?

A travel demand model is a computer model that predicts the number of transportation trips (travel demand) in an area at a given time. The travel demand model used for the S.R. 210 Project is maintained by WFRC.

Lake County's and Utah County's populations are expected to grow by 36% and 108%, respectively, over 2017 levels. These demographic changes will add travel demand and increased recreation-based trips into Little Cottonwood Canyon.

This ROD constitutes UDOT's approval of Gondola Alternative B with phased implementation of components of the Enhanced Bus Service Alternative (the selected alternative) as described in the *S.R. 210 Wasatch Boulevard through the Town of Alta Final Environmental Impact Statement and Section 4(f)/6(f) Evaluation* and further described below. This decision is based on the information presented in the Final EIS and supporting technical documents, the associated project file, and input received from the public and interested local, state, and federal agencies. In making this decision, UDOT considered the expected impacts of the project and alternative courses of action under the National Environmental Policy Act (NEPA), Section 4(f) of the Department of Transportation Act of 1966, and other applicable laws, thereby balancing the need for safe and efficient transportation with national, state, and local environmental requirements.

## Decision

In this ROD for the S.R. 210: Wasatch Boulevard through Town of Alta Project, UDOT selects Gondola Alternative B as the selected primary alternative, the following sub-alternatives, and the following components of the Enhanced Bus Service Alternative.

UDOT selects the following sub-alternatives as supporting elements:

- **Five-lane Alternative (Wasatch Boulevard Sub-alternative).** Based on public comments, UDOT commits to first construct the Imbalanced-lane Alternative. UDOT would construct the additional northbound lane when the level of service on the roadway and/or intersections reaches LOS E or worse, which is projected to occur after 2050. With the construction of the Imbalanced Lane Alternative, UDOT will place the multi-use trail in the location as shown in the Five-Lane Alternative to preserve the right of way and provide a better experience for trail users.
- **Snow Sheds with Realigned Road Alternative (Avalanche Mitigation Sub-alternative)**
- **Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative (Trailhead Parking Sub-alternative)**
- **No Winter Parking Alternative (No Winter Parking Sub-alternative)**
- **Gravel Pit Mobility Hub (Mobility Hubs Sub-alternative)**

UDOT selects the following components of the Enhanced Bus Service Alternative:

- **Improved and Increased Bus Service**
- **Bus Maintenance and Storage Facility**
- **Resort Bus Stops**

The project will be constructed in three phases. Phase 1 will consist of Improved and Increased Bus Service (similar to the bus service described under the Enhanced Bus Service Alternative but smaller in scale to meet the demands associated with earlier years of operation), a mobility hub at the gravel pit (as described under the Enhanced Bus Service Alternative), and bus stops at the Snowbird and Alta ski resorts (as

described under the Enhanced Bus Service Alternative). To make the bus service attractive to use, tolling will be implemented to coincide with the start of the bus service in Phase 1. The No Winter Parking Alternative will be implemented after bus service is operating, and would continue while the Gondola Alternative B is operating. Phase 2 will involve constructing the Snow Sheds with Realigned Road Alternative, the Wasatch Boulevard Sub-alternative, and the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative. Phase 2 implementation will depend on available funding. Phase 3 will involve constructing Gondola Alternative B and its supporting infrastructure (base station parking and its access roads). Phase 3 implementation will depend on available funding. Also see Section 4.0, *Project Implementation Plan*, of this ROD.

Pursuant to 23 Code of Federal Regulations (CFR) Section 771.127 and 40 CFR Section 1505.2, UDOT finds that the requirements of NEPA and other applicable laws have been satisfied for the construction and operation of the selected alternative. This ROD is based on the process followed by UDOT in setting forth and considering the effects of the reasonable alternatives. This process included preparing the *S.R. 210 Wasatch Boulevard through the Town of Alta Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation* (Draft EIS), the Final EIS, and supporting technical memoranda.

This ROD describes the basis for the decision; summarizes the alternatives considered; identifies the environmentally preferable alternative, which is not the selected alternative, and documents the reasons for not selecting the environmentally preferable alternative. This ROD also documents the mitigation measures that will be implemented. The summary descriptions in this ROD do not supersede or negate any of the information, descriptions, or evaluations provided in the environmental review documents, except what is expressly stated below. This ROD and the associated published environmental review documents, which are incorporated into this ROD by reference, constitute UDOT's environmental record for the S.R. 210: Wasatch Boulevard through Town of Alta Project.

Based on the analysis and evaluation in the Final EIS and after careful consideration of the social, economic, and environmental effects and input from the public involvement process, UDOT hereby approves the selection of Gondola Alternative B with phased implementation of components of the Enhanced Bus Service Alternative (the selected alternative) as identified in the Final EIS and summarized in Section 3.3.4, *Gondola Alternative B (Starting at La Caille)*, and Section 3.3.1, *Enhanced Bus Service Alternative*, of this ROD and the sub-alternatives described above. This approval constitutes UDOT's acceptance of the selected alternative and completes the approval process for the environmental evaluation. UDOT has determined that the selected alternative best meets the transportation needs for the traveling public while considering environmental, safety, and socioeconomic factors. This decision is based on the Final EIS, public and agency comments received during the EIS process, and the entire project record.

UDOT selects Gondola Alternative B primarily because it provides the best overall reliability. The selected alternative will have a high travel reliability because it will be on a separate alignment and will operate independently from the road. Snow, vehicle slideoffs and crashes, and snow- and avalanche-removal operations will not affect the gondola service. Also see Section 3.7.1, *Primary Alternative Selection*, of this ROD. The environmental impacts and costs would be similar for the various sub-alternatives. More information regarding the basis of this selection is included in Section 3.7.2, *Sub-alternatives Selection*, of this ROD.

In reaching the decision, UDOT has considered all of the alternatives, information, analyses, and objections submitted by state, tribal, and local governments and public commenters for consideration by UDOT and cooperating agencies in developing the EIS. UDOT has considered all of the information in the project record including the information contained in the Draft EIS, the Final EIS, and supplemental information reports, including public comments received on each of these documents. The selected alternative was developed through a public process that resulted in refinements made over the course of the EIS process and the development of measures to avoid or minimize environmental impacts and mitigation measures, where warranted, for unavoidable impacts.

UDOT consulted with other federal and state agencies including the 17 participating agencies and 5 cooperating agencies, namely: the U.S. Department of Agriculture (USDA) Forest Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the Utah Transit Authority, and the Salt Lake City Department of Public Utilities. A full list of interagency coordination is included in Chapter 1, *Purpose and Need*, and Chapter 27, *Public and Agency Consultation and Coordination*, of the Final EIS.

## Fiscal Constraint

Federal regulations require that all regionally significant transportation projects be included in a regional transportation plan (RTP) and at least one subsequent phase of the project is shown in the Statewide Transportation Improvement Program (STIP)/Transportation Improvement Program (TIP) to demonstrate fiscal constraint.

The 2023–2050 Wasatch Front Regional Council (WFRC) *Wasatch Front Regional Transportation Plan* (WFRC 2023) identifies the transportation-related elements of the selected alternative in the following phases:

- **Phase 1:** 2023 to 2032: enhanced bus service and resort bus stops (RTP ID# T-S-31), tolling (RTP ID# R-S-126), a mobility hub (RTP ID# T-S-64), and Wasatch Boulevard improvements (RTP ID# R-S-116)
- **Phase 2:** 2033 to 2042: snow sheds (RTP ID# R-S-257)
- **Phase 3:** 2043 to 2050: gondola system and its base station parking (RTP ID# T-S-36)

The project is identified in the WFRC 2023 – 2028 TIP (Amendment Nine), as a new project, to provide enhanced bus service, tolling, a mobility hub and resort bus stops for Big & Little Cottonwood Canyons.

The project is also identified on UDOT's 2023 – 2028 STIP as PIN 17374 with funding identified for final design and construction of Phase 1 elements. In addition, partial funding was provided for the project by the Utah legislature in the 2023 general legislative session. Senate Bill 2, signed by Utah's governor on March 23, 2023, allocated \$150 million to provide enhanced bus service, tolling, a mobility hub, and resort bus stops for Big and Little Cottonwood Canyons. These funds will be available on July 1, 2023, and incorporated in the future STIP.

## Limitation on Claims

On behalf of UDOT, the Federal Highway Administration (FHWA) will publish a notice in the Federal Register, pursuant to 23 USC Section 139(l)(1), stating that one or more federal agencies (or UDOT through its NEPA delegation authority from FHWA) have taken final action on permits, licenses, or approvals for this transportation project. After the notice is published, claims seeking judicial review of those actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the federal laws pursuant to which judicial review of the action is allowed.

06/29/2023

Date of Approval



TeriAnne S. Newell, Deputy Director  
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## 1.0 Introduction

This document is the Record of Decision (ROD) for the State Route (S.R.) 210: Wasatch Boulevard through Town of Alta Project [also called the Little Cottonwood Canyon Project or S.R. 210 Project, UDOT Project No. S-R299(281)]. The following parts of this section present the background on the project and the project needs study area. The remainder of this ROD presents the purpose of and need for the project, the alternatives screening process, a summary of the alternatives that were evaluated in the Draft and Final Environmental Impact Statements (EISs), a brief comparison of five primary action alternatives and supporting sub-alternatives, the basis for identifying the selected alternative, and the implementation plan for the selected alternative. This ROD summarizes comments received through the EIS process and includes, as attachments, the comments received on the Final EIS and supplemental information reports prepared after the Final EIS was published based on comments from agencies. This ROD documents the mitigation measures that will be used to minimize environmental impacts and discusses next steps for project implementation. This ROD also includes a Department of Transportation Section 4(f)/6(f) evaluation for the selected alternative.

### 1.1 Background

In 2017, the Utah legislature passed Senate Bill 277, *Highway General Obligation Bonds Authorization*, which included funding for transportation improvement projects that “have a significant economic development impact associated with recreation and tourism within the state” and that “address significant needs for congestion mitigation.” The bill charged the Utah Transportation Commission with prioritizing projects. The Commission ranked Little Cottonwood Canyon as a top-priority area because of its high recreation use and economic benefit from tourism to the state. With authorization from Senate Bill 277, the Utah Department of Transportation (UDOT) initiated an EIS process to identify and evaluate transportation improvement alternatives for S.R. 210 in and near Little Cottonwood Canyon.

In March 2018, UDOT initiated the resulting S.R. 210: Wasatch Boulevard through Town of Alta Project and its associated EIS to evaluate the major transportation needs in the area of and surrounding S.R. 210 (referred to as the transportation needs assessment study area or study area; see Figure 1-1). The study area extends along S.R. 210 from its intersection with S.R. 190/Fort Union Boulevard in Cottonwood Heights to its terminus in the town of Alta and includes the Alta Bypass Road.

Funding for components of the project was provided by the Utah legislature in the 2023 general legislative session. Senate Bill 2, signed by Utah’s governor on March 23, 2023, allocated \$150 million for enhanced bus service, tolling, a mobility hub, and resort bus stops for Little and Big Cottonwood Canyons. See Section 4.0, *Project Implementation Plan*, of this ROD for more information.

## 1.2 Transportation Needs Assessment Study Area

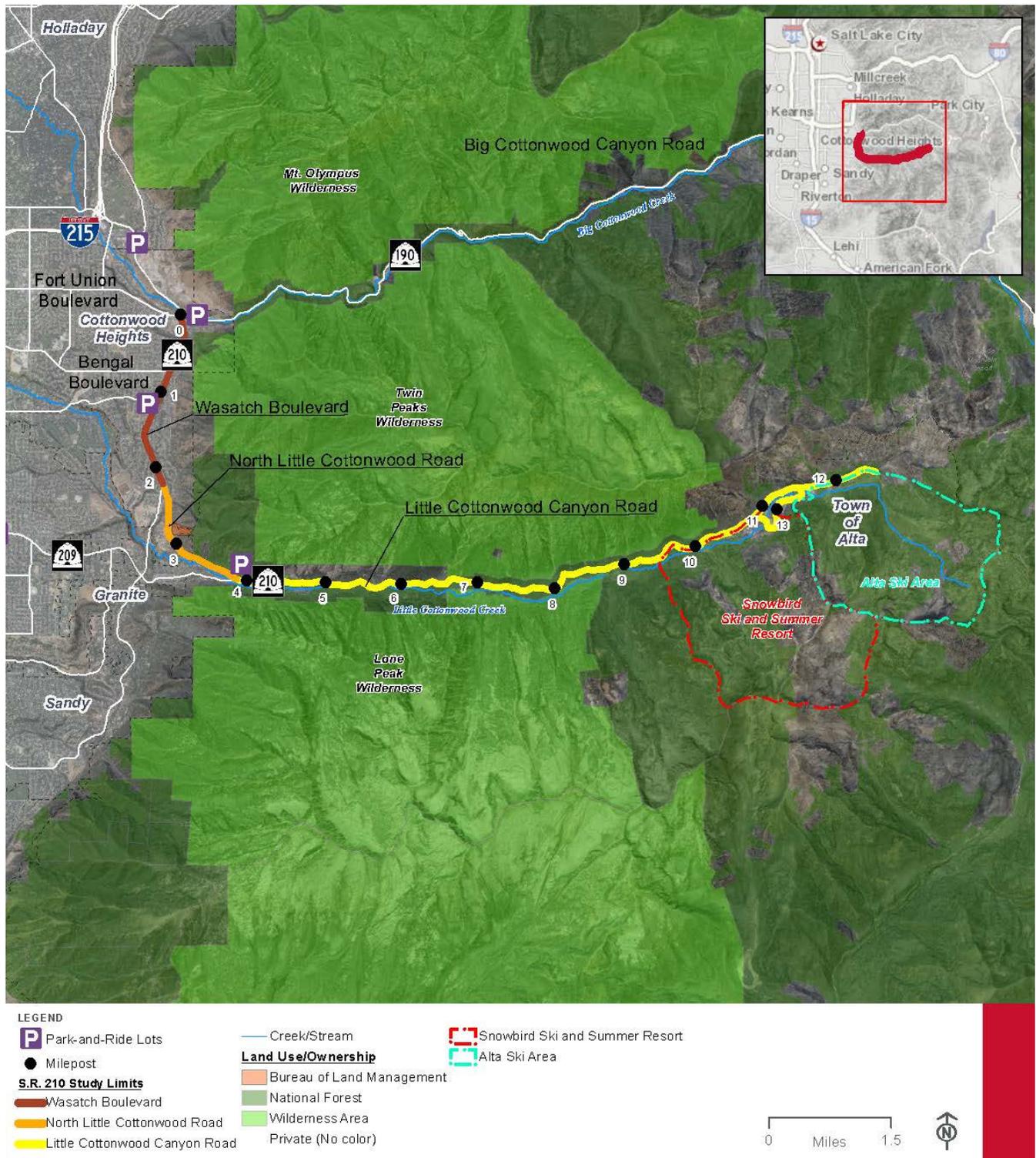
The transportation needs assessment study area, or study area, used for the Little Cottonwood Canyon EIS extends along S.R. 210 from its intersection with S.R. 190/Fort Union Boulevard in Cottonwood Heights to its terminus in the town of Alta and includes the Alta Bypass Road (Figure 1-1). UDOT developed the study area to include the area that is influenced by the transportation operations on S.R. 210 and to provide logical termini for the project. The transportation needs assessment study area was used to determine the need for transportation solutions. Separate impact analysis areas were developed for the environmental resources evaluated in the EIS.

The intersection of S.R. 190 and Fort Union Boulevard was selected as the western terminus because it is the point where traffic splits between Big Cottonwood Canyon and Little Cottonwood Canyon. Traffic south of this intersection is mostly related to trips into and out of Little Cottonwood Canyon and commuter traffic on Wasatch Boulevard. The end of the paved road in Little Cottonwood Canyon was selected as the eastern terminus because this is where S.R. 210 terminates in the town of Alta.

Through the study area, S.R. 210 is designated with different street names. For clarity in the EIS and this ROD, the following segments of S.R. 210 use the following naming conventions (shown in Figure 1-1):

- **Wasatch Boulevard** – S.R. 210 from Fort Union Boulevard to North Little Cottonwood Road
- **North Little Cottonwood Road** – S.R. 210 from Wasatch Boulevard to the intersection with S.R. 209
- **Little Cottonwood Canyon Road** – S.R. 210 from the intersection of North Little Cottonwood Road and S.R. 209 through the town of Alta, including the Alta Bypass Road, up to but not including Albion Basin Road

Figure 1-1. Transportation Needs Assessment Study Area



## 2.0 Project Purpose and Need (Chapter 1 of the Final EIS)

### 2.1 Purpose of the Project

The purpose of the S.R. 210: Wasatch Boulevard through Town of Alta Project is to improve the transportation-related commuter, recreation, and tourism experiences for all users of S.R. 210 through transportation improvements that improve roadway safety, reliability, and mobility on S.R. 210. In developing alternatives for these improvements, UDOT considered the character, natural resources, watershed, diverse uses, and scale of Little Cottonwood Canyon.

UDOT's purpose is reflected in one primary objective for S.R. 210: **to substantially improve roadway safety, reliability, and mobility on S.R. 210 from Fort Union Boulevard through the town of Alta for all users on S.R. 210.**

UDOT also developed secondary objectives based the following:

- Goals put forward by Cottonwood Heights City, which included a connected network of paths and trails for transportation and recreation and a balance of livability, roadway capacity, and sustainable canyon access
- Goals of the Town of Alta, which included accommodating bicycle and pedestrian use along S.R. 210, socially activating the commercial core of the town, managing vehicle speeds and increasing safety, preserving or optimizing on-street parking, and planning for snow removal
- Goals established in recognition of the importance of the Little Cottonwood Canyon watershed to Salt Lake City's, Sandy City's, and other cities' water supply

These secondary objectives were used to further refine and evaluate the project's action alternatives but were not used to eliminate alternatives from further consideration and detailed environmental review.

### 2.2 Need for the Project

The transportation needs in the study area are related primarily to traffic during the busiest travel periods, avalanche risk and avalanche mitigation in Little Cottonwood Canyon, multiple on-road users in constrained areas, and anticipated future increases in visitation to Little Cottonwood Canyon. The major mobility needs in the study area are a result of a growing population.

The planning horizon for the EIS is 2050 and is aligned with the Wasatch Front Regional Council's (WFRC) regional transportation plan (RTP). UDOT coordinated with WFRC and obtained WFRC's 2050 travel demand model for use in developing the EIS. The model includes the socioeconomic forecast for the Salt Lake and Utah counties and the RTP projects through 2050.

#### What are peak periods?

Peak periods are the periods of the day with the greatest amount of traffic. For the S.R. 210 Project, the AM peak period is 7 to 10 AM, and the PM peak period is 3 to 5 PM.

The following deficiencies occur on S.R. 210 today and are expected to increase over the planning horizon:

- Decreased mobility in winter during the morning (AM) and afternoon (PM) peak periods related to visits to ski areas, with the greatest traffic volumes on weekends and holidays and during and after snowstorms. The high seasonal demand and lack of standard shoulders on S.R. 210 in some parts of the canyon, which prevent motorists' ability to maneuver around incidents—even small incidents such as a broken-down vehicle or a vehicle without snow tires or chains—can cause substantial delay and reduce the road's reliability.
- Decreased mobility on Wasatch Boulevard resulting from weekday commuter traffic.
- Safety concerns associated with avalanche hazard and traffic delays caused by the current avalanche-mitigation program in Little Cottonwood Canyon. Periodic road closures for avalanche mitigation can cause 2-to-4-hour travel delays or longer, which can cause traffic to back up in the neighborhoods at the entrance of the canyon. This delay also reduces mobility and the reliability of access to the canyon; reduces mobility and the reliability of access for people traveling to and from their residences off of Wasatch Boulevard, North Little Cottonwood Road, and S.R. 209; and interferes with emergency vehicles' access.
- Limited parking at trailheads and ski areas that leads to roadside parking. The consequences of roadside parking include:
  - Reduced mobility on S.R. 210 near trailheads and at ski areas
  - Loss of shoulder area for cyclists and pedestrians, which forces them into the roadway travel lane and creates a safety concern
  - Creation of informal trailheads that contribute to erosion, mineral soil loss, the spread of invasive weeds, degradation of the watershed, and loss of native vegetation in the canyon
  - Damage to the pavement along the roadway edge, which causes increased soil erosion, runoff into nearby streams, and degradation of the watershed

Section 1.3, *Regional Transportation Planning*, and Section 1.4, *Need for the Project*, of the Final EIS present data that document the need for improvements to S.R. 210. UDOT determined the need for the project by reviewing the safety and operational issues identified in previous planning studies, through public and agency input, and by quantifying the change in anticipated travel demand between existing (2015) and forecasted (2050) conditions.

### 3.0 Evaluation of Alternatives (Chapter 2 of the Final EIS)

Improving mobility on S.R. 210 in 2050 involves meeting two different needs: improving mobility for weekday commuter traffic on Wasatch Boulevard and improving mobility for the winter ski traffic on S.R. 210 along the entire segment from Fort Union Boulevard to the town of Alta. In the EIS, alternatives to improve mobility for winter ski traffic on S.R. 210 on the entire segment from Fort Union Boulevard to the town of Alta are defined as **primary alternatives** (for more information, see Section 3.3, *Description of the Primary Alternatives*, of this ROD). Alternatives to improve future weekday commuter mobility on Wasatch Boulevard as well as alternatives to address safety and reliability need elements are defined as **sub-alternatives**. They are defined as sub-alternatives because they could be incorporated with any of the primary alternatives (for more information, see Section 3.4, *Description of the Sub-alternatives*, of this ROD).

To help meet the mobility objective for S.R. 210, each primary alternative is designed to reduce personal vehicle use on S.R. 210 in Little Cottonwood Canyon on a busy ski day during the AM peak period (7 AM to 10 AM) by about 30%. By achieving a 30% reduction in expected traffic, mobility on S.R. 210 would be substantially improved. To achieve this reduction, about 1,000 people would need to use transit during the peak periods, which is the transit capacity of each primary alternative for the 2050 design year. Traffic demand management (TDM, a toll or a ban on single-occupant vehicles) would be put in place to incentivize travelers going to the ski resorts to use transit. The cost to a rider for using the transit service has not been determined. However, to incentivize use, the cost of using the alternatives would be substantially less than a toll.

Improving mobility with the primary alternatives requires parking to facilitate transferring users from their personal vehicles to transit. Three of the primary alternatives (the two enhanced bus service alternatives and Gondola Alternative A) include mobility hubs. The mobility hubs would include parking and areas where users can board the transit system. The mobility hubs could be used for bus service directly to the ski resorts or to the base station for Gondola Alternative A. Therefore, mobility hubs are also considered sub-alternatives in the EIS. For more information, see Section 3.4.2, *Mobility Hubs Sub-alternative*, of this ROD.

TDM would be associated with each primary alternative and would focus on the area of S.R. 210 around the ski resorts that would be served by the proposed transit elements of the action alternatives. Congestion (variable) pricing is in use in areas around the United States and the world. For Little Cottonwood Canyon, variable pricing would need to be considered. For example, the toll could be free or reduced for travel during off-peak periods. This type of toll structure would encourage drivers to shift to transit during peak usage or to drive during off-peak or discount periods, both of which would be effective in improving mobility. For more information, see Section 2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, of the Final EIS.

#### What is a mobility hub?

A mobility hub is a location where users park their personal vehicle and transfer to a bus transit system to access the canyon.

#### What is congestion (variable) pricing?

Congestion (variable) pricing is a dynamic pricing strategy in which users are charged higher prices to travel during congested periods. The purpose of congestion pricing is to shift some travel to less-congested periods or to transit.

Because the mobility criterion is different for the Wasatch Boulevard segment of S.R. 210, the screening process for Wasatch Boulevard sub-alternatives was conducted separately from the alternatives screening process for S.R. 210 overall (primary alternatives). UDOT used a level of service (LOS) analysis to screen Wasatch Boulevard widening options and determine that two sub-alternatives were feasible for detailed analysis in the EIS. For more information, see Section 3.4.1, *S.R. 210 – Wasatch Boulevard Sub-alternatives*, of this ROD. The design of Wasatch Boulevard improvements, using current design standards, directly addresses the roadway safety and reliability need objectives for this segment.

#### What is level of service?

Level of service is a measure of the operating conditions on a road or at an intersection. Level of service is represented by a letter “grade” ranging from A (free-flowing traffic and little delay) to F (extremely congested, stop-and-go traffic and excessive delay).

The roadway safety and reliability objectives that are specific to the Little Cottonwood Canyon Road segment of S.R. 210 resulted in UDOT developing and evaluating the following additional sub-alternatives: avalanche mitigation (snow sheds), roadway parking restriction and improved trailhead parking, and elimination of winter roadside parking. For more information, see Section 3.4.3, *Avalanche Mitigation Sub-alternatives*; Section 3.4.4, *Trailhead Parking Sub-alternatives*; and Section 3.4.5, *No Winter Parking Alternative*, of this ROD.

## 3.1 Overview of Alternatives Development and Screening Process

UDOT first developed preliminary alternatives and presented a preliminary screening of the preliminary alternatives during the agency and public scoping process, which was conducted in June 2020. Following the initial screening, and based on comments, additional alternatives were considered, and preliminary alternatives were refined as part of an additional alternatives screening phase. In November 2020, agencies and members of the public were again provided opportunities to review alternatives, including alternatives that were eliminated from further study and the action alternatives proposed to be carried forward for detailed study in the Draft EIS.

UDOT also evaluated new alternatives and re-evaluated alternatives previously screened based on suggestions made after the Draft EIS was published in June 2021. UDOT made refinements to the action alternatives for analysis in the Final EIS. UDOT determined that the minor changes did not result in significant new impacts that would require a Supplemental Draft EIS.<sup>1</sup> In consideration of the new information, UDOT accepted public comments on the Final EIS before issuing this ROD, given the changes, given the amount of public interest in the Draft EIS (more than 13,800 comments were received), and to provide another opportunity for a public review and comment period.

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<sup>1</sup> The changes made between the release of the Draft and Final EISs were the locations of the resort bus stops with the enhanced bus service alternatives and modifications to the base stations for Gondola Alternative B and the Cog Rail Alternative. For more information, see Appendix 2H, *Base Station and Bus Stop Modifications from Draft EIS*, of the Final EIS.

The alternatives development and screening process consisted of the following phases:

1. Develop proposed alternatives that address the project's purpose and need based on previous studies, public and agency input during the scoping process, and local and regional land use and transportation plans.
2. Conduct a preliminary evaluation and screening of general concepts and/or alternatives received during the EIS scoping process to determine which concepts and/or alternatives could generally meet the project purpose, are within the scope of the EIS and EIS study area, and are technically feasible.
3. Apply initial (Level 1) screening criteria to eliminate alternatives that do not meet the purpose of and need for the project.
4. Refine alternatives that pass the Level 1 screening process for further evaluation and consideration as reasonable alternatives.
5. Apply secondary (Level 2) screening criteria to eliminate alternatives that might meet the purpose of and need for the project but would be unreasonable alternatives for other reasons—for example, an alternative would have unreasonable environmental impacts, would not meet regulatory requirements, or could be replaced by a less costly alternative that could be moved forward for further detailed environmental review.
6. The alternatives that passed Level 1 and Level 2 screening were refined to avoid and minimize impacts to the natural and human environment and were designed to a higher level of detail before UDOT performed the detailed impact analyses for the EIS.

These alternatives development and screening phases are described in detail in Chapter 2, *Alternatives*, of the Final EIS. Sections 3.1.1 and 3.1.2 below summarize the Level 1 and Level 2 screening criteria and summarizes the alternatives that were considered.

### 3.1.1 Level 1 Screening Criteria and Summary of Results

The Level 1 screening process was conducted to eliminate alternatives that would not meet the purpose of and need for the project. Alternatives that were determined by UDOT to (1) not meet the purpose of and need for the project were considered unreasonable alternatives for National Environmental Policy Act (NEPA) purposes; (2) not practicable under the Clean Water Act; and/or (3) not prudent under Section 4(f) of the Department of Transportation Act, and such alternatives were not carried forward for further analysis in Level 2 screening.

Level 1 screening consisted of the following project purpose elements:

- Improve mobility on S.R. 210, which includes mobility on Wasatch Boulevard for weekday AM and PM commuter traffic and mobility on S.R. 210 from Fort Union Boulevard to the town of Alta during busy winter travel periods
- Improve reliability and safety on S.R. 210 considering avalanche mitigation, trailhead parking, and winter roadside parking

For the Wasatch Boulevard segment of S.R. 210, UDOT evaluated mass transit options, adding a signalized intersection, adding a reversible third lane, building roundabouts at intersections, and adding lanes to

Wasatch Boulevard. The Imbalanced-lane Alternative (an additional southbound lane for two total southbound travel lanes, the current northbound travel lane, and a center turn lane) and the Five-lane Alternative (two travel lanes in each direction and a center turn lane) passed the screening process. Both alternatives met UDOT's level of service goal of LOS D or better. See Section 3.4.1, *S.R. 210 – Wasatch Boulevard Sub-alternatives*, of this ROD for a detailed description of the two Wasatch Boulevard sub-alternatives.

For S.R. 210 from Fort Union Boulevard to the town of Alta, UDOT evaluated a bus-only alternative (no personal vehicles during busy winter hours), a regional shuttle, transit service from Park City, enhanced bus service at 7.5- and 5-minute frequencies, aerial transit, fixed-rail transit, tunnels, and other traffic-management solutions (limiting the number of skiers, implementing resort parking reservation systems, and building new resorts). Two gondola alternatives, a cog rail alternative, and two enhanced bus service alternatives passed the Level 1 screening.

For the sub-alternatives, 14 mobility hub options, 11 avalanche mitigation options, 4 trailhead parking options, and a reduced or eliminated winter roadside parking option were also evaluated and screened.

### 3.1.2 Level 2 Screening Criteria and Summary of Results

The purpose of Level 2 screening was to identify alternatives that were practicable and reasonable and should be evaluated in detail in the EIS. During Level 2 screening, UDOT collectively evaluated the alternatives that passed Level 1 screening against key criteria that focused on an alternative's impacts to the natural and built environment, estimated project costs, logistical considerations, and technological feasibility. Level 2 screening consisted of the following criteria:

- Cost compared to other similar alternatives
- Consistency and compatibility with local and regional plans including transportation plans and restrictive land uses (like National Wilderness Areas) of the U.S. Department of Agriculture (USDA) Forest Service's 2003 *Revised Forest Plan: Wasatch-Cache National Forest* (USDA Forest Service 2003a)
- Compatibility with anticipated major permits and authorizations
- Impacts to Clean Water Act protected resources, which are restricted unless there is no practicable alternative
- Impacts to natural resources including floodplains and critical wildlife habitat
- Impacts to the built environment including parks, Section 4(f)/6(f) properties, and cultural resources

The alternatives development and screening process was dynamic throughout the EIS process. The initial alternatives development and screening process had two phases: from the start of the scoping process to the June 2020 release of the *Draft Alternatives Development and Screening Report* and from the release of the June 2020 report to the November 2020 release of the *Draft Alternatives Development and Screening Report Addendum*. The addendum was prepared to address new alternatives suggested during the public and agency review for the June 2020 report.

The Level 2 screening originally (as of June 2020) eliminated the Cog Rail Alternative because of its costs, which were twice the cost of other alternatives. However, a cog rail system provides a completely different

travel mode than the enhanced bus service and gondola alternatives that passed the screening process. Therefore, even with the substantially greater cost and operational concerns with snow removal, UDOT decided to carry a cog rail alternative forward for further evaluation.<sup>2</sup>

The Level 2 screening process resulted in action alternatives that were evaluated in the Draft EIS. UDOT also evaluated new alternatives and re-evaluated alternatives previously screened based on suggestions made after the Draft EIS was published in June 2021. UDOT also made refinements to the action alternatives for analysis in the Final EIS.

## 3.2 Alternatives Studied in Detail in the EIS

Based on the results of the June and November 2020 screening processes, UDOT determined that five primary action alternatives with sub-alternatives were reasonable alternatives for detailed evaluation in the EIS.

The five primary alternatives evaluated and compared to a No-Action Alternative were:

- **Enhanced Bus Service Alternative**
- **Enhanced Bus Service in Peak-period Shoulder Lane Alternative**
- **Gondola Alternative A (Starting at Canyon Entrance)**
- **Gondola Alternative B (Starting at La Caille)**
- **Cog Rail Alternative (Starting at La Caille)**

The sub-alternatives considered in the EIS were:

- **S.R. 210 – Wasatch Boulevard Alternatives**
  - Imbalanced-lane Alternative
  - Five-lane Alternative
- **Mobility Hubs Alternative** (for the locations of the mobility hubs, see Section 2.6.2, *Enhanced Bus Service Alternatives*, of the Final EIS).
  - Gravel Pit
  - 9400 South and Highland Drive
- **Avalanche Mitigation Alternatives**
  - Snow Sheds with Berms Alternative
  - Snow Sheds with Realigned Road Alternative

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<sup>2</sup> The cog rail alignment was refined for the Draft EIS by optimizing the alignment, establishing single-track segments, using diesel electric vehicles to eliminate overhead electrical catenary, and minimizing the size of an operations and maintenance facility.

- **Trailhead Parking Alternatives**
  - 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
- **No Winter Parking Alternative**
  - Roadside parking restrictions near the ski resorts.

As mentioned previously in Section 3.0, all of the primary alternatives considered in the EIS would include a travel demand strategy (tolling) to be implemented in Little Cottonwood Canyon for managing traffic during the ski season to reduce vehicle use on S.R. 210 in the canyon and promote the use of transit.

Section 3.3 below describes the five primary alternatives and lists the sub-alternatives that are needed for the primary alternatives to function. Section 3.4 below describes the sub-alternatives.

### 3.3 Description of the Primary Alternatives

This section briefly describes each of the five primary alternatives and sub-alternatives evaluated in the Final EIS. Chapter 2, *Alternatives*, of the Final EIS described each of these alternatives in greater detail.

To improve mobility on S.R. 210 during peak winter hours, a 30% reduction in vehicle traffic is needed. To achieve a 30% reduction vehicle traffic, the total person-capacity of the primary alternatives during peak periods would need to be about 1,008 people per hour in 2050. To incentivize use of any of the primary alternatives, which are transit-based, a travel demand management strategy (tolling) would be implemented during the ski season, which would make users of personal vehicles consider whether taking transit would be a better option. The exact amount of the toll has yet to be determined, but the initial toll could range from \$20 to \$30 during the peak hours with possible variations based on the time of day and the day of the week. However, the amount would be varied to achieve the necessary level of traffic reduction. Tolling would be focused on the area of S.R. 210 around the ski resorts that would be served by the proposed transit with the action alternatives.

#### 3.3.1 Enhanced Bus Service Alternative

The Enhanced Bus Service Alternative consists of high-frequency bus service from two mobility hubs directly to the ski resorts. UDOT anticipates that the enhanced ski bus service would operate 7 days per week between 7 AM and 7 PM with peak service in the morning (7 AM to 10 AM) and afternoon (3 PM to 6 PM). The service would run during the winter only and would operate from late November through mid-April, the same as the current ski bus service. The enhanced bus service would operate in mixed-flow traffic with other vehicles (the current roadway configuration) on S.R. 210 in the canyon. There would be no improvements to S.R. 210 in Little Cottonwood Canyon with the Enhanced Bus Service Alternative.

The bus service is based on buses leaving every 5 minutes from each mobility hub for a total of 24 buses per hour. The enhanced bus service could be operated by a public agency (such as the Utah Transit Authority) or a private vendor.

This alternative includes the following elements:

- Direct bus service to the resorts (UDOT estimated that 65 buses would be needed to meet expected demands in 2050)
- Bus priority at signalized intersections on Wasatch Boulevard and 9400 South
- Fare-collection system
- Communications equipment
- Bus maintenance and storage facility

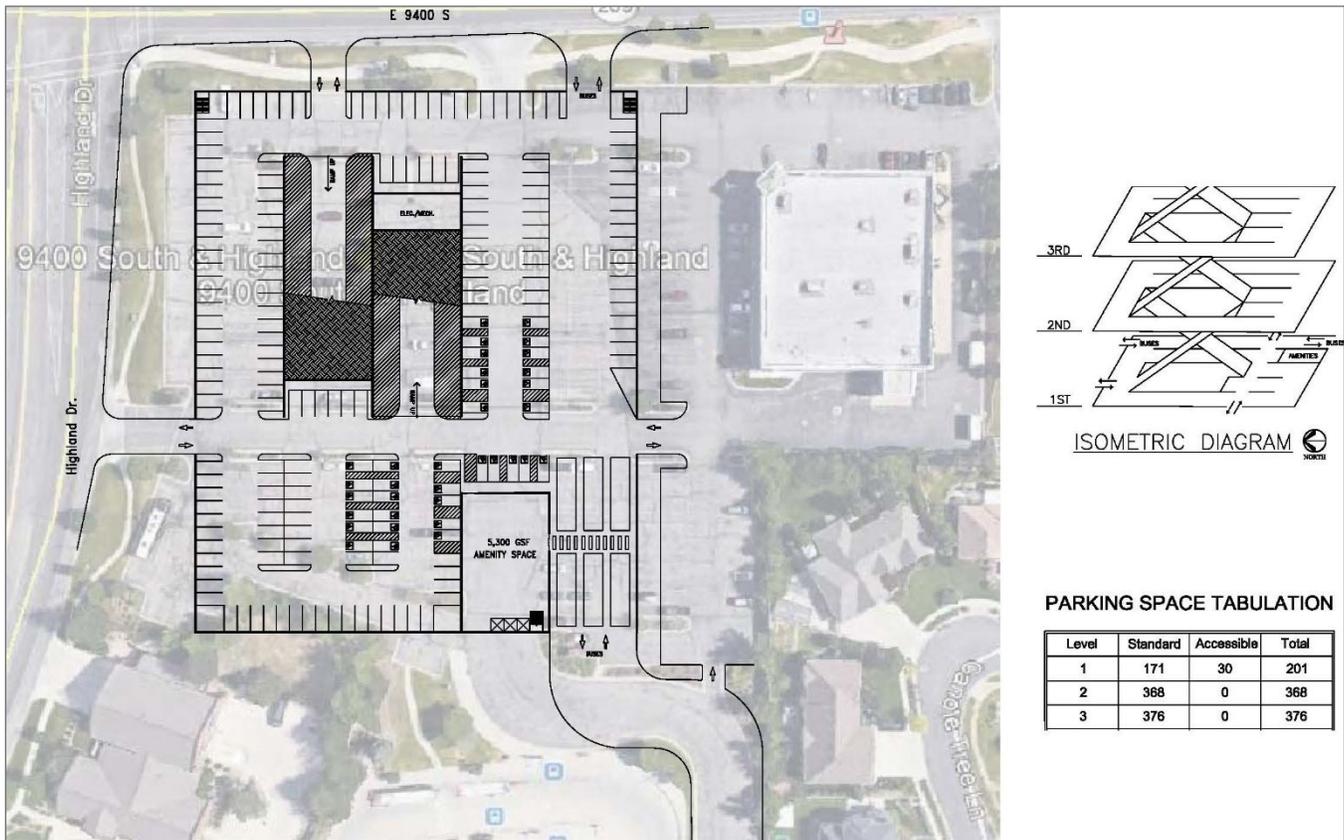
To support personal vehicle parking for the Enhanced Bus Service Alternative, about 2,500 parking spaces would be needed at the mobility hubs. Mobility hubs would be built at 9400 South and Highland Drive at an existing park-and-ride lot (1,000 parking spaces are needed) and at a gravel pit (1,500 spaces are needed) on the east side of Wasatch Boulevard between 6200 South and Fort Union Boulevard. The gravel pit mobility hub would require about a three- to four-story parking structure. Since a detailed geotechnical survey has not been performed at the gravel pit site, the final configuration could change. The gravel pit mobility hub could also include a bus storage area and some maintenance facilities. To handle traffic flow requirements, the gravel pit mobility hub would include an interchange from Wasatch Boulevard to the site. Figure 3-1 shows a conceptual layout of the proposed gravel pit mobility hub.

Figure 3-1. Concept for the Gravel Pit Mobility Hub



The mobility hub at 9400 South and Highland Drive would need about 1,000 parking spaces, or about a three-story parking structure, which would fit within the existing parking area. No changes to the site access would be required. Figure 3-2 below shows a conceptual layout of the proposed 9400 South and Highland Drive mobility hub.

Figure 3-2. Concept for the 9400 South and Highland Drive Mobility Hub

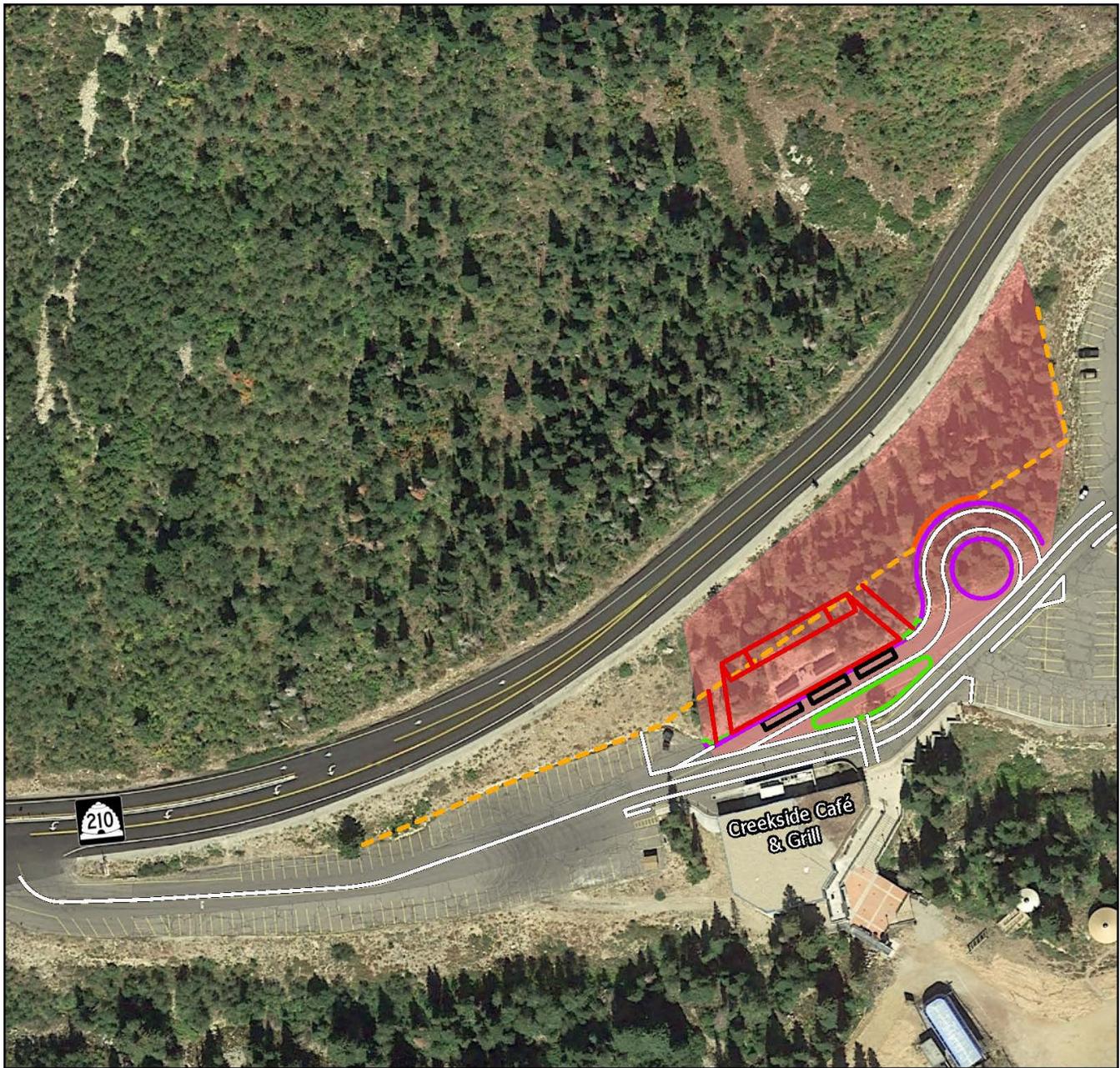


The enhanced bus service would run between each of the proposed mobility hub lots directly to one transit stop at either Snowbird or Alta (buses going to Alta would not stop at Snowbird first). At Snowbird, the bus stop would be at Entry 1 at the developed area near the Creekside Café and Grill near one of the current bus stops (Figure 3-3). At Alta, the bus stop would be on the south side of S.R. 210 between the Alta Lodge and Alta’s Rustler Lodge at the same location as an existing uphill bus stop (Figure 3-4). As proposed, the bus stops would include a shelter for people waiting for the bus, restrooms, and locker facilities.<sup>3</sup>

In addition to frequent bus service (including mobility hubs, resort bus stops, and tolling), the complete Enhanced Bus Service Alternative includes sub-alternatives for improvements to Wasatch Boulevard, snow sheds, improved trailheads and restrictions on roadside parking, and no winter parking. These sub-alternatives are described in Section 3.4, *Description of the Sub-alternatives*, of this ROD.

<sup>3</sup> Between the release of the Draft and Final EISs, UDOT changed the locations of the bus stops at the Snowbird and Alta resorts with the enhanced bus service alternatives. In the Draft EIS, the Snowbird Resort bus stop was located on the Alta Bypass Road, and the Alta Resort bus stop was located at their Wildcat parking lot. Also see Appendix 2H, *Base Station and Bus Stop Modifications from Draft EIS*, of the Final EIS.

Figure 3-3. Enhanced Bus Service Alternative – Snowbird Bus Stop



Legend

- Entry 1 Stop Impacted Area
- Buildings
- Curb and Gutter
- Edge of Paved Road
- Misc Roadway Features
- Roadway Slope Features
- Walls
- Striping



0 ————— 200 Feet

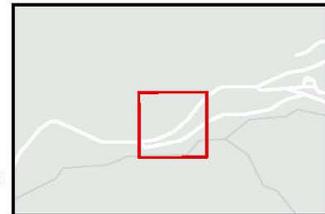


Figure 3-4. Enhanced Bus Service Alternative – Alta Bus Stop



Legend

- Alta Bus Stop Impacted Area
- Cut and Fill
- Buildings
- Curb and Gutter
- Edge of Paved Road
- Sidewalks
- Fences



0 200 Feet



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

The bus service with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative. The only difference between the alternatives is that this alternative includes widening S.R. 210 from North Little Cottonwood Road to the western limits of the Alta Bypass Road to add peak-period shoulder lanes (PPSLs). These lanes would be for buses only to improve bus travel times over that of personal vehicles. To meet the demands in 2050, about 45 buses would be needed for the Enhanced Bus Service in Peak-period Shoulder Lane Alternative.

#### What is a peak-period shoulder lane?

A PPSL is an upgraded roadway shoulder that functions as a bus-only travel lane during periods of peak congestion. During non-peak times, it functions as a shoulder.

A PPSL is an upgraded roadway shoulder that functions as a bus-only travel lane during periods of peak congestion. During non-peak times, it functions as a shoulder. PPSLs are a way to provide additional traffic capacity within a constrained right-of-way and improve mobility during periods of peak congestion without adding another lane. In the event of an emergency or blocking vehicle, the PPSL is closed until the lane is cleared. With this alternative, PPSLs would be implemented both eastbound and westbound on S.R. 210 for 8.6 miles from the intersection with Wasatch Boulevard (milepost 2.2) to the Alta Bypass Road (milepost 10.8) as shown in Figure 3-5. The preliminary plans for the PPSLs are included in Appendix 2D, *Enhanced Bus Service in Peak-period Shoulder Lane Alternative Plans*, of the Final EIS.

Figure 3-6 shows the typical cross section for PPSLs. S.R. 210 would be widened to include two 11-foot-wide shoulders with 2 feet of pavement beyond the shoulder stripe. The total pavement width would be 50 feet. The clear zone would be measured from the outside edge of the PPSL, for a total roadway width of 78 feet. In areas near Little Cottonwood Creek and with steep canyon walls or dropoffs, it might not be reasonable to have a full clear zone width because of the potential environmental impacts. The final design of this alternative might increase the shoulder width to 12 feet and reduce the personal vehicle lane width to 11 feet. This would not change the overall width of the roadway.

#### What is a clear zone?

A clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway.

The PPSLs would be used in the winter from late November through mid-April. When not in use on non-busy winter days and between mid-April through late November, the PPSLs would be available to cyclists and pedestrians. The PPSLs could be used for emergency pull-offs or other emergency incidents.

Figure 3-5. Location of the Peak-period Shoulder Lane

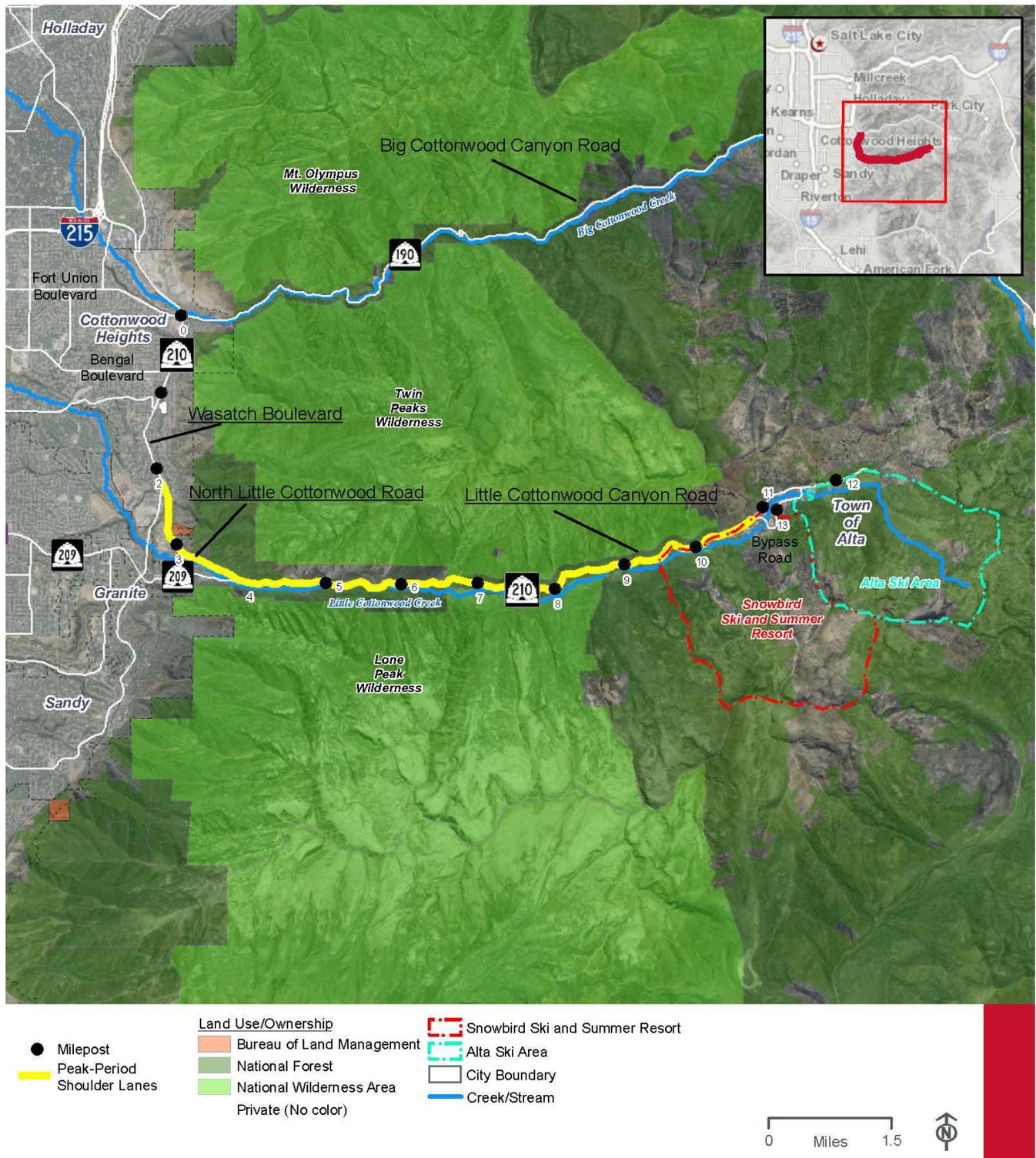
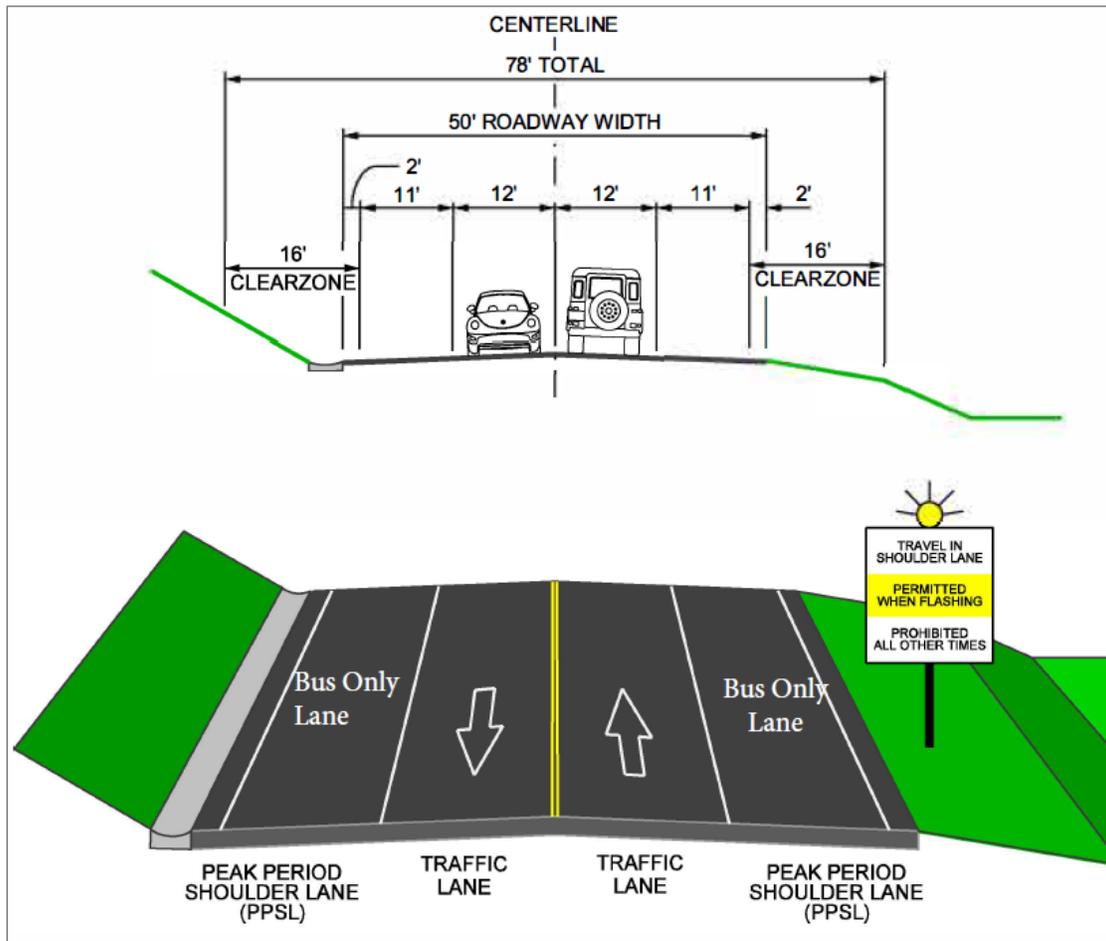


Figure 3-6. Typical Cross Section for the Peak-period Shoulder Lane



The Enhanced Bus Service in Peak-period Shoulder Lane Alternative would use the same mobility hubs and resort bus stops as the Enhanced Bus Service Alternative. The complete Enhanced Bus Service in Peak-period Shoulder Lane Alternative includes sub-alternatives for improvements to Wasatch Boulevard, snow sheds, improved trailheads and restrictions on roadside parking, and no winter parking. These sub-alternatives are described in Section 3.4, *Description of the Sub-alternatives*, of this ROD.

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

Gondola Alternative A would include a gondola alignment from the intersection of S.R. 209 and S.R. 210 to both the Snowbird and Alta ski resorts. The alternative would include frequent bus service from the gravel pit and 9400 South and Highland Drive mobility hubs to the gondola base station. Gondola Alternative A would provide a reliable mode of transportation in the canyon when the road would be less reliable due to weather conditions or accidents or closed due to the need to remove avalanche debris from the road.

Top speeds would be about 17 to 18 miles per hour (mph). The gondola system could operate while it is snowing and in wind speeds up to 68 miles per hour. It should also be noted that the gondola alignment would be located in the bottom of Little Cottonwood Canyon, which is less prone to the type of strong winds that can stop the Snowbird Tram, which is near the ridgeline of the mountains.

Although the exact hours of operation have not been determined, it is likely that the gondola would operate from 7 AM to 7 PM 7 days per week during the winter. About 30 gondola cabins with an assumed capacity of about 35 people per cabin would allow about 1,050 people per hour to travel up and down the canyon. More gondola cabins could be added to reduce the number of people per cabin and the need for some users to stand during the gondola trip to the resorts or to reduce the wait times to access the gondola.

During the summer, the gondola operating times would likely be between 8 AM and 8 PM (the final hours would be determined once the system is operational). The gondola would not operate during the Tanners Flat Campground noise restriction times (10 PM to 7 AM).

The base station for Gondola Alternative A would be located at the existing park-and-ride lot on the north side of S.R. 210 at the entrance to Little Cottonwood Canyon (Figure 3-7). The base station for Gondola Alternative A would include a platform for buses to pull in and drop off riders, who would then walk across the platform to access the gondola cabins. The total size of the gondola base station for this alternative would be about 30,000 square feet and would fit mostly within the existing park-and-ride lot. See Appendix 2E, *Gondola Alternatives Plans*, of the Final EIS.

As proposed, the base station would not allow users to park their personal vehicles at the gondola base station or drop off skiers at the station because this could create traffic congestion at the intersection of S.R. 209 and S.R. 210. Users of the gondola service would need to take an express bus from either the gravel pit mobility hub or the 9400 South and Highland Drive mobility hub to the base gondola station. About 24 buses per hour, or a bus every 2.5 minutes, would travel between the mobility hubs and the gondola base station. Wasatch Boulevard and 9400 South would be designed to include bus priority at signalized intersections. A total of about 26 buses would be required for this alternative.

The existing Little Cottonwood Canyon park-and-ride lot is used as an access point for the Alpenbock Loop Trailhead. To accommodate use of the trailhead and employee parking for the base station, about 95 parking spaces would be placed within the gondola base station complex (Figure 3-7).

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

As used in the discussions of the gondola alternatives, 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 a ski resort.

The gondola alternatives also include *angle stations*, which are needed to adjust the horizontal direction of the gondola cabins.

*Towers* support the gondola cable.

Figure 3-7. Gondola Alternative A – Base Station

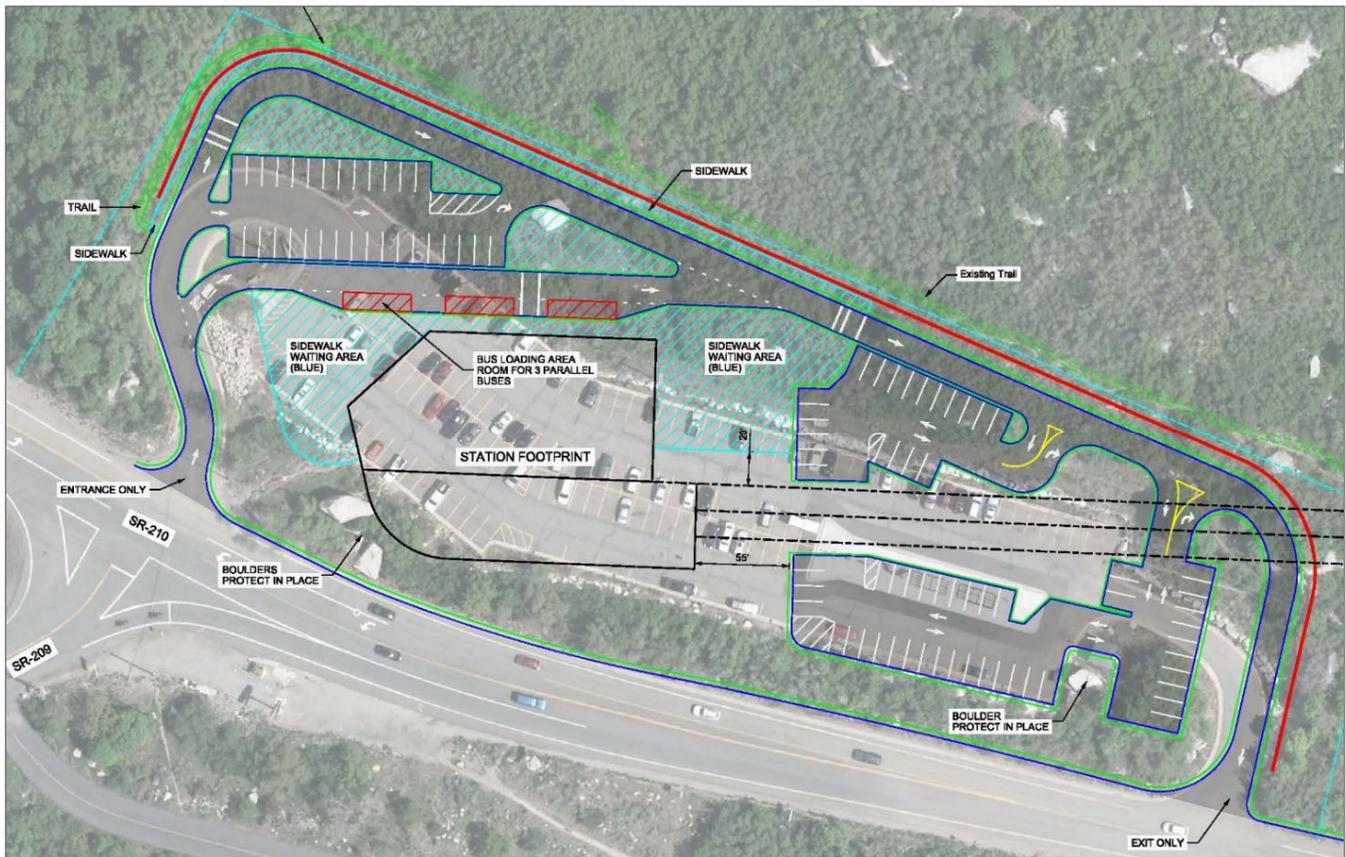


Figure 3-8 shows the alignment and terminal stations for Gondola Alternative A. About 20 gondola towers would be needed for Gondola Alternative A. The tower spacing depends on the topography under the alignment, the elevation gain needed in each segment, and the vertical clearance required from obstacles (including snow and avalanche flows) below the alignment. The Snowbird and Alta destination stations would be about 28,000 square feet and would require between 0.5 and 1 acre of land. The Snowbird destination station would be located over the Alta Bypass Road to reduce impacts to existing operations. The Alta destination station would be located east of the Goldminer's Daughter Lodge.

Gondolas require straight alignment segments between stations because gondolas can turn only very small angles at towers. A maximum 7-degree deflection can be made at towers but that is not desired, so angle stations are needed to turn sharper angles. The angle station for Gondola Alternative A would be located about 0.25 mile west of Tanners Flat Campground. At the angle station, the gondola cabins would move into the station near ground level. For this reason, about 2 to 3 acres of trees would be cleared around the station for cabin access into the angle station. The area would be planted with native vegetation that would not obstruct the gondola cabins (Figure 3-9).

The complete Gondola Alternative A includes the mobility hubs as described for the enhanced bus service alternatives as well as sub-alternatives for improvements to Wasatch Boulevard, snow sheds, improved trailheads and restrictions on roadside parking, and no winter parking. These sub-alternatives are described in Section 3.4, *Description of the Sub-alternatives*, of this ROD.

Figure 3-8. Gondola Alternative A – Alignment and Station Locations

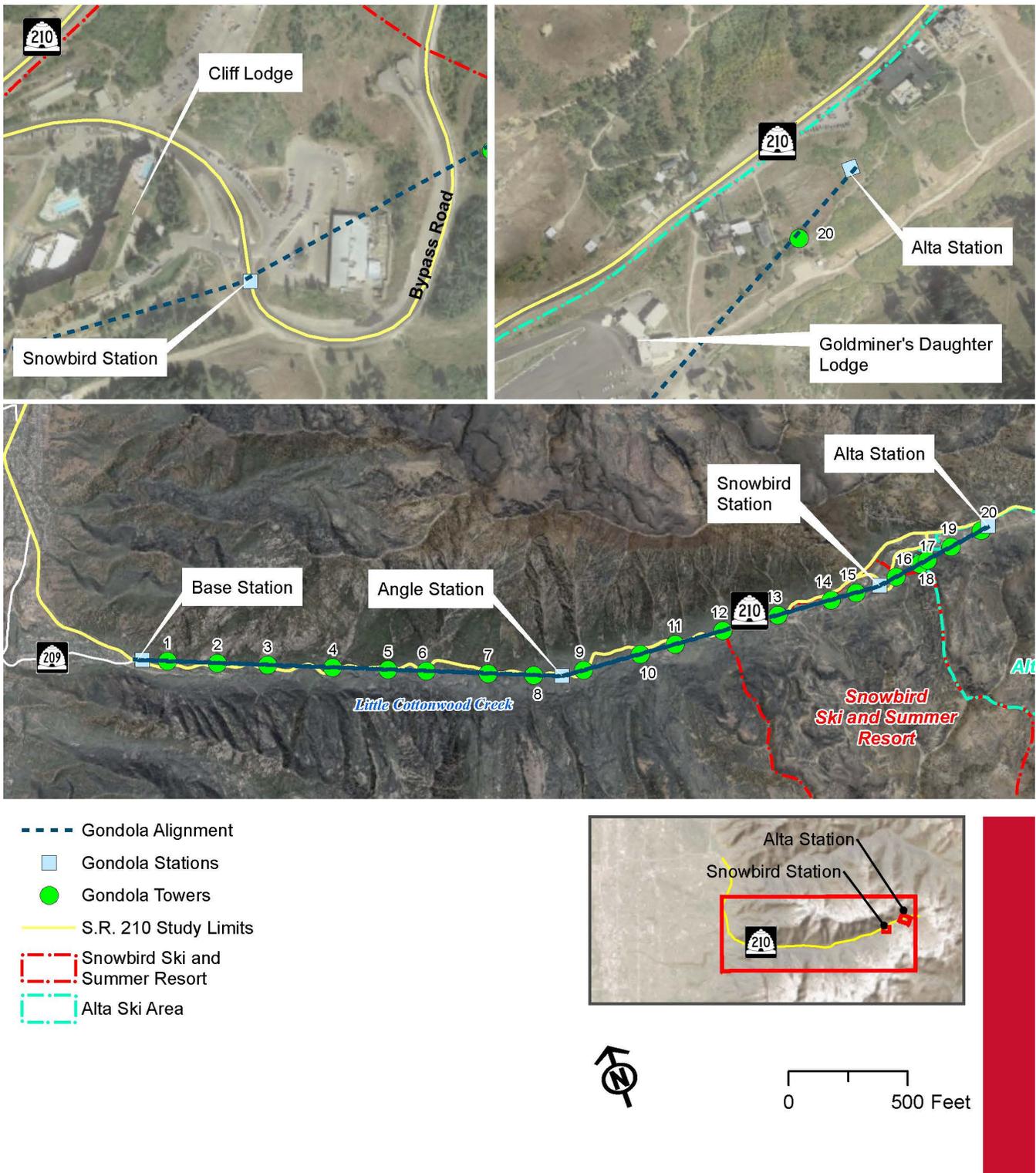
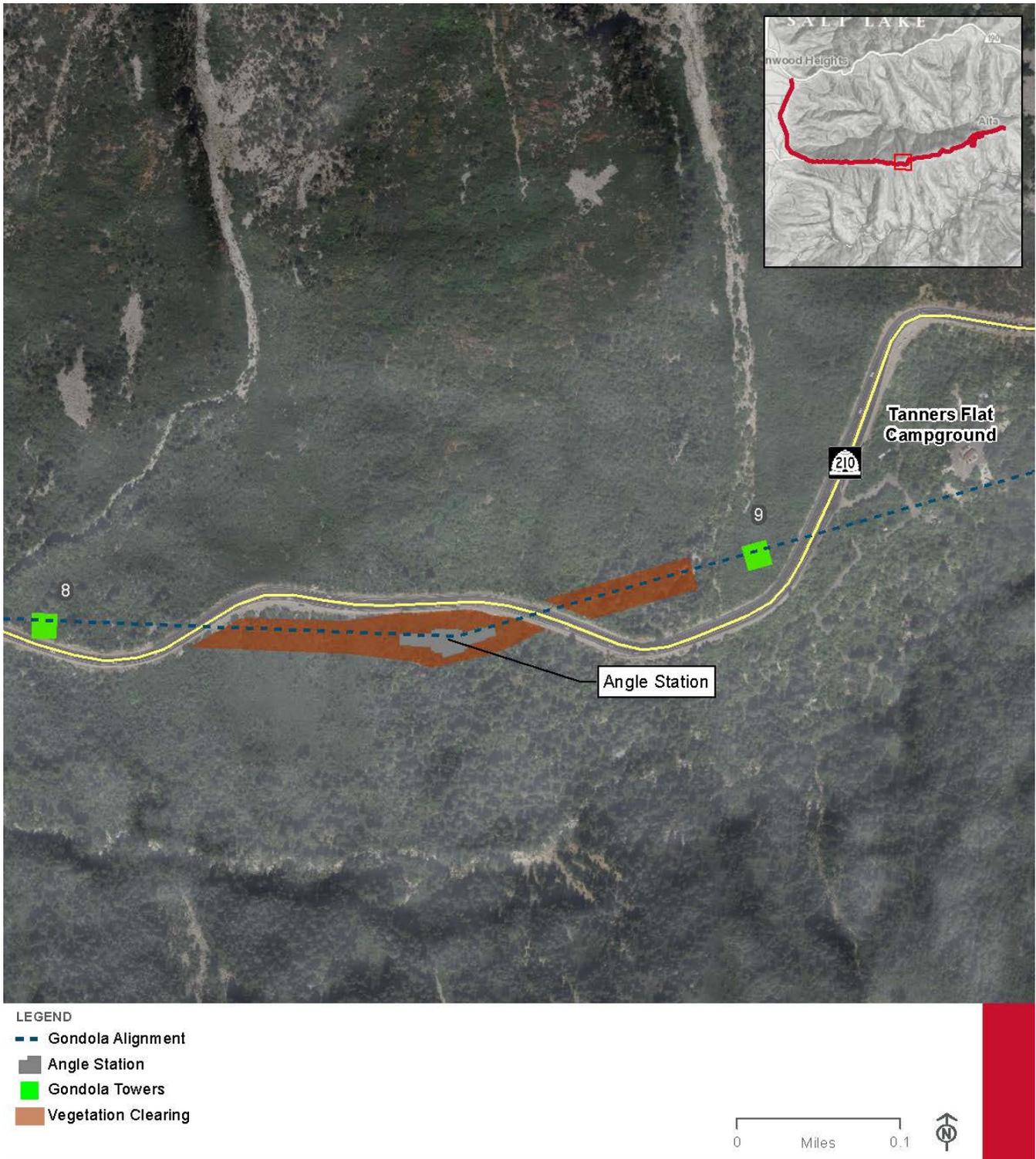


Figure 3-9. Gondola Angle Station



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

Gondola Alternative B would be similar to Gondola Alternative A in Little Cottonwood Canyon. Gondola Alternative B would be along the same alignment and would include the same angle station near Tanners Flat Campground and terminal stations as described for Gondola Alternative A. See Figure 3-10.

Gondola Alternative B would be the same as Gondola Alternative A except for the following differences:

- The base station would be located at a proposed development south of North Little Cottonwood Road east of the La Caille restaurant and adjacent to S.R. 210 (Figure 3-11).
- A 2,500-space parking structure would be built at the base station to allow personal vehicles to park at the base station<sup>4</sup> (Figure 3-11). No bus service would be needed with Gondola Alternative B.
- The gondola alignment would extend for an additional 0.75 mile southeast from the base station to the Little Cottonwood Canyon park-and-ride lot at the intersection of S.R. 209 and S.R. 210 (Figure 3-11). An angle station at the park-and-ride lot would be needed for the Gondola Alternative B alignment.
- Twenty-two gondola towers would need to be constructed (Figure 3-11).

The base station parking structure (2,500 spaces) would be placed in the hillside west of S.R. 210 and would be about six to seven stories tall. It is likely that one or two stories would be above the S.R. 210 road level (Figure 3-11). To improve traffic circulation on S.R. 210 to and from the base station, UDOT would make several improvements to S.R. 210.

- Two southbound travel lanes from Wasatch Boulevard would continue to the base station with the right lane becoming the dedicated access to the base station. The access would enter into the second or third level of the parking structure. The extra lane would require a stormwater detention basin (Figure 3-11 and Figure 3-12).
- A northbound exit ramp from the parking structure under S.R. 210 would connect to the east side of S.R. 210.
- A signalized intersection would be constructed on S.R. 210 at the base station.
- A new one-way access road west of the base station off Wasatch Boulevard would be constructed to capture traffic traveling from the southern parts of Salt Lake County.

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<sup>4</sup> Note that Gondola Alternative B, as it was defined in the Draft EIS, included a 1,500-space parking structure at the base gondola station. Because a total of 2,500 spaces are needed by 2050, a 600-space parking structure was proposed at the gravel pit mobility hub and another 400 parking spaces at the 9400 South and Highland Drive mobility hub. After additional evaluation after the Draft EIS, UDOT determined that a parking structure at the Gondola Alternative B base station can accommodate a 2,500-space parking structure. Therefore, no bus service would be needed once Gondola Alternative B is operational. Also see Appendix 2H, *Base Station and Bus Stop Modifications from Draft EIS*, of the Final EIS.



Figure 3-11. Gondola Alternative B – Base Station Layout South



- LEGEND**
- Gondola Towers
  - Pavement
  - Additional Southbound Lane
  - Detention Basins

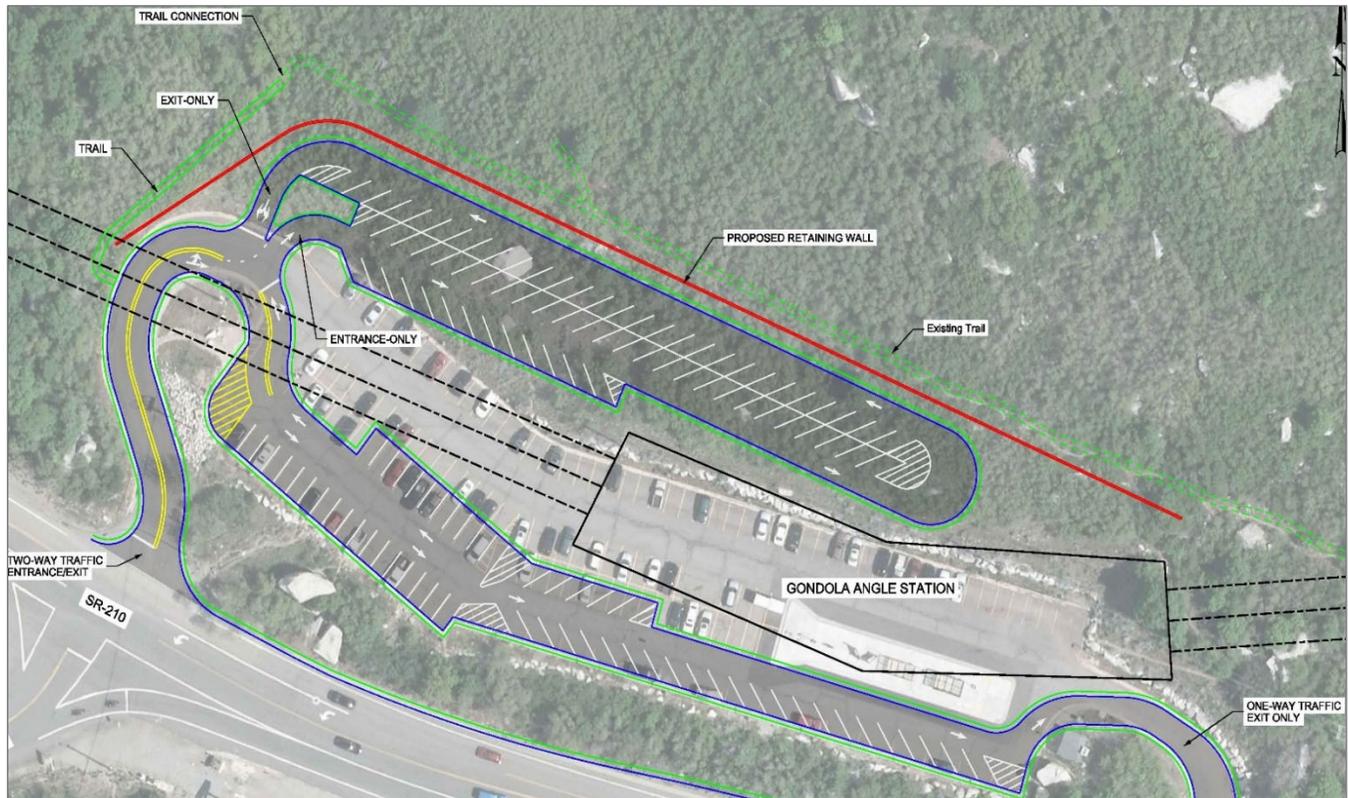


Figure 3-12. Gondola Alternative B – Base Station Layout North



The existing Little Cottonwood Canyon park-and-ride lot is used as an access point for the Alpenbock Loop Trailhead. To accommodate use of the trailhead and employee parking for the base station, about 95 parking spaces would be placed within the gondola angle station area. Gondola passengers would not board or exit the gondola cabins at the angle stations. The trailhead improvements would include restrooms for trailhead users (Figure 3-13).

Figure 3-13. Gondola Alternative B – Little Cottonwood Canyon Angle Station



The complete Gondola Alternative B would include sub-alternatives for improvements to Wasatch Boulevard, snow sheds, improved trailheads and restrictions on roadside parking, and no winter parking. These sub-alternatives are described in Section 3.4, *Description of the Sub-alternatives*, of this ROD.

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

The Cog Rail Alternative would start at a base station located at a proposed development south of North Little Cottonwood Road near the La Caille restaurant, about 0.75 mile northwest of the intersection of S.R. 209 and S.R. 210, and would travel on the north side of S.R. 210 to both the Snowbird and Alta ski resorts. The cog rail would stop at the Snowbird and Alta ski resorts only.

Although the exact hours of operation have not been determined, it is likely that the cog rail would operate from 7 AM to 7 PM 7 days per week during the winter. During peak periods (7 AM to 10 AM and 3 PM to 6 PM), the cog rail would operate every 15 minutes with a total hourly person-capacity of about 1,000 people. During off-peak periods (10 AM to 3 PM), the cog rail would operate every 30 minutes with an hourly person-capacity of about 500 people. Operating times could be changed based on demand.

It is likely that, during the summer, the cog rail could operate between 8 AM and 8 PM to the Snowbird and Alta ski resorts outside the Tanners Flat Campground noise restriction times (10 PM to 7 AM). There would be no intermediate stops at trailheads in Little Cottonwood Canyon. Given the likelihood of reduced demand during the summer, the cog rail might operate only every 30 minutes.

Figure 3-14 shows the cog rail alignment and the approximate locations of the terminal stations. The cog rail system would use a diesel-electric locomotive and therefore would not require an overhead catenary system for power. Similar to vehicle traffic on S.R. 210, the cog rail would not operate during avalanche-mitigation operations or interlodge events. If an avalanche flow covers the rail line, the rail line would need to be cleared of snow and debris before operations could proceed. To help the cog rail's reliability, additional snow sheds in the upper canyon segment would be needed. Also see Section 3.4.3, *Avalanche Mitigation Sub-alternatives*, of this ROD.

#### What are terminal and base stations?

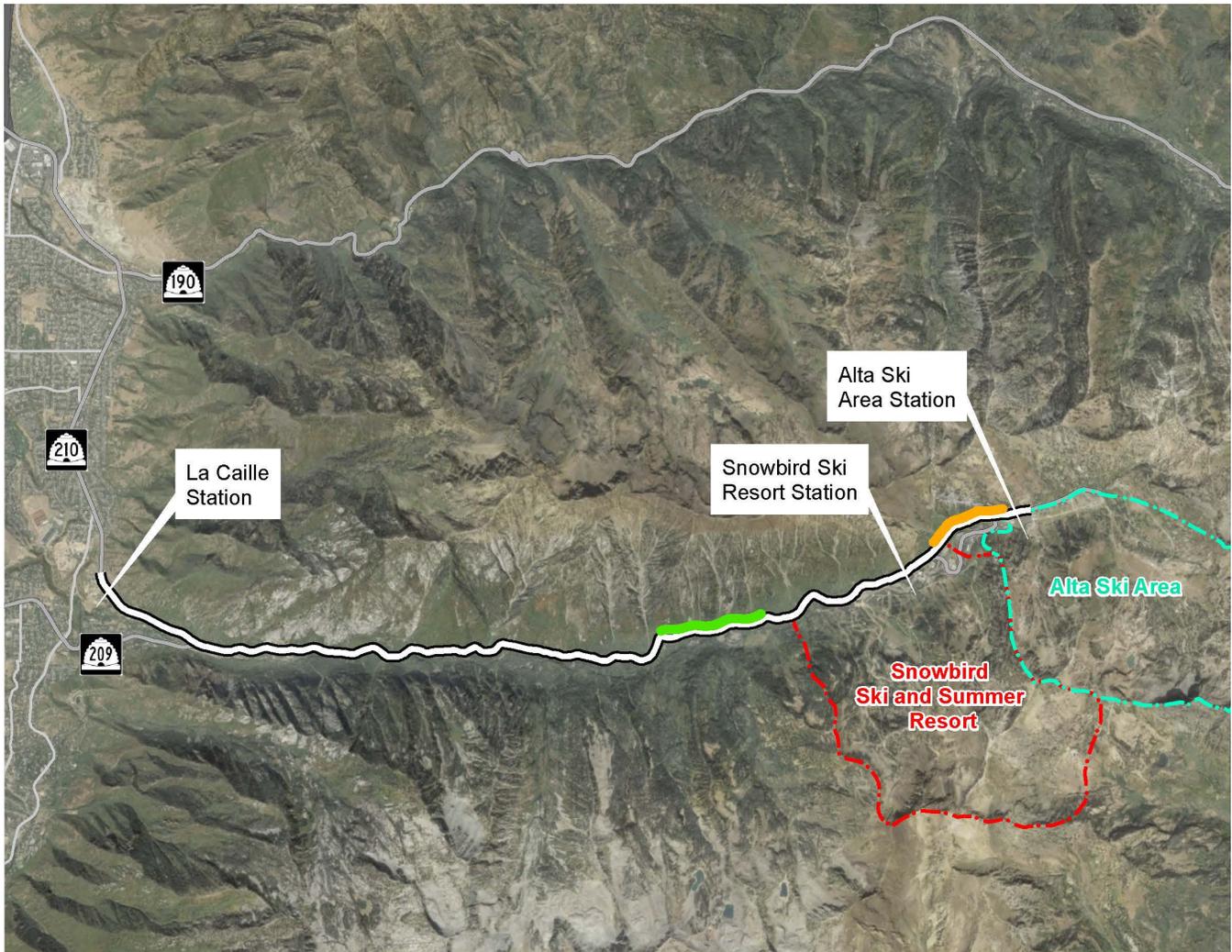
As used in the discussions of the Cog Rail Alternative, the term *terminal station* refers to the first and last stations on a passenger's cog rail trip. Passengers board and disembark the cog rail cars at the terminal stations.

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.

#### What is an interlodge event?

An interlodge event occurs when snow levels are so great and the avalanche danger is so extreme that patrons and employees of the Alta and Snowbird resorts are confined to resort buildings during avalanche-mitigation operations.

Figure 3-14. Cog Rail Alternative – Alignment and Station Locations



- ==== Cog Rail Alignment\*
- Creek/Stream
- Snow Shed Locations\***
- Minimum Mid Canyon
- Upper Canyon
- Ski Resort Boundaries**
- - - Snowbird Ski and Summer Resort
- - - Alta Ski Area

\*Alignments are conceptual and not engineered



0 5 Miles

The cog rail base station would be located about 0.75 mile northwest from the entrance to Little Cottonwood Canyon (Figure 3-15), similar to Gondola Alternative B. As proposed, the base station would include a 2,500-space parking structure and would allow users to park their personal vehicles at the base station or drop off skiers at the base station. The cog rail alignment would cross from the east side to the west side of S.R. 210 on a structure over the roadway. The structure would be about 20 feet high over the roadway (Figure 3-15).

To improve traffic circulation on S.R. 210 to and from the base station, UDOT would make several improvements to S.R. 210.

- Two southbound travel lanes from Wasatch Boulevard would continue to the base station with the right lane becoming the dedicated access to the base station. The access would enter into the second level of the parking structure (Figure 3-15). The extra lane would require a stormwater detention basin, which is the same as for Gondola Alternative B and is shown in Figure 3-12, *Gondola Alternative B – Base Station Layout North*, above.
- A northbound exit ramp from the parking structure under S.R. 210 would connect to the east side of S.R. 210.
- A signalized intersection would be constructed on S.R. 210 at the base station.
- A new one-way access west of the base station off Wasatch Boulevard would be constructed to capture traffic traveling from the southern parts of Salt Lake County.

Figure 3-16 shows the proposed destination stations at Snowbird and Alta.

The Cog Rail Alternative would require an operations and maintenance facility located along the rail alignment. As shown in Figure 3-17, the facility would be located at the Little Cottonwood Canyon park-and-ride lot. The facility would include administrative and operations offices, equipment storage, an enclosed vehicle maintenance facility, a fueling station, restrooms, and parking for employees. The operations and maintenance facility would likely be two stories to accommodate servicing cog rail vehicles.

Figure 3-15. Cog Rail Alternative – Base Station Layout South

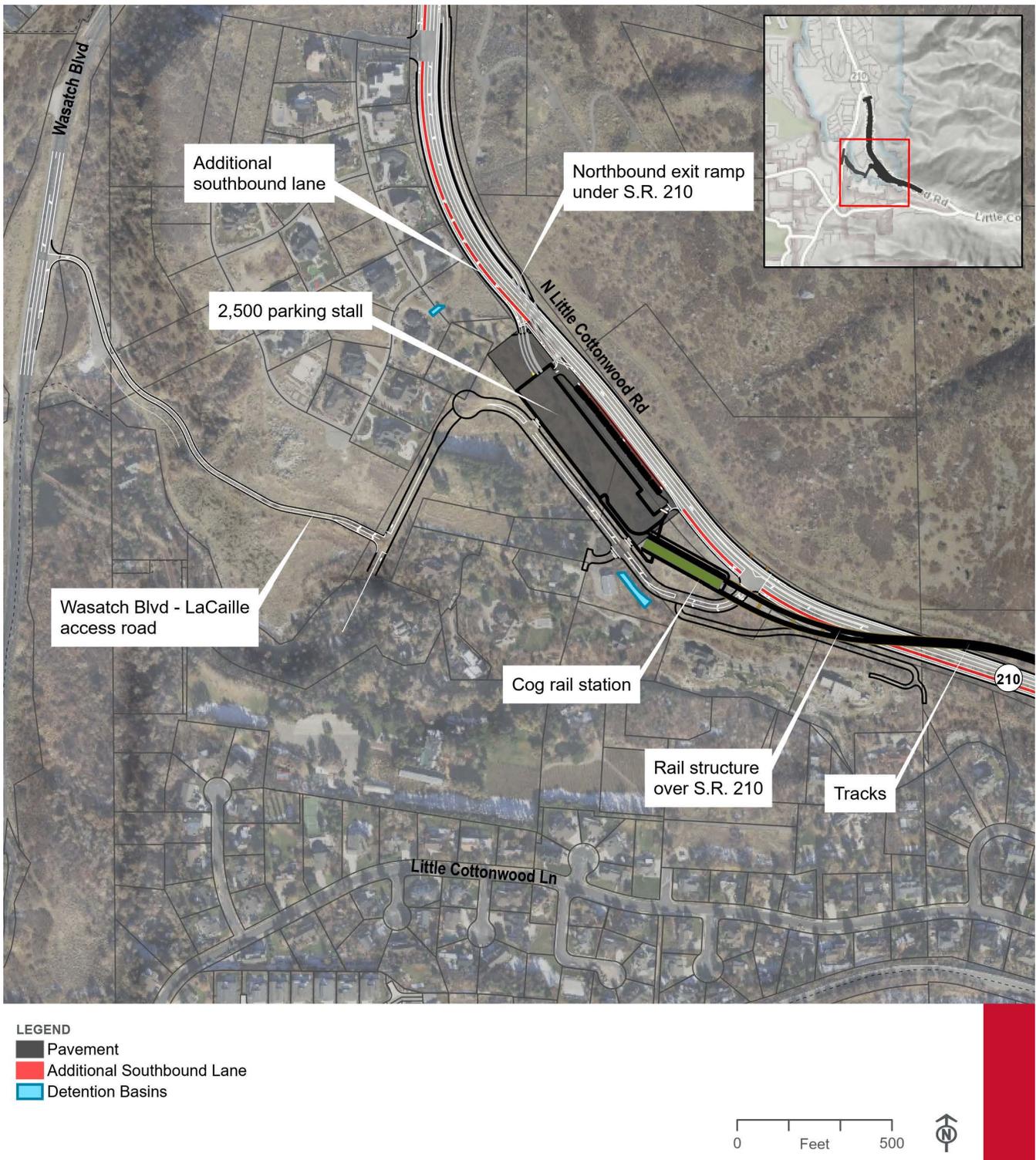
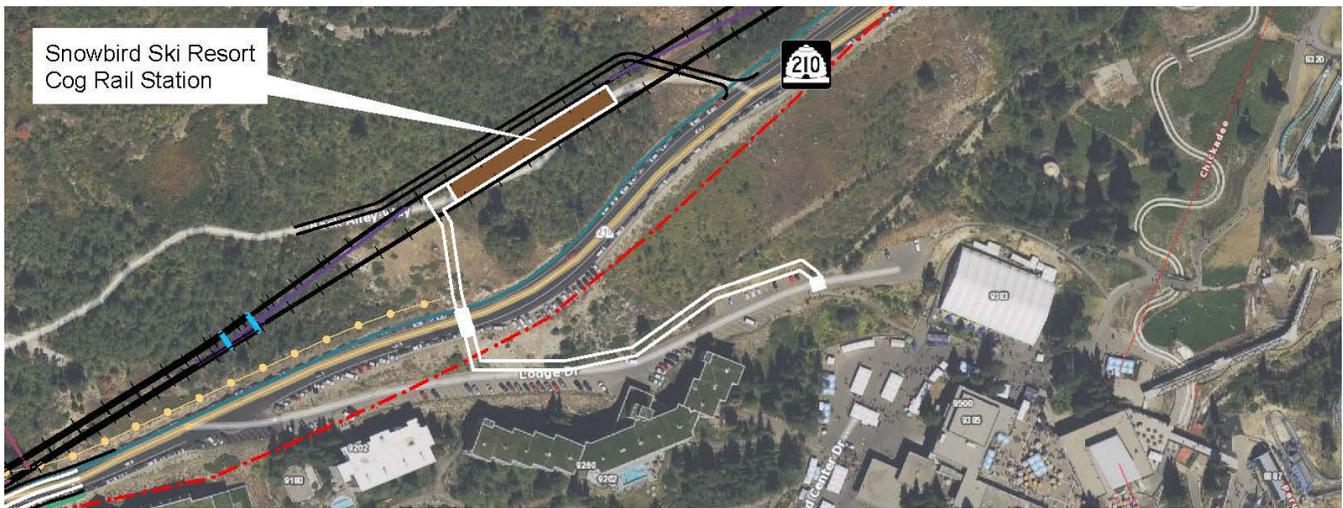


Figure 3-16. Cog Rail Alternative – Snowbird and Alta Stations

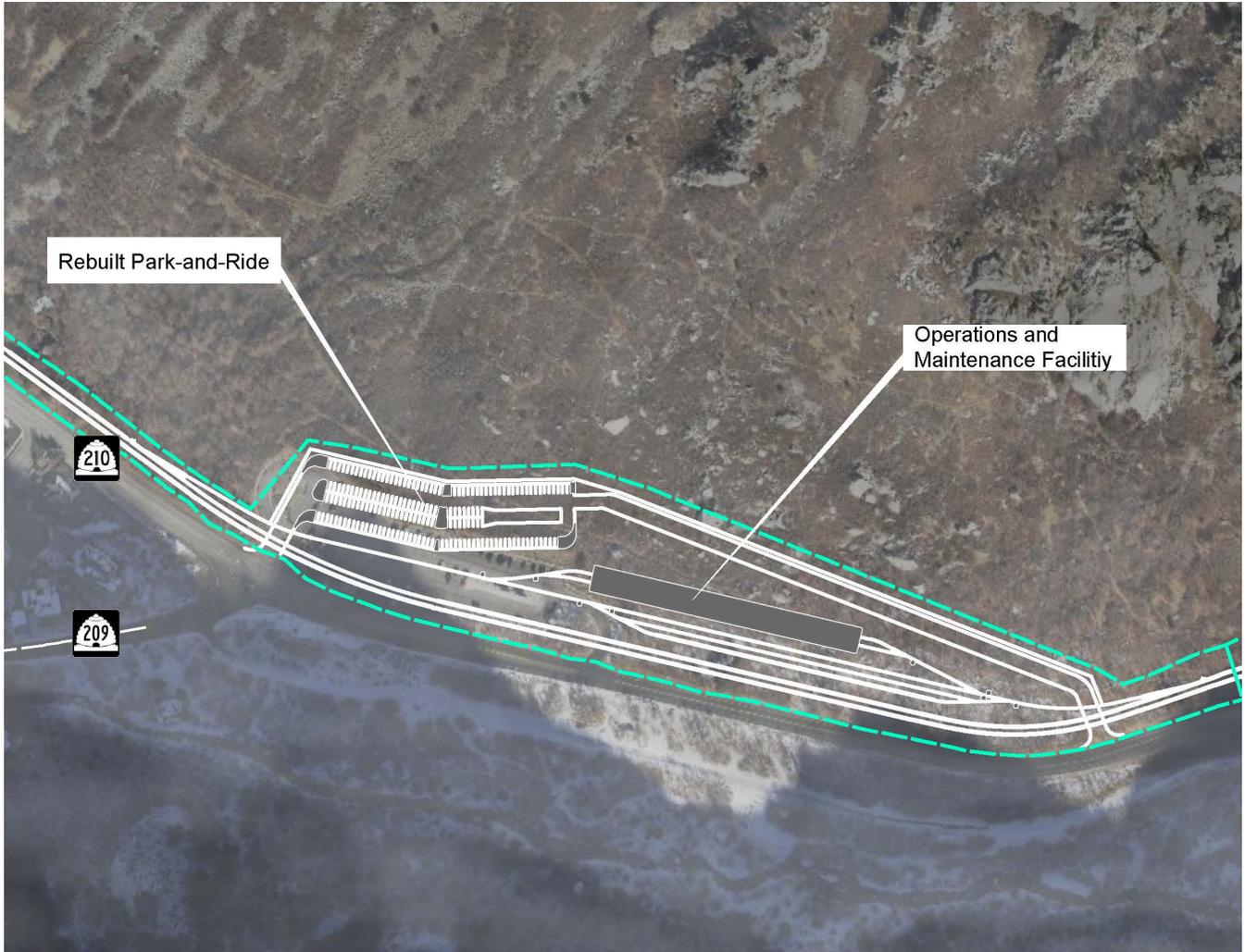


- +—+— Cog Rail Alternative
- Station Platform
- Upper Snow Shed Impact Boundary for Cog Rail Alternative
- - - Snowbird Ski and Summer Resort
- - - Alta Ski Area

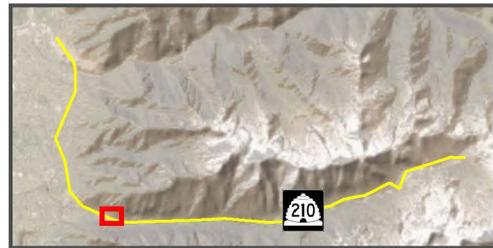


0 250 Feet

Figure 3-17. Cog Rail Alternative – Operations and Maintenance Facility and Little Cottonwood Canyon Park-and-ride Lot



 Cog Rail Alternative Impact Boundary



0 500 Feet

The cog rail would include both single- and double-track sections as well as ballasted and embedded track. The single-track section, about 2.2 miles, would be located in sections of the canyon where it would reduce impacts to the Grit Mill, Gate Buttriss, and Lisa Falls Trailheads. The double-track sections would be about 12 miles total (two tracks over a total of 6 miles). There would be an 8-foot-wide shoulder with a concrete barrier between the roadway travel lane and the rail alignment to keep vehicles from entering the tracks. See Figure 2.6-38, *Cog Rail Alternative – Track Configuration*, and Figure 2.6-39, *Cog Rail Alternative – Cross Sections*, of the Final EIS for the locations of double, single, ballasted, and embedded track and for typical cross section views, respectively.

The complete Cog Rail Alternative would not require mobility hubs. The Cog Rail Alternative would include sub-alternatives for improvements to Wasatch Boulevard, snow sheds in both the mid-canyon and upper-canyon segments (see Section 3.4.3, *Avalanche Mitigation Sub-alternatives*, of this ROD), improved trailheads and restrictions on roadside parking, and no winter parking. These sub-alternatives are described in Section 3.4, *Description of the Sub-alternatives*, of this ROD.

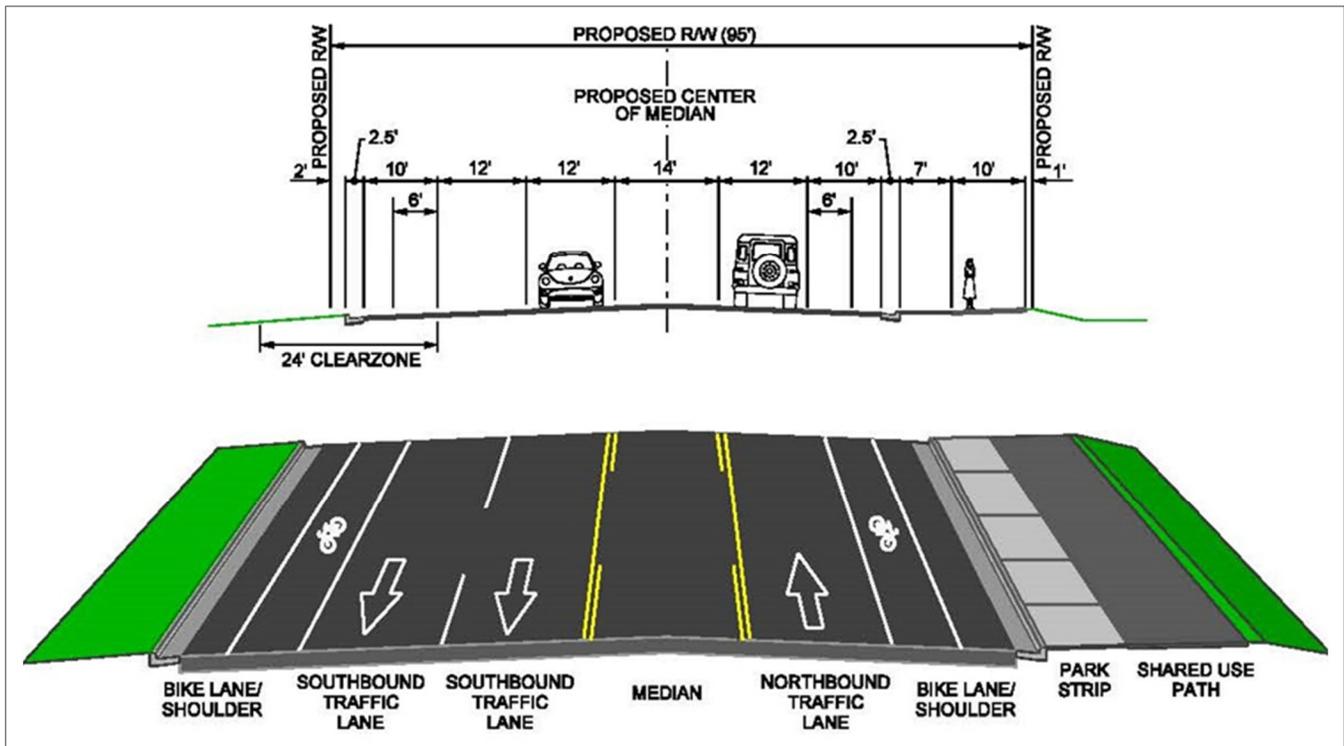
## 3.4 Description of the Sub-alternatives

### 3.4.1 S.R. 210 – Wasatch Boulevard Sub-alternatives

To improve mobility for commuter traffic during the weekday on Wasatch Boulevard, two Wasatch Boulevard sub-alternatives were considered in the EIS. These sub-alternatives are the Imbalanced-lane Alternative and the Five-lane Alternative. See Figure 3-18 and Figure 3-19.

**Imbalanced-lane Alternative.** This sub-alternative from Bengal Boulevard to North Little Cottonwood Road would have a four-lane (96-foot-wide) cross section consisting of three 12-foot-wide travel lanes (two southbound and one northbound), a 14-foot-wide median (either a two-way left-turn lane or a raised center median), 10-foot-wide shoulders consisting of a striped bicycle lane and curb and gutter, and a 7-foot-wide park strip and 10-foot-wide shared-use path on the east side of Wasatch Boulevard (Figure 3-18). The cross section could accommodate shoulder-running buses during busy winter hours. Intersections on Wasatch Boulevard would include appropriate dedicated left- and right-turn lanes, and signalized intersections would include priority signals to provide bus priority. This sub-alternative would maintain the existing Wasatch Boulevard five-lane cross section from Fort Union Boulevard to Bengal Boulevard.

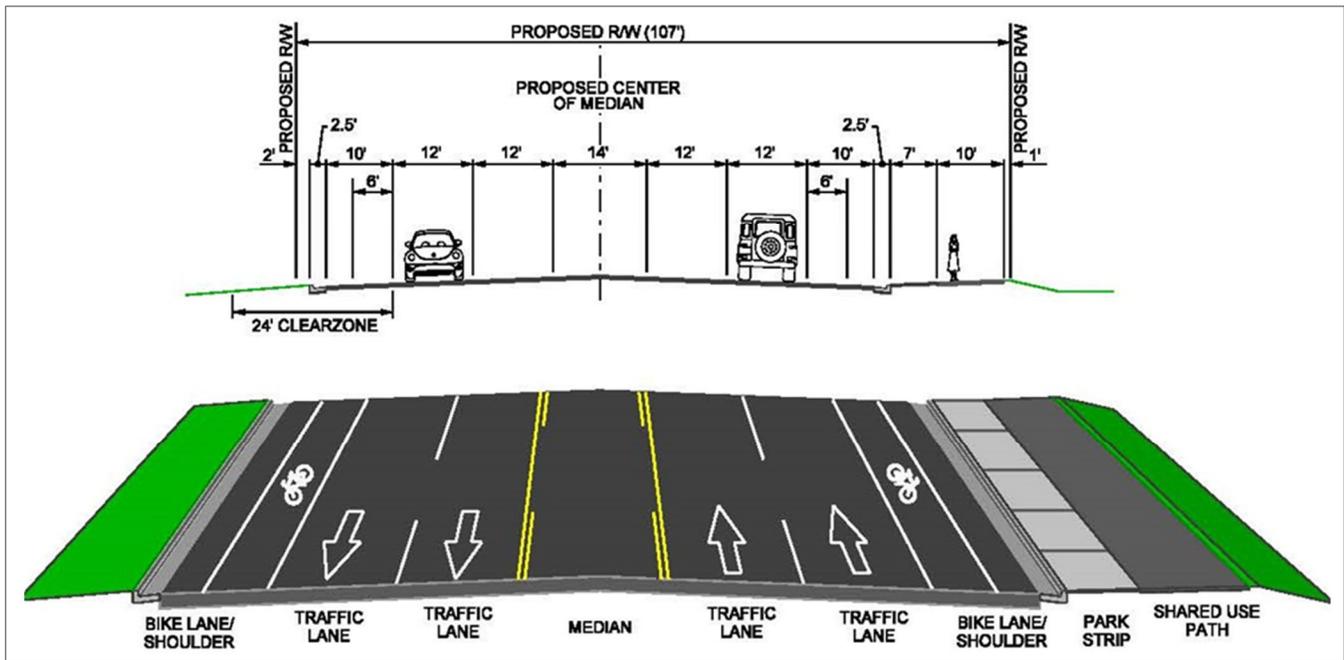
Figure 3-18. Wasatch Boulevard Sub-alternatives – Imbalanced-lane Alternative Cross Section



**Five-lane Alternative (Selected Sub-alternative<sup>5</sup>).** From Fort Union Boulevard to North Little Cottonwood Road, this sub-alternative would have a five-lane (107-foot-wide) cross section consisting of four 12-foot-wide travel lanes (two southbound and one northbound), a 14-foot-wide median (either a two-way left-turn lane or a raised center median), 10-foot-wide shoulders consisting of a striped bicycle lane and curb and gutter, and a 7-foot-wide park strip and 10-foot-wide shared-use path on the east side of Wasatch Boulevard (Figure 3-19). The cross section would accommodate shoulder-running buses during busy winter hours. Intersections on Wasatch Boulevard would include appropriate dedicated left- and right-turn lanes, and signalized intersections would include priority signals to provide bus priority.

<sup>5</sup> Based on public comments, UDOT commits to first construct the Imbalanced-lane Alternative. UDOT would construct the additional northbound lane when the level of service on the roadway and/or intersections reaches LOS E or worse, which is projected to occur after 2050. With the construction of the Imbalanced-lane Alternative, UDOT will place the multi-use trail in the location as shown in the Five-lane Alternative to preserve the right of way and provide a better experience for trail users.

Figure 3-19. Wasatch Boulevard Sub-alternatives – Five-lane Alternative Cross Section



UDOT in coordination with Cottonwood Heights City will consider, for both Wasatch Boulevard sub-alternatives, pedestrian overpasses or underpasses at about 325 feet south of the Fort Union Boulevard and Wasatch Boulevard intersection and at Russell Park Road. The pedestrian overpasses or underpasses were evaluated as part of the EIS process. UDOT would work with Cottonwood Heights City to determine funding options for the pedestrian overpasses or underpasses. Long-term maintenance of the pedestrian overpasses or underpasses would be the responsibility of Cottonwood Heights City.

UDOT in coordination with Cottonwood Heights City will develop an aesthetics plan to implement as part of proposed improvements to Wasatch Boulevard. To develop the plan, UDOT and Cottonwood Heights City would use the goals identified in the *Wasatch Boulevard Master Plan* and the general concepts shown in the *Wasatch Boulevard Aesthetic Design Plan* for preserving and enhancing scenic and natural qualities along Wasatch Boulevard.

### 3.4.2 Mobility Hubs Sub-alternative

Buses would be used to transport resort-bound canyon users directly from the gravel pit and 9400 South and Highland Drive mobility hubs to the ski resorts or to the Gondola Alternative A base station. For a description of the mobility hubs, see Section 3.3.1, *Enhanced Bus Service Alternative*, of this ROD.

In the selected alternative, UDOT will implement a phased approach where bus service, which is scaled to meet earlier-year demands, is implemented before Gondola Alternative B is constructed and operated.

This phased implementation approach would require the construction of the Gravel Pit Mobility Hub Sub-alternative, a Bus Maintenance and Storage Facility, and Resort Bus Stops (as described under the Enhanced Bus Service Alternative). The existing 9400 South and Highland Drive park-and-ride lot has capacity for some parking, and direct resort bus service would run from this location.

Once the gondola is operational, bus service would cease, and any repurposing of the mobility hub at the gravel pit would be evaluated. Any change in use would be subject to further environmental analysis and decision-making.

#### What is a mobility hub?

A mobility hub is a location where users park their personal vehicle and transfer to a bus transit system to access the canyon.

### 3.4.3 Avalanche Mitigation Sub-alternatives

Alternatives to improve mobility, reliability, and safety on S.R. 210 need to address road closures and the safety concerns associated with avalanche hazards. Avalanche hazards cause substantial traffic delays as a result of the current avalanche-control program in Little Cottonwood Canyon.

Two avalanche mitigation sub-alternatives were evaluated for Little Cottonwood Canyon EIS: the Snow Sheds with Berms Alternative and the Snow Sheds with Realigned Road Alternative. Either avalanche mitigation sub-alternative could be selected with any of the primary alternatives.

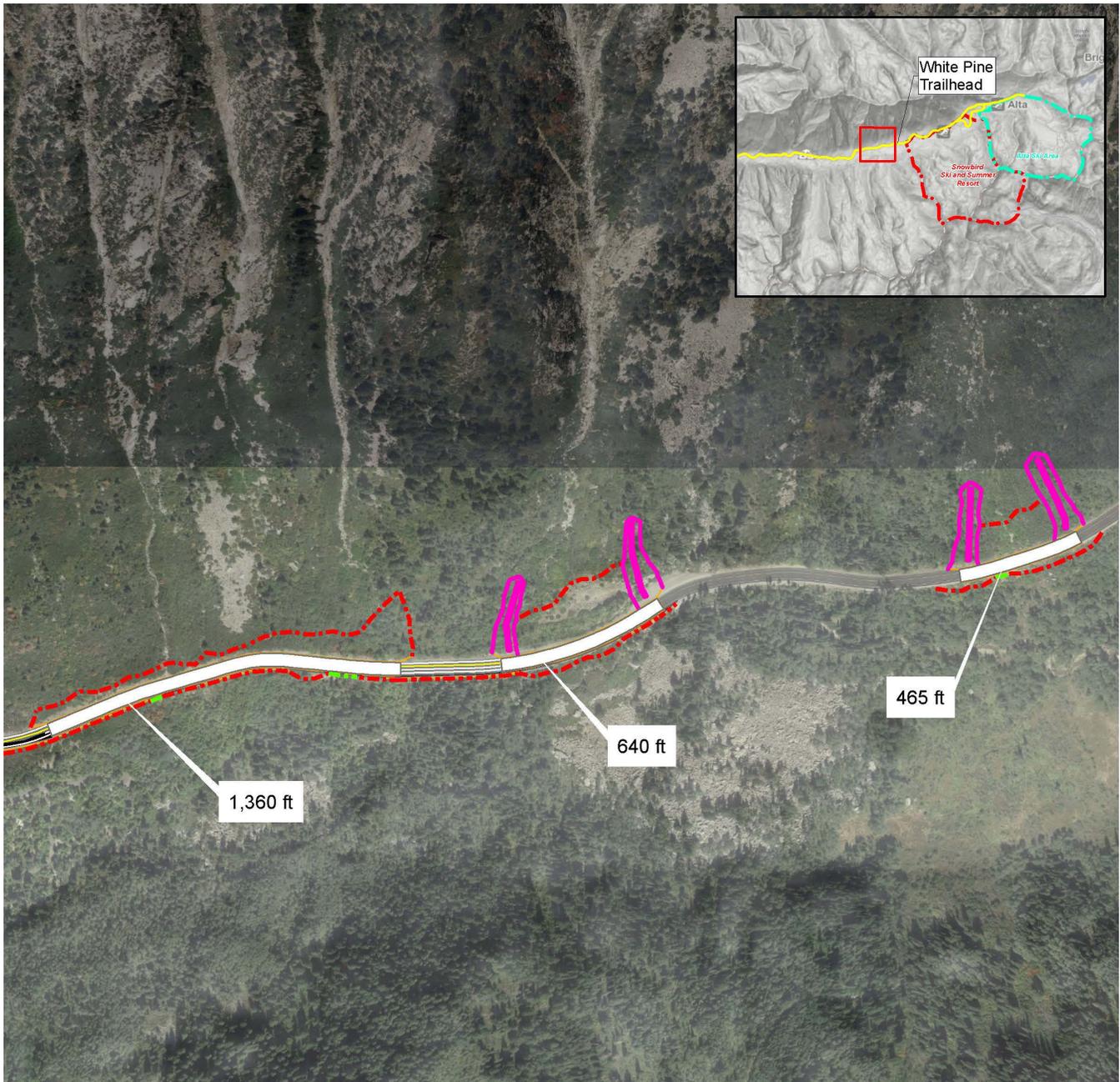
With the avalanche mitigation sub-alternatives, there would be less need for active avalanche mitigation such as the use of artillery to trigger avalanches. Under the current avalanche-mitigation program, from 2004 to 2017, an average of 153 artillery shells per ski season were fired into the avalanche paths where the snow sheds would be placed. UDOT anticipates that, with the avalanche mitigation (snow shed) sub-alternatives, artillery use in the avalanche paths protected by the snow sheds could be reduced by 80% to about 31 artillery shells per season.

**Snow Sheds with Berms Alternative.** The Snow Sheds with Berms Alternative includes three separate snow sheds (Figure 3-20). Snow sheds over three main avalanche paths (White Pine Chutes 1–4, a snow shed about 1,360 feet long; White Pine, a snow shed about 640 feet long; and Little Pine, a snow shed about 465 feet long) offer the most reduction in avalanche risk and would help keep S.R. 210 open more often.

#### What are snow sheds?

Snow sheds are rigid concrete and/or steel structures that protect a road by diverting avalanche flows over the top of the structure.

Figure 3-20. Avalanche Mitigation Sub-alternatives – Snow Sheds with Berms Alternative



LEGEND

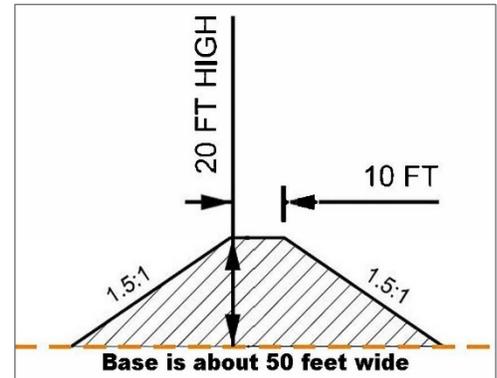
- Snow Shed    - - - Fill Slope
- Berms        ■ Pavement
- - - Cut Slope

0      Feet      500



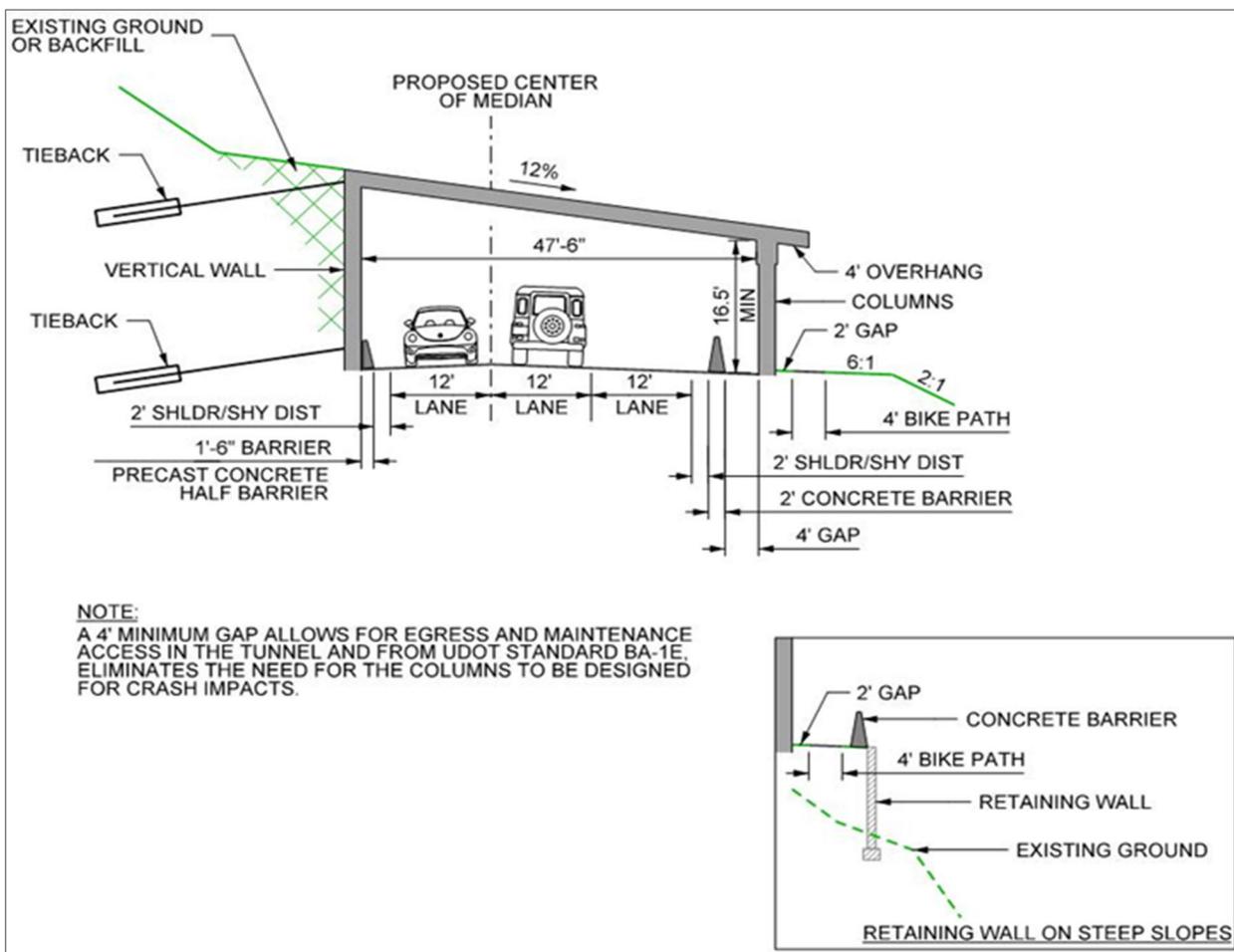
The Snow Sheds with Berms Alternative includes the use of earthen guiding berms at the two eastern snow sheds to direct avalanche flows over the shed and shorten the required length of the snow shed structure, which would reduce costs. The guiding berms would be about 300 feet long and 10 feet wide to help direct avalanche flows across the tops of the sheds. The berm geometry was assumed to be 20 feet high and 10 feet wide at the top, with 1.5:1 (horizontal:vertical) side slopes. Figure 3-21 at right shows a typical cross section of the earthen guiding berm.

Figure 3-21. Earthen Berms



The snow shed design would accommodate a bicycle path on the outside of the snow shed; cyclists would also be allowed in the snow sheds. The tie-backs shown in Figure 3-22 below would be used where the snow shed is close to the mountain. When the snow shed is not close to the mountain, engineered fill would be placed behind the snow shed to allow the avalanche flow to run over the top of the snow shed. The snow shed tie-backs would be placed in the engineered fill.

Figure 3-22. Snow Shed Design (with the Enhanced Bus Service and Gondola Alternatives)



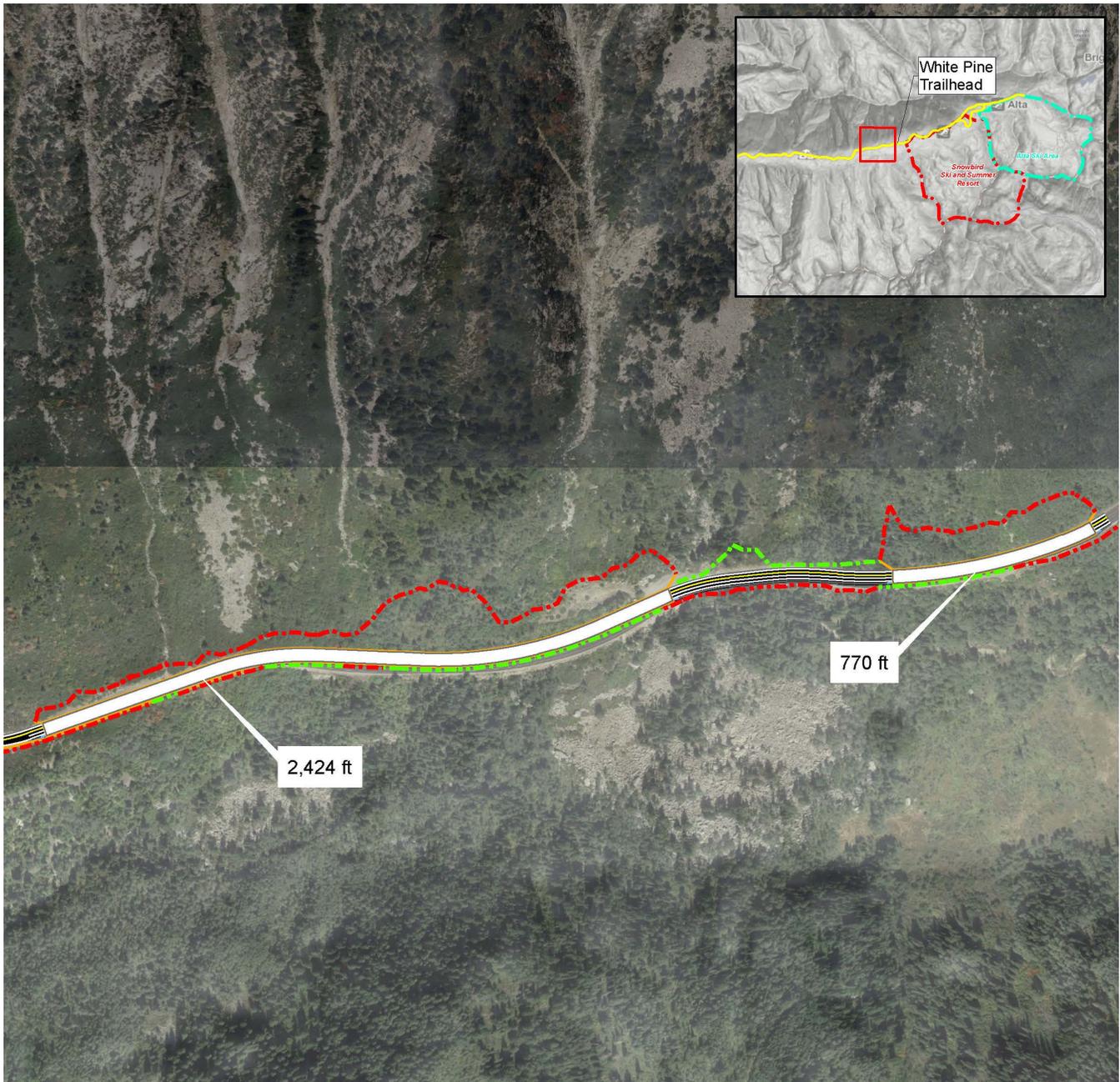
**Snow Sheds with Realigned Road Alternative (Selected Sub-alternative).** The Snow Sheds with Realigned Road Alternative includes two snow sheds. The White Pine Chutes and White Pine snow shed would be 2,424 feet long, and the Little Pine snow shed would be 770 feet long to help ensure that avalanche flows pass over the top of the shed. The existing road would be realigned to be closer to the mountain side in order to reduce the amounts of fill needed behind the snow sheds as well as to improve curve radii and sight distances inside the snow sheds.

The sight distances on the existing alignment inside the sheds would be suitable for a 30-mph design speed. The realigned road with snow sheds would be suitable for a 35-mph design speed. However, the Snow Sheds with Realigned Road Alternative would require UDOT to fully reconstruct the roadway cross section and potentially relocate all utilities in the project area, including between the sheds and along the roadway leading up to the snow shed zone. Figure 3-23 shows this layout. Moving the road toward the mountain side would also reduce the amount of fill or walls required on the downhill or stream side of the road.

**Snow Sheds with the Cog Rail Alternative.** The general design of the avalanche mitigation sub-alternatives for operation of the Cog Rail Alternative would be similar to snow sheds described above. However, the snow sheds in mid-canyon (in the White Pine Chutes, White Pine, and Little Pine avalanche paths) would be slightly wider to accommodate both the cog rail tracks and vehicles on the roadway. See Figure 2.6-41, *Cog Rail Alternative – Mid-canyon Snow Shed Design*, of the Final EIS for the cross section of the rail snow sheds in the mid-canyon segment.

The Cog Rail Alternative would also require additional snow sheds in the upper canyon. The snow sheds are required to mitigate the high avalanche risk associated with the Superior, Little Superior, and Hilton avalanche paths. The snow shed design would accommodate only the cog rail tracks, since vehicles can use the Alta Bypass Road to avoid this high-avalanche-risk area when necessary. See Figure 2.6-42, *Cog Rail Alternative – Upper-canyon Snow Shed Design*, of the Final EIS for the cross section of the rail snow sheds in the upper-canyon segment. As shown in Figure 3-24, one 2,100-foot-long snow shed would be required in the Superior, Little Superior, and Hilton avalanche paths and one 1,545-foot-long snow shed in the East Hellgate avalanche path.

Figure 3-23. Avalanche Mitigation Sub-alternatives – Snow Sheds with Realigned Road Alternative

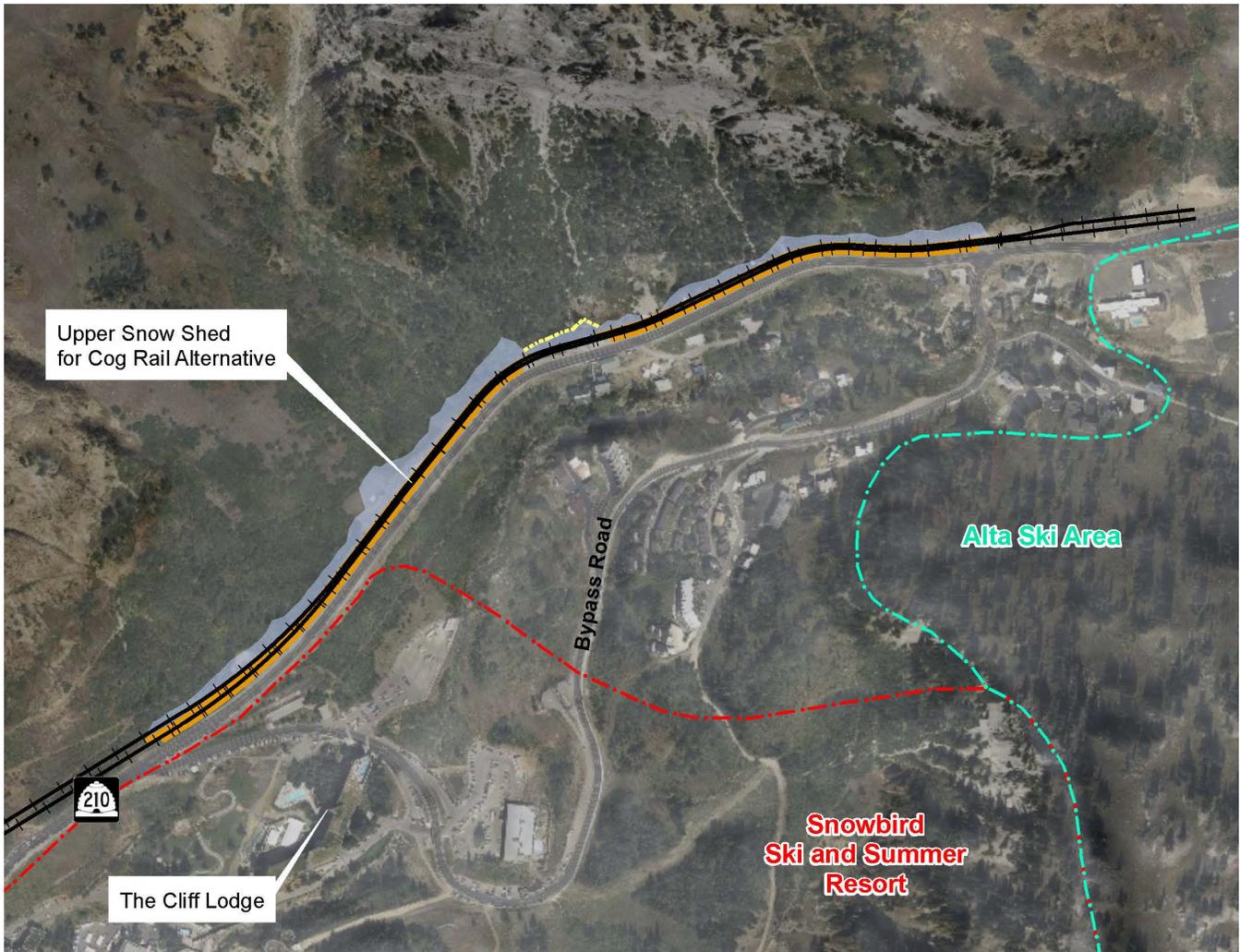


LEGEND

- Snow Shed
- Cut Slope
- Fill Slope
- Pavement



Figure 3-24. Avalanche Mitigation Sub-alternatives – Upper-canyon Rail Snow Sheds



- - - Breaklines
- + - Cog Rail Alignment
- - - Roadway Slope Features
- Walls
- Upper Snow Shed Impact Boundary for Cog Rail Alternative
- Snowbird Ski and Summer Resort
- Alta Ski Area



0 1,000 Feet

### 3.4.4 Trailhead Parking Sub-alternatives

Three trailhead parking sub-alternatives were developed to improve mobility and safety at the trailheads along S.R. 210. Any of the following three trailhead parking sub-alternatives could be selected with any of the primary alternatives:

- Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative (selected sub-alternative; see Figure 3-25)
- 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

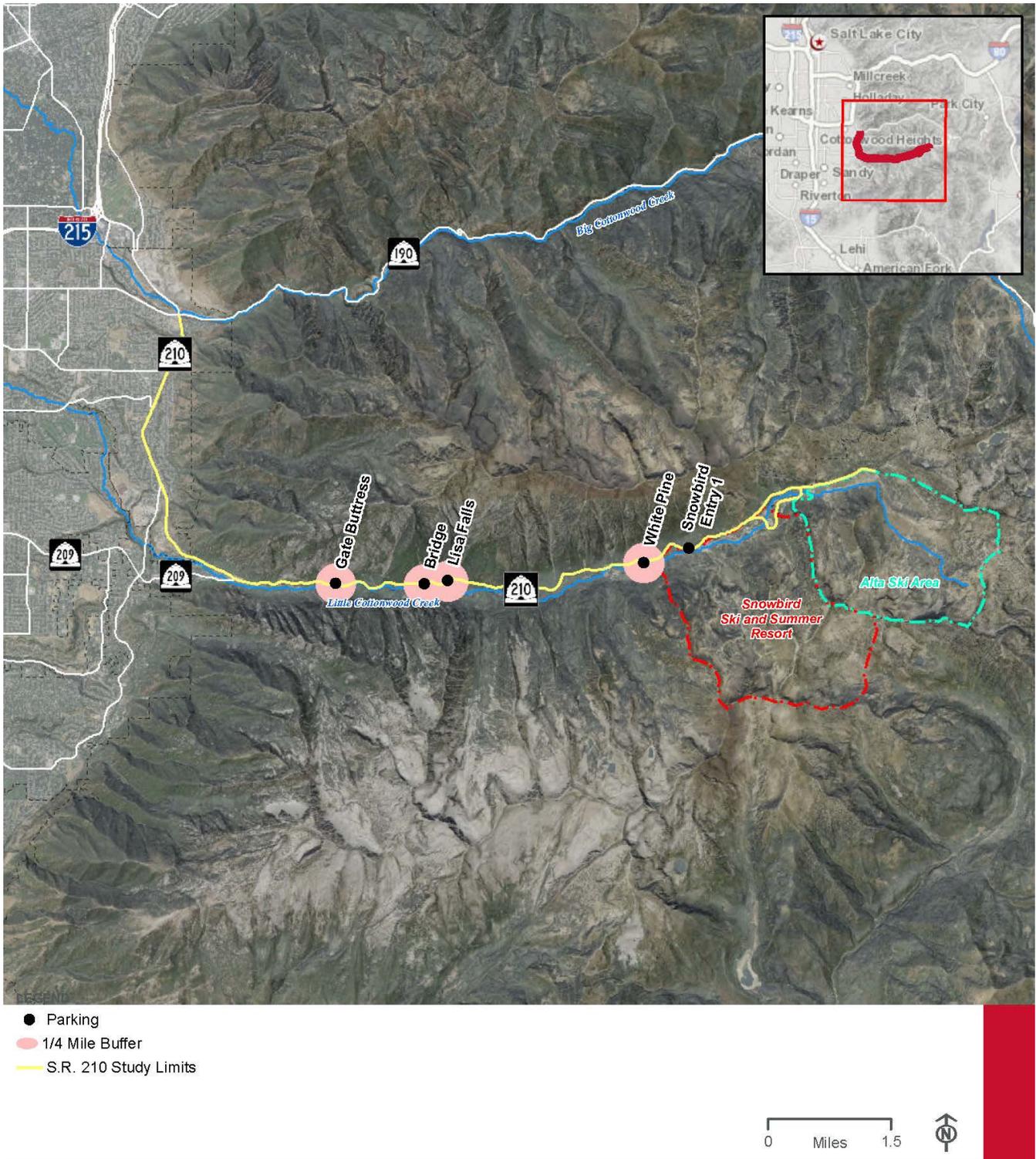
The first two trailhead parking sub-alternatives would improve the Gate Buttriss, Lisa Falls, and White Pine Trailheads parking and create a new trailhead at the Bridge Trail (Figure 3-25). All trailhead improvements would include adequate restroom capacity (to be determined through consultation with the USDA Forest Service). The trailhead improvements will also include appropriate water quality buffers and water quality treatment best management practices (BMPs).

**Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads (Selected Sub-alternative).** With this sub-alternative, all roadside parking within ¼ mile of the improved or new trailhead parking area would be eliminated. To eliminate parking, No Parking signs would be placed along S.R. 210. In all, the total number of parking spaces from the intersection of S.R. 209/S.R. 210 to Snowbird Entry 1 would be reduced from the existing 528 spaces to 511 spaces (a reduction of 17 spaces).

**Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1.** The trailhead parking improvements would be the same as for the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative. However, with this sub-alternative, all roadside parking in Little Cottonwood Canyon would be eliminated from the entrance to the canyon to Snowbird Entry 1. To eliminate parking, No Parking signs would be placed along S.R. 210. In all, the total number of parking spaces from the intersection of S.R. 209/S.R. 210 to Snowbird Entry 1 would be reduced from the existing 528 spaces to 221 spaces (a reduction of 307 spaces).

**No Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1.** With this sub-alternative, there would be no improvements to trailhead parking, and all roadside parking would be eliminated from the S.R. 209/S.R. 210 intersection to Snowbird Entry 1. To eliminate parking, No Parking signs would be placed along S.R. 210. In all, the total number of parking spaces from the intersection of S.R. 209/S.R. 210 to Snowbird Entry 1 would be reduced from the existing 528 spaces to 99 spaces (a reduction of 429 spaces).

Figure 3-25. Trailhead Parking Sub-alternatives



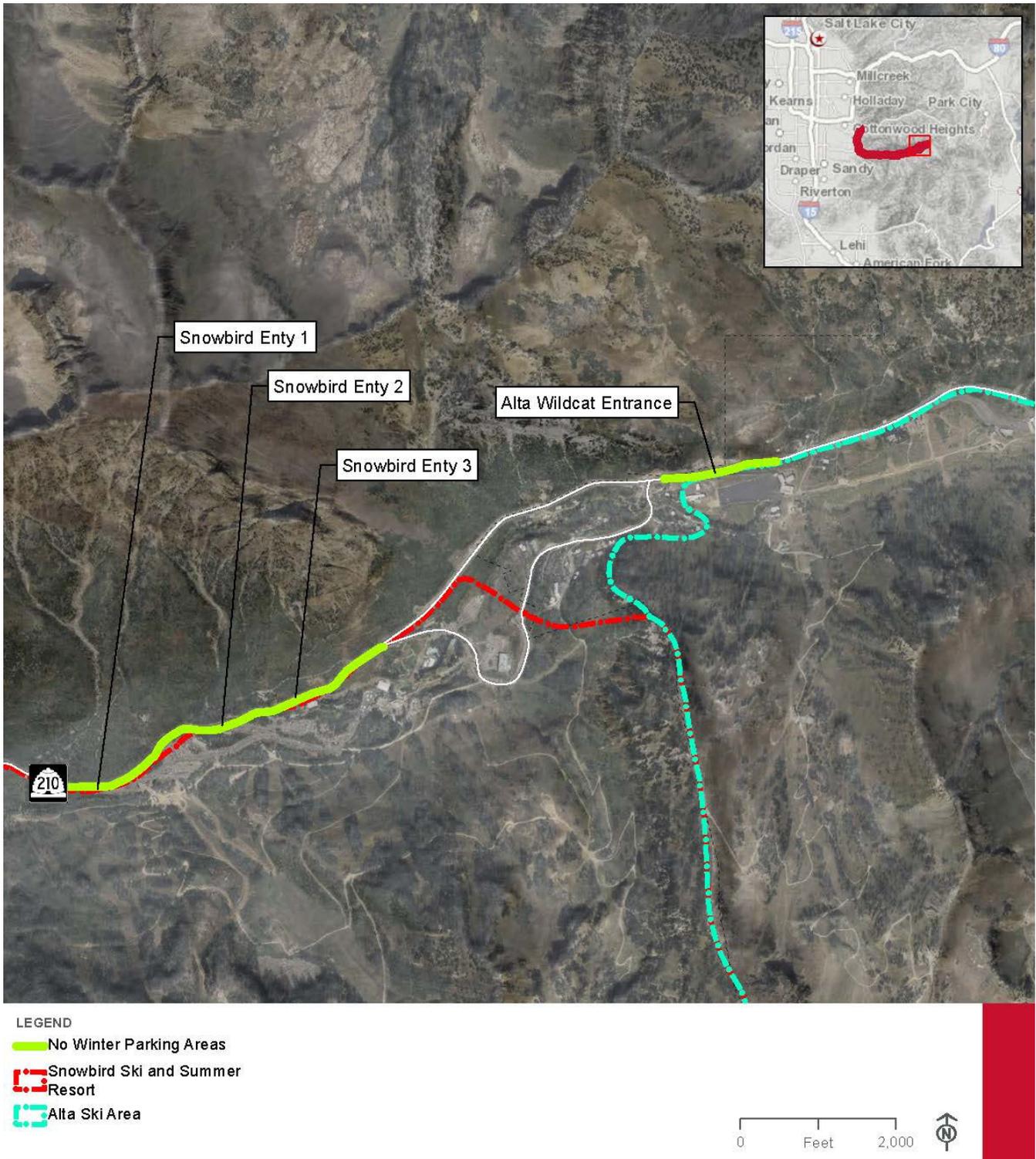
### **3.4.5 No Winter Parking Alternative (Selected Sub-alternative)**

The purposes of reducing or eliminating roadside parking on S.R. 210 near the ski resorts would be to improve pedestrian and vehicle safety, improve winter snow plowing operations by removing vehicles parking on the road shoulders, and reduce travel time.

One no winter parking sub-alternative is being considered. Eliminating roadside parking adjacent to the ski areas is a sub-alternative to all of the primary alternatives evaluated in detail in the EIS. Figure 3-26 shows the locations where new no-parking areas would be located. About 230 roadside parking spots would be eliminated during the winter near the ski resorts. The no winter parking area would be within UDOT right-of-way only and would not change private or town of Alta parking. Roadside parking is used during winter peak days when the main ski area parking lots are at capacity.

Eliminating roadside parking does not require any infrastructure in the canyon, besides No Parking signs, and is an operational option that UDOT could implement outside the NEPA process. There would be enough parking with the selected alternative in the Salt Lake Valley to accommodate resort users. By eliminating roadside parking, fewer private vehicles would use S.R. 210 in Little Cottonwood Canyon, which would improve overall mobility.

Figure 3-26. No Winter Parking Alternative



### 3.5 Evaluations and Updated Information between Final EIS and ROD

The Little Cottonwood Canyon Final EIS was announced in the Federal Register on September 2, 2022. During a 45-day comment period that extended to October 17, 2022, UDOT received more than 13,000 comments submissions from members of the public, government agencies, and nongovernmental agencies. Based on UDOT's review of the Final EIS comments, UDOT identified the need for updates, clarifications, and new analysis. These consisted of the following:

- Costs were updated to capture the changed economic and financial conditions due, in part, to the global pandemic. The following cost-related analyses were updated to better reflect the fourth quarter of 2022.
  - Updated capital and operations and maintenance (O&M) cost estimates. See Section 3.5.1, *Updated Capital Costs and Operations and Maintenance Cost Estimates*, of this ROD.
  - Updated life cycle costs analysis based on the updated capital and O&M costs. See Section 3.5.2, *Updated Life Cycle Costs Analysis*, of this ROD.
- Based on agency comments, UDOT also prepared two supplemental information reports after the Final EIS was released. UDOT held a 30-day public review and comment period (March 19 through April 18, 2023) for the following supplemental information reports.
  - Roadless Area Conservation Rule (RACR) evaluation. See Section 3.5.3, *Roadless Area Conservation Rule Evaluation*, of this ROD.
  - Additional air quality hot-spot analysis for the Final EIS preferred alternative. See Section 3.5.4, *Supplemental Air Quality Hot-spot Analysis*, of this ROD.

These four topics are discussed in the following sections. The supplemental analyses did not result in substantial changes to the action alternatives nor were there any findings that had a significant bearing on the finding of the Final EIS.

### 3.5.1 Updated Capital Costs and Operations and Maintenance Cost Estimates

To help compare the action alternatives, UDOT developed updated preliminary capital cost estimates and the annual cost to operate and maintain each primary alternative and sub-alternative. These updated estimates are based on the preliminary engineering conducted and include the total project cost for construction, right-of-way acquisition, utility relocation, design engineering, and the equipment needed to operate and maintain the primary alternative, equipment such as buses, gondola systems (motors, cables, and cabins), and cog rail vehicles.

The cost estimates in the Final EIS were based on 2020 dollars. After the Final EIS was published, UDOT updated cost estimates in November and December 2022 to account for recently (2021–2022) observed inflation and material cost escalations (10% to 25%) which have been higher than historic average annual increases (2.75% to 3.5%). In addition, UDOT received several public comments on the Final EIS on the topic of material cost escalation. The cause(s) of the cost increases are attributed to supply chain challenges with the COVID-19 pandemic, construction worker shortages, the war in Ukraine, increasing demand for materials, Utah's fast population and housing growth, and other factors. How and whether these higher annual increases will continue in the coming years is uncertain, but UDOT has used the best estimates available at the time of the ROD.

For the capital cost updates, the general method used to adjust the costs was to revise the unit costs for the civil works components of the alternatives based on 2022 market conditions. Prices have increased for labor, materials, equipment rates, and fuel. Costs for materials such as concrete, asphalt, and steel have affected overall construction prices substantially over the past couple years.

For O&M costs, UDOT, in discussion with the Utah Transit Authority, used a 10% adjustment from 2020 to estimate annual O&M costs in 2022. The cost of maintaining the existing S.R. 210 roadway would be the same for all alternatives (including the No-Action Alternative) and is therefore not included in the operational cost. The additional cost for snow plowing with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative and Cog Rail Alternative is included in the operational cost.

Table 3-1 provides the updated capital and O&M costs. Note that these O&M costs represent the estimated O&M costs for the primary alternatives which were sized to meet 2050 mobility needs in the study area. Table 3-1 amends Table 2.6-7, *Preliminary Construction Cost Estimate and Operation and Maintenance Cost*, of the Final EIS.

Table 3-1. Preliminary Construction Cost and Operations and Maintenance Cost Estimates

In millions of 2022 dollars

Alternative	Cost Estimate	Winter Operation and Maintenance Cost / Summer Operation and Maintenance Cost
<b>Primary Alternative <sup>a,b,c</sup></b>		
Enhanced Bus Service	441–474	15.4 / 0
Enhanced Bus Service in Peak-period Shoulder Lane	610–644	12.1 / 0
Gondola Alternative A	701–734	10.4 / 5.5
Gondola Alternative B	696–729	4.4 / 3.3
Cog Rail Alternative	1,221–1,239	3.7 / 2.4
<b>Sub-alternatives Part of Primary Alternatives</b>		
<b>Wasatch Boulevard</b>		Operations and maintenance cost is not provided since it would be the same for all primary alternatives.
• Imbalanced-lane Alternative	71	
• Five-lane Alternative	75	
<b>Mobility Hubs</b>		
<u>Enhanced Bus Service and Gondola A Alternatives</u>		
• 9400 South and Highland Drive	40	
• Gravel pit (includes right-of-way and interchange on Wasatch Boulevard)	114	
<u>Gondola B and Cog Rail Alternatives</u>		
• La Caille parking structure	99	
• North Little Cottonwood Road Improvements and Access Road	51	
<b>Avalanche Mitigation</b>		
<u>Enhanced Bus Service and Gondola Alternatives</u>		
• Snow Sheds with Berms	91	
• Snow Sheds with Realigned Road	109	
<u>Cog Rail Alternative</u>		
• Mid-canyon Snow Sheds with Berms	180	
• Mid-canyon Snow Sheds with Realigned Road	200	
• Upper-canyon snow sheds	139–155	
<b>Trailhead Parking</b>		
<u>Enhanced Bus Service and Gondola Alternatives</u>		
• Improvements and no parking within ¼ mile	7.5	
• Improvements and no parking in Little Cottonwood Canyon	7.5	
• No improvements and no parking	0.0	
<u>Cog Rail Alternative</u>		
• Improvements and no parking within ¼ mile	7.0	
• Improvements and no parking in Little Cottonwood Canyon	7.0	
• No improvements and no parking	0.0	
<b>No Winter Roadside Parking</b>	0.0	
<b>Tolling Infrastructure</b>	6.25	

(continued on next page)

**Table 3-1. Preliminary Construction Cost and Operations and Maintenance Cost Estimates**

In millions of 2022 dollars

Alternative	Cost Estimate	Winter Operation and Maintenance Cost / Summer Operation and Maintenance Cost
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- <sup>a</sup> The total cost of the primary alternatives includes the sub-alternatives and provides a range since each cost varies depending on the sub-alternative selected. Cost estimates also include noise walls (\$1.7 million). O&M cost includes total operations for the alternative, such as buses, personnel, maintenance, and snow removal for the peak-period shoulder lanes and cog rail tracks. The enhanced bus service alternatives would not operate during the summer.
- <sup>b</sup> The cost of all alternatives includes new buses, signal priority at intersections, fare-collection systems, communication equipment, and a bus maintenance and storage facility except for Gondola Alternative B and the Cog Rail Alternative.
- <sup>c</sup> The cost of Gondola Alternative A, Gondola Alternative B, and the Cog Rail Alternative includes reconfiguring the park-and-ride lot to accommodate the gondola base (Gondola A) or angle station (Gondola B) or cog rail operations and maintenance facility and parking for the Alpenbock Loop Trail (\$7.6 million).

The updated capital costs of the primary alternatives increased proportionally, or by about 30%, from the values reported in the Final EIS. The general order or rank of estimated initial capital costs and O&M costs (least cost to higher costs) did not change from the Final EIS. The updated costs did not have a substantive bearing on the decision since the relative ranking did not change and cost was only one of several factors UDOT used in making its decision. For more information, see Section 3.6, *Comparisons of Alternatives*, of this ROD.

### 3.5.2 Updated Life Cycle Costs Analysis

NEPA does not require an evaluation of the life cycle costs of the alternatives. However, because the capital and operating costs of the alternatives are so different, a life cycle cost analysis (LCCA) was used to compare the combination of capital and operating costs over time.

The data presented summarizes a revised version of the LCCA, which was prepared after the Final EIS was released. For the revised LCCA, UDOT updated original assumptions from the February 2022 LCCA regarding the year of construction (assumed to be 2024 and 2025) and used updated initial capital cost and the annual O&M costs (for more information, see Section 3.5.1 above). In addition, two of the key assumptions used in the LCCA, the assumed inflation rate and discount rate, have changed since the assumptions used for the LCCA reported in the Draft EIS and Final EIS. A 3.25% annual inflation rate was used to estimate the year-of-expenditure cost for both capital and O&M costs. The inflation rate was increased from earlier versions of the LCCA, which used 1.98%. A 0.5% nominal discount rate was used to determine the present value of year-of-expenditure costs. The discount rate used previously was 2.4%. These two assumptions were adjusted to reflect financial conditions in the fourth quarter of 2022.

The approach to the LCCA was to inflate the capital and O&M costs to a year of expenditure, then discount them to represent costs in current dollars (fourth quarter 2022) or present value to allow an “apples-to-apples” comparison. The estimates assume the primary alternative would be constructed in 2024 and 2025 and operating by 2026. The total annual costs were then summed to determine the cumulative costs over 30 years. Table 3-2 shows the present value of the 30-year life cycle cost for each alternative. Note the LCCA excludes Wasatch Boulevard improvements and tolling, which are the same for all alternatives. The table also presents the ranking (least cost to highest cost) of the primary alternatives based on the estimated

present value of the 30 years of cumulative costs. In addition, Table 3-2 presents the updated capital cost ranking (lowest to highest) for comparison.

**Table 3-2. 30-year Life Cycle Costs of the Five Primary Alternatives**

In millions of 2022 dollars

Alternative	Present Value, 30-year Costs	Present Value Rank (least to highest cost)	Updated Capital Cost Rank (least to highest cost)
Gondola B (Starting at La Caille)	\$904	1	3
Gondola A (Starting at Canyon Entrance)	\$1,267	2	4
Enhanced Bus Service in Peak-period Shoulder Lane	\$1,326	3	2
Enhanced Bus Service	\$1,330	4	1
Cog Rail (Starting at La Caille)	\$1,419	5	5

The selected alternative is Gondola Alternative B starting with components of the Enhanced Bus Service Alternative (Improved and Increased Bus Service, Bus Maintenance and Storage facility, and Resort Bus Stops), a mobility hub and tolling. For the LCCA, UDOT assumed mobility hubs and the resort bus stops would be constructed over 2 years, in 2024 and 2025, and bus operations would start by 2026. The LCAA also assumed construction of the sub-alternatives (snow sheds and trailhead parking) in 2024 and 2025. For the revised LCCA, UDOT assumed that Gondola Alternative B would be constructed in 2031 and 2032 and operations would begin in 2033. The assumption for the LCCA is also that bus service would, therefore, operate between 2026 and 2032 and cease once the gondola is operational. Under these assumptions, the life cycle cost for a phased implementation approach for the preferred alternative in the Final EIS would be about \$1,212 million.

Note that the above are estimated construction durations. The exact year of the transition from bus service to a gondola has not been defined because this transition will depend on funding availability, design, and related preconstruction work and activities, and then the completion of construction. In addition, the timing of implementing the sub-alternatives has also not been determined and also depends on funding availability. See Section 4.0, *Project Implementation Plan*, of this ROD.

### 3.5.3 Roadless Area Conservation Rule Evaluation

Following publication of the Little Cottonwood Canyon Final EIS, the USDA Forest Service requested that UDOT provide supplemental information and analysis regarding the impacts of the S.R. 210 Project to Inventoried Roadless Areas (IRAs) under the 2001 RACR and the 2003 *Revised Forest Plan: Wasatch-Cache National Forest (Forest Plan; USDA Forest Service 2003a)*. In general, the RACR prohibits road construction, road reconstruction, and timber harvesting (timber cutting, sale, or removal) in IRAs unless certain exceptions or circumstances exist. The *Forest Plan* includes the management direction for IRAs within the Wasatch-Cache Planning Area of the Uinta-Wasatch-Cache National Forest. Little Cottonwood Canyon contains the White Pine IRA and portions of the Twin Peaks and Lone Peak IRAs. See Figure 3-27 below.

The *Final Environmental Impact Statement for the Wasatch-Cache National Forest, Forest Plan* (Forest Plan Final EIS; USDA Forest Service 2003b) assessed each IRA's roadless area values. These values are high-quality soil, water, and air resources; sources of public drinking water; biodiversity (assessed in whole as the IRA's degree of "properly functioning condition") and habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land; recreation opportunities in the primitive, semi-primitive non-motorized, and semi-primitive motorized classes; reference landscapes; scenic integrity; traditional cultural properties and sacred sites (heritage resources); and other locally unique characteristics.

UDOT assessed the expected impacts to the roadless area values of individual IRAs from the Little Cottonwood Canyon Final EIS alternatives using the evaluation criteria in Appendix C2 of the *Forest Plan* Final EIS. UDOT prepared the *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule for the Final EIS Alternatives* (UDOT 2023) to present the expected impacts of the alternatives and to evaluate the exceptions allowed (subject to USDA Forest Service's final decision) in the RACR. UDOT issued the report for a 30-day public review and comment period on March 19, 2023.

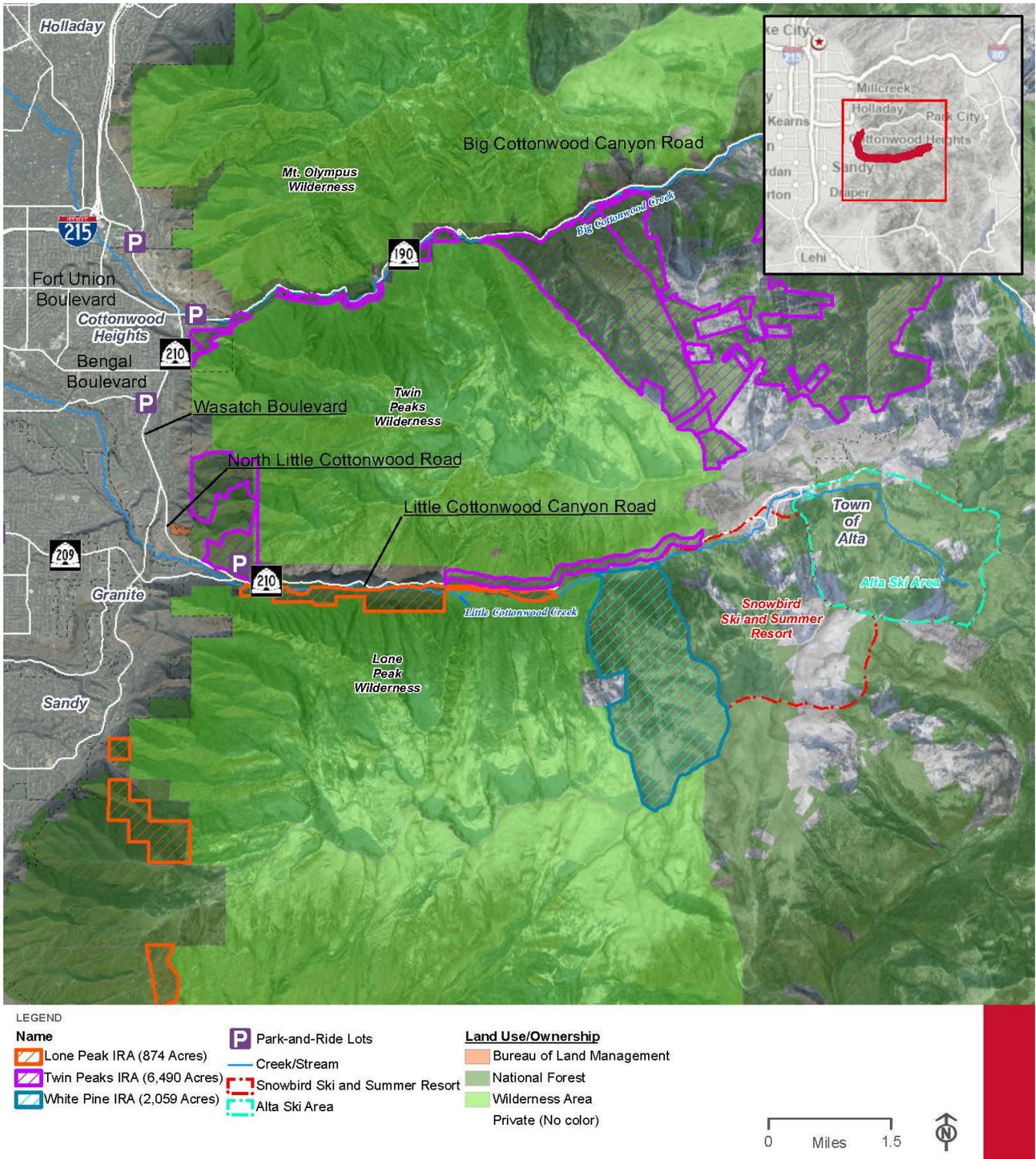
In the *Forest Plan*, the USDA Forest Service assigned management prescriptions to manage the IRAs' roadless values. Descriptions of the IRAs in Little Cottonwood Canyon and their assigned management prescriptions are provided below.

**Twin Peaks IRA.** The Twin Peaks IRA is a noncontiguous area that is about 6,490 acres. The majority of the IRA is in the Big Cottonwood Canyon watershed. An approximately 250-acre portion lies in the land use impact analysis area (for the Little Cottonwood Canyon Final EIS) north of and adjacent to S.R. 210 (North Little Cottonwood Road segment) between Lisa Falls on the west and about Snowbird Entry 1 to the east. Another approximately 208-acre portion is near the entrance to Little Cottonwood Canyon north of the existing park-and-ride lot on the north side of S.R. 210 (Figure 3-27). The Twin Peaks IRA was not recommended for wilderness designation (as is the case for all IRAs evaluated for the proposed action). The Twin Peaks IRA in Little Cottonwood Canyon has management prescription MP 3.1W (watershed emphasis). Activities planned in the IRA must meet the RACR.

**Lone Peak IRA.** The Lone Peak IRA is a noncontiguous area that is about 874 acres. A 376-acre portion lies south of S.R. 210. The Lone Peak IRA is offset from S.R. 210 a variable distance from the park-and-ride at the entrance to the canyon and terminates west of Tanners Flat Campground (Figure 3-27). The Lone Peak IRA in Little Cottonwood Canyon has management prescription MP 3.1W (watershed emphasis). Activities planned in the IRA must meet the RACR.

**White Pine IRA.** The White Pine IRA is about 2,059 acres. It is a north-south-running drainage basin adjacent to the eastern boundary of the Lone Peak Wilderness and west of the Snowbird Ski and Summer Resort boundary (Figure 3-27). The White Pine IRA has management prescription MP 2.6 (undeveloped areas). Activities planned in the IRA must meet the RACR.

Figure 3-27. Inventoried Roadless Areas (IRAs)



A summary of the alternative components' potential exceptions to the RACR is provided below.

- The USDA Forest Service has determined that the PPSL and snow sheds are considered roads or components of a road for the purpose of the RACR. UDOT's analysis shows that snow sheds are in the public interest and essential for public safety to mitigate a hazard. See Section 4.4.2.4, *Avalanche Mitigation Alternatives*, of the Final EIS. If the Federal Highway Administration (FHWA) agrees that the components are in the public interest, the components would qualify for a land appropriation under 23 USC Section 317. The USDA Forest Service will then determine if these components meet an exception in the RACR. Timber harvesting (timber cutting, sale, or removal) would be incidental to construction. If FHWA determines the snow sheds do not qualify for a land appropriation, the snow sheds might also qualify for an exception to the prohibition on timber cutting, sale, or removal in IRAs if the USDA Forest Service determines that they are "needed to protect public health and safety in cases of an imminent threat to flood fire or other catastrophic events that, without intervention, would cause the loss of life or property" [36 CFR Section 294.12 (b)(1)].
- The USDA Forest Service has determined that the gondola system and trailheads are not considered roads for the purpose of the RACR. The RACR provides an exception to the prohibition on timber cutting, sale, or removal in IRAs if the USDA Forest Service determines that "the cutting, sale, or removal of timber is incidental to the implementation of a management activity not otherwise prohibited" [36 CFR Section 294.13(b)(2)].
- The USDA Forest Service has determined that the cog railway is not considered a road for purposes of the RACR.<sup>6</sup> The RACR provides an exception to the prohibition on timber cutting, sale, or removal in IRAs if the USDA Forest Service determines that "the cutting, sale, or removal of timber is incidental to the implementation of a management activity not otherwise prohibited" [36 CFR Section 294.13(b)(2)].

Any exceptions per the RACR remain subject to the USDA Forest Service's review and decision, which is based on FHWA's characterization of whether components of the primary action alternatives and sub-alternatives fall under FHWA's authority.

The supplemental information report found that less than 1% of each of the three IRAs would be affected by any of the action alternatives including sub-alternatives. See *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule for the Final EIS Alternatives* for UDOT's assessment of the impacts to the roadless values of each IRA.

When analyzing information to prepare the supplemental information report, UDOT discovered a discrepancy between the impact assessment in Chapter 3, *Land Use*, of the Little Cottonwood Canyon Final EIS and in the IRA assessment. Gondola tower 10 could impact 0.06 acre of NFS land inside the boundary of the White Pine IRA. Chapter 3, *Land Use*, of the Little Cottonwood Canyon Final EIS does not report any impacts to NFS lands assigned management prescription MP 2.6 (undeveloped areas). The geographic information systems (GIS) analysis using the official IRA boundary determined that, based on preliminary design, the footprint for gondola tower 10 could overlap the White Pine IRA by about 0.06 acre. This small discrepancy does not materially affect the land use impact conclusions in the Little Cottonwood Canyon

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<sup>6</sup> RACR and *Forest Service Manual 7700 – Travel Management*, Section 7705 – *Definitions*, define a road as "a motor vehicle travelway over 50 inches wide, unless designated and managed as a trail." The manual defines a motor vehicle as "any vehicle which is self-propelled, other than vehicles operated on rails."

Final EIS. UDOT will evaluate shifting the gondola tower 10 to the west during final design to avoid the White Pine IRA.

UDOT determined that a Supplemental EIS for the S.R. 210 Project was not required under 40 Code of Federal Regulations (CFR) Section 1502.9(d) because substantial changes to the proposed actions have not occurred, nor are there any significant changes or information in the impacts analysis that would have a significant bearing on the findings of the Final EIS.

The USDA Forest Service would use information provided in the Little Cottonwood Canyon Final EIS and associated supporting documents including the *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule for the Final EIS Alternatives* as appropriate to inform a Forest Service ROD. The Forest Service ROD would discuss compliance with the 2001 RACR, and consistency with *Forest Plan* direction related to roadless areas and project-specific *Forest Plan* amendments, as needed, for its decision.

### 3.5.4 Supplemental Air Quality Hot-spot Analysis

In support of the Little Cottonwood Canyon EIS, UDOT conducted quantitative air quality analyses (also called “hot-spot” or project-level analyses) for particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>) for emissions sources associated with Gondola Alternative A. Gondola Alternative A includes the gravel pit mobility hub, which would have the highest number of buses (108 trips per day) departing from a single location, and the Gondola Alternative A base station, which would have the highest number of buses (216 trips per day) dropping off passengers at a single location.<sup>7</sup> This analysis modeled vehicle activity associated with the base station and the gravel pit mobility hub, which would have a 1,500-space parking structure in addition to bus operation. UDOT determined that, for Gondola Alternative A, the PM<sub>10</sub> and PM<sub>2.5</sub> concentrations would be equal to or higher than those for the other primary alternatives because the hot-spot analysis for Gondola Alternative A encompasses the highest diesel emission sources.

UDOT selects Gondola Alternative B to improve mobility in the canyon. The selected alternative also includes a construction phasing plan that would provide improved and increased bus service from the gravel pit mobility hub to Snowbird and Alta until gondola funding is obtained and construction is completed. UDOT would start with a bus service adjusted to be closer to the implementation-year demand. The bus service would likely start with 10-to-15-minute service instead of the 5-minute service evaluated to meet the demand in 2050.

In response to FHWA’s request for additional information to make a transportation conformity determination for the selected alternative, UDOT conducted additional modeling on two inputs in the quantitative air quality analyses for PM<sub>2.5</sub> and PM<sub>10</sub> to analyze a scenario with a different fuel mix and age of buses. There was no change in the underlying modeling.

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<sup>7</sup> A hot-spot analysis was conducted for the locations with highest potential for impact (the highest concentration of emissions). Because no air quality exceedances were identified for the worst locations, other locations with less traffic and a lower concentration of buses also would not exceed air quality standards.

UDOT prepared an *Air Quality Supplemental Information Technical Report* (UDOT 2023) and issued it for a 30-day public review and comment period on March 19, 2023. The adjustments made to the modeling did not change the results of the quantitative air quality analyses for PM<sub>2.5</sub> and PM<sub>10</sub>. The hot-spot analysis discussed in the technical report did not change the hot-spot analysis results discussed in the Final EIS nor identify any new or significant impacts.

### 3.6 Comparisons of Alternatives

Table 3-3 compares the major advantages and disadvantages of the primary action alternatives. Table 3-4 compares the environmental impacts of the No-action Alternative to each of the primary action alternatives. These tables amend Table 2.6-8, *Primary Advantages and Disadvantages of the No-Action and Primary Alternatives*, and Table 2.6-9, *Environmental Impacts of the No-Action and Primary Action Alternatives*, of the Final EIS. In Table 3-3, bold text indicates some, but not all, key decision factors for the selected alternative.

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Table 3-3. Primary Advantages and Disadvantages of the No-Action and Primary Action Alternatives

Evaluation Factor	No-Action Alternative	Enhanced Bus Service Alternative <sup>a</sup>	Enhanced Bus Service in Peak-period Shoulder Lane Alternative	Gondola Alternative A	Gondola Alternative B <sup>a</sup>	Cog Rail Alternative
<b>Primary advantages</b>	<ul style="list-style-type: none"> <li>Few environmental impacts because no major improvements to S.R. 210 would be made</li> <li>No additional impacts to the watershed</li> <li>No change to rural character of Wasatch Boulevard</li> </ul>	<ul style="list-style-type: none"> <li><b>Lowest capital cost</b></li> <li><b>Least environmental impacts</b></li> <li><b>Scalable service <sup>b</sup></b></li> <li><b>Potential for phased implementation <sup>b</sup></b></li> <li>Low mechanical and operation concerns</li> <li>No impacts to IRAs from this primary alternative</li> </ul>	<ul style="list-style-type: none"> <li>Second-lowest capital cost</li> <li>Best travel times</li> <li>Allows area for vehicles to pull off the road in an emergency</li> <li>Scalable service <sup>b</sup></li> <li>Potential for phased implementation <sup>b</sup></li> <li>Low mechanical and operation concerns</li> <li>Provides summer bicycle lanes</li> </ul>	<ul style="list-style-type: none"> <li>High travel reliability</li> <li>Minimal impact from road emergencies</li> <li>High person-carrying capacity</li> <li>Low construction impact in Little Cottonwood Canyon</li> </ul>	<ul style="list-style-type: none"> <li><b>High travel reliability</b></li> <li><b>Minimal impact from road emergencies and road conditions related to weather</b></li> <li>High person-carrying capacity</li> <li><b>Low construction impact in Little Cottonwood Canyon</b></li> <li>2,500 parking spaces at gondola base station</li> <li>Requires no bus service <sup>c</sup></li> <li><b>Second-lowest operations and maintenance cost (after cog rail)</b></li> </ul>	<ul style="list-style-type: none"> <li>Lowest operational and maintenance cost</li> <li>High travel reliability</li> <li>Minimal impact from road emergencies</li> <li>2,500 parking spaces at gondola base station</li> <li>Requires no bus service</li> <li>No impacts to the White Pine IRA</li> </ul>
<b>Primary disadvantages</b>	<ul style="list-style-type: none"> <li>Potential increase in emissions of air pollutants from personal vehicles with increased visitation in Little Cottonwood Canyon by 2050</li> <li>Would not be consistent with regional transportation plans</li> <li>Substantial travel delays and vehicle backups in 2050 would not be addressed, resulting in poor mobility</li> <li>Wasatch Boulevard would continue to operate at an unacceptable level of service</li> <li>Would not provide economic benefit to the state from the potential in improved tourism</li> <li>Would not address safety concerns with roadside parking in Little Cottonwood Canyon</li> <li>Would not address avalanche mitigation delays and associated safety risk</li> </ul>	<ul style="list-style-type: none"> <li><b>Highest operational and maintenance cost</b></li> <li><b>Highest potential for disruption to travel times from weather events, congestion, roadway slideoffs, and accidents</b></li> <li>Longest vehicle backups on S.R. 209 and S.R. 210</li> <li><b>Lowest overall travel reliability</b></li> </ul>	<ul style="list-style-type: none"> <li>Second-highest operational and maintenance cost</li> <li>Higher amount of impervious surface and risks of water quality impacts</li> <li>Reduces climber access in lower canyon</li> <li>Moderate visual impact from roadway widening</li> <li>More impacts to Twin Peaks IRAs from the PPSL</li> </ul>	<ul style="list-style-type: none"> <li>Fourth-highest capital cost</li> <li>High visual impact</li> <li>Breakdowns could strand users in canyon</li> <li>Requires all users to have two transfers (personal vehicle to bus, then bus to gondola)</li> <li>Service is not scalable <sup>b</sup></li> <li>Does not allow personal vehicles to park or drop off passengers at base station</li> <li>Haul rope must be inspected after artillery is used for avalanche mitigation</li> <li>Required bus service could reduce summer use of gondola</li> <li>Impacts to Lone Peak and White Pine IRAs</li> </ul>	<ul style="list-style-type: none"> <li><b>Third-highest capital cost</b></li> <li><b>High visual impact</b></li> <li>Breakdowns could strand users in canyon</li> <li>Service is not scalable <sup>b</sup></li> <li>Haul ropes and track ropes must be inspected after artillery is used for avalanche mitigation</li> <li>Impacts to Lone Peak and White Pine IRAs</li> </ul>	<ul style="list-style-type: none"> <li>Highest capital cost</li> <li>Highest amount of impervious surfaces</li> <li>High visual impact with greatest length of snow sheds</li> <li>High visual impact from the cog rail alignment</li> <li>Greater potential for mechanical delays compared to bus service</li> <li>Breakdowns could strand users in canyon</li> <li>Service is not scalable <sup>b</sup></li> <li>Conflicts when removing snow from the cog rail tracks and S.R. 210</li> <li>Highest impact to wildlife habitat.</li> <li>Concrete barrier along the rail alignment could disrupt wildlife movement in the canyon</li> <li>Most physical impacts to Twin Peaks IRA</li> </ul>

<sup>a</sup> Bold text indicates some, but not all, key decision factors for the selected alternative.

<sup>b</sup> Scalable service means that the alternative could be built in phases, starting with improvements to address the initial need and then ramping up to full build-out by 2050. For example, bus service could start with an initial, less-frequent service and build on that service as demand increases. The advantage of scalable service is that it would allow UDOT to start with a low initial upfront capital and operating and maintenance cost and build up the system over time while taking into account future changes in transportation demand and technology. The gondola alternatives and the cog rail alternative require complete construction to operate. However, rail vehicles and gondola cabins can be added over time to meet demand.

<sup>c</sup> UDOT proposes a phased implementation plan for Gondola Alternative B (the selected alternative) that would provide bus service from the gravel pit mobility hub until funding for Gondola Alternative B is obtained and construction is completed. For more information about phased implementation, see Section 4.0, *Project Implementation Plan*, of this ROD, and Section 2.6.9.1.2, *Implementation of the Preferred Alternative*, and Appendix 21, *Phased Implementation of the Preferred Alternative*, of the Final EIS.

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Table 3-4. Environmental Impacts of the No-Action and Primary Action Alternatives <sup>a</sup>

Impact Category	Unit	No-Action Alternative	Enhanced Bus Service Alternative	Enhanced Bus Service in Peak-period Shoulder Lane Alternative	Gondola Alternative A	Gondola Alternative B	Cog Rail Alternative
Land converted to alternative use <sup>b</sup>	Acres	0	110–115	196–201	197–202	206–211	209–214
Twin Peaks IRA <sup>b,c</sup>	Acres	0	10.2–13.0	22.9–25.8	17.8–20.7	17.8–20.7	54.4–54.7
Lone Peak IRA <sup>b,c</sup>	Acres	0	0	0.1	7.5	7.5	0
White Pine IRA <sup>b,c</sup>	Acres	0	0	0	0.8 <sup>c</sup>	0.8 <sup>c</sup>	0
Potential residential relocations	Number	0	1	1	1	1	1
Potential business relocations	Number	0	0	0	0	0	0
Recreation areas affected	Number	0	2	4	3	3	5
Community facilities affected	Number	0	1	1	1	1	1
Environmental justice impacts	Yes/no	No	No	No	No	No	No
Economic impacts	Yes/no	No	No	No	No	No	No
Existing Forest Service trails affected	Number	0	0	1	1	1	1
Climbing resources (existing boulders affected)	Number	0	0	41	5	2	116
Air quality impacts above regulations	Yes/no	No	No	No	No	No	No
Receptors with modeled noise levels above criteria	Number	173	213–230	216–233	213–230	213–230	213–230
Increase in impervious surface <sup>d</sup>	Acres	0	13.2–16.8	35.2–38.8	14.8–18.4	22.6–26.2	59.2–62.8
Water quality standards exceeded <sup>e</sup>	Yes/no	No	No	No	No	No	No
Wildlife habitat impacted	Acres	0	11–15	44–48	13–17	24–28	87–91
Threatened and endangered species	Yes/no	No	No	No	No	No	No
Impacts to waters of the United States	Acres	0	0	0	0	0	0.01 <sup>f</sup>
Impacts to intermittent, perennial, and ephemeral streams	Acres	0	0.03–0.17	0.32–0.46	0.03–0.17	0.03–0.17	0.35–0.49

(continued on next page)

Table 3-4. Environmental Impacts of the No-Action and Primary Action Alternatives <sup>a</sup>

Impact Category	Unit	No-Action Alternative	Enhanced Bus Service Alternative	Enhanced Bus Service in Peak-period Shoulder Lane Alternative	Gondola Alternative A	Gondola Alternative B	Cog Rail Alternative
Impacts to Riparian Habitat Conservation Areas	Acres	0	0.14–0.83	1.58–2.18	0.14–0.83	0.14–0.83	0.75–1.44
Adverse impacts to cultural resources	Number	0	2	2	2	2	2
Hazardous waste sites affected	Number	0	1	2	1	2	2
Floodplain impacts	Acres	0	1.18–1.32	2.1–2.2	1.5–1.6	2.1–2.3	1.5–1.6
Visual change <sup>g</sup> (primary alternative/supporting element)	Category	None	Negligible/high	High/high	High/high	High/high	High/high
Section 4(f) uses (with greater-than- <i>de minimis</i> impact) <sup>h</sup>	Number	0	1	1	1	1	2

<sup>a</sup> Table 3-4 amends Table 2.6-9, *Environmental Impacts of the No-Action and Primary Action Alternatives*, of the Final EIS. Because the impacts depend on which sub-alternative is selected, a range of impacts from low to high is provided.

<sup>b</sup> Land use converted acres for the gondola alternatives includes the area under an aerial easement or USDA Forest Service special-use authorization. However, the area under the aerial easement or USDA Forest Service special-use authorization would not change the land uses or activities under the easement since the land would still be available for recreation uses.

<sup>c</sup> The values includes the aerial easement for the gondola alternatives. Physical disturbance in the White Pine IRA is from one tower and would be about 0.06 acre or about 0.003% of the IRA.

<sup>d</sup> Range captures the increase in impervious surface from the Wasatch Boulevard Imbalanced-lane Alternative or the Five-lane Alternative. Range does not include new impervious surface at the gravel pit or 9400 South and Highland Drive mobility hubs, These locations were not included in the quantitative water quality analysis because they are outside the Little Cottonwood Creek watershed. Range includes the impervious surface at the gondola and cog rail base stations at La Caille.

<sup>e</sup> Based on water quality modeling, numeric water quality standards in Little Cottonwood Creek would not be exceeded for any alternative for 80% of the storm events.

<sup>f</sup> The impact would be to a seep from the upper-canyon snow sheds as part of the Cog Rail Alternative.

<sup>g</sup> Visual change includes landscape character change at key observation points. The visual change is for the primary alternative and supporting elements such as snow sheds.

<sup>h</sup> The Section 4(f) use with greater-than-*de minimis* impact would occur with the avalanche mitigation sub-alternatives under all primary alternatives. Section 4(f) is an element of law and U.S. Department of Transportation regulation that requires a project to avoid the use of eligible or potentially eligible historic properties and significant publicly owned parks, recreation areas, and wildlife or waterfowl refuges unless there is no feasible and prudent alternative to such use or unless the use would have a *de minimis* impact. For historic properties, a *de minimis* impact means that UDOT has determined, in accordance with 36 Code of Federal Regulations Part 800, that the historic property in question would not be affected by the project or that the project would have “no adverse effect” on the historic property. For recreation areas, a *de minimis* impact is one that would not adversely affect the features, attributes, or activities that qualify the property for protection under Section 4(f). A temporary occupancy is an occupancy of land so minimal as to not constitute a use within the meaning of Section 4(f). For more information, see Chapter 26, *Section 4(f) and Section 6(f) Evaluation*.

## 3.7 Basis for Identifying the Selected Alternative

In identifying the selected primary alternative and selected sub-alternatives, UDOT considered public and agency input during the scoping process and during the alternatives development, screening, and refinement process as well as comments received on the Draft and Final EISs and supplemental information reports. UDOT identified the selected alternative based on its transportation performance, impacts to the natural and human environment, and cost. Also see Section 2.6.9, *Basis of Identifying the Preferred Alternative*, and Appendix 2G, *Preferred Alternative Selection Memorandum*, of the Final EIS.

UDOT selects Gondola Alternative B with phased implementation of components of the Enhanced Bus Service Alternative (Improved and Increased Bus Service, Bus Maintenance and Storage Facility, and Resort Bus Stops; also see Section 3.7.3, *Selected Components of the Enhanced Bus Service*). To make the bus service attractive to use, tolling will be implemented with the start of the bus service, which is also included with all primary alternatives as described in the Final EIS and in Section 3.3, *Description of the Primary Alternatives*, of this ROD, and will continue with Gondola Alternative B.

The following sections present the basis for UDOT's selection of Gondola Alternative B as the selected primary alternative, the basis for selecting the sub-alternatives, and the basis for selecting components of the Enhanced Bus Service Alternative.

### 3.7.1 Primary Alternative Selection

UDOT selects Gondola Alternative B as the selected primary alternative. The factors used to determine the selected primary alternative are summarized below.

**Reliability.** UDOT based the decision for selecting the primary alternative on the analysis that shows that Gondola Alternative B provides the best overall reliability. The selected alternative will have a high travel reliability because it will be on a separate alignment and will operate independently from the road. Weather related incidents, snow, vehicle slideoffs and crashes, and snow- and avalanche-removal operations will not affect the gondola service. If S.R. 210 were closed because of an avalanche debris or vehicle crash, the gondola could still operate and be used as an alternate to personal vehicle use. The gondola will not delay or be delayed by UDOT's snow-removal operations and would likely provide an incentive for people to switch from personal vehicles to the gondola service. In addition, the 2,500-space parking structure at the gondola base station will make Gondola Alternative B an attractive option to using personal vehicles.

**Costs.** Gondola Alternative B has the third-highest construction cost but the second-lowest winter O&M cost. Over a 30-year period, the lower O&M costs for Gondola Alternative B result in a life cycle cost that is lower than that of the enhanced bus service alternatives.

**Environmental.** UDOT considered the importance of the scenic value and watershed that Little Cottonwood Canyon provides. UDOT believes that Gondola Alternative B will have the highest visual impacts of the primary action alternatives; however, the alternative will have the second-lowest impacts to the watershed (after the Enhanced Bus Service Alternative) because there will be a negligible increase in the amount of impervious surfaces added in the watershed, thus reducing the potential for increasing stormwater runoff to affect water quality. The selected alternative will not create an additional barrier to wildlife movement since no additional travel lanes are included. The selected alternative might directly remove two climbing boulders in Little Cottonwood Canyon if they cannot be avoided during final design or relocated to a new location in Little Cottonwood Canyon. Gondola Alternative B will not reduce access to climbing or other recreation

resources in Little Cottonwood Canyon. Gondola cabins will fly over the Tanners Flat Campground and, if the gondola is operated in the summer, campground users could feel that these elements reduce the quality of the camping experience.

For the selected alternative, UDOT also considered funding availability, construction timing, and improving mobility in the short term. Recognizing that safety, mobility, and reliability are issues on S.R. 210 today, and the time required to fund and complete construction of Gondola Alternative B, UDOT has determined that the selected alternative will include implementing Improved and Increased Bus Service as a first phase. This phased approach does not introduce substantially different impacts over Gondola Alternative B. For more information, also see Section 2.6.9.1.2, *Implementation of the Preferred Alternative*, of the Final EIS and Section 4.0, *Project Implementation Plan*, of this ROD.

### 3.7.2 Sub-alternatives Selection

UDOT selects the following sub-alternatives as supporting elements of the select primary alternative.

**Gravel Pit Mobility Hub (Mobility Hubs Sub-alternative).** The phased approach will require the construction of the Gravel Pit Mobility Hub. The gravel pit mobility hub provides a convenient location to park personal vehicles and pick up resort-bound canyon users and transport them directly to the ski resorts.

**Five-lane Alternative (Wasatch Boulevard Sub-alternative).** The Five-lane Alternative will provide better transportation performance, with all segments of Wasatch Boulevard operating at LOS B or better compared to the Imbalanced-lane Alternative providing LOS C or better. In addition, the Five-lane Alternative will have only one intersection operating at LOS D, whereas the Imbalanced-lane Alternative would have three. The environmental impacts of the alternatives would be similar, with the main difference being that about 17 more residential receptors will have noise impacts from the Five-lane Alternative compared to the Imbalanced-lane Alternative.

Some residents of Cottonwood Heights wanted UDOT to minimize the footprint of any Wasatch Boulevard alternative being considered. Residents felt that a wider road will harm the rural nature of the community, cause greater safety concerns with pedestrians wanting to cross the road, and further increase vehicle speeds. In making its decision, UDOT considered the concerns of the residents and therefore will implement a phased approach for the Wasatch Boulevard improvements. UDOT will first construct the Imbalanced-lane Alternative and will purchase the right-of-way to accommodate the Five-lane Alternative in the future. With the construction of the Imbalanced-lane Alternative, UDOT will place the multi-use trail in the location as shown for the Five-lane Alternative to preserve the right-of-way and provide a better experience for trail users. The extra right-of-way will be maintained as open space on the east side of the road between the travel lane and multi-use trail until the Five-lane Alternative is constructed. UDOT will base the need for the additional northbound lane on when the level of service on the road and/or intersections reaches LOS E or worse.

**Snow Sheds with Realigned Road Alternative (Avalanche Mitigation Sub-alternative).** UDOT selects the Snow Sheds with Realigned Road Alternative as the avalanche mitigation sub-alternative. The decision was based primarily on visual impacts. Both avalanche mitigation alternatives would equally meet the project purpose of improving safety and reliability by substantially decreasing the amount of time when S.R. 210 is closed for avalanche mitigation and by reducing the avalanche risk to roadway users. The environmental impacts of the two avalanche mitigation alternatives would be similar, with the main difference being that the

Snow Sheds with Berms Alternative would have a greater visual impact because the berms would extend 300 feet up the mountainside at a height of up to 20 feet. Both alternatives would have the same use of Section 4(f) resources with a greater-than-*de minimis* impact to a Section 4(f) resource. Also see Section 2.6.9.2.3, *Avalanche Mitigation Alternatives*, of the Final EIS.

**Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative (Trailhead Parking Sub-alternative).** UDOT selects the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative as the trailhead improvements sub-alternative. UDOT made the decision primarily because UDOT did not want to substantially reduce recreation access in areas that are currently used by recreationists but do not have designated parking areas. With the trailhead improvements, UDOT will add parking at the Bridge, Lisa Falls, Gate Burress, and White Pine Trailheads equivalent to the number of spaces eliminated in the proposed no-parking areas ¼ mile on either side of the trailheads and will maintain the existing roadside parking outside the ¼ mile area. Also see Section 2.6.9.2.4, *Trailhead Parking Alternatives*, of the Final EIS.

**No Winter Parking Alternative (No Winter Parking Sub-alternative).** UDOT selects the No Winter Parking Alternative for implementation. UDOT based its decision on the fact that removing winter roadside parking near the resorts will reduce friction between parked vehicles and vehicles in the travel lanes and therefore improve overall mobility. In addition, removing roadside parked vehicles will allow UDOT to improve winter snow-removal operations since snow plows will not need to navigate around parked vehicles, and it will also provide more areas for storing snow.

### 3.7.3 Selected Components of the Enhanced Bus Service Alternative

UDOT selects the following components of the Enhanced Bus Service Alternative for implementation.

**Improved and Increased Bus Service.** The bus service will be similar to the bus service described for the Enhanced Bus Service Alternative but smaller in scale to meet the demands associated with earlier years of service. As mentioned in the Final EIS and in Table 3-3, *Primary Advantages and Disadvantages of the No-Action and Primary Action Alternatives*, of this ROD, the primary advantages of bus service are its low initial capital costs and scalable service, which facilitates a phased implementation approach for the selected alternative. Also see Section 4.0, *Project Implementation Plan*, of this ROD.

**Bus Maintenance and Storage Facility.** The gravel pit mobility hub will include a bus storage area and maintenance facility so that these functions are located closer to Little Cottonwood Canyon, which will improve operational efficiency.

**Resort Bus Stops.** The Resort Bus Stops will include shelters for people waiting for buses, restrooms, and locker facilities. These features will help attract bus riders.

See Section 4.0, *Project Implementation Plan*, of this ROD for information about how these components will be implemented.

### 3.8 Environmentally Preferable Alternative

Council on Environmental Quality regulations [40 CFR Section 1505.2(b)] require a ROD to identify the environmentally preferable alternative. The environmentally preferable alternative is one that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. Designation of the environmentally preferable alternative typically involves judgment and balancing some environmental values against others. The Council notes that comments on environmental documents (such as the Draft EIS, Final EIS, and supplemental information reports for this project) can help the lead agency develop and determine the environmentally preferable alternative.

Although the No-Action Alternative would have less environmental impact, this alternative does not meet any of the project's purpose and needs.

The Enhanced Bus Service Alternative is the environmentally preferred alternative because, besides bus stops at the resorts, which are in disturbed areas, and snow sheds, which are common among all alternatives, the Enhanced Bus Service Alternative would not include major transportation infrastructure in the Little Cottonwood Canyon watershed, nor would it change the landscape character in the canyon. In addition, the Enhanced Bus Service Alternative would have the lowest impacts to IRAs; these impacts would be primarily from the snow sheds. The regional greenhouse gas emissions of the Enhanced Bus Service Alternative would be marginally lower than those of the selected alternative. However, bus emissions would be within the canyon setting, which was not preferred by several public commenters and agency representatives when comparing emissions to the gondola alternative, for which the power needed to operate motors would be generated off site.

Besides impacts to visual resources, impacts to IRAs, and the impacts to Tanners Flat Campground, the environmental impacts of the Enhanced Bus Service Alternative and Gondola Alternative B are similar. Both alternatives would not impact habitat for threatened or endangered species, would have the same impacts to streams and riparian habitat conservation areas, and would have the same amount of impacts to cultural resource sites (two sites) and would have the same greater-than-*de minimis* use of one Section 4(f) site.

The transit mode travel time would be essentially the same between the Enhanced Bus Service Alternative (54 minutes) and Gondola Alternative B (55 minutes). However, as described in Section 3.7, *Basis for Identifying the Selected Alternative*, of this ROD, UDOT made the decision regarding the selected primary alternative because Gondola Alternative B will provide the best overall reliability and therefore will best meet the project's purpose. The gondola component of the selected alternative will have high travel reliability because it will be on a separate alignment and will operate independently from the S.R. 210 roadway. By contrast, the enhanced bus service would run in mixed traffic and would be subject to same external factors that influence the road's reliability and user mobility, which are avalanche mitigation closures, weather (snow) and resulting road conditions, and roadway incidents (crashes and slideoffs).

## 4.0 Project Implementation Plan

UDOT has established a phased approach to implementing Gondola Alternative B, the selected sub-alternatives, and components of the Enhanced Bus Service Alternative. These implementation phases are presented below.

- Phase 1 of the S.R. 210 Project will include an Improved and Increased Bus Service that is scaled to accommodate earlier years of ridership needs and not the full 2050 buildout that is described for the Enhanced Bus Service Alternative. Phase 1 will include Resort Bus Stops and a Bus Maintenance and Storage Facility (as described under the Enhanced Bus Service Alternative), the Gravel Pit Mobility Hub, and tolling to incentivize transit use (bus or gondola), as described for all alternatives long term. The No Winter Parking Alternative will be implemented after the bus service is operating and will continue while Gondola Alternative B is operating.
- Phase 2 of the S.R. 210 Project will include constructing the sub-alternatives (Snow Sheds with Realigned Road Alternative, the selected Wasatch Boulevard sub-alternative, and the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ mile of Trailheads Alternative). Phase 2 implementation will depend on available funding.
- Phase 3 of the S.R. 210 Project will include Gondola Alternative B and its supporting infrastructure (base station parking and its access roads). Phase 3 implementation will depend on available funding.

Utah Senate Bill 2 (2023) allocates \$150 million for Phase 1: enhanced bus service, a mobility hub, traffic demand management (tolling), and resort bus stops in Little Cottonwood Canyon. Senate Bill 2 also authorizes spending the allocation for enhanced bus service, resort bus stops, and tolling in Big Cottonwood Canyon. UDOT will assess the environmental impacts of these actions in Big Cottonwood Canyon prior to implementation. Also see Section 11.0, *Next Steps*, of this ROD.

## 5.0 Summary of Comments on the Final EIS and Supplemental Information Reports

The Little Cottonwood Canyon Final EIS was announced in the Federal Register on September 2, 2022. During a 45-day comment period that extended to October 17, 2022, UDOT received comments from members of the public, government agencies, and nongovernmental agencies. This Final EIS public review and comment period followed a 70-day public review for the Draft EIS (June 25 to September 3, 2021) and a 30-day public review and comment period for a revised Draft Chapter 26, *Section 4(f) and Section 6(f) Evaluation* (December 10, 2021, to January 10, 2022). The Final EIS highlighted the notable refinements made between the release of the Draft and Final EISs, addresses the controversial issues identified during the EIS process, and specifies UDOT's preferred alternative.

After the Final EIS was published and based on comments received on the Final EIS, UDOT prepared two supplemental information reports to address a few corrections, clarifications, and new analysis. In March 2023, UDOT published and held a 30-day public review and comment period on the *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule for the Final EIS Alternative* to assess and further document the expected impacts of the S.R. 210 Project (primary alternatives and sub-alternatives) under the RACR framework. Also in March 2023, UDOT prepared an *Air Quality Supplemental Information Technical Report* and issued it for a 30-day public review and comment period. The air quality hot-spot model refinements discussed in the technical report did not change the hot-spot analysis results discussed in the Final EIS. These evaluations and assessment of new or updated information did not change the conclusions in the Final EIS.

During the public review and comment period for the Final EIS and supplemental information reports, more than 30,200 comments submissions were received. The comments were in the form of letters, emails, website submissions, and phone messages. Comments were received from the following agencies: Salt Lake City (Department of Public Utilities, council, and mayor), Salt Lake County, Sandy City (council and mayor), Cottonwood Heights City, Town of Alta, Central Wasatch Commission, U.S. Department of the Interior, Utah House of Representatives Democratic Caucus, U.S. Environmental Protection Agency, Wasatch Front Regional Council, League of Unincorporated Community Councils, and Metropolitan Water District of Salt Lake and Sandy. Comments were also received by the following organizations: Save Our Canyons, Salt Lake Climbers Alliance, Access Fund, Friends of Alta, Utah Audubon, American Mountain Guides Association, Snowbird Ski and Summer Resort, Alta Ski Area, Leitner Poma, CW Management Corp., Solitude Mountain Resort, Brighton Resort, Wasatch Mountain Club, and Scenic Utah.

A summary of the more common comment themes is provided in Section 5.1 below.

## 5.1 Summary of Comments

The more common comment themes received on the Final EIS and supplemental information reports included, but were not limited to, the following:

- Support for or opposition to the project
- Support for or opposition to specific alternatives
- Questions regarding the purpose of and need for the project and EIS study area, such as:
  - Requests to include Big Cottonwood Canyon and other Central Wasatch canyon areas
  - Requests to address regional transportation needs and integration project alternatives into the existing transit network
  - Request for a visitor capacity analysis
  - Request to address year-round needs, including summer transit service and stops at trailheads
- As the Final EIS identified Gondola Alternative B as the preferred alternative, comments expressed concerns with a gondola system, including the following
  - Concerns about the visual impacts of towers, cables, and gondola cabins
  - Concern that a gondola would harm the canyon watershed from construction and operations
  - Concerns about indirect impacts from increased canyon usage
- General support for a phased implementation plan starting with enhanced busing. Commenters requested additional information about the phased implementation plan.
- Concern that the overall project costs were not justified
- Requests to update capital and O&M costs based on recent (2021 and 2022) inflation. Additional cost-related comments included:
  - Requests to updated life cycle cost assumptions given changes to future inflation and discount rates expectations
  - The additional costs of phased implementation
- Concerns about impacts to dispersed recreation and climbing resources
- Questions about the cost to ride the transit alternatives versus the cost of a toll
- Strong desire for public-private partnerships and statements that the resorts should pay for the transportation improvements
- Questions regarding whether the resort parking reservation systems are effectively reducing peak traffic volumes
- Concerns about impacts to the Little Cottonwood Canyon ecosystem including vegetation and wildlife
- Concerns about impacts to IRAs and whether the alternatives would modify the IRA boundary

## 5.2 Responses to Comments

UDOT received about 30,200 comments on the Final EIS and supplemental information reports. Prior to this decision, UDOT reviewed and considered each comment for new substantive information such as comments on the alternative refinements and analyses conducted for the Final EIS, comments suggesting additional refinements to the action alternatives, comments suggesting new study methodologies that might affect the analyses, and any necessary factual corrections to the Final EIS.

The appendices to this ROD provide responses to comments received on the Final EIS and supplemental information reports. Appendix A, *Responses to Comments on the Final EIS and Supplemental Information Reports*, provides responses to new substantive comments on the Final EIS and on the supplemental information reports. Appendix A1, *Reproductions of Comments on the Final EIS*, provides a reproduction of each comment received on the Final EIS and, for each comment, provides response code(s) referencing the responses in Chapter 32, *Response to Comments*, of the Final EIS and/or Appendix A of this ROD. Appendix A2, *Reproductions of Comments on the Supplemental Information Reports*, provides a reproduction of each comment received on the supplemental information reports and, for each new substantive comment, provides response code(s) referencing the responses in Appendix A of this ROD. The comments in Appendices A1 and A2 are listed by the commenter's last name. Appendix A3, *Reproductions of Mailed Comments and Comments Received as Email Attachments*, provides a reproduction of the longer comments on the Final EIS and supplemental information reports which were received by mail or as email attachments.

The majority of comments that UDOT received on the Final EIS and supplemental Information reports were similar to the comments received and addressed on the Draft EIS. If a comment on the Final EIS was the same as a comment on the Draft EIS, Appendix A1 refers the reader to response(s) in Chapter 32 of the Final EIS. If the comment was a new, substantive comment, Appendices A1 and A2 refer the reader to new or refined response(s) in Appendix A of this ROD. Appendix A also contains new and revised responses based on new information or analysis conducted after the Final EIS was released.

Based on review of the comments received, UDOT did not identify any new significant information or changes that were not previously evaluated that would require to further NEPA review (supplemental EIS or reopening the Final EIS).

## 6.0 Measures to Minimize Harm from the Selected Alternative (Chapter 25 of the Final EIS)

This section provides the mitigation measures that will be adopted to avoid, minimize, rectify, reduce, or compensate impacts from the preferred alternative for the S.R. 210: Wasatch Boulevard through Town of Alta Project [see 40 CFR Section 105.2(a)(3)]. Funding for mitigation will be included in the cost of construction for the project. UDOT will have the final responsibility for implementation.

UDOT or its designated contractor will implement a mitigation and monitoring tracking system to ensure that all mitigation identified in this ROD is performed and that appropriate monitoring for effectiveness takes place. If a mitigation measure is determined to be not effective, UDOT or its contractor in consultation with UDOT and other agencies (permitting agencies or cooperating agencies where UDOT has agreed to coordinate) will refine the mitigation measure or develop other appropriate mitigation.

### 6.1 Mitigation Measures for Impacts to Communities and Properties

#### 6.1.1 Recreation

##### Avalanche Mitigation Alternatives

During construction of the snow sheds, access to recreation in Little Cottonwood Canyon would be restricted in the area of snow shed construction. UDOT will implement a public involvement program to inform recreation users of potential temporary road and recreation site closures. UDOT will also look at maintaining access to the White Pine North boulder area on the north side of S.R. 210 as part of the mid-canyon snow sheds.

##### Trailhead Parking Alternatives

During construction of the trailheads at Gate Buttriss, Bridge, Lisa Falls, and White Pine, access to the trailheads could be restricted during construction. In coordination with the USDA Forest Service, UDOT will implement a public involvement program to inform recreation users of potential trailhead closures. For the trailhead parking alternatives that eliminate parking at the Tanners backcountry skiing area, UDOT will add parking at the entrance to the Tanners Flat Campground as shown in Figure 4.4-1, *Mitigation for Elimination of Tanners Roadside Parking*, in Chapter 4, *Community and Property Impacts*, of the Final EIS. There are no cultural resources or important biological resources in the area of the proposed improvements.

During the 2019 EIS scoping period, the Salt Lake Climbers Alliance requested that Gate Buttriss be considered as a parking area. The Gate Buttriss is used by climbers to access boulders and climbing areas in lower Little Cottonwood Canyon. Currently there is an existing off-road dirt parking area on the north side of S.R. 210 with a capacity of about 30 vehicles. The property at the parking area is owned by the Church of Jesus Christ of Latter-day Saints and is used under an agreement with the Salt Lake Climbers Alliance. Because this is an existing informal parking area with trails connecting to climbing areas, UDOT decided to

include the Gate Buttriss as an alternative for trailhead parking. However, the trailhead improvements proposed by UDOT allow only 21 parking spaces, a reduction of 9 parking spaces in the informal lot. The reason for the reduction is that UDOT would need to maintain appropriate access and parking standards. Before implementing the Gate Buttriss improvements, UDOT would coordinate with the property owner (the Church of Jesus Christ of Latter-day Saints) to determine whether they want to move forward with the UDOT improvements.

During final design, UDOT will work with USDA Forest Service to evaluate interpretive opportunities to mitigate impacts to Section 4(f) recreation resources on NFS land. Interpretive opportunities could include information about the history of recreation in Little Cottonwood Canyon or recreation opportunities presented on a kiosk or delivered on transit systems. Also see Section 26.8.2, *Section 4(f) Recreation Resources*, of the Final EIS.

### 6.1.2 Property Impacts

Property acquisitions will be completed according to the provisions of the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended; the Utah Relocation Assistance Act, Utah Code, Section 57-12; and UDOT's relocation guidelines (UDOT 2016).

Gondola infrastructure (towers and angle station) will be re-evaluated in the final design phase to determine whether resource and property impact avoidance measures are feasible.

## 6.2 Mitigation Measures for Impacts to Environmental Justice Populations

With the selected alternatives, paying a toll could cause an adverse impact to low-income populations wanting to recreate during the winter in the lower canyon (below the ski resorts). A practicable measure to avoid or reduce the potential adverse effects to low-income populations will be to place the toll gantry immediately prior to Snowbird Entry 1. This would allow low-income populations wanting to recreate in the lower portions of Little Cottonwood Canyon to avoid having to pay the toll.

Congestion (variable) pricing will be implemented. For example, the toll could be free or reduced for travel during off-peak periods. This type of toll structure would encourage drivers to shift to transit during peak usage or to drive during off-peak or discount periods, both of which would be effective in improving mobility.

## 6.3 Mitigation Measures for Economics Impacts

For businesses that experience short-term access and visibility problems during construction, a traffic access management plan will be developed and implemented by the construction contractor that maintains the public's access to the business during normal business hours. However, with construction in Little Cottonwood Canyon, it might not be possible to keep the road open all of the time during the summer construction period. UDOT will work with the USDA Forest Service and businesses in Little Cottonwood Canyon to inform them of potential closures and try to avoid closures during certain periods.

For impacts related to partial acquisitions from business properties, the business will receive compensation in accordance with UDOT's right-of-way acquisition practices. Property acquisitions will be completed

according to the provisions of the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the Utah Relocation Assistance Act, Utah Code, Section 57-12.

## 6.4 Mitigation Measures for Impacts Related to Pedestrians and Bicyclists

Existing pedestrian and bicyclist facilities that would be temporarily impacted during construction will be temporarily relocated as part of the project. Project construction for pedestrian and bicyclist facilities will be phased to minimize disruptions to the public to the extent feasible. Trailheads could be temporarily closed during construction. UDOT will also coordinate with the USDA Forest Service, Cottonwood Heights City, Sandy City, the Town of Alta, and Salt Lake County during the final design of the selected alternative to mitigate disruptions to pedestrians, cyclists, and trail users. Potential mitigation for disruption will include providing signed on-road detours where feasible, closing facilities during low-use seasons (trail- and use-dependent), and providing information to the public about trail closures.

UDOT will work with the municipalities and Salt Lake County during the final design of the selected alternative to determine whether additional funding is available for new trails or new trail connections to areas where S.R. 210 improvements are made.

UDOT will work with Cottonwood Heights City and Salt Lake County on the design of the bicycle path around the gondola base station to minimize safety conflicts and maintain the quality of this cyclist route. This could include providing a multi-use trail from Wasatch Boulevard on the east side of North Little Cottonwood Road south to the land designated as open space by Cottonwood Heights City. The multi-use trail could provide access for Cottonwood Heights residents to the open space. Constructing a trail on the open space would be the responsibility of Cottonwood Heights. UDOT would also build the trail within its existing right-of-way on the south and east sides of the property connecting the trail to the Little Cottonwood Canyon park-and-ride lot at the intersection of S.R. 209 and S.R. 210. UDOT would not construct the trail across land designated as open space by Cottonwood Heights City. That would be the responsibility of Cottonwood Heights City.

## 6.5 Mitigation Measures for Noise Impacts

In accordance with UDOT's noise-abatement policy (UDOT Policy 08A2-01, *Noise Abatement*, revised May 28, 2020), noise abatement was considered for new highway construction where noise impacts are identified. The goal of noise abatement is to substantially reduce noise, which might or might not result in noise levels below UDOT's noise-abatement criteria.

The two primary criteria to consider when evaluating noise-abatement measures are feasibility and reasonableness. Noise abatement will be provided by UDOT if UDOT determines that noise-abatement measures are both feasible and reasonable.

The final decision to build a noise barrier will be made on completion of the project design and on completion of the public involvement process (which includes balloting of affected locations), which is considered in the reasonableness criterion, consistent with UDOT's noise-abatement policy. A barrier identified as recommended for balloting in the Final EIS is a barrier that has been shown to be both feasible and reasonable. However, that finding is not a commitment to build a barrier.

Of the noise walls evaluated in the EIS, 14 met UDOT's feasibility and reasonableness acoustic and cost criteria for the Imbalanced-lane Alternative on Wasatch Boulevard and were recommended for balloting during final design. Maps showing the locations of the noise walls evaluated for the action alternatives and more detailed information is available for each barrier in Appendix 11A, *Noise Technical Report*, of Chapter 11, *Noise*, of the Final EIS.

## 6.6 Mitigation Measures for Impacts to Water Resources

The following mitigation measures will be employed to maintain water quality.

- UDOT or its design consultants will follow UDOT's *Stormwater Quality Design Manual*, which address construction and postconstruction water quality controls.
- UDOT or its construction contractors will prepare a stormwater pollution prevention plan (SWPPP) and obtain a Utah Pollutant Discharge Elimination System (UPDES) permit for construction and will monitor restoration efforts for revegetation success. Also see Section 6.7.3, *Mitigation Measures for Aquatic Resources Impacts*, of this ROD.
- UDOT will visually inspect and maintain construction water quality BMPs to check that they are functioning properly.
- During construction, inspectors for the project will certify that the BMPs were implemented according to contract documents and UDOT standards.
- After construction, UDOT will document and maintain records of inspections, any deficiencies identified during inspections, and the repairs or other activities performed to meet the BMPs.
- UDOT will work with the Salt Lake City Department of Public Utilities (SLCDPU), the Metropolitan Water District of Salt Lake and Sandy (Metropolitan Water), and the sewer district to determine the procedures for discharging the fire-suppression water from the snow sheds.
- UDOT will ensure that the emergency generators and fuel storage tanks are inspected for damage and evidence of leaks, and if feasible that they will include leak-detection systems. The tanks will be dual-walled or will have a secondary containment system.
- SLCDPU and Metropolitan Water (Sandy City) stated that one of their primary water quality concerns is vehicle accidents in which a vehicle leaves the roadway and enters Little Cottonwood Creek, with the result that vehicle fluids leak and directly contaminate the creek and potentially contaminate the water treatment processes. UDOT will include safety barriers if the required shoulder and 2-foot safety distance between the travel lane and barrier can be maintained and if the barriers do not substantially impede UDOT's ability to remove snow from the roadway. Subject to UDOT's final evaluation, the barriers will be located between mileposts 4.9 and 5.7, 6.7 and 7.0, and 8.7 and 9.0 on S.R. 210. UDOT will work with the USDA Forest Service before installing any barriers to address the Forest Service's concerns about visual impacts.

- During final design of the snow sheds, UDOT will coordinate with key stakeholders regarding the specific features needed with the snow sheds. The proposed snow sheds in Little Cottonwood Canyon are considered road tunnels and could include the following operational elements, subject to a detailed engineering analysis and coordination with the authorities having jurisdiction (Unified Fire Authority, Utah Highway Patrol, UDOT, USDA Forest Service, and SLCDPU):
  1. Traffic-control devices at the approaches to the snow sheds and within the snow sheds
  2. Fire-detection and alarm systems
  3. Two-way communications
  4. A water connection to local water infrastructure
  5. Dry pipeline and dry standpipes in the snow sheds
  6. Portable fire extinguishers
  7. Fixed water-based fire-fighting systems (sprinklers)
  8. Tunnel drainage/containment systems
  9. Means of egress and signage
  10. Electrical systems for lighting the inside of the snow shed

Depending on the outcome of the engineering analysis, a water supply might need to be provided to the snow sheds for fixed fire protection. Because the water lines would be subject to freezing conditions, and to eliminate the need to circulate the water and to install heat-tracing tape and insulation, the water system would be “dry.” With a dry system, when a fire occurs, water is turned on at a source and would be delivered to all hose connections within 10 minutes or less to meet standards. If water is needed for the fixed fire protection, UDOT will obtain agreements with SLCDPU and Canyon Water District to deliver emergency fire suppression water to the snow sheds from Canyon Water District.

Given the proximity of Little Cottonwood Creek, the snow shed drainage system will be designed to contain water used in a fire emergency and for spill containment from a non-fire accident. An emergency response plan will be developed in consultation with SLCDPU, UDOT, the USDA Forest Service, and the local fire authority to address spills and how water contained from use of the emergency fire-suppression system will be removed from the containment system.

## 6.7 Mitigation Measures for Impacts to Ecosystem Resources

### 6.7.1 Mitigation Measures for Vegetation Impacts

Removing vegetation or soil disturbance could introduce noxious species into the construction areas. To minimize further, potential effects, UDOT will mitigate temporary impacts to vegetation by creating and implementing a revegetation plan. A revegetation plan will be produced and will include the following measures:

- All fill materials brought onto the construction site will be required to be clean of any chemical contamination per UDOT's General Standard Specifications, Section 02056, *Embankment, Borrow, and Backfill*. Topsoil for landscaping must also be free of weed seeds per UDOT's General Standard Specifications, Section 02912, *Topsoil*.
- Compacted soils will be ripped, stabilized, and reseeded with native seed mixes.
- The contractor will be required to follow noxious weed mitigation and control measures identified in the most recent version of UDOT Special Provision Section 02924S, *Invasive Weed Control*.
- Reseeding with native plants, followed by monitoring seedlings and invasive species until the vegetation has re-established, will mitigate direct-disturbance impacts and reduce the potential for weed invasions. UDOT will be responsible for monitoring and determining when vegetation becomes re-established.
- UDOT will comply with USDA Forest Service requirements by continuing to treat noxious and other invasive weeds on areas disturbed by this project for a period of three growing seasons.
- UDOT will coordinate with the USDA Forest Service to determine the proper methods for disposing of any vegetation slash generated from the selected alternative.
- UDOT will coordinate with the USDA Forest Service and follow Salt Lake County Watershed Protection Ordinances regarding the use of any herbicides in Little Cottonwood Canyon.

### 6.7.2 Mitigation Measures for Wildlife Impacts

UDOT will implement the following mitigation measures to minimize impacts to migratory birds and in furtherance of Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*:

- Trees and shrubs will be removed during the non-nesting season (about August 15 to April 1). If this is not possible, UDOT or its contractor will arrange for preconstruction nesting surveys of the area that would be disturbed, to be conducted no more than 10 days before ground-disturbing activities, by a qualified wildlife biologist of the area that would be disturbed to determine whether active bird nests are present. If active nests are found, the construction contractor will coordinate with the UDOT Natural Resources Manager/Biologist to avoid impacts to migratory birds. If necessary, UDOT will coordinate with the U.S. Fish and Wildlife Service (USFWS).
- Coordination with the USDA Forest Service will be conducted to determine any known raptor nests that could be disturbed by construction activities and to determine when and where preconstruction raptor nest surveys should occur. If active nests are found, UDOT will coordinate with the USDA Forest Service and USFWS regarding protocols to protect the active nests.

- To the extent practicable, gondola towers and lighting design should consider recommendations from the *Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning* (USFWS 2021). Tower lighting should be implemented only if required by the Federal Aviation Administration, and flashing red lights and an aircraft detection lighting system should be used if allowed by the Federal Aviation Administration.

### 6.7.3 Mitigation Measures for Aquatic Resources Impacts

During final design, if (1) the loss of waters of the United States exceeds 0.1 acre or (2) there is a discharge in a special aquatic site including wetlands, UDOT must submit a preconstruction notification to the U.S. Army Corps of Engineers (USACE) prior to construction. For the impacts to the streams that require preconstruction notification, USACE may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects.

If preconstruction notification is required by USACE and if compensatory mitigation is required, UDOT will prepare a mitigation plan during the Clean Water Act Section 404 permitting phase of the project. UDOT will discuss mitigation concepts with USACE and the USDA Forest Service that might include the restoration or enhancement, maintenance, and legal protection (for example, through a conservation easements) of riparian areas next to streams that would be affected.

In addition, other mitigation measures will include the following:

- BMPs will be used during all phases of construction to reduce impacts from sedimentation and erosion. BMPs will include the use of erosion-control blankets, silt fences, straw-bale barriers, and other measures developed during final design.
- No equipment staging, refueling, or storing of construction materials will occur within 50 feet of wetlands or other waters, which includes locations where the Wasatch fitweed was found during surveys.
- Temporary fill material will not be stored within wetlands or other waters.
- Properly sized and engineered culverts will be used for stream crossings to minimize indirect impacts to aquatic resources and provide unobstructed, continuous flow for fish and macroinvertebrates.
- All areas of temporary disturbance will be re-graded to match existing conditions following construction.
- All disturbed wetlands will be revegetated with a seed mix determined in coordination with the USDA Forest Service and USACE.

#### 6.7.4 Mitigation Measures for Impacts to USDA Forest Service Sensitive Species

Species-specific surveys for USDA Forest Service sensitive and Wasatch-Cache *Forest Plan* watch list plant species conducted during the summer of 2021 identified about 1,015 individual broadleaf beardtongue plants that would be removed by the Snow Sheds with Berms Alternative. This species is on the USDA Forest Service, Wasatch-Cache *Forest Plan*'s watch list.

However, species-specific field surveys identified additional occurrences of broadleaf beardtongue on open, rocky sites throughout the top half of Little Cottonwood Canyon. In addition, a search of the Intermountain Regional Herbarium Network found a list of 187 broadleaf beardtongue occurrences throughout the Wasatch Front in Davis, Salt Lake, and Utah Counties as well as Box Elder and Duchesne Counties. Also, the collections manager at the herbarium in Brigham Young University's Monte L. Bean Life Science Museum confirmed that this species grows throughout the Wasatch Front.

Given this evidence, and since broadleaf beardtongue is not listed by the State of Utah as a Species of Greatest Conservation Need and is not listed in the *Utah Rare Plant Guide* published by the Utah Native Plant Society, any impacts are not expected to cause species level-impacts, nor are they likely to cause a loss of species viability. Therefore, no compensatory mitigation is required.

Based on this information and discussion with the USDA Forest Service, UDOT will avoid staging equipment, supplies, or personnel within sensitive plant populations within 50 feet of the project footprint. UDOT will also coordinate with the USDA Forest Service to collect seeds from the broadleaf beardtongue stand that would be impacted by the avalanche mitigation alternatives and will subsequently use these seeds in the seed mix used to revegetate the site.

#### 6.7.5 Mitigation Measures for Impacts to Riparian Habit Conservation Areas

UDOT will implement the following mitigation measures to minimize impacts for unavoidable impacts to riparian vegetation within Riparian Habitat Conservation Areas (RHCAs):

- Establish vegetation cover and stem density equal to or greater than 90% of preconstruction conditions in disturbed, nonhardened areas.
  - Use only USDA Forest Service–approved seed mixes.
  - In some areas, the USDA Forest Service may reduce re-established tree stand density requirements to improve forest health.
- Structural changes to a stream channel or bed will not induce significant changes in stream velocities.
  - Removing trees outside RHCAs, in areas that are otherwise not hardened, may be subject to Riparian Management Objectives.
  - In some areas, the USDA Forest Service may reduce re-established tree stand density requirements to improve forest health.

- Restore a minimum of 80% of preconstruction effective stream shading within ¼ mile of riparian canopy disturbances along streams.
- Obtain USDA Forest Service approval of BMPs and a stormwater pollution prevention plan prior to submission for Utah Division of Water Quality permitting.
- Follow USDA Forest Service guidelines and requirements for performing inspections of equipment and vehicles for invasive plant and noxious weeds.

## 6.8 Mitigation Measures for Impacts to Floodplains

UDOT and/or its construction contractor will take measures to reduce floodplain impacts and to ensure that the project complies with all applicable regulations. These mitigation measures will include the following:

- The selected alternative would require stream and floodplain crossings in the same locations where they presently exist. Where new or rehabilitated bridges and culverts are included in the design of an alternative, the design will follow Federal Emergency Management Agency (FEMA) requirements and the requirements of UDOT's Drainage Manual of Instruction, where applicable. Where no regulatory floodplain is defined, culverts and bridges will be designed to accommodate a 50-year (2%-annual-chance) or greater-magnitude flood. Where regulatory floodplains are defined, hydraulic structures will be designed to accommodate a 100-year (1%-annual-chance) flood. Energy-dissipation measures will be included in the alternative's design as applicable.
- Stream alteration permits will be obtained for stream crossings as required by the Utah Division of Water Rights. The stream alteration permitting process is required to satisfy state regulations and under certain circumstances may also be used to meet Clean Water Act Section 404 permitting requirements (through use of USACE Programmatic General Permit 10).
- Floodplain development permits will be obtained for all locations where the proposed new roadway embankment fill or other structural elements would encroach on a regulatory floodplain, and structures will be designed to meet the more stringent of FEMA requirements and local floodplain ordinances. FEMA requires that construction within a floodway must not increase the base (100-year) flood elevation. FEMA Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) processes will be executed in compliance with 44 CFR Sections 60.3 and 65.12 as necessary based on hydrologic and hydraulic analyses and the nature of anticipated changes in base flood elevation and/or floodplain limits. The following case applies:
  - For areas of Zone A floodplain impacts, the approach will be to analyze existing and proposed conditions and design project features such that compliance is achieved (that is, such that a CLOMR is not required) as much as possible. In these areas, FEMA performed floodplain mapping based on approximate methods. The absence of a detailed study or floodway delineation places the burden on the project proponent (in this case, UDOT) to perform hydrologic and hydraulic analyses consistent with FEMA standards. These analyses will confirm or refine the FEMA floodplain mapping and could increase or decrease the estimate of affected areas.
- UDOT will obtain flood-control permits from Salt Lake County for actions affecting County-controlled waterways, which include Little Cottonwood Creek and Big Cottonwood Creek. UDOT will obtain

flood-control permits from Cottonwood Heights City for an Unnamed Creek near 3500 East and an Unnamed Creek near 9000 South.

- Roadway elevations will be a minimum of 2 feet above adjacent floodplain elevations, where those elevations are defined, so that flooding will not interfere with a transportation facility needed for emergency vehicles or evacuation.
- Walls will be designed and constructed to minimize longitudinal floodplain impacts.

## 6.9 Mitigation Measures for Impacts to Cultural Resources

As described in a Memorandum of Agreement among UDOT, the USDA Forest Service, and the Utah State Historic Preservation Office (SHPO), dated May 19, 2023, and attached in Appendix B, the following measures will be implemented taking into account the effects of the project to on historic properties.

**Mitigation for Site 42SL52 (Town of Alta Site).** UDOT will conduct archaeological investigations of a possible adit feature (feature 3) and a data recovery, testing, and analysis plan of the gondola terminal station. UDOT will prepare a research design and data recovery plan in consultation with consulting parties. UDOT will provide archaeological surveys and update documentation of the entire site. UDOT will prepare a monitoring plan and conduct archaeological monitoring for all ground-disturbing construction within the site boundary. UDOT will also provide \$15,000 to the Town of Alta to assist in stabilizing the stone Tom Moore restroom building.

**Mitigation for Site 42SL419 (D&RGW Railroad/Wasatch & Jordan Valley Railroad/Salt Lake & Alta).** UDOT will salvage stone from the existing retaining wall and reuse the material as facing material on the snow sheds. If practical and in consultation with the USDA Forest Service, UDOT will name the snow shed after the railroad. UDOT will conduct additional research, survey, and documentation of the historic railroad and update the site form. UDOT will prepare a monitoring plan and conduct archaeological monitoring of all ground-disturbing construction within the site boundary.

UDOT will develop interpretive displays for the public highlighting the railroad, mining, and ski industry of Alta. These displays will be included in the mobility hubs, resort bus stops, and gondola facilities and at USDA Forest Service kiosks, where practical. UDOT will consult with the USDA Forest Service and the SHPO regarding the content of these displays prior to installation.

## 6.10 Mitigation Measures for Impacts to Hazardous Materials and Waste Sites

Site investigations will be conducted by UDOT during the final design of the selected alternative on sites with known or suspected contamination. Investigations will determine the nature and extent of any contamination and other potential hazards, if any, to define the appropriate mitigation including measures to limit the spread of such contamination and to gather information to protect construction worker health and safety. In the case of an identified chemical hazard, UDOT will negotiate the site remedy with the property owner before acquiring the property and coordinating as necessary with the U.S. Environmental Protection Agency (EPA) and the Utah Division of Environmental Response and Remediation (DERR). UDOT will also coordinate with the USDA Forest Service and SLCDPU to address each department's watershed concerns

associated with impacts to historic smelters (the Jones and Pardee Smelter near the angle station and the Flagstaff and Davenport smelter near the base station) and a historic mine dump site near Alta.

Previously unidentified sites or contamination could be encountered during construction activities. The construction contractor will implement measures to prevent the spread of contamination and to limit worker exposure. In such a case, all work will stop in the area of the contamination according to UDOT Standard Specifications, and the contractor will consult with UDOT and DERR to determine the appropriate remedial measures. Hazardous materials will be handled according to UDOT Standard Specifications 01355 and the requirements and regulations of DERR.

During construction, coordination will take place among UDOT, EPA, or DERR, the construction contractor, and the appropriate property owners. This coordination will involve determining the status of the sites of concern, identifying newly created sites, identifying the nature and extent of remaining contamination (if any), and minimizing the risk to all parties involved. Environmental site assessments might be conducted at the sites of concern to further evaluate the nature and extent of contamination and to better identify the potential risks of encountering hazardous materials when constructing the selected alternative.

If needed, a remediation work plan will be prepared and submitted to regulatory agencies. The workplan will describe engineering controls (such as dust mitigation, temporary soil covers, and groundwater extraction and treatment) and personal protective equipment for construction workers will be used to reduce the potential for public or worker exposure to hazardous materials as determined necessary by UDOT.

## 6.11 Mitigation Measures for Impacts to Visual Resources

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 the project's ROD has been issued and funding has been allocated.

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.
- UDOT will evaluate custom-designed gondola structures (as alternatives to lattice-type towers), 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 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, where 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.
- UDOT will use variable-length tower legs, where feasible, 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, where feasible.
- Design facilities and structures using natural materials (for example, wood or stone) to blend with the "forest" aesthetic.
- Use low-color-temperature lighting (that is, warm color spectrum) for all facilities to minimize project effects on dark night skies.

## 6.12 Mitigation Measures for Construction Impacts

The following mitigation measures will be implemented during construction.

### 6.12.1 Mitigation Measures for Construction Phasing

No specific mitigation has been identified for potential construction phasing. UDOT will incorporate the mitigation identified in the EIS will be implemented for each specific design phase. Future mitigation for subsequent phases will take into account the final design of the selected alternative component for that phase and any changes in regulations or potential improvements to BMPs at the time of implementation.

Once the gondola is operational, bus service would cease, and any repurposing of the gravel pit mobility hub would be evaluated. Any change in use would be subject to further environmental analysis and decision-making.

### 6.12.2 Mitigation Measures for Public Impacts from Construction

UDOT will implement a public information program to inform the public about construction activities and to reduce impacts. Information will include work hours and alternate routes. Construction signs will be used to notify all roadway users about work activities and changes in traffic patterns. UDOT will work with the USDA Forest Service to inform recreation users (climbers, hikers, cyclists, and others) that access to recreation

areas might be restricted during construction. UDOT will also work with recreation groups directly, such as the Salt Lake Climbers Alliance, to inform them of construction activities so that they can inform their members.

If nighttime construction is required, impacts from lighting will be reduced by aiming construction lights directly at the work area and/or shielding the lights. Utility agreements will be completed to coordinate utility relocations. UDOT will also reach out to owners of property adjacent to construction areas including homeowners who have special-use permits to access their homes on NFS lands.

### **6.12.3 Mitigation Measures for Air Quality Impacts from Construction**

The contractor will follow the appropriate BMPs included in UDOT's plans and specifications for roadway and bridge construction. This includes items such as fugitive-dust control and street sweeping (UDOT Standard Specification 01355, *Environmental Compliance*).

### **6.12.4 Mitigation Measures for Water Quality Impacts from Construction**

According to UDOT's *Water Quality Design Manual* and its municipal separate storm sewer system (MS4) permit, a general construction stormwater discharge permit would be secured prior to ground disturbances. As part of the requirements of the permit, the contractor will develop and implement a construction stormwater pollution prevention plan (SWPPP). The plan will identify measures to reduce impacts to receiving waters from construction activities including site grading, materials handling and storage, fueling, and equipment maintenance. As part of the SWPPP, the contractor will develop a BMP implementation plan including methods to monitor BMP conditions and any corrective actions needed. The development of the SWPPP will be coordinated with the USDA Forest Service and SLCDPU. Also see Section 6.6, *Mitigation Measures for Impacts to Water Resources*, of this ROD.

For disturbance adjacent to or near Little Cottonwood Creek, UDOT will coordinate as appropriate with SLCDPU and the USDA Forest Service with respect to BMPs and other measures to minimize runoff and sediment. For construction on NFS lands, UDOT will obtain approval from the USDA Forest Service regarding BMPs and will incorporate them into the SWPPP prior to construction.

### **6.12.5 Mitigation Measures for Noise Impacts from Construction**

The contractor will comply with all state and local regulations relating to construction noise. The contractor will be required to obtain a UDOT temporary noise permit and to notify the local government authorities in advance of any percussive noise activity and for any nighttime work.

### **6.12.6 Mitigation Measures for Visual Impacts from Construction**

UDOT will prepare and implement an appropriate seeding vegetation and/or landscaping plan to restore or enhance aesthetics after the project is completed. The plan will be implemented by the contractor. For construction on NFS lands, UDOT will coordinate with the USDA Forest Service regarding an acceptable seed mix and other components of the landscaping plan.

### **6.12.7 Mitigation Measures for Construction-related Impacts to Cultural Resources**

In accordance with a signed Memorandum of Agreement (MOA) among UDOT, the USDA Forest Service, and the Utah SHPO (see Appendix B, *Pertinent Correspondence*, of this ROD) and UDOT Standard Specification 01355, *Environmental Compliance*, if cultural resources are discovered during construction, activities in the area of the discovery will immediately stop. The construction contractor will notify UDOT of the nature and exact location of the finding and will not damage or remove the resource. Work in the area of the discovery would be delayed until UDOT evaluates the extent and cultural significance of the site in consultation with the Utah SHPO and tribes. The course of action and the construction delay would vary depending on the nature and location of the discovery. Construction would not resume until the contractor receives written authorization from UDOT to continue. For discoveries on NFS lands, UDOT will coordinate with the USDA Forest Service regarding the course of action taken for any discoveries.

### **6.12.8 Mitigation Measures for Construction-related Discoveries of Hazardous Materials**

If contamination is discovered during construction, mitigation measures will be coordinated according to UDOT Standard Specification 01355, *Environmental Compliance*, which directs the construction contractor to stop work and notify UDOT of the possible contamination. Any hazardous materials will be disposed of according to applicable state and federal guidelines.

### **6.12.9 Mitigation Measures for Utility Service Impacts from Construction**

UDOT will consult with all utility providers (including but not limited to SLCDPU, Murray City Power, Metropolitan Water, Canyon Water District, and Cottonwood Heights City) affected by construction to complete utility agreements before construction, and the construction contractor will coordinate with all utility providers to minimize interruptions to utility service. Before beginning work, the contractor is required to contact Blue Stakes to identify the locations of all utilities. The contractor will use care when excavating to avoid unplanned utility disruptions. If utilities are unintentionally disrupted, UDOT will work with the contractor and the utility companies to restore service as quickly as possible. UDOT will coordinate with the USDA Forest Service for the relocation of any utilities on NFS lands including those within UDOT's right-of-way on NFS lands. UDOT will inform affected residents and businesses about any planned utility disruptions.

### **6.12.10 Mitigation Measures for Traffic Impacts from Construction**

UDOT or its construction contractor will develop a maintenance-of-traffic plan that defines measures to reduce construction impacts to traffic. A general requirement of this plan is that, to the extent reasonably practical, safe access to businesses, residences, and recreation areas must be maintained and existing roads kept open to traffic.

Road closures would be limited to what is specified in the maintenance-of-traffic plan as approved by UDOT before the start of construction. UDOT will coordinate with the USDA Forest Service regarding an appropriate outreach program for notifying the public of potential construction delays and temporary closures of resources (trailheads, campgrounds, or other recreation areas) on forest lands.

### 6.12.11 Mitigation Measures for Economic Impacts from Construction

To the extent practicable, access to businesses will be maintained during the construction and postconstruction phases of this project. For each phase of the project, UDOT will coordinate with property owners and businesses to evaluate ways to maintain access while still allowing efficient construction operations. This coordination could entail sharing a temporary access or identifying acceptable timeframes when access is not needed. Adequate signs will be placed in construction areas to direct drivers to businesses. Other potential mitigation measures for construction impacts could include the following:

- Frequently notify all businesses in the construction area regarding the progress of the construction and upcoming construction events.
- Provide business access signs that identify business access points within the construction limits.
- Hold meetings with business representatives to inform them of upcoming construction activities and to provide a forum for the representatives to express their concerns with the project.
- For construction in Little Cottonwood Canyon, as much as possible avoid lane restrictions during peak recreation times such as holidays and weekends.
- To the extent practicable, UDOT will reach out to special-event organizers, permitted commercial activities, outfitters, and guides about construction activities. UDOT will coordinate with the USDA Forest Service with regard to an appropriate outreach program.

### 6.12.12 Mitigation Measures for Invasive Species Impacts from Construction

To mitigate the possible introduction of invasive weeds due to construction activities, the invasive weed BMPs in UDOT's current *Standard Specifications for Road and Bridge Construction* will be implemented, monitored, and included in the plans and specifications for the project. In addition, UDOT will follow USDA Forest Service guidelines for inspecting equipment and vehicles for invasive plant and noxious weed species and will coordinate with the USDA Forest Service regarding any additional required Forest Service noxious and invasive species BMPs to be implemented on NFS lands.

- The contractor will follow the noxious weed mitigation and control measures identified in UDOT's Supplemental Specification 02924S, *Invasive Weed Control*.
- The contractor will reduce the potential for weed infestations by strictly following BMPs.
- On NFS lands, with the USDA Forest Service's coordination and approval, the contractor will obtain and import certified weed-free soil from a vendor or other certified source, and UDOT will retain the certification documentation in the project files.
- On NFS lands, areas disturbed by construction work will be monitored by UDOT for new invading weeds for a minimum of 3 years, and, when weeds are located, they will be treated or removed immediately.
- The contractor will avoid selecting and placing staging areas in locations that have existing invasive and noxious weed infestations.
- The contractor will avoid selecting borrow areas that have existing invasive and noxious weed infestations.

- The contractor will reseed the construction area with native plants, and UDOT will monitor seedlings to determine when vegetation becomes re-established. This measure will mitigate direct-disturbance impacts and reduce the potential for weed invasions.
- On NFS lands, UDOT will use only Forest Service–approved seed mixes.
- Daily or multiple times a day if needed, the contractor will wash vehicles and equipment at a portable wash station set up at the exit of the staging area before the equipment goes into any work locations that are currently weed-free.

### **6.12.13 Mitigation Measures for Construction Staging and Material Borrow Areas**

Earth-disturbing activities would be generally confined to the limits of cut and fill, although staging areas and some construction activity might be located outside the limits of cut and fill included in the EIS impacts. Any ground disturbances on NFS lands, including those at staging areas, will comply with all the USDA Forest Service requirements listed in this section.

## **6.13 Mitigation Measures for Indirect Effects**

Implementing tolling or a ban on single-occupant vehicles in Little Cottonwood Canyon requires the same traffic demand strategies in Big Cottonwood Canyon and could cause an adverse impact to low-income populations wanting to recreate during the winter in the lower canyon (below the ski resorts) or at Guardsman Pass. Practicable measures to avoid or reduce these potential adverse effects could include the following:

- Place the toll gantry immediately prior to the Solitude ski resort. This would allow low-income populations wanting to recreate outside the ski resorts in the lower portion of Big Cottonwood Canyon to avoid having to pay the toll.
- Have the toll in effect only during the morning peak period (7 AM to 10 AM), which would allow low-income populations to recreate before 7 AM or after 10 AM to avoid having to pay the toll.

## **6.14 Mitigation Measures for Cumulative Impacts**

No mitigation measures are proposed for the selected alternative to address cumulative impacts specifically. All of the measures described in Section 6.0, of this ROD help minimize the impacts of the selected alternative and minimize its effects with other planned developments and increasing recreational pressure in Little Cottonwood Canyon.

## 7.0 Section 4(f)/6(f) Evaluation (Chapter 26 of the Final EIS)

Section 4(f) of the Department of Transportation Act of 1966 is codified at 49 United States Code (USC) Section 303, *Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites*, and at 23 USC Section 138, *Preservation of Parklands*. It applies to significant publicly owned parks, recreation areas, and wildlife and waterfowl refuges and to significant publicly or privately owned historic properties.

There are no Section 6(f) resources in the study area.

Chapter 26, *Section 4(f) and 6(f) Evaluation*, of the Final EIS identifies all Section 4(f) resources that could be affected by the project alternatives, the impacts and Section 4(f) uses of these resources from the primary alternatives and sub-alternatives, avoidance alternatives, and proposed measures to minimize harm to these Section 4(f) resources. Section 26.9, *Coordination*, of the Final EIS describes the coordination UDOT conducted with the public and with agencies with jurisdiction over Section 4(f) recreation resources.

The selected alternative will have one use with greater-than-*de minimis* impacts to one Section 4(f) historic property, and an individual Section 4(f) evaluation is required. The selected snow sheds sub-alternative would use one site 42SL419 (D&RGW Railroad/Wasatch & Jordan Valley Railroad/Salt Lake & Alta), resulting in a use with greater-than-*de minimis* impacts. There will be other uses of Section 4(f) resources (historic properties and recreation resources); however, the uses will result in *de minimis* impacts to each resource. *De minimis* impact determinations are based on the degree of impact after the inclusion of any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) to address the Section 4(f) use (that is, the net impact). These other Section 4(f) resources, the effects of the selected alternative, and the avoidance, minimization, and mitigation measures are described in Table 7-1, *Measures to Minimize Harm to Section 4(f) Properties*, in Section 7.3, *Measures to Minimize Harm to Section 4(f) Properties*, of this ROD.

The following sections summarize information from Chapter 26, *Section 4(f) and Section (6f) Evaluation*, of the Final EIS to show that there are no feasible and prudent alternatives that avoid the use of site 42SL419 and that the project included all planning to minimize harm resulting from the transportation use.

### What is Section 4(f)?

Section 4(f) is an element of law and FHWA regulations that requires a project to avoid the use of protected historic properties and park and recreation areas unless there is no feasible and prudent alternative to such use or unless the lead agency determines that the impacts would be *de minimis*. If the project would use protected properties, all possible planning must be undertaken to minimize harm to these properties.

## 7.1 Avoidance Alternatives

Unless the use of land from a Section 4(f) property is determined to be a use with a *de minimis* impact, UDOT must determine that no feasible and prudent avoidance alternative exists before approving the use of such land (23 CFR Section 774.3). This section evaluates whether a feasible and prudent avoidance alternative exists to avoid use of site 42SL419.

Site 42SL419 is an archaeological site (a historic railroad with intact retaining wall segments) on the north side or mountain side of S.R. 210 near the snow sheds. The No-Action Alternative would result in no use; however, it would not meet the purpose of and need for the project.

Avalanche mitigation is and will continue to be required with all of the primary action alternatives. In the Final EIS, UDOT evaluated active avalanche mitigation measures (blasting using artillery or explosives), which requires the road to be closed. These would not require the use of site 42SL419. However, active mitigation measures alone would not reduce the number of days or hours when the road is closed for avalanche control. UDOT also evaluated passive mitigation measures other than snow sheds including on-mountain snow-supporting structures, road realignment and bridges, earthen stopping berms, and stopping walls. None of these options were determined to be feasible and prudent avoidance alternatives. Section 26.6, *Avoidance Alternatives*, of the Final EIS describes avoidance options in greater detail. Also see Section 3.1, *Improve Reliability and Safety through Avalanche Mitigation*, of Appendix 2A, *Draft Alternatives Development and Screening Report*, of the Final EIS for a detailed description of the passive avalanche mitigation alternatives considered by UDOT to potentially avoid Section 4(f) use of site 42SL419. UDOT did not identify any feasible and prudent avoidance alternatives to the use of site 42SL419.

## 7.2 Least Overall Harm Analysis

If there is no prudent and feasible overall avoidance alternative, UDOT may select the alternative that “causes the least overall harm in light of the statute’s preservation purpose” [23 CFR Section 774.3(c)]. Under these regulations, the “least overall harm” is determined by balancing the following factors:

1. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)
2. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
3. The relative significance of each Section 4(f) property
4. The views of the official(s) with jurisdiction over each Section 4(f) property
5. The degree to which each alternative meets the purpose of and need for the project
6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)
7. Substantial differences in costs among the alternatives

The selected alternative must include all possible planning, as defined in 23 CFR Section 774.17, to minimize harm to Section 4(f) property.

The Snow Sheds with Realigned Road Alternative will result in a use with greater-than-*de minimis* impact to historic property 42SL419 (D&RGW Railroad/Wasatch & Jordan Valley Railroad/Salt Lake & Alta) but will cause the least overall harm in light of the preservation purpose of 49 USC Section 303. The other avalanche sub-alternative, the Snow Sheds with Berms Alternative, would not avoid site 42SL419, but UDOT evaluated it against the Snow Sheds with Realigned Road Alternative (the selected sub-alternative) and determined that the selected sub-alternative will result the least overall harm. The following summarizes the evaluation under the factors used for the least overall harm analysis.

- Because the impacts and mitigation would be the same for both avalanche mitigation sub-alternatives, they perform equally with respect to the first four factors listed above.
- Both avalanche mitigation sub-alternatives would meet the project's purpose and need (factor 5) to the same degree. However, the Snow Sheds with Realigned Road Alternative will provide better driver sight distance in the snow sheds, thereby providing a safer alternative compared to the Snow Sheds with Berms Alternative.
- The environmental impacts of the two avalanche mitigation sub-alternatives would be similar. See Table 26.7-2, *Environmental Impacts of the No-Action Alternative and Avalanche Mitigation Sub-alternatives*, of the Final EIS. The main difference between the two are as follows:
  - The Snow Sheds with Berms Alternative would have a greater visual impact because the berms would extend 300 feet up the mountainside at a height of up to 20 feet.
  - The Snow Sheds with Realigned Road Alternative will have less impacts to Riparian Habitat Conservation Areas.
  - The Snow Sheds with Realigned Road Alternative will result in greater impacts to wildlife habitat and floodplains. However, the wildlife habitat impacted would be adjacent to the road and low quality. The floodplains impacted would also be adjacent to the road.
  - The Snow Sheds with Realigned Road Alternative will have about 2.8 acres of additional impacts to the Twin Peaks IRA. However, the majority of the impacts in the IRA (2.4 acres) will be to the low-quality, developed habitat type.

The Snow Sheds with Realigned Road Alternative will cost about 20% more than the Snow Sheds with Berms Alternative. This cost difference (factor 7) is notable but is not considered enough in the context of the entire project to be considered a substantial difference in cost—in other words, the costs are essentially similar. Due to the location of a retaining wall feature in site 42SL419 within the lower end of the White Pine avalanche chute, it is not possible to minimize harm by shortening the snow shed to partially avoid the wall, since that would expose a portion of the road to avalanches. Therefore, based on all possible planning, minimization of harm for site 42SL419 will consist of mitigation. Mitigation will be conducted according to the signed Memorandum of Agreement (MOA) among UDOT, the USDA Forest Service, and the Utah SHPO. See Appendix B. The MOA requires UDOT to salvage stone from the retaining wall and use it as facing material for the snow shed, conduct archaeological monitoring during construction, conduct additional surveys to document previously unknown segments of the site and prepare an updated site form, coordinate naming and signage with the USDA Forest Service and, if practical, name the snow shed after the railroad.

There is no feasible and prudent alternative to the use of site 42SL419, and UDOT has made the determination that the Snow Sheds with Realigned Road Alternative will cause the least overall harm in light

of the preservation purpose of 49 USC Section 303, and all planning measures to minimize harm have been considered and incorporated. Balancing the above factors allowed UDOT to make project decisions in the best overall public interest.

### 7.3 Measures to Minimize Harm to Section 4(f) Properties

Avoidance, minimization, and mitigation measures for Section 4(f) properties have been considered during the development of the action alternatives and were incorporated into all of the action alternatives, including those determined to have uses with only *de minimis* impacts. After considering measures to minimize harm, UDOT has also determined that the S.R. 210 Project will not result in constructive use of any Section 4(f) resources [see Appendix 32D, *Section 4(f) – No Constructive Use Determination*, of the Final EIS].

Table 7-1 presents the additional measures that will be implemented to minimize harm from the selected alternative to Section 4(f) historic properties and recreation resources.

Table 7-1. Measures to Minimize Harm to Section 4(f) Properties

Section 4(f) Property or Recreation Resource	Alternative Component	Avoidance, Minimization, and Mitigation
Six historic properties on Wasatch Boulevard	Five-lane Alternative	<ul style="list-style-type: none"> <li>Widening mainly to the east side of Wasatch Boulevard.</li> <li>Retaining walls in select locations.</li> </ul>
Historic properties at La Caille base station (ID# 61, 84)	Gondola Alternative B	<ul style="list-style-type: none"> <li>Access road aligned to minimize impacts to historic parcel.</li> </ul>
Historic Snowbird Lodges: Iron Blossam, The Inn at Snowbird, The Lodge at Snowbird (see Table 2.5-6, IDs # 68, 69, 70, 71)	Gondola Alternative B	<ul style="list-style-type: none"> <li>Gondola tower would be located to reduce visual impacts from the historic lodges toward the mountain.</li> <li>Single-pole gondola tower would be used in place of lattice tower to reduce visual impacts.</li> </ul>
Snowbird Center (ID# 72)	Gondola Alternative B	<ul style="list-style-type: none"> <li>Gondola tower would be located to avoid impacts to Snowbird Center.</li> <li>Single-pole gondola tower would be used in place of lattice tower to reduce visual impacts.</li> </ul>
Alta Lodge (ID# 82)	Gondola Alternative B	<ul style="list-style-type: none"> <li>Gondola tower would be located to reduce visual impacts from the historic lodge toward the mountain.</li> <li>Single-pole gondola tower would be used in place of lattice tower to reduce visual impacts.</li> </ul>
Site 42SL419	Snow Sheds with Realigned Road Alternative	<ul style="list-style-type: none"> <li>Mitigation is outlined in the MOA. UDOT will continue to consult with the USDA Forest Service and the Utah SHPO in the development of a monitoring plan and additional surveys for this site.</li> </ul>
Ferguson Trailhead off Prospector Drive	Five-lane Alternative	<ul style="list-style-type: none"> <li>UDOT will coordinate with Cottonwood Heights City during the Ferguson Trailhead design process to ensure that the location of the multi-use trail is considered during development of the park plan.</li> <li>If planned trailhead improvements are not constructed prior to widening Wasatch Boulevard, UDOT would regrade the existing parking lot to maintain the number of parking spaces.</li> </ul>

(continued on next page)

Table 7-1. Measures to Minimize Harm to Section 4(f) Properties

Section 4(f) Property or Recreation Resource	Alternative Component	Avoidance, Minimization, and Mitigation
Golden Hills Park	Five-lane Alternative	<ul style="list-style-type: none"> <li>• Impacts to park features (parking, playground, walking path, restrooms) would be avoided.</li> <li>• All disturbed areas would be revegetated.</li> </ul>
Tanners Flat Campground	Gondola Alternative B	<ul style="list-style-type: none"> <li>• No towers or stations would be located in the campground.</li> <li>• There would be no impacts to campground features (for example, campsites, bathroom facilities, volleyball court, or amphitheater).</li> <li>• The gondola would not operate during campground summer quiet hours of 10 PM to 7 AM.</li> <li>• During final design, a landscape architect would evaluate impacts at each site. Potential mitigation would include as applicable the following:               <ul style="list-style-type: none"> <li>○ Reconfiguring sites to visually shield tables and fire pits from the gondola cabins overhead</li> <li>○ Relocating the group area to a location with less visual impact</li> <li>○ Redesigning sites to accommodate different user groups</li> <li>○ Adding shade structures or pavilions to screen sites from visual impacts</li> <li>○ Planting trees to create a visual screen over time</li> </ul> </li> </ul>
Alpenbock Loop and Grit Mill Climbing Opportunities	Gondola Alternative B	<ul style="list-style-type: none"> <li>• The park-and-ride lot would be reconstructed to accommodate 95 parking spaces.</li> <li>• The restroom facility at the park-and-ride lot would be reconstructed if the restroom cannot be avoided during the final design process.</li> <li>• Impacts to USDA Forest Service trails would be mitigated through trail realignment so that connectivity and function would be maintained.</li> <li>• UDOT would work with the USDA Forest Service and the contractor to provide trail access during construction as much as possible.</li> <li>• In coordination with the USDA Forest Service, UDOT would implement a public involvement program to inform potential recreation users of potential temporary trailhead closures during construction.</li> <li>• UDOT commits to working with the USDA Forest Service and property owners to determine if it is feasible to have no net loss of climbing boulders opportunities. If possible, removed climbing boulders would be relocated near the Grit Mill parking lot. If it is not possible to relocate boulders, including obtaining environmental clearances, new trails would be constructed to provide sustainable access to boulders that do not currently have trail access within the Alpenbock Loop and Grit Mill Climbing Opportunities area.</li> </ul>
Little Cottonwood Creek Trail (USDA Forest Service #1001)	Gondola Alternative B	<ul style="list-style-type: none"> <li>• No towers or stations would be located on the trail (gondola would pass overhead).</li> </ul>

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Table 7-1. Measures to Minimize Harm to Section 4(f) Properties

Section 4(f) Property or Recreation Resource	Alternative Component	Avoidance, Minimization, and Mitigation
Lisa Falls Trail (USDA Forest Service #1012)	Trailhead Improvements and No Roadside Parking within ¼ mile Alternative	<ul style="list-style-type: none"> <li>• Informal parking would be consolidated into a larger formal lot with additional parking spaces.</li> <li>• Restrooms would be added.</li> <li>• UDOT would work with the USDA Forest Service and the contractor to provide trail access during construction as much as possible.</li> <li>• In coordination with the USDA Forest Service, UDOT would implement a public involvement program to inform potential recreation users of potential temporary trailhead closures during construction.</li> </ul>
White Pine Trail (USDA Forest Service #1002)	Trailhead Improvements and No Roadside Parking within ¼ mile Alternative	<ul style="list-style-type: none"> <li>• Parking lot would be expanded to provide additional parking spaces.</li> <li>• The single entrance would be replaced with a one-way-entrance and a one-way exit.</li> <li>• UDOT would work with the USDA Forest Service and the contractor to provide trail access during construction as much as possible.</li> <li>• In coordination with the USDA Forest Service, UDOT would implement a public involvement program to inform potential recreation users of potential temporary trailhead closures during construction.</li> </ul>
White Pine Trail (USDA Forest Service #1002)	Gondola Alternative B	<ul style="list-style-type: none"> <li>• No towers or stations located in trailhead (gondola cabins would pass overhead).</li> </ul>
Parking within the special-use permit area at Snowbird	Gondola Alternative B	<ul style="list-style-type: none"> <li>• During the final design of the selected alternative, UDOT would work to minimize the loss of parking for tower construction near the Iron Blossam Lodge.</li> </ul>
Transfer tow at Alta	Gondola Alternative B	<ul style="list-style-type: none"> <li>• During the final design of the selected alternative, UDOT would work to minimize impacts to infrastructure at Alta such as the transfer tow to ensure that the gondola system does not interfere with the infrastructure's operation.</li> </ul>

## 8.0 Permits and Approvals

A list of required permits is included in Chapter 24, *Permits, Reviews, Clearances, and Approvals*, of the Final EIS. A summary is provided below.

Permits and approvals required for the selected alternative include a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers, which also requires a Section 401 Water Quality Certification by the Utah Division of Water Quality, and a Stream Alteration Permit from the Utah Division of Water Rights. Construction will also require a Clean Water Act Section 402 permit (Utah Pollutant Discharge Elimination System) for ground disturbances greater than 1 acre.

The USDA Forest Service may consent to the appropriation of NFS lands to UDOT, through FHWA and pursuant to 23 USC Section 317, or could approve a special-use permit for UDOT. The USDA Forest Service would use information provided in the Little Cottonwood Canyon Final EIS and associated supporting documents, including the *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule for the Final EIS Alternatives* as appropriate, to inform a Forest Service ROD. The USDA Forest Service ROD would discuss compliance with the 2001 RACR, and consistency with *Forest Plan* directions related to roadless areas and project-specific *Forest Plan* amendments, as needed, for its decision. Also see Section 11.0, *Next Steps*, of this ROD. The USDA Forest Service would permit any removal of timber and other forest product (rock, gravel, or other mineral resources) on NFS lands.

FHWA requires authorization of tolling through the Value Pricing Pilot Program.

Form 7460-1, *Notice of Proposed Construction or Alteration*, will be submitted to the Federal Aviation Administration before construction of the gondola.

An air quality approval order will be obtained with the submission of a notice of intent to the Utah Division of Air Quality. The notice of intent will include provisions for controlling dust and emission sources, and the permit might require other construction approvals depending on the source and location of aggregate, asphalt, combustion, and/or fuel storage.

If needed, after coordinating with EPA and DERR regarding impacts to potentially contaminated sites, UDOT will submit a remediation work plan to the regulatory agency (either the Utah Department of Environmental Quality or the U.S. Environmental Protection Agency) for construction activities on the sites with hazardous materials. The work plan will address any institutional controls and will be coordinated with regulatory agencies and the current site owner or other responsible parties.

UDOT will coordinate with FEMA during the construction phase to ensure that local jurisdictions' flood design standards are met and to obtain floodplain development permits from the local jurisdictions where the alternatives cross a regulatory floodplain boundary. Other local permits are needed from Salt Lake County per county health regulations (Regulations 13 and 14), county ordinances (Chapters 19.72 and 19.13), and Salt Lake City ordinances (Section 17.040). Building and construction-related permits will also be required from municipalities.

## 9.0 Transportation Air Quality Conformity

This S.R. 210 Project is located in Salt Lake County, which, per the National Ambient Air Quality Standards (NAAQS), is a nonattainment area for particulate matter (PM) 2.5 and a maintenance area for PM<sub>10</sub>; therefore, the project is subject to project-level conformity requirements. The S.R. 210 Project is a regionally significant transportation project and is included in WFRC's 2023–2050 RTP, which was determined to conform to the state implementation plan (SIP) on May 31, 2023. The S.R. 210 Project was considered a project of air quality concern under 40 CFR Section 93.123(b)(1) and required a quantitative air quality analysis. A project-level conformity determination required a hot-spot analysis for PM<sub>10</sub> and PM<sub>2.5</sub>.

The analysis in the Final EIS and the *Air Quality Supplemental Technical Report* demonstrated that the S.R. 210 Project would not contribute to local violations of, or increase the frequency or severity of any existing violation of, the annual PM<sub>2.5</sub> and PM<sub>10</sub> NAAQS. Therefore, the selected alternative is consistent with the SIP. FHWA provided a project-level air quality conformity determination on June 26, 2023. See Appendix B, *Pertinent Correspondence*, of this ROD. The S.R. 210 Project is, therefore, in conformance with all applicable conformity requirements of 40 CFR Part 93.

## 10.0 Monitoring and Enforcement Program

This ROD represents UDOT's commitment to implement, monitor, and enforce the mitigation measures described in Section 6.0, *Measures to Minimize Harm from the Selected Alternative (Chapter 25 of the Final EIS)*, and Section 7.0, *Section 4(f)/6(f) Evaluation (Chapter 26 of the Final EIS)*, of this ROD. All of the mitigation measures listed in this ROD will be incorporated into the contract documents, plans, and specifications and will be monitored according to the construction/postconstruction monitoring plans identified in the mitigation measures. All conditions of permits and other authorizations obtained for the project will also become part of the construction contract. Enforcing the contract provisions and monitoring the project is the responsibility of the UDOT Project Manager.

## 11.0 Next Steps

As described in Section 4.0, *Project Implementation Plan*, of this ROD, the selected alternative will be constructed in phases based on available funding. Funding is available for enhanced bus service, a mobility hub, traffic demand management (tolling), and resort bus stops in Little Cottonwood Canyon. Utah Senate Bill 2 also authorizes spending the allocation for enhanced bus service and tolling in Big Cottonwood Canyon, and UDOT plans to proceed with the next steps of project development (permitting, right-of-way acquisition, bus procurement, final engineering, contractor procurement, and construction).

UDOT or its contractors will obtain all required permits and federal, state, and local approvals for constructing the initial phase of the selected alternative. UDOT will also begin more-detailed design and project development for the environmental mitigation commitments and for other operational needs, for which UDOT has agreed to work with other interested agency stakeholders in developing. For example, UDOT will work with Cottonwood Heights City on an aesthetic plan for the mobility hubs and for Wasatch Boulevard. UDOT will work SLCDPU, Canyon Water, Snowbird Resort, and the Town of Alta on a water source for the resort bus stops. In addition, prior to final design of the snow sheds, UDOT will facilitate an engineering analysis with authorities having jurisdiction (Unified Fire Authority, Utah Highway Patrol, USDA Forest Service, and SLCDPU) to better define operation features of these road tunnels (fire-detection methods and the need for fixed fire suppression system, for example).

Following the release of this ROD, UDOT will request that FHWA determine which components are under FHWA's authorities to use a 23 USC Section 317 process to appropriate federal lands to UDOT. Any of the primary alternatives and sub-alternatives can be implemented with or without FHWA appropriations. FHWA stated that it will provide a decision regarding land appropriation after reviewing the selected alternative in this ROD, because it did not want to influence or predetermine an outcome, and to ensure that a fair comparison of the alternatives could be made.

FHWA, with the input of the USDA Forest Service, will determine whether a lands appropriation would be consistent with applicable laws in the context of the 23 USC Section 317 appropriation process. The appropriation of lands by FHWA is in the form of an easement but not a complete transfer of property ownership. The underlying *Forest Plan's* objectives, management prescriptions, standards, and guidelines (or "management objectives" as described in Section 12.4.8, *Forest Plan-related Management Objectives*, of the Final EIS) would still apply to those lands within the transfer easement not being directly used for transportation. The USDA Forest Service would then issue a Letter of Consent which will state the conditions under which the appropriation is granted.

For lands not appropriated by 23 USC Section 317, UDOT will submit a special-use permit proposal. The USDA Forest Service will screen the proposal for consistency with 36 CFR Section 251.54. If the proposal passes the initial and second-level screening criteria, the USDA Forest Service may accept the proposal as an application and would then prepare its ROD, which would include discussion of any project-specific Forest Plan Amendments. The USDA Forest Service's process is that it issues a Draft ROD for public review and a 45-day predecisional administrative review process or "objection period." During this objection period, USDA will solicit objections from persons or entities that commented during previous public comment periods. The USDA Forest Service would then address any objections, pursuant to the objection procedures in 36 CFR Part 218, and sign its ROD.

UDOT will request the authority to implement a toll under FHWA's Value Pricing Pilot Program. UDOT will also conduct an environmental analysis for implementing congestion-management strategies for S.R. 190 in Big Cottonwood Canyon. This is described in Section 20.4.7, *Tolling or Vehicle Occupancy Restrictions on S.R. 190 in Big Cottonwood Canyon*, of the Final EIS. Implementing tolling will require improved bus service for winter canyon users who do not want to pay a toll and to address the potential impacts on any minority or low-income populations wishing to access the ski resorts. Section 20.4.8, *Mitigation Measures*, of the Final EIS describes the activities to address Big Cottonwood Canyon users outside the ski resort areas. Congestion-management strategies for S.R. 190 in Big Cottonwood Canyon are included as Phase 1 operational improvements in WFRC's 2023–2050 RTP (WFRC 2023; RTP ID# R-S-101).

Once funding is identified for Phases 2 and 3, as described in Section 4.0, *Project Implementation Plan*, of this ROD, the same project development process (permitting, right-of-way acquisition, final engineering, and construction) would begin.

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## APPENDIX A

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### Responses to Comments on the Final EIS and Supplemental Information Reports

Because of their large size, Appendices A1, A2, and A3, which are the reproductions of comments received since the Draft EIS, are provided under separate covers. To view these appendices, please visit the project website at <https://littlecottonwoodeis.udot.utah.gov>.

In addition, paper copies of Appendices A1, A2, and A3 are available for review at the Utah Department of Transportation offices located at 4501 South 2700 West, Salt Lake City, Utah. If you would like to view the paper copies, please call (503) 939-3798 to make arrangements.

# Appendix A: Response to Comments on the Final EIS and Supplemental Information Reports

This appendix contains responses to comments that were received on the Final Environmental Impact Statement (Final EIS) for the State Route (S.R.) 210: Wasatch Boulevard through Town of Alta Project, and on supplemental information reports that were published after the Final EIS, from members of the public, government agencies, and nongovernmental organizations. The Final EIS was released on August 31, 2022. A 45-day public review and comment period was held between September 2 and October 17, 2022.

Following publication of the Final EIS, the U.S. Department of Agriculture (USDA) Forest Service requested that the Utah Department of Transportation (UDOT) provide supplemental information and analysis regarding the impacts of the S.R. 210 Project to Inventoried Roadless Areas under the 2001 Roadless Area Conservation Rule and the 2003 *Revised Forest Plan: Wasatch-Cache National Forest (Forest Plan; USDA Forest Service 2003)*. In addition, following publication of the Final EIS, the Federal Highway Administration (FHWA) requested that UDOT complete a further scenario evaluation by adjusting two factors in the air quality hot-spot analyses for particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). Therefore, UDOT prepared two supplemental information reports to address these requests. A public review and comment period was held between March 19 and April 18, 2023.

The Final EIS public review and comment period and supplemental information reports public review and comment period followed a 70-day public review for the Draft EIS (June 25 to September 3, 2021) and a 30-day public review and comment period for a revised Draft Chapter 26, *Section 4(f) and Section 6(f) Evaluation* (December 10, 2021, to January 10, 2022).

The sections below present the responses to comments that were received on the Final EIS and the supplemental information reports. The section numbers in this document correspond to the chapters and sections in the Final EIS (for example, Section A32.12, *Water Resources*, in this appendix corresponds to Chapter 12, *Water Resources*, of the Final EIS).

UDOT provided responses to the comments on the Draft EIS in Chapter 32, *Response to Comments*, of the Final EIS. Responses to each comment received on the Draft EIS were identified with a response code which was listed along with the reproduction of comments. These reproductions were provided as Appendix 32B, *Reproductions of Comments on the Draft EIS*, of the Final EIS. Because UDOT received

## How do I find the responses to my comment?

Appendix A1 and A2 of the Record of Decision (ROD) are reproductions of comments on the Final EIS and supplemental information reports. These appendices are sorted by last name. Find your name, then you will find your comment, and adjacent to your comment find a response code or codes. These response codes indicate the sections of Chapter 32 of the Final EIS or the sections of this document that address your comment.

similar comments on the Final EIS as were received on the Draft EIS, the numbering convention of Chapter 32 was retained in this appendix.

Individuals and agencies who commented on the Final EIS and the supplemental information reports are listed alphabetically by last name in Appendix A1, *Reproduction of Comments on the Final EIS*, and in Appendix A2, *Reproductions of Comments on the Supplemental Information Reports*, along with the comment and a comment ID.

Where the response to a Final EIS comment is the same as the comment on the Draft EIS and a response is provided in Chapter 32 of the Final EIS, a reference is provided in Appendix A1 to the response code found in Chapter 32 of the Final EIS. If the comment was a new substantive comment or where clarification was provided based on the additional analysis conducted after the Final EIS was released, response codes are provided referencing the responses in this appendix. Appendices A1 and A2 present reproductions of written comments or transcriptions of comments that were submitted via voicemail. Each comment is identified in Appendices A1 and A2 by a comment ID. Reproductions of comments received by mail or as email attachments are provided in Appendix A3, *Reproductions of Mailed Comments and Comments Received as Email Attachments*. These comments include the comment ID from Appendices A1 and A2.

UDOT reviewed all comments received on the supplemental information reports, including comments outside the scope of the supplemental information reports. In Appendix A2, *Reproductions of Comments on the Supplemental Information Reports*, comments that were applicable to the contents of the supplemental information reports were provided a response code. Comments received that were outside the scope of the supplemental information reports did not raise any new issues or concerns and were the same as the comments addressed in Appendix A1.

***Because not all of the Final EIS comment responses are being republished in this appendix—only new or refined responses—the response code labeling under each heading is not sequential.***

**How do I search for specific words in this PDF?**

In Adobe Acrobat, press **Ctrl-Shift-F** (in Windows) or **Command-Shift-F** (on a Mac) to open the Advanced Search dialog.

## Summary of Comments

About 13,400 comment submissions were received on the Draft EIS, about 13,200 comment submissions were received on the Final EIS, and about 17,200 comment submissions were received on the supplemental information reports from individuals, organizations, and government agencies. The comment submissions took the form of letters, emails, phone messages, and website submissions.

The public involvement efforts of the National Environmental Policy Act (NEPA) are intended to gather information and ideas from the public on the proposed action and alternatives, and on the impact assessment and other information in the EIS documents, in order to ensure that the project record is as accurate, informative, and useful as possible prior to UDOT's decision-making. Analysis of public comments and, as appropriate, modification to the EIS analysis, results in a better document to help the decision-makers make better decisions. Consequently, UDOT did not simply count up the pros and cons or the yes or no votes on a particular alternative or issue.

The decision-makers also gather quantitative information that is important in assessing attitudes and concerns about particular issues; however, this is only part of the information that the decision-maker analyzes. The reasons for people's concerns, preferences, and criticisms are also sought in this process.

Therefore, the total number of comments on a particular issue is not counted; instead, the assessment of comments focuses on more qualitative information that can include trends in public opinion.

UDOT received similar comments on the Final EIS as were received on the Draft EIS. See Chapter 32, *Response to Comments*, of the Final EIS.

The following sections summarize the new comments on the Final EIS and on the supplemental information reports.

- **Purpose and Need (Sections A32.1.1–A32.1.5).** The majority of comments on this topic included:
  - The EIS transportation need assessment study area was too narrowly focused and should have included all of the central Wasatch Mountains including Big Cottonwood Canyon, Mill Creek Canyon, and Parley’s Canyon.
  - The project purpose was too narrowly focused and limited the range of potential alternatives.
  - The EIS project purpose should have included summer use in Little Cottonwood Canyon.
- **Alternatives Development and Screening Process (Section A32.2.2).** A number of comments questioned the results of the alternatives-screening process. Common questions or comments included:
  - Why didn’t the reasonable alternatives include a regional bus system with mobility hubs dispersed throughout the Salt Lake Valley?
  - Parking reservation systems are effective at reducing peak-hour congestion.
  - Why doesn’t UDOT implement less-impactful options first and test their performance before moving to higher-cost alternatives with more infrastructure in the canyon?
- **Preliminary Cost Estimates and Construction Implementation (Section A32.2.7).** The majority of comments on this topic included:
  - UDOT should update the capital and operations and maintenance (O&M) costs given higher than historic inflation. UDOT should also update the life cycle cost estimates considering potential changes in future inflation expectations.

- **Basis for Identifying the Preferred Alternatives (Section A32.2.9).** The majority of comments on this topic included:
  - UDOT should provide more information about the phased implementation approach.
  - The enhanced bus service alternatives would still be affected by snow and icy conditions on S.R. 210.
  - Comments expressed that snow sheds alone would be adequate to improve road reliability and safety.
  - Commenters expressed a preference for or opposition to an alternative or sub-alternatives.
- **Land Use Impacts (Section A32.3).** The majority of comments on the supplemental information reports were related to Inventoried Roadless Areas (IRAs) that are located in the National Forest. The main comments were:
  - Commenters expressed the desire to not change the IRA boundaries and stated that these areas should be avoided.
  - Commenters expressed an opinion that the gondola alternative should be considered a road and not be allowed in IRAs under the Roadless Area Conservation Rule (RACR).
  - Commenters believed that temporary construction access roads and permanent maintenance roads would be needed.
- **Air Quality (Section A32.10).** The majority of comments on this topic included:
  - UDOT should use electric buses to minimize air quality impacts.
- **Water Resources (Section A32.12).** The majority of comments on this topic included:
  - Commenters had concerns about impacts to the Little Cottonwood Canyon watershed and the water quality of Little Cottonwood Creek.
  - Commenters had concerns about potential indirect impacts.
- **Visual Resources (Section A32.17).** The majority of comments on this topic included:
  - Commenters had concerns about visual impacts from the preferred alternatives, with most concerns associated with visual impacts of the gondola alternatives.

- **Indirect Effects (Section A32.20).** The majority of comments on this topic included:
  - The gondola alternatives would increase summer use at the ski resorts and associated trails.
  - The primary alternatives could cause the ski resorts to expand their facilities and terrain, which will impact the environment, watershed, and water supply.
- **Section 4(f) and Section 6(f) Evaluation (Section A32.26).** The majority of comments on this topic included:
  - Commenters stated that IRAs should be considered Section 4(f) resources.
- **USDA Forest Service Forest Plan Amendments (Section A32.28).** The majority of comments on this topic included:
  - Lands transferred from National Forest System management to UDOT due to the project alternatives should stay under the Forest Service management prescriptions.
  - The USDA should not allow development in Inventoried Roadless Areas

## A32.1 Purpose and Need

### A32.1.1 Introduction

- A. Commenters stated that UDOT should also be looking at infrastructure improvements in Big Cottonwood Canyon. Others commented that the project study area should be larger to include the Salt Lake Valley or other areas surrounding the Wasatch Mountains.

See Section 1.1.1, *Description of the Transportation Needs Assessment Study Area*, of the Final EIS for more information about the study area developed to consider transportation solutions for S.R. 210. The transportation needs assessment study area, or study area, used for the Little Cottonwood Canyon EIS extends along S.R. 210 from its intersection with S.R. 190/Fort Union Boulevard in Cottonwood Heights, Utah, to its terminus in the town of Alta, Utah, and includes the Alta Bypass Road (Figure 1.1-1, *Transportation Needs Assessment Study Area*). UDOT developed the study area to include an area that is influenced by the transportation operations on S.R. 210 and to provide logical termini (endpoints) for the project.

Potential transportation solutions in the study area would have independent utility because they would be usable and would be a reasonable expenditure even if no additional transportation improvements in the area are made. In addition, alternative solutions on S.R. 210 would not restrict UDOT from considering alternatives for other reasonably foreseeable transportation improvements currently included in the regional transportation plan or being considered by local municipalities. The study area from Fort Union Boulevard to the town of Alta is also long enough to address environmental matters on a broad scope along Wasatch Boulevard and along S.R. 210 in Little Cottonwood Canyon. Transportation improvements in Big Cottonwood Canyon or other areas are outside the transportation needs assessment study area for the Little Cottonwood Canyon EIS and would require a separate environmental document.

#### What is Wasatch Boulevard?

Wasatch Boulevard is a segment of S.R. 210 from Fort Union Boulevard to North Little Cottonwood Road.

The EIS does recognize that transportation solutions on S.R. 210 could have indirect effects on S.R. 209 in Big Cottonwood Canyon, which are discussed in Chapter 20, *Indirect Effects*, of the EIS. UDOT realizes that implementing a traffic demand management strategy (tolling) in Little Cottonwood Canyon could move traffic into Big Cottonwood Canyon. If a toll on vehicles were implemented on S.R. 210 in Little Cottonwood Canyon, UDOT would likely implement a similar congestion-management strategies for S.R. 190 in Big Cottonwood Canyon. See Section 20.4.7, *Tolling or Vehicle Occupancy Restrictions on S.R. 190 in Big Cottonwood Canyon*, of the Final EIS. If a toll were implemented for S.R. 190, bus service would need to be improved for those not willing to pay a toll. Before a toll is implemented in Big Cottonwood Canyon, a separate environmental document would be prepared evaluating the potential impacts.

- C. *Commenters stated that the transportation study area used in the EIS was too small and should have focused on regional transportation solutions. Others commented that the transportation improvements should be part of a comprehensive planning effort that considers all access involving the central Wasatch Mountains.*

**S.R. 210 Transportation Needs Assessment Study Area.** UDOT developed this study area to include an area that is influenced by the transportation operations on Wasatch Boulevard and in Little Cottonwood Canyon, and to provide logical termini (endpoints) for the project. The intersection of S.R. 190/Fort Union Boulevard was selected as the western terminus because it is the point where traffic splits between Big Cottonwood Canyon and Little Cottonwood Canyon. Traffic south of this intersection is mostly related to trips in and out of Little Cottonwood Canyon and commuter traffic on Wasatch Boulevard. The end of the paved road in Little Cottonwood Canyon was selected as the eastern terminus because this is where S.R. 210 terminates in the town of Alta at Albion Basin Road. The S.R. 210 Project does not include Albion Basin Road.

Potential transportation solutions in the study area would have independent utility because they would be usable and a reasonable expenditure even if no additional transportation improvements in the area are made. The study area from Fort Union Boulevard is also long enough to address environmental matters on a broad scope along Wasatch Boulevard and in Little Cottonwood Canyon.

The needs assessment study area used in the EIS did not restrict UDOT from considering alternatives outside this area. UDOT did consider alternatives, such as a train or a gondola from Park City and a regional bus service, outside the needs assessment study area. Also see Section 2.2, *Alternatives Development and Screening Process*, of the Final EIS. The needs assessment study area only helped define the problem, and alternatives or actions that could contribute to addressing this problem could start at points outside the needs assessment study area. For example, UDOT evaluated a regional transit system across the Salt Lake Valley, light rail from the University of Utah and Murray, and mobility hubs in Sandy. All of these alternatives were outside the needs assessment study area.

**Comprehensive Regional Planning.** The Wasatch Front Regional Council is the agency responsible for integrated regional planning. UDOT used the 2019–2050 *Wasatch Front Regional Transportation Plan* (RTP) (WFRC 2019) as a guide in developing and considering the project purpose and the alternatives evaluated during the EIS process. The RTP is an integrated regionwide plan that identifies a list of projects that should be implemented by phase. Four projects in the 2019–2050 RTP identify the need to make improvements to S.R. 210 (Projects R-S-53, R-S-163, R-S-216, and T-S-75). One of the purposes of the RTP is to demonstrate how projects affect other projects so that a regional approach can be considered to avoid a fragmented approach to planning. UDOT used all of the projects in the RTP as a baseline in developing alternatives. Once a project is listed in the RTP, and based on the need and the phase of the project, a more specific study is conducted for each project, such as the Little Cottonwood Canyon EIS for the S.R. 210 Project.

The status of these more-detailed project studies are captured in updates to the RTP, which occur at least every 4 years to verify that regional air quality and fiscal constraint requirements are

accounted for in the RTP or through RTP amendments. The current 2023–2050 RTP was adopted in May 2023 (WFRC 2023).

In developing the project purpose, alternatives, and the environmental analysis, UDOT considered planning documents from the Mountain Accord, the *Wasatch Canyons General Plan*, watershed plans, Forest Service plans, and other local and regional city, county, and state transportation, land use, and environmental plans.

UDOT started a corridor planning process for Big Cottonwood Canyon, but that process was independent of the Little Cottonwood Canyon EIS but that process was put on hold.

## A32.1.2 Summary of Purpose and Need

- B. Commenters asked: What is the goal or purpose of the project? Other commenters stated that the goal of the project should not be to get more people into Little Cottonwood Canyon to recreate. Other commenters stated that the traffic was bad only few days each winter. Commenters also stated that the need for the project does not justify the expenditures when other projects in the Salt Lake Valley are more pressing.*

The purpose of the S.R. 210 Project is to substantially improve roadway safety, reliability, and mobility on S.R. 210 from Fort Union Boulevard to the town of Alta for all users on S.R. 210. The goal of the project is not to increase visitation or promote ski resort expansion in Little Cottonwood Canyon but to improve the operation of S.R. 210. All of the reasonable alternatives identified in the Draft and Final EISs meet the project purpose and reduce personal vehicle use in Little Cottonwood Canyon since each alternative is transit based and all alternatives include tolling to encourage transit use.

Based on the traffic forecasts and analysis in the EIS, UDOT found that, in 2050, S.R. 210 is projected to experience congestion conditions for about 50 days per winter season. The needs assessment found the following existing issues that need to be addressed.

- Decreased mobility in winter during the morning (AM) and afternoon (PM) peak travel periods related to trips to ski areas, with the greatest traffic volumes occurring on weekends and holidays and during and after snowstorms (see Section 1.4.3.2.1, *Mobility*, of the Final EIS regarding the expected number of days of wintertime congestion in 2050). With such high seasonal demand and lack of standard shoulders in some parts of the canyon, which prevent motorists' ability to maneuver around incidents, even small incidents such as a broken-down vehicle or a vehicle without snow tires or chains can cause substantial delay and affect the road's reliability. The traffic congestion also affects residents who live at the entrance of Little Cottonwood Canyon and cannot reliably exit or return to their homes on busy ski days.
- Decreased mobility on Wasatch Boulevard resulting from weekday commuter traffic.

### What are peak periods?

Peak periods are the periods of the day with the greatest amounts of traffic. For Little Cottonwood Canyon, the winter daily peak periods are tied to the ski areas opening and closing, whereas peak summer traffic occurs in the early afternoon. Peak periods are looked at by transportation analysts when examining the need for a project.

- Safety concerns associated with avalanche hazards and traffic delays caused by the current avalanche-mitigation program in Little Cottonwood Canyon. Periodic road closures for avalanche mitigation can cause 2-to-4-hour travel delays, or longer, which can cause traffic to back up in the neighborhoods at the entrance of the canyon. This delay also affects the reliability of access to the canyon; the reliability of access for people traveling to and from their residences off of Wasatch Boulevard, North Little Cottonwood Road, and S.R. 209; and interferes with emergency vehicles' access.
- Limited parking at the trailheads and the ski areas that leads to roadside parking on narrow shoulders. The consequences of roadside parking include:
  - Reduced mobility on S.R. 210 near trailheads and at ski areas
  - Loss of shoulder area for cyclists and pedestrians, which forces them into the roadway travel lane and creates a safety concern
  - Creation of undesignated trailheads and paths that contribute to erosion, mineral soil loss, the spread of invasive weeds, degradation of the watershed, and loss of native vegetation in the canyon
  - Damage to the pavement along the roadway edge, which causes increased soil erosion, runoff into nearby streams, and degradation of the watershed

The purpose of the project is not to increase use of dispersed recreation sites or at trailheads by promoting transit stops. S.R. 210 does not have a mobility concern that would be solved by increasing recreation use at the trailheads. If the USDA Forest Service wants to have transit service at the trailheads or increased dispersed recreation, it can work with the Utah Transit Authority (UTA) or another transit provider.

The EIS process does not determine the importance of one project over another, whether the expense of the project justifies solving the problem, or how best to use state funds between projects or to pay for state projects. That responsibility is up to the state legislature.

- F. *Commenters including Save Our Canyons, the Salt Lake City Department of Public Utilities, and the Metropolitan Water District of Salt Lake and Sandy stated that the project purpose should consider or “prioritize” protection of the environment, including watershed protection. Others commented that maintaining visual quality should have been considered in the purpose and need for the project.*

UDOT has a mission and jurisdiction focused on transportation; therefore, UDOT projects are primarily focused on transportation. This project is funded through Senate Bill 277—the Utah legislature approved funding for transportation improvements in areas with recreation and tourism activity that currently experience significant congestion.

The objective of the purpose and need chapter in an EIS is to identify the “need” for a specific project. For UDOT projects, those needs are transportation needs. The purpose and need chapter for the Little Cottonwood Canyon EIS focuses on the transportation needs on S.R. 210. The Council on Environmental Quality recognizes that, as the agency with legal responsibility for surface transportation projects and with transportation expertise, UDOT should be given “substantial deference” when identifying the transportation purposes and needs that are at issue.

Environmental protection or conservation is not part of the need that UDOT is trying to solve with the reasonable alternatives and therefore is not included as part of the primary purpose of the S.R. 210 Project. Including environmental protection as part of the purpose would require UDOT to also consider project elements that protect the environment, such as revegetating portions of the forest, which is outside the transportation need faced on S.R. 210. If UDOT were to eliminate alternatives in Level 1 screening based on specific types of environmental impacts, this could eliminate many alternatives that would otherwise be reasonable to solve the transportation need.

See Section A32.12, *Water Resources*, of this appendix for more information regarding watershed and water quality impacts. UDOT does note the importance of drinking water sources in Little Cottonwood Canyon in the purpose and need chapter. Minimizing impacts to the watershed and water quality is listed as a secondary objective in Section 1.2.1, *Purpose of the Project*, of the EIS. As required by NEPA, UDOT considered in detail the environment as part of the EIS analysis and also developed mitigation measures to protect those resources. The analysis included how alternatives would affect the watershed, regulations such as the Safe Drinking Water Act and Clean Water Act, and potential impacts to existing water quality infrastructure. UDOT had an interdisciplinary team conduct the environmental impact analysis assisted by resource experts from the USDA Forest Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the Utah Transit Authority, and the Salt Lake City Department of Public Utilities. All of these agencies reviewed preliminary drafts of the Draft EIS prior to public release. The environmental analysis considered the direct, indirect, and cumulative impacts of each reasonable alternative in accordance with NEPA.

- H. *Several commenters, including Salt Lake County, the Salt Lake Climbers Alliance, and the Access Fund commented that the purpose and need is too narrowly focused, and therefore the EIS does not consider a reasonable range of alternatives. They also stated that, because of the narrow focus, the EIS does not give adequate consideration to less-impactful alternatives. The comments suggested that UDOT should implement the Enhanced Bus Service Alternative first to determine whether it could solve the congestion problem before more impactful alternatives are implemented.*

The purpose and need is sufficiently broad to address the project needs identified in Chapter 1, *Purpose and Need*, of the EIS and to develop a reasonable range of alternatives. Based on the existing traffic analysis, the current need for improving mobility is during peak winter days when skiers access the ski resorts. During the winter, skiers represent about 90% of the traffic entering Little Cottonwood Canyon. The data show that, outside these peak winter days, substantial mobility-related issues were not identified. Some safety issues with roadside parking on non-winter day were identified, which are addressed with the trailhead parking alternatives.

NEPA does not require that the least impactful alternative be selected. NEPA requires that the decision-maker make an informed decision based on the EIS, agency coordination, public input, and the project record. The inclusion of the Enhanced Bus Service Alternative in the EIS does not require UDOT to first select it and test the alternative before another alternative is implemented.

Based on the EIS analysis, the project record, and public and agency comments, UDOT selects Gondola Alternative B as the selected alternative because it meets the purpose of and need for the project, and primarily because it will provide the best overall reliability compared to other primary alternatives. The alternative will have a high travel reliability because it will be on a

separate alignment and will operate independently from the road. Snow, vehicle slideoffs, crashes, and snow- and avalanche-removal operations would not affect the gondola service. If S.R. 210 were closed because of avalanche debris on the road or a vehicle crash, the gondola can still operate and be used as an alternative to personal vehicle use. By contrast, enhanced bus service would be less reliable because it would run in mixed traffic and would be subject to the same factors that influence the road's reliability and users' mobility, which are traffic congestion, avalanche mitigation closures, weather (snow) and resulting road conditions, and roadway incidents (crashes and slide-offs). Also see response A32.29R in this appendix.

Recognizing that traffic conditions are currently affecting mobility and reliability on S.R. 210 today, and the time it takes to fund and complete construction of Gondola Alternative B, UDOT as part of the selected alternative will implement improved and increased bus service similar to the bus service described under the Enhanced Bus Service Alternative but smaller in scale to meet the demands associated with earlier years of operation) to address congestion and mobility on S.R. 210 pending construction of Gondola Alternative B. UDOT has determined that construction of Gondola Alternative B is the appropriate long term transit solution for the canyon. UDOT's selected alternative adopts elements of alternatives that were evaluated in the EIS (gondola, improved and enhanced bus service, bus maintenance and storage facility, mobility hubs, snow sheds, and tolling) to create the best possible action based on technical evaluation, modeling, and analysis. The selected alternative provides increased transit service to address mobility needs sooner and, when funding becomes available, allows UDOT to implement an aerial transit alternative as a long term solution that has improved reliability over road-based transit alternatives.

### **A32.1.3 Regional Transportation Planning**

See Section A32.1.1, *Introduction*, of this appendix for comments related to regional transportation planning.

### **A32.1.4 Need for the Project**

See Section A32.1.2, *Summary of Purpose and Need*, of this appendix for comments related to the project's need.

### **A32.1.5 Scope of the Environmental Impact Statement**

- C. *Commenters stated that the EIS does not address environmental impacts outside the resorts that would occur as a result of proposed alternatives and that the study area was limited to a 60-foot corridor surrounding S.R. 210. Other commenters stated that the EIS should consider environmental protection of the resources in Little Cottonwood Canyon. Commenters also stated that an in-depth analysis needs to be conducted using a multidisciplinary team.*

The EIS evaluates impacts to 20 resources from the action alternatives and suggests potential mitigation measures. The analysis includes the entirety of the S.R. 210 corridor and surrounding areas. A study area was developed and included in the EIS for each resource evaluated. The resource-specific study areas were based on where expected impacts would occur. For example,

the water quality analysis included the entire Little Cottonwood Canyon watershed and considered direct and indirect impacts.

The purpose of an EIS is to document the expected impacts to the human and natural environment so that an informed decision can be made on the select alternative. The EIS process does not require standalone alternatives whose purpose is to protect the environment or that are unrelated to or inconsistent with the proposed action. The in-depth analysis was performed by a multidisciplinary team of resource experts in coordination with the cooperating agencies that manage or oversee the resources, and the analysis considers the direct and indirect environmental impacts of the alternatives.

UDOT's partners in developing the EIS included the cooperating agencies listed in Chapter 1, *Purpose and Need*, of the Final EIS. These included the USDA Forest Service, the Utah Transit Authority, the Salt Lake City Department of Public Utilities, the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers. UDOT met with these agencies throughout the development of the EIS to address their concerns, develop alternatives, and confirm analysis methodologies. Additional coordination and input were obtained from several additional participating agencies, as documented in Chapter 27, *Public and Agency Consultation and Coordination*, of the EIS.

For purposes of the National Environmental Policy Act, a *multidisciplinary team* refers to professionals and experts conducting the analysis. UDOT used the resource expertise of the cooperating agencies as well as professionals in biology, air quality, wetlands, noise, water quality, and visual analysis (to name a few) to prepare the EIS. This includes the specialists identified in Chapter 29, *List of Preparers*, of the EIS.

- L. *The Salt Lake City Department of Public Utilities commented that the EIS does not incorporate summer impacts, including the indirect and cumulative impacts to the watershed and water supply, since summer use is outside the scope of the EIS.*

The analysis for all resources includes the expected impacts from the action alternatives during the entire year. See response A32.20A in this appendix regarding which alternatives will operate during the summer (potentially gondola but not bus service) and the expected impacts. Note that the gondola and cog rail alternatives would stop only at resorts. In addition, the analysis of all resources addresses how each primary alternative would affect summer recreation as well as water quality, ecosystems, noise, and visual resources, to name a few. For each resource, summer use is analyzed, as necessary, for potential direct, indirect, and cumulative impacts. Also see response A32.21C in this appendix for the cumulative impacts of the anticipated growth in canyon visitation.

- M. *The Salt Lake City Department of Public Utilities commented that the economic value of natural systems in the study area and additional costs of watershed protection and water treatment should be considered in the EIS.*

UDOT conducted an extensive analysis of the resources evaluated in the EIS. This analysis included how impacts to recreation and the natural environment could deter or enhance use of the resources. The EIS also included an evaluation of how changes caused by the primary alternatives could affect the watershed and related water infrastructure. Also see Sections A32.12,

*Water Resources, A32.20, Indirect Effects, and A32.21, Cumulative Impacts, of this appendix for more information. The EIS process does not require an economic cost-benefit analysis of the primary alternatives. Also see response A32.2.7E in this appendix.*

## A32.2 Alternatives

### A32.2.1 Introduction

No new comments were received on this section of the Final EIS.

### A32.2.2 Alternatives Development and Screening Process

- F. Commenters stated that the ski resorts should implement a high-cost parking pass to encourage people to take transit, with the proceeds for the parking pass going to operate the transit. Others suggested that the resorts should build more parking.*

UDOT evaluated parking fees and parking reservation systems but recognized that such actions are not within UDOT's jurisdiction or control. UDOT does not have the ability to require private businesses to charge fees and have those fees be applied to public transit. Instead of a parking fee, the select alternative would implement a toll on S.R. 210, which would encourage users of personal vehicles to take a transit alternative. With a toll, UDOT can better control traffic on S.R. 210 and how toll fees are used. UDOT does not have the ability to require ski resorts to build more parking, and adding more resort parking would only increase congestion in on S.R. 210 in Little Cottonwood Canyon and thus would not meet the project purpose. In addition, the *Forest Plan* caps the parking capacity at the levels that occurred in 2000. Also see response A32.2.2K in this appendix.

- I. Commenters including the Central Wasatch Commission and Salt Lake County suggested that UTA buses could be connected to the mobility hubs or base stations, or that a regional bus system with multiple mobility hubs in the Salt Lake Valley should be considered.*

UDOT evaluated a regional bus system to expand bus service into Little Cottonwood Canyon. A regional bus system sized to accommodate the peak-hour demands would require a substantial bus fleet and would need various routes to service the ski resorts. This type of regional system can be implemented independent of the EIS as part of a mobility hub concept. The buses could provide service to the mobility hubs or gondola or cog rail base stations from anywhere in the Salt Lake Valley. Once at the mobility hubs or at the base stations, riders could select the appropriate express bus to their resort destination or access the gondola or cog rail.

#### What is a mobility hub?

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

Although UDOT eliminated a regional bus service concept during the alternatives-screening process, it decided to gather further information about the concept after the release of the Draft EIS (see Section 2.2.6, *Alternatives Suggested during the Draft EIS Comment Period*, of the EIS for more detail). The analysis was based on data provided by UTA regarding a regional bus

service concept that UTA developed to better understand the operations of a regional transit system with service to the ski resorts. This service consisted of eight regional hubs (Salt Lake City, University of Utah, Millcreek, Holladay, West Valley, Murray, Midvale, and Sandy) with direct service (express bus service) from each pickup location to each ski resort in Little Cottonwood Canyon.

In order to be convenient and provide similar service as a private vehicle, the regional bus service would have no intermediate stops. To meet the project purpose as described in the Draft EIS, the regional bus service would need to provide a peak-period capacity of at least 1,008 people. The regional bus service considered by UTA provided a peak-period capacity of 2,688 people. To make the regional bus service attractive, UTA assumed 15-minute headways during the peak period for each route and 30-minute headways during off-peak times. The regional bus service would have a winter operations and maintenance (O&M) cost of \$42,751,234 (in 2020\$) and an initial capital cost of about \$118,770,000 (in 2020\$). Inflating these costs to 2022\$, the regional bus service would have an annual O&M cost of about \$47,000,000 and an initial capital cost of about \$128,400,000.

In the EIS, UDOT evaluated the Enhanced Bus Service Alternative and the Enhanced Bus Service in Peak-period Shoulder Lane Alternative. The Enhanced Bus Service Alternative has a peak-period capacity of 1,008 people, a winter O&M cost of about \$15,400,000 (in 2022\$), and a total bus cost of about \$39,000,000 (in 2022\$). The Enhanced Bus Service in Peak-period Shoulder Lane Alternative has a peak-period capacity of 1,008 people, a winter O&M cost of about \$12,100,000 (in 2022\$), and a total bus cost of about \$27,000,000 (in 2022\$). See response A32.2.7C in this appendix for an explanation of how capital and O&M costs were updated to reflect 2022 values.

Regional bus service that provides a similar frequency of service as the enhanced bus service alternatives would cost \$28,751,234 to \$31,751,234 (in 2020\$) more per winter to operate than the enhanced bus service alternatives. Using 2022 costs, regional bus service would cost about \$31,600,000 and \$35,000,000 more than the enhanced bus service alternatives. In addition, the bus cost would be about \$89,400,000 to \$101,400,000 more (in 2022\$) than with the enhanced bus service alternatives. These increases are a result of the additional buses, longer travel times, and drivers required to provide 15-minute service with the regional bus service versus the 5-minute service considered in the EIS.

If the convenience of regional bus service were reduced by having peak-period headways of 30 minutes, thereby providing peak-period capacity closer to that of the Enhanced Bus Service Alternative (1,344 versus 1,008 people per hour), the winter operation cost and bus capital cost of regional bus service would still be greater. Regional bus service with 30-minute headways during the peak period and 1-hour headways during off-peak times would cost about \$8,100,000 to \$11,400,000 more per winter to operate than the enhanced bus service alternatives. In addition, the bus cost would be about \$25,200,000 to \$37,200,000 more (in 2022\$) than with the enhanced bus service alternatives.

With regional bus service, enough parking would need to be included at each pickup location. Although places such as downtown Salt Lake City and the University of Utah have large parking areas that might be available on weekends and holidays, parking would also need to be available

during the week and holiday periods such as weekdays surrounding Christmas, Martin Luther King Jr. Day, and President's Day, which are all busy ski weeks when the parking areas might be used for business or events. Thus, it is likely that additional parking facilities at a cost similar to the mobility hubs would be required. In-road transit infrastructure such as exclusive lanes and transit signal priority would still be necessary to support the regional bus service. With a bus fleet that is 4 times larger than the fleet required with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative, a significant capital investment would also be required to build bus maintenance and storage facilities. These associated costs were not included in the regional bus service analysis.

Overall, as shown by the analysis in Section 2.2.6.2, *Regional Bus System with Micro-hubs*, of the Final EIS, regional bus service would provide a similar benefits in addressing the project purpose of improving reliability, mobility, and safety on S.R. 210 as the enhanced bus service alternatives evaluated in the EIS but at a substantially greater cost to operate during the winter and with greater bus expenditures. In addition, such an alternative would have the same impacts to S.R. 210 in Little Cottonwood Canyon as would the Enhanced Bus Service Alternative (no road construction). For these reasons, UDOT eliminated regional bus service from detailed consideration in the EIS.

- K. *Commenters suggested that the IKON pass should be eliminated to reduce congestion, the resorts should charge more for lift ticketers or parking to reduce demand, tourists should be charged more for lift tickets, a ski permit system should be implemented, the number of skiers should be limited at the resorts, a parking reservation system should be implemented by the resorts, resorts should use odd/even-day access based on license plates, the resort hour of operations should be changed, or that the road should be closed to vehicles when a limit is met or parking is full.*

As stated in Section 2.2.3.1, *Alternatives Considered and Screening Process – November 2020*, of the Final EIS, limiting the total number of skiers, having a reservation system, or limiting a certain ski pass would not solve traffic congestion because most skiers arrive during the peak morning period of 7 AM to 9 AM when parking at the resorts is available and leave at the same time at the end of the day. Thus peak-period congestion before the parking lots are full would still exist, and therefore limiting the number of skiers would not improve overall mobility. Under current conditions, which result in congestion, the reduced mobility on S.R. 210 occurs when there is still parking available.

In addition, UDOT does not have the authority to ban certain ski passes, charge more for lift tickets or parking, add more or reduce parking at the ski resorts, or limit the number of visitors at private businesses. Although ski resorts have the ability to implement a reservation system, UDOT would have no control of the system, so the ski resorts could change the use of the reservation system, thereby altering the benefit of the system. Additionally, Alta Ski Resort did implement a parking reservation system for day pass users for the 2021–2022 ski season. The reservation system did not substantially reduce peak-period morning traffic and did not reduce afternoon congestion since congestion still occurred.

Closing the road when the parking lots are full or when a cap on the number of vehicles is reached would not reduce peak-hour traffic in the morning when parking is available or before the cap is reached and so would not improve mobility. Additionally, because S.R. 210 is a public road, UDOT

does not have the ability to close the road to all public travel except as a result of accidents, emergencies, or extreme weather conditions.

UDOT does not have the authority to change a private business's operating hours. However, changing the time of lift operations would not reduce the congestion in the peak hour since skiers would still want to reach the lifts during the time of operation in the morning. In addition, the resort opening time is based on getting the mountain ready for skiers, and it is difficult to open the resorts earlier because of the lack of morning light during the winter. Finally, skiers would still leave the resort at the same time at the end of the day.

Some commenters said that an entry permit system similar to those used at National Parks should be implemented. Unlike the National Park Service, UDOT is not a land-management agency. It does not control the federal and private land nor the commercial businesses in Little Cottonwood Canyon. In contrast, National Parks can implement permit systems because they control all aspects of the land and commercial operation within their boundaries. Even if such a system could be developed, it would still not reduce peak-hour congestion unless it was based on entry at a specific time. This would require stopping each vehicle to check for its assigned entry time, which would cause backups and congestion and would not solve the morning mobility issue. In addition, there is no way to prevent people without a pass or those arriving before their entry time from coming to the check station, which would also cause congestion to turn them around. This would also force ski resorts to have multiple types of ski passes since they could not charge for a full lift ticket price for someone with an entry time later in the day, which could affect how they operate their business and UDOT has no jurisdiction over the ski resorts to require these changes.

Some commenters suggested that the ski resorts raise the ticket prices to reduce the number of skiers and thus road users. UDOT does not have the authority to raise ticket prices or require the businesses to do so, but can implement a toll on the road, which has a similar effect. Thus, all of the alternatives include a toll.

Some commenters suggested the use of ride-share apps to help with carpooling to reduce vehicle use. Absent other changes, there is no incentive for skiers to use a ride-share app and carpool with unknown people. The toll proposed by UDOT would likely incentivize carpooling among people who know each other to share the cost of the toll.

Commenters stated that UDOT removing parking along S.R. 210 would alleviate the congestion problem. The peak-hour congestion occurs between 7 AM to 9 AM when parking at the resorts is available and between 3 PM and 5 PM when skiers leave at the same time at the end of the day. Thus peak-period congestion before the parking lots are full would still exist, and therefore removing roadside winter parking would not improve overall mobility. Under current conditions, which result in congestion, the reduced mobility on S.R. 210 occurs when there is still parking available.

*JJ. Commenters asked whether other gondola systems besides the 3S (three cables) were considered, including the new hybrid system called the TRI-Line.*

For the EIS, UDOT evaluated six types of gondola/tram systems including systems similar to those in operation at Snowbird Resort and Telluride in Colorado. Because it would have the greatest maximum passenger capacity, the fastest travel times, the greatest operational benefits (most

stability in high winds), and the most opportunity to avoid environmental resources, the 3S-type gondola is considered the appropriate gondola system for Little Cottonwood Canyon. At the time the Final EIS was published, the gondola manufacturer Doppelmayr introduced a new type of gondola system called the TRI-line. The first TRI-Line is being installed in Hoch-Ybrig, Switzerland. If Gondola Alternative B is selected in the Record of Decision (ROD) and before Gondola Alternative B is designed, UDOT would investigate any benefits of this or other new gondola technologies and their suitability for Little Cottonwood Canyon's unique setting.

*UU. Alta Ski Resort, the Sierra Club, and Alta Lodge stated that the EIS should address the number of merge points at Snowbird Resort onto S.R. 210 to address its impact on traffic congestion and that it should be considered in the EIS.*

In 2020, UDOT made improvements to the merge points to better manage congestion on S.R. 210. During the process, UDOT looked at a separate downhill lane but determined that there was insufficient room within the canyon to include the lane. The primary alternatives considered in the EIS would improve overall mobility on S.R. 210 without the need for additional improvements to the merge points onto S.R. 210. UDOT's goal is to reduce personal vehicle use by incentivizing personal vehicle users to transfer to transit.

*SSS. Save Our Canyons commented that UDOT revived Gondola Alternative B that failed to pass screening in the June 2020 screening report because of political pressure. They stated that the alternative failed because of mobility concerns around the parking of the base station.*

In the June 2020 *Draft Alternatives Development and Screening Report*, UDOT eliminated a gondola alternative with base station parking near the intersection of S.R. 210 and S.R. 209, including one at the existing park-and-ride lot (called gondola alternative 1 in the June 2020 screening report) and one about 1 mile northwest of the canyon entrance and adjacent to North Little Cottonwood Road (called gondola alternative 2 in the June 2020 screening report) because they would not eliminate traffic concerns near this busy intersection. Therefore, parking was moved to the gravel pit and to 9400 South and Highland Drive, with bus service provided to the gondola base station at the park-and-ride lot, and this became Gondola Alternative A in the EIS.

After the June 2020 *Draft Alternatives Development and Screening Report* was published, an adjacent landowner suggested a gondola alternative along North Little Cottonwood Road just south of the gondola alternative 2 location near an area known as La Caille. The proposal included a traffic-mitigation measures on North Little Cottonwood Road, which was a separate turn lane on North Little Cottonwood Road. UDOT reviewed the alternative and conducted an independent analysis of the traffic mitigation. UDOT found that, with improvements to North Little Cottonwood Road and access from Wasatch Boulevard, such an alternative would not cause substantial traffic congestion around the gondola base station.

UDOT re-evaluated gondola alternative 2 with the similar roadway improvements and found that it would perform slightly better at reducing traffic congestion than the alternative with a base station at La Caille. However, UDOT also investigated geotechnical issues at the location of the base station for gondola alternative 2 and found that the area had a high potential for an earthquake rupture fault at the site and thus eliminated the alternative from further consideration. For more information, see Section 4.2.2.2.6, *Gondola at Wasatch Boulevard and North Little Cottonwood*

Road, of the *Draft Alternatives Development and Screening Report Addendum*. See also response A32.2.9DD in this appendix.

*UUU. Save Our Canyons, the Metropolitan Water District of Salt Lake and Sandy, Sandy City, Salt Lake County, and the Salt Lake City Department of Public Utilities commented that the screening criteria should include criteria for the Clean Water Act, Safe Water Drinking Act, water quality, water infrastructure, water rights, and air quality. Others commented that source water protection and drinking water should have been included as screening criteria.*

The purpose of screening is to eliminate alternatives that do not meet the project purpose (Level 1 screening) and to eliminate alternatives that provide the same transportation performance but would cause a substantial environmental impact (Level 2 screening). Level 1 screening criteria are used to determine alternatives that meet the purpose of the project, which in this case is to improve the safety, reliability, and mobility of the transportation system. Level 2 screening criteria included impacts to wetlands, streams, and floodplains. If two alternatives meet the purpose equally, but one would have greater impacts to these water resources, the alternative with greater impacts would be eliminated from further detailed environmental review on the basis that another alternative could meet the purpose with fewer or less significant impacts.

For Level 2 screening, alternatives are not developed in enough detail to determine compliance with the federal and state Safe Drinking Water Act or other criteria suggested by the commenters. Once reasonable alternatives are determined, they are evaluated in detail to determine compliance with these acts and resources. Decision-makers considered all of the alternatives' impacts to drinking water and other resources in connection with identifying a preferred alternative and selecting the alternative that will be implemented through the Record of Decision.

The purpose of screening is not to conduct extensive environmental analysis on each alternative being considered in screening, since that would be time-consuming and costly and might eliminate otherwise reasonable alternatives. Instead, screening identifies the reasonable alternatives that should be brought forward for detailed environmental analysis in the EIS. Also see response A32.1.2F in this appendix.

### **A32.2.3 Alternatives Refinement Process**

No new comments were received on this section of the Final EIS.

### **A32.2.4 Travel Demand Management Strategies Considered as Part of the Action Alternatives**

No new comments were received on this section of the Final EIS. See Section 2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, and response 32.2.4A in Chapter 32, *Response to Comments*, of the Final EIS for a comprehensive response to questions and comments regarding tolling and alternative traffic demand strategies.

### A32.2.5 Land Appropriation, Easements, and/or Special-use Permits

No new comments were received on this section of the Final EIS. Responses in Section A32.3, *Land Use*, of this appendix respond to comments on the supplemental information reports that are related to the 23 United States Code Section 317 appropriations and consistency with the *Forest Plan* including Inventoried Roadless Areas.

### A32.2.6 Alternatives Considered for Detailed Study

- O. *The Central Wasatch Commission and the Salt Lake City Department of Public Utilities were concerned that the alternatives presented in the Final EIS will ultimately be used for year-round service for developed and dispersed recreation once they are constructed. The Final EIS did not fully analyze the environmental impacts of year-round use. Commenters requested that these impacts be analyzed as part of the NEPA process.*

The Enhanced Bus Service alternatives do not include summer use because it is not required to meet the project's purpose. The gondola and cog rail alternatives could be used during the summer. However, none of the primary alternatives include service to trailheads or other dispersed recreation sites during the summer or winter. Chapter 20, *Indirect Effects*, of the Final EIS discusses the impacts of potential summer use of the gondola and cog rail alternatives. Also see responses A32.2.6U, A32.20A, A32.20C, and A32.20F in this appendix.

- S. *Several commenters suggested the enhanced bus service be implemented immediately, without peak-period shoulder lanes, before any new infrastructure is constructed in Little Cottonwood Canyon. The Salt Lake Climbers Alliance commented that both UDOT and the Forest Service are both legally obligated to take an approach that adheres to principles of adaptive management; whereby, both agencies take careful steps to begin addressing the transportation problems on S.R. 210, learn from those initial steps, and carefully reassess before moving forward. UDOT is required by law to select a less impactful alternative.*

NEPA does not require UDOT or the USDA Forest Service to take an approach of adaptive management or select the least impactful alternative. Instead, NEPA requires UDOT to fully evaluate the environmental impacts of proposed actions in the context of the contemplated purpose and need and project objectives before committing any resources. UDOT sought input from the cooperating agencies (USDA Forest Service, Salt Lake City Department of Public Utilities, UTA, U.S. Army Corps of Engineers, and U.S. Environmental Protection Agency) in determining the selected alternative. UDOT has also worked with the USDA Forest Service regarding how their NEPA decisions might impact National Forest System–managed lands. The selection of Gondola Alternative B was made using an objective, data-driven approach and analysis that is informed by the public input received during the various comment periods throughout the NEPA process. Also see responses A32.1.2H and A32.29R in this appendix.

- U. *Save Our Canyons, the Salt Lake City Department of Public Utilities, and several others asked why summer operation of the gondola was considered but not summer operation of bus service. They commented that the only reason for summer operation of the gondola (or cog rail) was the tourist attraction.*

UDOT has stated in the EIS that there is no need to address summer mobility on S.R. 210 and thus UDOT would not need to operate any alternative during the summer. UDOT selected Gondola Alternative B because it provides the best winter reliability. The alternative would have a high travel reliability because it would be on a separate alignment and would operate independently from the road. However, UDOT believes that the gondola might also provide a tourist attraction and so UDOT might operate it during the summer. The tourism factor was not considered in screening the alternatives, nor was it a factor in the decision regarding the selected alternative. Some commenters stated that summer service is a welcome benefit because of the views from the gondola cabins. Summer service, if implemented, would not be subsidized, and fares could help pay for the capital and O&M costs of the gondola system. Summer gondola service would run from the base station directly to the resorts.

UDOT is not proposing to provide summer trailhead service since it is not needed to meet the project purpose, and increasing summer visitor use at USDA Forest Service trailheads is not under UDOT's authority. Therefore, with no service to trailheads, no summer mobility issue on S.R. 210, and no parking capacity issue at the resorts, there would be limited demand for summer bus service.

- W. *The Salt Lake City Department of Public Utilities stated that the EIS doesn't analyze whether the preferred alternatives might be impossible to implement and that the EIS doesn't analyze whether the preferred alternatives are consistent with the 2003 Wasatch-Cache Forest Plan directing the USDA Forest Service to manage federal lands with the City's watershed as a priority. Other comments suggested that all primary alternatives and sub-alternatives are for a "highway purpose" and should be classified as a "road" for the purpose of the compliance with the Roadless Area Conservation Rule (RACR).*

FHWA, with the input of the USDA Forest Service, will determine whether an appropriation would be consistent with applicable laws in the context of the 23 United States Code (USC) Section 317 appropriation process and also the applicability of the RACR. Also see response A32.28A in this appendix.

The EIS recognizes the emphasis on watershed protection in the 2003 *Forest Plan* and Salt Lake City's authority and role with respect to watershed and water quality protection. It assesses the expected impacts on the watershed and water quality from each of the alternatives, as well as measures to avoid, minimize, and mitigate such impacts. This analysis is provided in Chapter 12, *Water Resources*, of the EIS, and it includes the results of a water quality model showing that there would be *de minimis* impacts. Based on that and other analysis in the EIS, UDOT believes that any of the action alternatives can be implemented in compliance with federal law and with applicable water quality and watershed protection standards.

UDOT also notes that, as explained in Chapter 28, *U.S. Department of Agriculture Forest Service Forest Plan Amendments*, of the Final EIS, the appropriation of National Forest System lands by

the Federal Highway Administration and the transfer of an interest in these lands to UDOT would be in the form of a nonexclusive right of way for highway purposes. The Forest Service would still administer the appropriated lands, according to the *Forest Plan* or amended *Forest Plan*, but UDOT would have an easement on these lands.

### A32.2.6.1 No-Action Alternative

No new comments were received on this section of the Final EIS.

### A32.2.6.2 Enhanced Bus Service Alternative

**Note to reader:** UDOT's responses to some of the general comments regarding bus types, bus operating times, operating seasons, routes, bus service to trailheads, phased implementation, and other factors that apply to both the Enhanced Bus Service Alternative and the Enhanced Bus Service in Peak-period Shoulder Lane Alternative are provided in Chapter 32, *Response to Comments*, Section 32.2.6.3, *Enhanced Bus Service in Peak-period Shoulder Lane Alternative*, of the Final EIS and Section A32.2.6.3, *Enhanced Bus Service in Peak-period Shoulder Lane Alternative*, of this appendix. Responses to comments regarding tolling, subsidizing transit fares, the method and timing of tolling, and other access-control options (limit parking, road closures, and vehicle occupancy restrictions), which are common among the primary alternatives, are provided in Section A32.2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, of the Final EIS.

#### A32.2.6.2.1 Mobility Hubs Sub-alternative

- C. *Commenters asked where UDOT would park the vehicles for the primary alternatives and whether the parking structures would include covered parking, shops, and amenities. Other comments asked whether there would be enough parking spaces to support the primary alternatives.*

See Section 2.6.2.2, *Mobility Hubs Alternative*, of the Final EIS for more information regarding the mobility hubs. UDOT designed the mobility hubs to have adequate parking to support each primary alternative and would include a structure with some covered parking. UDOT proposed two mobility hubs with the enhanced bus service alternatives: one at the gravel pit with access from Wasatch Boulevard, and the second at 9400 South and Highland Drive. For the enhanced bus service alternatives and Gondola Alternative A, there would be 1,500 parking spaces at the gravel pit mobility hub and 1,000 at the 9400 South and Highland Drive mobility hub.

For Gondola Alternative B there would 2,500 parking spaces at the base station at La Caille. The select alternative is Gondola Alternative B with phased implementation of components of the Enhanced Bus Service Alternative. With the selected alternative UDOT will construct a mobility hub at the gravel pit and would operate improved and increased bus service (from the gravel pit mobility hub and from the existing 9400 South and Highland Drive park-and-ride lot) until Gondola Alternative B is constructed. Once the gondola is operational, bus service would cease, and the mobility hub would be repurposed, subject to further environmental analysis and decision making.

UDOT has not determined whether the parking will be 100% covered parking spaces or whether electric charging stations would be provided. These details would be determined during final

project design and engineering. UDOT would not develop any shops or other commercial amenities at the mobility hubs.

#### A32.2.6.2.2 Wasatch Boulevard Sub-alternatives

- A. *Numerous comments were received on the Final EIS, including those from Cottonwood Heights City, regarding Wasatch Boulevard, including that UDOT should lower the speed limit, that UDOT should consider the Wasatch Boulevard Master Plan, that UDOT should include landscaping with any improvements, that Wasatch Boulevard is being expanded to accommodate only 15 busy ski days, and that expansion would only increase traffic in neighborhoods. The comments were focused on the questions below.*

##### **Why is UDOT expanding Wasatch Boulevard, or is UDOT expanding Wasatch Boulevard for weekend ski traffic?**

Wasatch Boulevard is being expanded to address weekday southbound PM peak-period traffic that occurs during the week throughout the year. By 2050, traffic on Wasatch Boulevard is projected to be severely congested. Travel times for the 2.2-mile segment in the weekday PM peak-period are projected to increase from 4 minutes and 40 seconds today to 10 minutes and 15 seconds in 2050. The level of service on Wasatch Boulevard is also projected to decrease—from one of the four segments operating at failing conditions (LOS E or F) today to three of the four segments by 2050. Wasatch Boulevard is not being expanded to address winter ski traffic, which typically occurs on weekends and in the opposite direction of commuter traffic during the week. Widening Wasatch Boulevard is required with all of the primary alternatives.

The analysis for the need to expand Wasatch Boulevard is based on projected population and employment growth in 2050 provided by the University of Utah. The projections show growth in population and employment not only along Wasatch Boulevard but to the south in Sandy and Draper. UDOT used a travel demand model developed by the Wasatch Front Regional Council that includes the growth projections in 2050. More information regarding the travel demand modeling assumptions is provided in Section 2.1.2.2.2, *Level 1 Screening Criteria*, of Appendix 2A, *Draft Alternatives Development and Screening Report June 8, 2020*, of the EIS.

##### **Why doesn't UDOT reduce the speed limit on Wasatch Boulevard, since more lanes would only increase vehicle speeds?**

UDOT is not proposing to increase the speed limit beyond the currently posted speed limit. The evaluation of speed limits is done outside the EIS process. To determine speeds on state roads, UDOT conducts a speed management study. The posted speed limit is based on the 85th-percentile speed while giving consideration to the road surface, shoulders, sight distance, development, pedestrian activity, roadside conditions, and crash data. Using these criteria, the posted speed limit for Wasatch Boulevard is 50 miles per hour (mph). To ensure mobility on state roads and equity between cities, UDOT must apply the speed study policy equally on state roads within each city. Wasatch Boulevard south of 9400 South is posted at 35 mph. That portion of Wasatch Boulevard is a city road, so the local government can post the speed limit.

UDOT would not increase the speed limit on Wasatch Boulevard. UDOT will consider center medians and other traffic-calming measures.

Changing the design speed would not have substantially changed the footprint of the Wasatch Boulevard alternatives and thus impacts to adjacent property. The cross-section of the road would still require the same width for the travel lanes, median, roadway shoulder, and trail. Because Wasatch Boulevard is mostly straight other than one corner south of Kings Hill Drive, the sight distance criteria would not have changed with a lower speed limit other than traffic heading north just south of Kings Hill Drive. This change would not have prevented the need to acquire the one home in this area.

**Would planted medians and a more-scenic Wasatch Boulevard be developed similar to the plans in the Cottonwood Heights Wasatch Boulevard Master Plan?**

As stated in Section 2.6.2.3, *Wasatch Boulevard Alternatives*, of the EIS, UDOT in coordination with Cottonwood Heights City would develop an aesthetics plan to implement as part of proposed improvements to Wasatch Boulevard. To develop the plan, UDOT and Cottonwood Heights City would consider the goals identified in the *Wasatch Boulevard Master Plan* and the general concepts in the *Wasatch Boulevard Aesthetic Design Plan* for preserving and enhancing scenic and natural qualities along Wasatch Boulevard and Cottonwood Heights City's goals to develop a gateway corridor that accommodates future transit needs. Planted medians and trails have the added benefit of providing traffic calming. UDOT provided a letter to Cottonwood Heights City on September 29, 2021, reaffirming its position regarding implementing the aesthetics plan. The EIS documents this commitment in Section 2.6.2.3, *Wasatch Boulevard Alternatives*, in Chapter 2, *Alternatives*, of the EIS, noting that UDOT is committed to following the aesthetics plan and implementing traffic-calming elements.

**What impacts would widening Wasatch Boulevard have on key intersections including the intersection of Wasatch Boulevard and North Little Cottonwood Road?**

With the Wasatch Boulevard sub-alternatives, the level of service (LOS) at key intersections would improve compared to the No-Action Alternative. With the No-Action Alternative, four of the five intersections would operate under failing conditions (LOS E or F) by 2050. With the Wasatch Boulevard sub-alternatives, all intersections would operate at an acceptable level of service in 2050.

Commenters stated that, with two southbound travel lanes and only one dedicated right turn lane with the Wasatch Boulevard alternatives at the Wasatch Boulevard and North Little Cottonwood Road intersection, there would be severe congestion. UDOT conducted a detailed analysis of this intersection. The level of service at the intersection of North Little Cottonwood Road and Wasatch Boulevard ("high-T") would be less in the PM peak period with the Wasatch Boulevard alternatives (LOS D compared to LOS C for the No Action). However, LOS D is acceptable and meets UDOT's stated goal for the project. For more information, see Chapter 7, *Traffic and Transportation*, of the EIS.

**Would expanding Wasatch Boulevard increase traffic into local neighborhoods in Cottonwood Heights?**

By making travel less congested on Wasatch Boulevard traffic in local neighborhoods would be reduced.

**Would expanding Wasatch Boulevard increase accidents, make left turns difficult, and make for an unsafe road for pedestrians and cyclists?**

UDOT would design Wasatch Boulevard using current safety standards that take into account pedestrians, cyclists, and vehicle safety. This would include providing appropriate sight distances, clear zones, and shoulders.

UDOT would also provide a 10-foot-wide pedestrian trail away from the travel lane to improve pedestrian safety. The new roadway would also include appropriate crosswalks. Finally, UDOT would not substantially straighten the road but would provide for better sight distances by clearing vegetation. This would allow drivers to better see into intersections, which would reduce the potential for accidents.

UDOT is not planning to increase the speed limit on Wasatch Boulevard or reduce safety. It should be noted that the current accident rate on Wasatch Boulevard is below the statewide average for similar roads. With the current road configuration and limited sight distance, the accident rate on Wasatch Boulevard ranges from 1.46 to 2.43 per million vehicle-miles traveled compared to the state average for similar roads of 2.89 per million-vehicle miles traveled.

**Would new traffic signals be placed at key intersections such as Kings Hill Drive?** As part of the alternatives screening process, UDOT evaluated a traffic signal at Kings Hill Drive as part of any of the roadway action alternatives on Wasatch Boulevard. As part of the screening, UDOT conducted a traffic signal warrant study (to determine whether a traffic signal is warranted) at that intersection based on the *Manual on Uniform Traffic Control Devices (MUTCD)*, Chapter 4C, *Traffic Control Signal Need Studies*. The MUTCD is the law governing all traffic-control devices. It is a federal standard used by highway officials nationwide to guide installation and maintenance of traffic-control devices on all streets and highways open to public travel. The MUTCD is published by FHWA under 23 Code of Federal Regulations Part 655, Subpart F.

UDOT's review of the Kings Hill Drive intersection showed that the intersection meets the requirements for a traffic signal. However, 96% of the turning movements on Kings Hill Drive during the morning peak period are right-turning vehicles. If a dedicated right-turn lane were added on Kings Hill Drive, the signal warrant would no longer be met. There is enough room on Kings Hill Drive to stripe the road for dedicated right- and left-turn lanes without acquiring any additional right of way. UDOT determined that adding a traffic signal would create an offset intersection that would not meet sight distance standards at this location, and that meeting the sight distance standards would require purchasing two homes. Therefore, UDOT decided that all of the roadway alternatives on Wasatch Boulevard would include dedicated right- and left-turn lanes at Kings Hill Drive. Therefore, a traffic signal would not meet MUTCD warrants and was not carried forward as part of any roadway alternatives.

Other intersections that do not have an existing traffic signal would not meet traffic warrants to meet the criteria for installing a traffic signal.

**Would the Wasatch Boulevard alternatives have bicycle shoulders and a pedestrian trail?**

Both Wasatch Boulevard sub-alternatives would include a shoulder that can be used by cyclists and a multi-use 10-foot-wide path on the east side of the road. A multi-use path was not included on the west side since it would have resulted in home relocations and substantial property impacts. The bicycle lane would be within the shoulder and would not be protected since the shoulder would also need to be used for vehicles that break down, for bus priority at intersections, and for snow storage. A protected bicycle lane would eliminate the primary purpose of the shoulder. Adding a separate bicycle lane in addition to the shoulder would expand the roadway footprint which would result in more private property impacts.

**Why doesn't UDOT just expand Highland Drive to reduce traffic on Wasatch Boulevard?**

UDOT considered improvements to Highland Drive during the evaluation process. UDOT modeled the expected traffic volumes in the project area in 2050 using the Wasatch Front Regional Council's travel demand model. The travel demand modeling for the project included Highland Drive being built as a five-lane road and connecting from 9800 South to the Draper city limits. Even with Highland Drive being expanded to five lanes (four travel lanes and a center turn lane), the results of the travel demand model showed a need to expand the traffic capacity on Wasatch Boulevard to meet future regional growth.

**Did UDOT consider reversible lanes on Wasatch Boulevard instead of widening?** UDOT evaluated a reversible-lane alternative. The alternative was eliminated because it did not meet the project purpose of improving mobility on all segments of Wasatch Boulevard because it still resulted in roadway congestion in excess of the acceptable level of service.

**Would homes be acquired as a result of widening Wasatch Boulevard?** There would be one home acquisition as a result of widening Wasatch Boulevard and one potential acquisition. The one home that would need to be acquired has already been purchased by UDOT.

**Would Wasatch Boulevard become congested south of the intersection of North Little Cottonwood Road with the roadway expansion?** With either Wasatch Boulevard sub-alternative, there would be a no-stop right turn at the Wasatch Boulevard and North Little Cottonwood Road intersection in the southbound direction. The number of vehicles heading southbound would basically be the same with or without the Wasatch Boulevard alternatives. With a no-stop right turn, traffic would not need to stop, which is similar to current conditions, and no substantial congestion is anticipated at the intersection or on Wasatch Boulevard south of the intersection. Traffic modeling shows that the intersection would operate at an acceptable level of service of LOS D.

**Would the primary alternatives just cause congestion on Wasatch Boulevard?** The Five-lane and Imbalanced-lane Alternatives would improve mobility on Wasatch Boulevard. Based on travel demand modeling, UDOT expects traffic to operate at an acceptable level of congestion.

**Commenters stated that UDOT did not consider all of the environmental impacts to Wasatch Boulevard residents.** The EIS includes a detailed analysis of the Wasatch Boulevard sub-alternatives' impacts to both the human and natural environment. The analysis states that the road widening could reduce the quality of life of residents, impact property, increase noise levels, and change the character of the neighborhood.

**Commenters stated that adding additional lanes on Wasatch Boulevard would induce travel demand and vehicle-miles traveled.** For the Wasatch Boulevard sub-alternatives (Five-lane Alternative and Imbalanced-lane Alternative), travel demanding modeling showed that there would be about a 4% increase in average daily traffic on the 2.2-mile segment compared to the No-Action Alternative in 2050 during an average weekday. The 4% increase in average daily traffic would be considered induced demand. Even with the induced demand, the proposed Wasatch Boulevard alternatives would operate at an acceptable level of congestion.

**Commenters stated that the 2050 traffic analysis was based on an outdated 2015 survey.** Commenters were not specific regarding which 2015 data was outdated. UDOT used the latest

version of the regional travel demand model developed for the 2019–2050 *Wasatch Front Regional Transportation Plan*. The model is the best available tool and has been approved by the Federal Highway Administration for use in both forecasting traffic and in determining regional air quality conformity. The model's base year is 2015. UDOT took the baseline data from the model and used a VISSIM model to predict traffic on Wasatch Boulevard. The VISSIM model is a better tool to focus on specific roadway segments and intersections. UDOT updated the baseline data from the regional travel demand model with traffic counts taken in 2018.

**Commenters stated that Wasatch Boulevard would be seven travel lanes.** UDOT is not proposing seven travel lanes. The Five-lane Alternative would include four travel lanes, a center median, and appropriate shoulders for cyclist use, snow storage, and vehicles that break down [see Figure 2.6-8, *Wasatch Boulevard Alternatives – Five-lane Cross-section (Fort Union Boulevard to North Little Cottonwood Road)*, of the Final EIS]. The proposed Five-lane Alternative does not include seven travel lanes plus shoulders. UDOT is not proposing shoulder-running buses on Wasatch Boulevard as part of the EIS alternatives. However, UDOT is integrating transit into the Wasatch Boulevard alternatives by including priority signals for buses to reduce their travel time.

**Commenters asked whether Wasatch Boulevard would be straightened, which would increase vehicle speeds.** Wasatch Boulevard would remain in its current alignment. Some trees would be removed to improve sight distances and thereby improve safety at intersections.

**Commenters wanted pedestrian over- or underpasses as part of the Wasatch Boulevard alternatives.** In working with Cottonwood Heights City, UDOT is considering two pedestrian overpasses to facilitate community connectivity. The overpass on the south end is proposed at Russell Park Road and on the north end at the new Canyon Center Development just south of Fort Union Boulevard. The final design could be an underpass depending on the location and the impacts associated with an underpass.

**Who enforces vehicle noise ordinances?** Enforcement of noise ordinances is the responsibility of law enforcement.

**Why don't the Wasatch Boulevard alternatives include dedicated bus lanes for buses going to the ski resorts?** The Wasatch Boulevard sub-alternatives include signal priority at signalized intersections. Dedicated bus lanes are not necessary because widening Wasatch Boulevard would reduce congestion to acceptable levels.

**Why doesn't UDOT consider design guidelines from the National Association of City Transportation Officials?** UDOT has design guidelines which use the American Association of State Highway and Transportation Officials standards. These standards take into account safety standards for all users including pedestrians and cyclists. As stated in Section 2.6.2.3, *Wasatch Boulevard Alternatives*, of the EIS, UDOT in coordination with Cottonwood Heights City would develop an aesthetics plan to implement as part of proposed improvements to Wasatch Boulevard. To develop the plan, UDOT and Cottonwood Heights City would use the goals identified in the *Wasatch Boulevard Master Plan* and the general concepts shown in the *Wasatch Boulevard Aesthetic Design Plan* for preserving and enhancing scenic and natural qualities along Wasatch Boulevard. Planted medians and trails have the added benefit of providing traffic calming.

- S. *Cottonwood Heights City commented that the proposed shared-use path should be designed to connect to other pedestrian amenities in the area, including neighborhood sidewalks, surrounding trail systems (that is, Big Cottonwood Canyon Trail), private developments (that is, the gravel pit site), and transit stops. UDOT should also consider in its design process a wayfinding signage system, so that the shared-use path becomes both a recreation amenity and also a substantial piece of active transportation infrastructure.*

During the final design process, UDOT will work with Cottonwood Heights City regarding other trail connections, transit stops, and other amenities. The requested trail connections are not required to meet the project purpose and would add additional cost to the alternatives. These trail connections and amenities should be considered outside the EIS process collaboratively with UTA, local municipalities, and private developers to identify the necessary funding.

- T. *Cottonwood Heights City commented that the traffic studies that serve as the baseline analysis for the EIS are not current. The City requests that UDOT complete a current traffic analysis of the project area. An updated analysis will ensure that the most accurate and updated data are used as a basis for decision-making. Acknowledgement of the short-term and long-term impacts of the COVID-19 pandemic on traffic patterns should also be included.*

The EIS traffic studies were reviewed by UDOT after the Final EIS was published, based on the review, no changes were needed. The studies are accurate and use the latest version of the Wasatch Front Regional Council's travel demand model and associated traffic counts (also see response A32.2.6.2.2A in this appendix). See response 32.2.4A of the Final EIS regarding pandemic-related travel demand.

#### *A32.2.6.2.3 Avalanche Mitigation Sub-alternatives*

No new comments were received on this section of the Final EIS.

#### *A32.2.6.2.4 Trailhead Parking Sub-alternatives*

No new comments were received on this section of the Final EIS.

#### *A32.2.6.2.5 No Winter Parking Alternative*

No new comments were received on this section of the Final EIS.

### A32.2.6.3 Enhanced Bus Service in Peak-period Shoulder Lane Alternative

**Note to reader:** UDOT’s responses to comments regarding the sub-alternatives (Mobility Hubs Alternative, Wasatch Boulevard alternatives, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative), which are all part of the primary alternatives, are provided in Section 32.2.6.2, *Enhanced Bus Service Alternative*, of the Final EIS and Section A32.2.6.2, *Enhanced Bus Service Alternative*, of this appendix. Responses to comments regarding tolling, subsidizing transit fares, the method and timing of tolling, and other access-control options (limit parking, road closures, and vehicle occupancy restrictions), which are common among the primary alternatives, are provided in Section 32.2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, of the Final EIS and Section A32.2.6.2, *Enhanced Bus Service Alternative*, of this appendix.

- C. *Several commenters on the Final EIS asked why the buses would not serve all the recreation trailheads in the canyon during both winter and summer. Other commenters requested that the buses serve the trailheads and other recreation areas.*

Bus service to the trailheads is not needed to meet the project purpose of improving mobility and reliability on S.R. 210, since the majority of the vehicles that enter the canyon in the winter are going to the ski resorts (about 90%). The main concern with mobility is during the winter when skiers arrive during the peak travel period in the morning. By reducing use of vehicles by the main users (resort skiers), the recreation users who want to travel to the trailheads should have improved mobility on S.R. 210. Additional bus stops in the canyon would also add travel time for all travelers on the bus, and potentially delay personal vehicles on the road, making transit a less-attractive option for the majority of users. This is why the bus service is direct to the ski resorts—so that Alta riders would not need to stop at Snowbird or vice versa. Also see response A32.1.2U in this appendix.

During the summer, traffic is better dispersed throughout the day, so there is not a peak-hour mobility concern that would warrant summer bus service in Little Cottonwood Canyon including stops at trailheads. In addition, having dispersed recreation and bus trailhead stops would allow more people to access the forest and substantially increase use at the trailheads. UDOT is not responsible for increasing use at the trailheads or at dispersed recreation sites but for improving mobility on S.R. 210. In the future, if the USDA Forest Service identifies a need to increase transit service and thus increase the number of recreationists at the trailheads, it can work with UTA and/or others to evaluate transit service independent of the UDOT Little Cottonwood Canyon EIS process. In addition, the USDA Forest Service, outside the Little Cottonwood Canyon EIS process, can potentially consider and evaluate a parking permit system at trailheads under their current authority and jurisdiction.

#### A32.2.6.4 Gondola Alternative A (Starting at Canyon Entrance)

**Note to reader:** No new comments were received on Gondola Alternative A besides comments generally supporting the gondola alternatives (see response 32.2.9D in Chapter 32 of the Final EIS) or not supporting Gondola Alternative A (see response 32.2.9T in Chapter 32 of the Final EIS).

Responses to some of the general comments received on the Final EIS regarding gondola types, gondola operating times, operating seasons, operational weather conditions, frequency of service, service to trailheads, phased implementation, and other factors that apply to both Gondola Alternative A (Starting at Canyon Entrance) and Gondola Alternative B (Starting at La Caille) are provided in Chapter 32, *Response to Comments*, of the Final EIS and Section A32.2.6.5, *Gondola Alternative B (Starting at La Caille)*, of this appendix.

Some comments referred to, or supported, a “tram” up the canyon. A tram or tramway is a specific type of aerial transit that was not considered as a feasible alternative because it would have limited capacity over longer distances, as described in Section 2.2, *Alternatives Development and Screening Process*, of the EIS. However, comments referencing a tram were taken to mean a gondola alternative.

UDOT’s responses to comments on the sub-alternatives (mobility hubs sub-alternative, Wasatch Boulevard sub-alternatives, avalanche mitigation sub-alternatives, trailhead parking sub-alternatives, and the No Winter Parking Alternative) are provided in Section 32.2.6.2, *Enhanced Bus Service Alternative*, of the Final EIS and Section A32.2.6.2, *Enhanced Bus Service Alternative*, of this appendix.

Responses to comments on tolling, subsidizing transit fares, the method and timing of tolling, and other access-control options (limit parking, road closures, and vehicle occupancy restrictions), which would be common among the primary alternatives, are provided in Section 32.2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, in Chapter 32, *Response to Comments*, of the Final EIS.

#### A32.2.6.5 Gondola Alternative B (Starting at La Caille)

**Note to reader:** Responses to comments on tolling, subsidizing transit fares, the method and timing of tolling, and other access-control options (limit parking, road closures, and vehicle occupancy restrictions), which would be common among the primary alternatives, are provided in Section A32.2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, in Chapter 32, *Response to Comments*, of the Final EIS.

UDOT’s responses to comments on the sub-alternatives (mobility hubs sub-alternative, Wasatch Boulevard sub-alternatives, avalanche mitigation sub-alternatives, trailhead parking sub-alternatives, and the No Winter Parking Alternative) are provided in Section 32.2.6.2, *Enhanced*

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

As used in the discussions of the gondola alternatives, 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 a ski resort.

The gondola alternatives also include *angle stations*, which are needed to adjust the horizontal direction of the gondola cabins.

*Towers* support the gondola cable.

*Bus Service Alternative*, of the Final EIS and Section A32.2.6.2, *Enhanced Bus Service Alternative*, of this appendix.

- E. *Commenters asked UDOT to consider the traffic congestion that could be created with a parking structure at the gondola base station at La Caille. How will people know when the lot is full?*

UDOT conducted an independent traffic evaluation of the proposed gondola base station off North Little Cottonwood Road to develop traffic-mitigation strategies. As stated in Section 7.4.5.2, *S.R. 210 – North Little Cottonwood Road to Alta*, and Appendix 2H, *Base Station and Bus Stop Modifications from Draft EIS*, of the Final EIS, with Gondola Alternative B, UDOT would improve North Little Cottonwood Road and build a new access from Wasatch Boulevard to alleviate traffic congestion. The improvements would include road widening and improved access points to the parking structure. UDOT's analysis was based on a total of 1,550 vehicles wanting to enter Little Cottonwood Canyon on the 30th-busiest hour in 2050. Of those vehicles, UDOT would divert about 400 to 450 vehicles to transit through tolling. To enhance entry into the parking structure, there would be a direct-access ramp from North Little Cottonwood Road and a separate access off of Wasatch Boulevard, and vehicles would not need to stop at a ticket kiosk before entering the parking garage. As part of the Final EIS process, UDOT updated the La Caille parking structure from 1,500 parking spaces to 2,500 parking spaces and conducted a new traffic analysis and still found that North Little Cottonwood Road and Wasatch Boulevard would operate at acceptable levels of congestion. The 2,500-parking space structure would eliminate the need for the mobility hubs and bus service once Gondola Alternative B is operational.

- DD. *Commenters asked whether the gondola alignment or towers could be moved to avoid impacts to homes, roadless areas, or recreation resources.*

Many factors were used to develop the gondola alignment including minimizing home impacts, avoiding avalanche paths, avoiding wilderness areas and Little Cottonwood Creek, and avoiding impacts to commercial businesses. UDOT was able to directly avoid overflight of wilderness and private homes. It should also be noted that gondola alignments need to run in straight lines unless an angle station is introduced which requires the gondola cables to come near the ground. UDOT would not place an angle station in an avalanche path since it would impact the operation of the gondola. Based on all of these criteria, UDOT optimized the gondola alignment and believes that the alignment in the EIS is the best alignment possible considering all of the factors. The final structural design of towers and stations would consider avalanche runout zones and forces and other factors and slight alignment shifts or slight relocation of towers will be evaluated.

### A32.2.6.6 Cog Rail Alternative (Starting at La Caille)

**Note to reader:** UDOT’s responses to comments on the sub-alternatives (Wasatch Boulevard alternatives, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative), which are all part of the primary alternatives, are provided in Chapter 32, *Response to Comments*, of the Final EIS and Section A32.2.6.2, *Enhanced Bus Service Alternative*, of this appendix. Responses to comments on tolling, subsidizing transit fares, the method and timing of tolling, and other access-control options (limit parking, road closures, and vehicle occupancy restrictions), which would be common among the primary alternatives, are provided in Section A32.2.4, *Travel Demand Management Strategies Considered as Part of the Action Alternatives*, in Chapter 32, *Response to Comments*, of the Final EIS.

#### What are terminal and base stations?

As used in the discussions of the Cog Rail Alternative, 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 cars 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.

- B. Commenters stated that UDOT misrepresented the cost estimate of the Cog Rail Alternative.

In the *Draft Alternatives Development and Screening Report Addendum*, UDOT provided a detailed cost estimate of the Cog Rail Alternative considered. Although lower cost estimates were provided by others, their estimates did not include all of the supporting elements or sub-alternatives that are included with all of the primary alternatives, such as widening Wasatch Boulevard, parking structures, improvements to North Little Cottonwood Road, snow sheds over the S.R. 210 roadway and the rail line in the mid-canyon area, and snow sheds over the cog rail alignment in the upper portion of Little Cottonwood Canyon. Without these additional common elements, the cost of just the cog rail system was comparable between the UDOT estimate and those provided by others.

The costs presented in the Final EIS represented construction and operations and maintenance costs in 2020. After the Final EIS was published, UDOT updated costs to reflect market conditions in November and December 2022. See responses A32.2.7C and A32.2.7F in this appendix.

### A32.2.7 Preliminary Cost Estimates and Construction Implementation

- C. Commenters asked how much the alternatives would cost, what would be the yearly operations and maintenance (O&M) cost, how long would construction take, and when would the project be completed.

Section 2.6.7, *Preliminary Cost Estimates and Construction Implementation*, of the Final EIS provides a preliminary construction cost, preliminary operations and maintenance costs for the alternatives considered for detailed study, and the construction timeframes. The cost estimates in the Final EIS were developed using the same methodology and used material construction labor costs in 2020. However, there is some uncertainty with each estimate since they were based on preliminary design and pricing changes rapidly based on supply and demand dynamics. All of the

cost estimates included a 20% contingency for potential issues that might arise during construction.

After the Final EIS was published, capital and O&M costs were updated to reflect market conditions in 2022 to capture recently (2021–2022) observed inflation and material cost escalations, which have been higher than historic average annual increases.

Table A32.2-1 compares the costs from the Final EIS and the updated capital costs. These capital costs include all sub-alternatives (Wasatch Boulevard alternatives, avalanche mitigation alternatives, and trailhead parking alternatives). The general order or ranking of the alternatives' capital costs (least cost to higher costs) did not change from the Final EIS.

**Table A32.2-1. Comparison of 2022 to 2020 Capital Cost Estimates for the Little Cottonwood Canyon Alternatives**

Alternative	Approximate Current Cost (2022\$)	Final EIS Cost (2020\$)
Enhanced Bus Service	\$474.0M	\$354.6M
Enhanced Bus Service in Peak-period Shoulder Lanes	\$643.6M	\$509.6M
Gondola A	\$734.0M	\$561.3M
Gondola B	\$729.0M	\$550.7M
Cog Rail	\$1,239.0M	\$1,064.0M

UDOT, in consultation with UTA, estimated yearly O&M costs based on observed O&M cost increases. Table A32.2-2 compares the O&M costs presented in the Final EIS and the updated O&M costs. The result was that the alternatives are in the same general order as the order in the Final EIS.

**Table A32.2-2. Comparison of 2022 to 2020 Operations and Maintenance Costs for the Little Cottonwood Canyon Alternatives**

Primary Alternative	Annual O&M Costs (2020\$)	Annual O&M Costs (2022\$)
Enhanced Bus Service	\$14.0M	\$15.4M
Enhanced Bus Service in Peak-period Shoulder Lanes	\$11.0M	\$12.1M
Gondola A	\$9.5M	\$10.4M
Gondola B	\$4.0M	\$4.4M
Cog Rail	\$3.4M	\$3.7M

Parking structures and other infrastructure improvements that are part of all of the primary alternatives would have similar construction timelines. Many commenters thought that increased bus service could start immediately. However, adding more buses could still take up to

18 to 24 months and would require constructing parking structures at the mobility hubs. Buses are not immediately available and would need to be procured, ordered, and built.

The primary alternatives would take about 2 to 3 years to construct. The start of construction would be identified once enough funding has been allocated by the Utah legislature. The start of construction and completion date depend on when funding is identified. In the Final EIS, UDOT evaluated a phased approach to implementing the preferred alternative from the Final EIS (Gondola Alternative B with improved and increase bus service). With the selected alternative, UDOT would construct a mobility hub at the gravel pit, resort bus stops, improved and increased bus service scaled to accommodate earlier years of service (not the full 2050 build-out), bus maintenance and storage facility, and traffic demand management such as tolling. The phased implementation approach would add about \$153 million to the cost the Final EIS preferred alternative. Initial O&M costs would be about \$7.7 million.

*E. Commenters asked what are the life cycle costs of the alternatives.*

The EIS is not required to evaluate a cost-benefit analysis or life cycle costs of the alternatives. A cost-benefit analysis was not completed because there are many important qualitative considerations that cannot be measured solely on a monetary basis. In addition, UDOT does not track maintenance cost for separate segments of the roads that it maintains, so a direct comparison among the No-Action and action alternatives is not possible. However, over the course of the EIS process, UDOT published separate reports with the estimated 30-year life cycle cost of the alternatives. The life cycle cost analysis (LCCA) included the initial capital cost and the estimated annual operations and maintenance (O&M) costs. O&M costs include periodic system refurbishments (new bus transmissions, cog rail motor replacement, and gondola cabin repairs and cable replacements), new bus purchases, and labor costs. Capital and O&M costs were inflated to a year of expenditure and then discounted to represent costs in current dollars (2020\$ in the Final EIS and 2022\$ as reported in an updated life cycle cost report) and summed to determine the total costs over a 30-year cycle. A 30-year cycle was selected to match the study horizon. Note that the LCCA relies on inflationary factors and discount rates that are dynamic over time. Therefore, year-of-expenditure costs might be different than what are estimated for the LCCA. Furthermore, life cycle costs and comparisons represent a snapshot in time and will change over time with changing assumptions.

Using updated capital and O&M cost estimates, as described in response A32.2.7C above, and assuming construction in 2024 and 2025 and operation by 2026, the estimated 30-year life cycle cost of the Enhanced Bus Service Alternative is \$1,330 million, the Enhanced Bus Service in Peak-period Shoulder Lane Alternative is \$1,326 million, Gondola Alternative A is \$1,267 million, and Gondola Alternative B is \$904 million. The Cog Rail Alternative, because of its higher initial capital costs, has a 30-year life cycle cost of about \$1,419 million.

The selected alternative is Gondola Alternative B starting with components of the Enhanced Bus Service Alternative (bus service, bus maintenance and storage facility, resort bus stops), tolling, and a mobility hub. For the LCCA only, UDOT assumed Gondola Alternative B would be constructed in 2031 and 2032 and operations would begin in 2033. Improved and increased bus service would, therefore, operate between 2026 and 2032 and cease once the gondola is

operational. Under these assumptions, the life cycle cost for a phased implementation approach for the preferred alternative would be about \$1,212 million.

- F. *Commenters stated that the costs of the primary alternatives have increased during the EIS process and asked whether they would continue to increase.*

The costs of the primary alternatives have changed due to refinements conducted over the course of the EIS process and due to recently (2021–2022) observed inflation and material cost escalations. For more information, see response A32.2.7C above. The final design could also result in additional changes to the total cost of a project.

### A32.2.8 Comparison of Alternatives

There are no new comments on this section of the Final EIS.

### A32.2.9 Basis for Identifying the Preferred Alternatives

- N. *Commenters on the Final EIS reiterated that the decisions should be a vote and that only locals should be able to vote. Other commenters asked who would make the final decision, how did UDOT make the decision, and how were alternatives evaluated.*

Section 2.6.9, *Basis for Identifying the Preferred Alternative*, of the Final EIS provides the rationale for why UDOT selected the preferred alternative (also see Appendix 2G, *Preferred Alternatives Selection Memorandum*, of the Final EIS).

The final project-level decision is not a vote but a decision based on the information contained in the EIS and the supporting project record. UDOT focused on comments that suggest new alternatives, refinements to existing alternatives, and the environmental analysis conducted throughout the EIS process. In selecting a final alternative for implementation, UDOT has sought input from the cooperating agencies (USDA Forest Service, Salt Lake City Department of Public Utilities, UTA, U.S. Army Corps of Engineers, and U.S. Environmental Protection Agency). UDOT has also worked with the USDA Forest Service regarding how their NEPA decisions might impact National Forest System–managed lands. The selection of the final approved alternative was made using an objective, data-driven approach and analysis that is informed by the agency and public input received during the various comment periods throughout the NEPA process.

- DD. *Save Our Canyons commented that the alternatives development process and selection of the preferred alternative was predetermined and was based on political pressure to select Gondola Alternative B. They claim that UDOT prioritized economic development over drinking water. They also claim that UDOT can't conduct an impartial NEPA process since their budget is set by the state legislature and the governor selects the director of UDOT. Save Our Canyons stated that, for the enhanced bus service alternatives, diesel buses were used in the analysis instead of electric to make the gondola alternatives look better. They also commented that all primary alternatives*

*would result in harming the natural and human environment in Little Cottonwood Canyon, which is against the purpose of NEPA.*

UDOT selected Gondola Alternative B because it would provide the best overall reliability. The alternative would have a high travel reliability because it would be on a separate alignment and would operate independently from the road. Snow, vehicle slideoffs and crashes, and snow- and avalanche-removal operations would not affect the gondola service in the same manner as road-based transit options. For example, if S.R. 210 were closed because of avalanche debris on the road or a vehicle crash, the gondola could still operate and be used as an alternative to personal vehicle use. By contrast, the Enhanced Bus Service Alternative would be less reliable because it would run in mixed traffic and be subject to same factors that influence the roadway reliability and mobility, such as traffic congestion, avalanche mitigation closures, weather (snow) and resulting road conditions, and roadway incidents (crashes and slide-offs).

Gondola alternatives have been part of many previous studies for Little Cottonwood Canyon. UDOT used those previous studies to develop a list of potential alternatives. All of the potential alternatives were put through the screening process to determine the reasonable alternatives that would be evaluated in the EIS. A gondola system, along with buses and a rail system, were determined to be reasonable. UDOT's screening process and the reasons for identifying two preferred alternatives were documented in the Draft EIS, as is the primary reason for identifying Gondola Alternative B as the preferred alternative in the Final EIS, which is that it would best meet the reliability criteria and would have no substantial regulatory environmental impacts. None of the criteria nor the identification of the preferred alternative was based on the preferences of elected officials. The reason that alternatives were determined reasonable, and why alternatives were identified as preferred, is well-documented in the Draft and Final EISs. The commenter did not provide any comments on the content in the EIS regarding why the preferred alternatives were identified or regarding how Gondola Alternative B did not meet the screening criteria.

UDOT's decision to locate the Gondola Alternative B base station at La Caille was not based on land ownership. UDOT evaluated numerous locations for a base station and parking including the gravel pit, 9400 South and Highland Drive, the Little Cottonwood Canyon park-and-ride lot, and locations that were about 1 mile from the entrance to Little Cottonwood Canyon. None of the other locations were determined reasonable because of overflight of homes except locations within about 1 mile of the entrance to Little Cottonwood Canyon. The three locations were the Little Cottonwood Canyon park-and-ride lot, La Caille, and an empty lot just south of the intersection of North Little Cottonwood Road and Wasatch Boulevard. The lot south of the intersection of North Little Cottonwood Road and Wasatch Boulevard was the best option from a traffic perspective because traffic could enter the site from two roads; however, the site was eliminated because it was located on a known earthquake fault with a high rupture potential. The La Caille and Little Cottonwood Canyon park-and-ride lot sites were the only areas that did not have existing homes on the proposed site location and provided enough available land to locate a base station without direct overflight of private residences. None of the proposed site selection was based on future development potential.

UDOT did use diesel buses in evaluating impacts in for the NEPA analysis where applicable. The reason electric buses were not included in the analysis was not to make one alternative look better but rather to give UDOT the option to use diesel buses if necessary. If UDOT evaluated electric

buses only, then there would be no option to use diesel buses. Based on currently available information on bus technology, UDOT is not sure that electric buses would work in the steep and cold environments of Little Cottonwood Canyon. UDOT has documented in Chapter 2, *Alternatives*, of the Final EIS that, if an enhanced bus service alternative is selected at the time of bus procurement, UDOT would evaluate hybrid and electric buses to determine their suitability for operation in Little Cottonwood Canyon. Even if UDOT selects electric buses, diesel buses might need to be used occasionally. If diesel buses were not evaluated in the EIS, they could not be used and may not reflect the scope of potential environmental impacts. UDOT has updated the greenhouse gas analysis in Chapter 10, *Air Quality*, of the Final EIS to state the benefits of electric buses. Also see response A32.10G in this appendix

Finally, UDOT evaluated a range of alternatives under the NEPA process that considered different transit types (bus, gondola, and rail) and much different construction needs. In addition, the range of alternatives consider alternatives that have no new construction in Little Cottonwood Canyon (Enhanced Bus Service alternative) and others that do require construction. Thus some alternatives would have limited impact to Little Cottonwood Canyon, while others would have larger impacts to the natural and human environment. NEPA does not require that the least impactful alternative be selected. NEPA requires only that the decision-maker make an informed decision based on the project purpose and need, agency coordination, environmental impacts, public input, and the project record.

### **A32.3 Land Use**

- A. *Commenters stated that the gondola alternatives might impact wilderness areas or Inventoried Roadless Areas (IRAs) and that construction should not be allowed within or next to these areas. Commenters stated that the wilderness and IRA boundaries should not be adjusted or reduced to accommodate the project. Commenters stated that all impacts to IRAs should be avoided “in the spirit” of the Roadless Area Conservation Rule.*

The proposed gondola alignments would not directly impact any designated wilderness areas. Avoidance of impacts to the Twin Peaks Wilderness Area and Lone Peak Wilderness Area from activities adjacent to the areas is not required. In accordance with Section 303 of the Utah Wilderness Act of 1984 (Public Law 98-428), these wilderness areas were not intended to create buffers and preclude activities beyond their boundaries. These wilderness areas are separate and distinct from the identified IRAs further discussed below. Similarly, the presence of an IRA does not, by itself, restrict activities outside the IRA boundaries. Areas of the National Forest System (NFS) outside IRAs are managed according to assigned management prescriptions. See Section 3.3.2.1.7, *Revised Forest Plan for the Wasatch-Cache National Forest*, of the Final EIS for a description of the management prescriptions assigned to the NFS lands in the land use impact analysis area and UDOT assessment of each.

The preference to avoid impacts to IRAs is noted. The potential impacts to these areas disclosed in the Final EIS and further discussed in the *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule for Final EIS Alternatives* supplemental information report will be considered by the Forest Service Responsible Official in making a decision pertaining to management actions on NFS lands. Physical impacts to the Twin Peaks IRA, Lone Peak IRA, or

White Pine IRA would not change the IRA boundaries or reduce the acreage. The IRAs would still be managed by the USDA Forest Service according to the management prescriptions assigned to the IRA, which are 3.1W (multiple uses with watershed integrity emphasized) and 2.6 (undeveloped areas).

- F. *Several commenters stated that UDOT should have considered in detail the local, state, and regional plans that promote the protection of resources. They also commented that UDOT ignored the plans in the development of alternatives and in the EIS analysis. Comments on the Final EIS and supplemental information reports were focused on Gondola Alternative B and stated that UDOT ignored roadless areas in the development of the alternative and in the EIS analyses.*

Several applicable plans and their goals and objectives were considered and evaluated in the development of alternatives and as part of the EIS process. Chapter 3, *Land Use*, Chapter 12, *Water Resources*, and Chapter 17, *Visual Resources*, of the Final EIS describe the federal, state, regional, and local designated plans. As referenced in many applicable plans, all of the primary alternatives are transit-based alternatives that promote a reduction in the number of personal vehicles. NEPA does not require the scope of the alternatives to meet goals outside the stated project purpose and need but rather to consider the impacts of a reasonable range of action alternatives on a variety of environmental resources and other applicable factors, including the goals and objectives of other agencies planning efforts. Many factors were used to establish an alignment for the gondola alternatives including consideration of avalanche paths, avoiding wilderness areas, avoiding Little Cottonwood Creek, and avoiding resort infrastructure.

In response to comments on IRAs received on the Final EIS, UDOT further completed a supplemental information report evaluating impacts to IRAs to determine whether there was any new significant information or impacts that had not previously been evaluated that would require supplementation. Based on that review and input from the USDA Forest Service, UDOT determined that there were no significant impacts that would require supplementation as outlined in the supplemental information report.

The *Assessment of the RACR for the Final EIS Alternatives* (RACR Report) also expanded on the assessment of impacts to the management prescriptions which are assigned to each IRA in Little Cottonwood Canyon. For more information see Chapter 3, *Land Use*, of the Final EIS. Various management prescriptions are assigned to the IRAs to provide the principal management directions regarding what activities are intended for the IRAs and to support different levels of protection (maintain, mostly maintain, or allow development) of roadless values, while also meeting the requirements of the RACR. Section 3.0, *Affected Environment*, of the RACR Report addresses these protections for each IRA.

As described in Section 5.0, *Impacts Summary*, of the RACR Report, less than 1% of each of the three IRAs would be affected by any of the action alternatives. Therefore, the analysis concludes that resource impacts within localized areas of IRAs would not substantially affect roadless values of the IRAs overall. The RACR Report discusses the *Forest Plan* management prescriptions that the IRAs are located in (MP 3.1W for Twin Peaks and Lone Peak IRAs, and MP 2.6 for White Pine IRA). The Forest Service will consider effects to the IRAs as informed by the analysis RACR report, along with any project-level *Forest Plan* amendments pertaining to these management areas, in making a decision pertaining to management actions on NFS lands.

- G. *Commenters objected to the EIS characterization that a gondola is not a road for purposes of the RACR. Commenters also stated that a right of way or easement for the gondola alignment on NFS lands could be appropriated by FHWA for “highway purposes”; and, therefore, the gondola would be classified as a road, it would not qualify for an exception from the RACR, and construction in IRAs would not be allowed.*

The RACR and Forest Service Manual 7700 – Travel Management, Section 7705 – Definitions, define a road as “A motor vehicle route over 50 inches wide, unless identified and managed as a trail” (36 CFR 212.1). The Manual defines a motor vehicle as “Any vehicle which is self-propelled, other than: a. A vehicle operated on rails”. Gondola cabins are not self-propelled vehicles and a gondola system is not considered a motor vehicle travelway and, therefore construction of a gondola is an activity not otherwise prohibited in the RACR. Any timber harvesting (timber cutting, sale, or removal) would be considered incidental to gondola construction [36 CFR 29413(b)(2)]. Any exceptions per the RACR remain subject to the USDA Forest Service’s review and decision.

After the UDOT ROD is issued, FHWA will determine components of the selected alternative under its statutory purview, which is contained in Title 23, *Highways*, of the United States Code. If FHWA determines that it will appropriate NFS lands (in the form of a non-exclusive easement or right of way) for the gondola, the appropriation would be considered “in the public interest” and the gondola would qualify for an exception in the RACR. [36 CFR 294.12(b)(5)] For additional information on FHWA’s potential to appropriate land see A32.2.6W, A32.28A, and A32.28H of this appendix. If NFS land is not appropriated by FHWA, UDOT would be required to obtain a special-use permit from the Forest Service under 36 Code of Federal Regulations (CFR) Part 251 for those uses occurring on NFS lands. If the proposed use on NFS land is not consistent with the Forest Plan, a project-level plan amendment would be required for the USDA Forest Service to authorize these uses.

- H. *Commenters stated that the EIS analysis underestimates the amount of temporary roads needed in IRAs for construction and that permanent roads will be needed to access the gondola towers for maintenance and for emergency evacuations, in violation of the RACR.*

**Temporary Roads for Gondola Construction.** Commenters stated that using helicopters or cranes to access construction areas for the gondola is not feasible because heavy equipment is needed to grade a level area and to excavate material for the tower foundations. The entire tower footprint would not need to be excavated and each tower leg could have an individual foundation. Where feasible based on final design, UDOT would use variable length tower legs that do not require a level construction pad and would therefore reduce the amount of earthwork needed. Also see Section 25.2.11, *Mitigation Measures for Impacts to Visual Resources*, of the Final EIS. Therefore, UDOT believes that construction materials and suitable construction equipment can be delivered by helicopter or crane and temporary construction access roads in IRAs are not needed.

**Roads for Gondola Maintenance and Emergency Evacuation.** A road to each tower is not necessary for routine maintenance. For towers in IRAs, operators can walk to each gondola tower which would incorporate a ladder to access the top of the tower and allow operators to inspect and conduct maintenance of the mechanical equipment on the tower. During scheduled shutdowns, a gondola cabin or a specially-design maintenance car can be stopped at each tower and used to access the tower and deliver replacement parts. Ground-based evacuation of three-cable gondola

is uncommon. For considerations related to emergency evacuation see response 32.2.6.5K in Chapter 32, *Response to Comments*, of the Final EIS.

**Temporary Roads for Snow Shed Construction.** Commenters also stated that construction of snow shed will require temporary access roads to perform earthwork, place fill behind the snow sheds, and compact the earthen berms (for the Snow Shed with Berms Alternative). Earth-disturbing activities that are incidental to construction would be limited to the area within the ultimate footprint of the snow sheds. Temporary access within the authorized footprint is also required to monitor and maintain revegetated areas upgradient of the snow sheds until vegetation is established; however, no permanent maintenance access roads or temporary construction roads running up slope from the snow sheds are anticipated.

- I. *Several commenters believe that assessing just the physical impacts to IRAs was not appropriate and, because the gondola infrastructure would be visible from all areas of the IRAs, the gondola alternatives would have a negative impact to such a degree that it would materially decrease the landscape character and integrity roadless values of the three IRAs.*

In addition to describing the potential for exemptions per the RACR, the RACR Report assessed the direct and indirect impacts of each alternative and sub-alternative to the IRAs' roadless values and the potential to change the rank or scores assigned by the USDA Forest Service to those roadless values. The majority of physical impacts to the IRAs are from the snow sheds (8.9 to 11.8 acres in the Twin Peaks IRA) which would be included with all alternatives. The gondola alternatives would physically impact about 1.1 acres of the Twin Peaks IRA, about 1.6 acres of the Lone Peak IRA, and about 0.06 acres of The White Pine IRA. As described in A32.3F, the gondola alternatives would not substantially alter the baseline physical roadless values (high quality soil, water, and air resources; sources of drinking water; biodiversity, wildlife habitat, recreation opportunities; and cultural resources) of the IRAs.

Several commenters believe that assessing just the physical impacts to IRAs was not appropriate and, because the gondola infrastructure would be visible from all areas of the IRAs, the gondola alternatives would have a negative impact to a degree that it would materially decrease the landscape character and integrity roadless values of the three IRAs. In addition to the potential physical impacts, UDOT assessed the visual impacts and the indirect impacts, including impacts to the landscape character and integrity roadless values assigned under the *Forest Plan* to each IRA. The assessment considered visual impacts. The location of the gondola alignment within the IRAs is along the perimeter, which reduces visual impacts. In addition, as noted in the RACR Report, views towards the gondola would be partially screened by vegetation and, to some degree user experience is already impacted by existing features, specifically S.R. 210. In addition, not all IRAs were assessed by the USDA Forest Service as possessing a "high" existing score (a score of 5) for the landscape character and integrity roadless values. The Twin Peaks IRA has a medium (3) score, the Lone Peak IRA has a medium-high (4) score, and the White Pine IRA has a high score of (5). For the White Pine IRA, the small amount of disturbance from the gondola in the extreme northwest corner of the White Pine IRA would not materially affect the high score for the landscape character and integrity roadless value.

## **A32.4 Community and Property Impacts**

No new comments were received on this section of the Final EIS.

## **A32.5 Environmental Justice**

- D. *Salt Lake City Department of Public Utilities commented that impacts to water quality from the primary alternatives might require improvements to water treatment facilities, and the cost of those improvements would be passed on to rate payers and would be a burden to low-income populations.*

In Chapter 5, *Environmental Justice*, of the Final EIS, UDOT evaluated the potential increase in water user rates to low-income populations if additional water treatment was necessary as a result of the water quality impacts of the primary alternatives. The analysis concluded that the construction and additional impervious surfaces from the primary alternatives would have *de minimis* impacts to Little Cottonwood Creek water quality and the overall watershed as a primary drinking water source and thus would not impact water treatment or increase water rates for low-income or minority populations or the overall population. In addition, UDOT does not expect that the water infrastructure would need to be improved based on the *de minimis* impacts finding. Therefore, none of the primary alternatives are expected to require capital or operational improvements to the drinking water supply system that could then increase water user rates and thereby affect low-income populations. Also see responses A32.12A, A32.20A, and A32.20F in this appendix and Chapter 12, *Water Resources*, of the EIS for more information regarding the expected impacts to the Little Cottonwood Canyon watershed including Little Cottonwood Creek as a drinking water source.

## **A32.6 Economics**

No new comments were received on this section of the Final EIS.

## **A32.7 Traffic and Transportation**

No new comments were received on this section of the Final EIS.

## **A32.8 Joint Development**

No new comments were received on this section of the Final EIS.

## **A32.9 Considerations Related to Pedestrians and Bicyclists**

No new comments were received on this section of the Final EIS.

## A32.10 Air Quality

- G. *Save Our Canyons, Salt Lake City, Salt Lake County, and others stated that the air quality analysis did not include the use of electric buses. In addition, comments stated that UDOT purposely used diesel buses in the air quality analysis to favor the gondola alternatives. Several commenters on the Air Quality Supplemental Information Report (Air Quality Report) stated that UDOT should have assessed electric buses, in addition to the scenario of 14-year-old, diesel-powered buses. Commenters stated that the analysis assumption of steady-state bus arrivals and departures should not be assumed. Commenters also requested a hot-spot analysis for a location in the canyon. Commenters stated that if UDOT can adjust the analysis for diesel buses why can't it analyze the impact of lower emitting fuel types?*

UDOT used a model default for the fuel mix of buses (diesel, gas, and compressed natural gas) in the quantitative air quality analysis in the Final EIS to address air quality regulations and to address the necessary project-level air quality conformance analysis. The analysis estimated and analyzed emissions at appropriate receptor locations substantially affected by the project. Because the gravel pit mobility hub (a bus transfer point) includes a substantial number of diesel vehicles in a single location (216 trips per day), it would have the highest number of diesel emission sources, and emissions concentrations were modeled for receptors at this location.

UDOT's goal is to reduce congestion in the peak winter hours to maintain free-flowing or steady-state conditions. The alternatives were designed to accommodate an estimated number of canyon users (about 1,000 people per hour in transit in 2050) that, if they did not shift modes, would cause the capacity of S.R. 210 (about 1,000 vehicles per hour) to be exceeded and cause congestion during the peak hours. The air quality modeling includes both bus and personal vehicles arrivals and departures over the course of a day in the location modeled.

The analysis determined that all of the action alternatives would comply with air quality regulations. The analysis also demonstrated that the S.R. 210 Project would not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the National Ambient Air Quality Standards for particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). Also see response to comment 32.10A and 32.10F in Chapter 32, *Response to Comments*, of the Final EIS.

After the Final EIS was published, and based on coordination with FHWA, UDOT analyzed a scenario with a different fuel mix and age of buses in response to FHWA's request for additional information to support a transportation conformity determination as discussed in the supplemental information report. The same modeling and methodology discussed in the Final EIS was used in this evaluation. UDOT updated the analysis by adjusting two factors in the model (bus fuel mix and the age of buses) as discussed in the supplemental technical report. The hot-spot analysis discussed in the supplemental technical report did not change the hot-spot analysis results discussed in the Final EIS nor identify any new or significant impacts that the Final EIS did not already analyze.

A hot-spot analysis was not performed for locations in Little Cottonwood Canyon itself because no bus terminals or transfer points with a significant number of diesel vehicles congregating at a single location are proposed in the canyon. Each resort bus stop would have fewer diesel buses arriving than at the mobility hub. Additionally, baseline levels of particulate matter (PM) are likely to

be higher at the modeled location than in Little Cottonwood Canyon itself because regional topography generally leads to higher levels of PM in lower-elevation areas compared to areas surrounded by mountains, since mountains limit air flow and the dispersal of emissions. The canyons generally also contain less background pollution.

The reason electric buses were not included in the original analysis was not to make one alternative look better than another but rather model the worst-case scenario and to give UDOT the flexibility to use diesel buses if necessary. If UDOT evaluated only electric buses, then there would be no option to use diesel buses if needed, nor information regarding such use. Based on consultation with UTA, UDOT understands that use of electric bus technology, at this stage of development, may be limited in the steep and cold environment of Little Cottonwood Canyon. Also see Bus Technology on page 44 in Section 2.2.2.2.1, *Bus Alternatives*, in Appendix 2A, *Draft Alternatives Development and Screening Report, June, 8, 2020*, of the Final EIS. UDOT has stated numerous times and documented in Chapter 2, *Alternatives*, of the EIS that, at the time of bus procurement, UDOT will evaluate electric and hybrid buses to determine their suitability for operation in Little Cottonwood Canyon.

UDOT did include electric buses in a greenhouse gas (GHG) analysis in Chapter 10, *Air Quality*, of the Final EIS. Use of electric buses in the winter would reduce GHG emissions by 338 tons in 2050. This results in a 3% reduction in GHG emissions compared to the use of diesel buses. See Section 10.4.9, *Comparison of Greenhouse Gas Emissions by Alternative*, in Chapter 10, *Air Quality*, of the Final EIS. The goal of the project is to reduce personal vehicle use by 30% by 2050. The remaining 70% of traffic would be personal vehicles, which would contribute the majority of GHG emissions.

## A32.11 Noise

No new comments were received on this section of the Final EIS.

## A32.12 Water Resources

- A. *Commenters including Salt Lake City Department of Public Utilities, the Central Wasatch Commission, Salt Lake County, and the Metropolitan Water District of Salt Lake and Sandy stated that the gondola alternatives could impact water resources and introduce risks to the Little Cottonwood Canyon Creek watershed.*

**Impacts to the Little Cottonwood Canyon Watershed.** See Chapter 12, *Water Resources*, of the EIS for a more detailed discussion of impacts to the watershed and water quality. Also see response A32.12K in this appendix for more information regarding the direct and indirect analysis methodologies. Expected impacts to the watershed are also included in Chapter 13, *Ecosystem Resources*, of the Final EIS. Chapter 20, *Indirect Effects*, of the Final EIS addresses the indirect effects of mobility changes and summer and winter use of the alternatives. Also see the comment responses in Section 32.20, *Indirect Effects*, of the Final EIS and Section A32.20, *Indirect Effects*, in this appendix. In addition, the supplemental information report concerning Inventoried Roadless

Areas (IRAs), assessed the impacts from Gondola Alternative B (including sub-alternatives) to the roadless values, which include water resources and sources of public drinking water.

UDOT conducted water quality modeling for the gondola alternatives. See Section 12.4.5, *Gondola Alternative A (Starting at Canyon Entrance)*, and Section 12.4.6, *Gondola Alternative B (Starting at La Caille)*, of the EIS. UDOT met with watershed stakeholders, including the Salt Lake City Department of Public Utilities (SLCDPU, the main water rights holder and watershed steward) and the water treatment plant operator (Metropolitan Water District of Salt Lake and Sandy), throughout 2020 to review the model inputs and results.

**What is a stormwater detention facility?**

A stormwater detention facility is a pond that holds stormwater runoff temporarily before releasing it into a surface water body, or below ground, at an allowable release rate.

There would be a minor addition of impervious areas associated with the gondola alternatives. The gondola base station area, including the parking structure and roadways, which is where most of the additional pavement would be added, would include stormwater best management practices (such as detention basins) to capture stormwater before it is released into the storm drainage system in compliance with UDOT policies. The results of the analysis showed that the gondola alternatives would not contribute contaminants of concern at concentrations that would change water quality over the No-Action Alternative, impair Little Cottonwood Creek's beneficial uses, or impair Metropolitan Water's ability to deliver safe drinking water. Also, at the request of SLCDPU, UDOT has included a mitigation measure of adding guardrails in key locations to reduce the potential for vehicles to enter Little Cottonwood Creek.

The amount of impervious surface analyzed for the gondola alternatives was based on additional parking and facilities required for the alternatives. Because the areas under the towers would be revegetated, they are not included as impervious surfaces. Most towers would not have access roads as stated in the EIS. They would be constructed either from S.R. 210 using a crane or by helicopter. Any temporary access areas would be restored. Under the majority of the gondola cables, there would be no change to existing vegetation or the land's stormwater runoff properties.

**Impacts to Groundwater.** With gondola alternatives, the gondola stations, towers, and cabins would not discharge pollutants in quantities that would impact groundwater. Stormwater quality controls that infiltrate stormwater from any new pavement around the gondola alternatives' base station are permitted by rule, meaning that the Utah Division of Water Quality has determined that, with the controls in place, the risks to groundwater quality impacts would be minimal.

**Compliance with Watershed Management Plans.** The watershed management plans identify fuel storage as a source of pollution if not properly managed. See Section 12.4.1.1.3, *Compliance with Watershed Management Plans and Forest Plan*, of the EIS. The gondola alternatives include pollution-prevention measures including dual-walled tanks for the fuel needed to run the emergency generators at the base, angle, and terminal stations. With a reduction in personal vehicles compared to the No-Action Alternative, the gondola alternatives would reduce the risk of any accidents and vehicles entering the creek. In addition, to address the risk of vehicles entering the creek and spilling fluids directly to the creek, UDOT will include a barrier where there is a higher roadway departure frequency and where the road is close to the creek as long as the

barrier does not impede snow removal. See Section 12.4.9, *Mitigation Measures*, of the EIS. The gondola alternatives are in general compliance with watershed management plans.

In the *Supplemental Information Report – Assessment of the Roadless Area Conservation Rule (RACR) for Final EIS Alternatives* (March 2022), UDOT, with input from the USDA Forest Service, assessed the impacts to IRAs and their roadless values, including the potential to affect the water supply value. Little Cottonwood Canyon contains the White Pine IRA and portions of the Twin Peaks and Lone Peak IRAs. With Gondola Alternative B, the roadless values of the Twin Peaks and Lone Peak IRAs would be maintained in compliance with the management prescription category (MPC-2, mostly maintain roadless values) assigned to these IRAs. The footprint of the gondola alternatives (one tower and about 500 feet of cable) would be within the White Pine IRA. The base physical values and unique qualities of roadlessness of White Pine IRA would be maintained in compliance with its management prescription category (MPC-1, maintain roadless values).

**Impacts around the Base Station.** In the area around the Gondola Alternative B base station, there is more opportunity to incorporate a drainage collection system and add larger, more-robust post-construction best management practices such as detention basins that can contain spills from accidents. The modeling for Gondola Alternative B included detention best management practices to treat 108% of the new impervious area. Developments adjacent to the creek will occur with or without mobility improvements. The base station parking structure could also be equipped with spill-containment supplies to facilitate rapid response to a vehicle accident that results in a spill. Also see response A32.20H in this appendix for the potential indirect impacts of the Gondola Alternative B base station.

- K. *The Salt Lake Department of Public Utilities and the Metropolitan Water District of Salt Lake and Sandy commented that, although the statements in the Final EIS that the selected alternatives could have de minimis impacts might be true regarding Clean Water Act standards, these standards are far less comprehensive than the Safe Drinking Water Act standards that Metropolitan Water is required to meet. Making this statement suggests that Metropolitan Water's ability to provide reliable and safe drinking water would not be impacted; however, impacts to drinking water cannot be adequately assessed by considering only Clean Water Act standards.*

UDOT's analysis of impacts to Little Cottonwood Creek from project-related activities included a quantitative analysis of impacts from stormwater runoff to surface waters from pollutants normally found in transportation facilities' stormwater. UDOT focused on Clean Water Act standards according to its municipal separate storm sewer system (MS4) permit (UTS000003), which allows stormwater discharges pursuant to Section 402 of the federal Clean Water Act and the permitting program described in Utah Administrative Code R317-8, Utah Pollutant Discharge Elimination System (UPDES). Clean Water Act standards apply because surface waters in Utah are protected to meet specific beneficial uses, including drinking water, aquatic wildlife, and recreation. Little Cottonwood Creek's drinking water beneficial uses are protected under Class 1C numeric water quality criteria, narrative standards, and antidegradation rules.

Chapter 12, *Water Resources*, of the EIS also addresses Safe Drinking Water Act standards by comparing model results to maximum contaminant levels for some constituents found in Safe Drinking Water Act standards that are applicable to highway stormwater runoff. The analysis for

stakeholder-identified Safe Drinking Water Act constituents found *de minimis* differences between the No-Action Alternative and the five primary action alternatives. Therefore, any alternative should not affect treatment processes or Metropolitan Water’s ability to deliver safe drinking water. Additional details, including identification of the constituents of concern (COCs) and analysis results, is provided below.

The EIS addresses how the S.R. 210 Project is in general conformance with water supply stakeholders’ Drinking Water Source Protection Plan requirements as described in their watershed management plans, prepared pursuant to Safe Drinking Water Act requirements. Also see responses A32.1.5L, A32.5D, A32.20A, A32.20C, and A32.20U in this appendix. For this project, these drinking water stakeholders are SLCDPU, Metropolitan Water, and Sandy City. Together with the USDA Forest Service, these entities are referred to in the EIS as the watershed managers.

As described in Section 12.4.1.1, *Surface Water Quality*, of the EIS, UDOT worked with SLCDPU, Metropolitan Water, and Sandy City to develop the list of COCs for analysis. The 17 identified COCs included constituents commonly found in highway stormwater runoff and identified in the Safe Drinking Water Act. At the request of watershed managers, UDOT compared model results for several COCs (10 of the 17 total) to the Safe Drinking Water Act primary and secondary maximum contaminant levels listed in Utah drinking water standards (found in Utah Administrative Code R309-200). The COCs with a Safe Water Drinking Act standard are cadmium, chloride, chromium, copper, lead, nitrogen, pH, total dissolved solids (TDS), sulfate, and zinc.

The water quality model results for the action alternatives show *de minimis* changes in the in-stream concentrations of these COCs compared to the No-Action Alternative. In addition, the resulting in-stream concentrations after mixing highway stormwater runoff with Little Cottonwood Creek water would be well below the maximum contaminant levels for drinking water. The model also assumed that all stormwater would enter Little Cottonwood Creek as a concentrated flow immediately above the water treatment plant inlet, thereby providing a worst-case scenario for the model rather than numerous discharge locations over the entire approximately 8-mile length of Little Cottonwood Creek.

The numeric criteria for contaminants in Utah’s surface waters (Clean Water Act and state water quality standards) include many of the same constituents found in drinking water standards (Safe Drinking Water Act and Utah drinking water standards). The Utah Division of Water Quality compiles water quality monitoring data and conducts an analysis to determine whether surface water quality is sufficient to meet a water’s beneficial uses. Those constituents that do not meet beneficial use standards are placed on the State’s 303(d) list and prioritized for developing a total maximum daily load (TMDL) analysis.

#### **What is a *de minimis* impact?**

As used in Section A32.12 of this appendix, a *de minimis* impact is a minor impact that does not pose a substantial risk to water quality.

#### **What is a 303(d) list?**

When a lake, river, or stream fails to meet the water quality standards for its designated beneficial use, Section 303(d) of the Clean Water Act requires that the State place the water body on a list of “impaired” waters, which is also known as a 303(d) list, and develop a plan to reduce pollution from various sources so that beneficial uses are met.

Some additional primary inorganic chemicals listed in Safe Drinking Water Act standards (antimony, arsenic, barium, beryllium, cyanide, fluoride, mercury, nickel, and thallium) are also monitored by the Division of Water Quality to assess beneficial uses. Little Cottonwood Creek is not impaired for any of these primary inorganic constituents, and these constituents are not common pollutants found in roadway stormwater runoff (NCHRP 2019; SWCA 2020; UDOT 2021). Therefore, UDOT does not consider them COCs that need to be analyzed because stormwater runoff from the project will not impact them.

The list of COCs analyzed include some constituents (alkalinity, calcium, hardness, and magnesium) that are not listed in Utah water quality standards and are not typically found in, or affected by, roadway runoff but were included as COCs at SLCDPU's and Metropolitan Water's request. Changes to these constituents, along with other constituents (pH, temperature, and TDS), could affect the corrosivity of drinking water. Corrosivity is a secondary drinking water standard. Secondary standards are recommended limits because, if drinking water significantly exceeds these secondary standards, the water could have an unpleasant taste. No meaningful differences between the No-Action and action alternatives were found in the model results for these secondary drinking water COCs.

Other contaminants listed in both Utah drinking water standards and in the water quality standards for Little Cottonwood Creek's beneficial uses are organic chemicals, pesticides, herbicides, polychlorinated biphenyls (PCBs), volatile organic contaminants, and radiologic contaminants, which are not commonly found in roadway stormwater runoff. These same contaminants are included in numeric criteria for beneficial-use Classes 1C (drinking water) and 3A (aquatic wildlife) which contain a long list of human health criteria (refer to Table 2.14.5 in Utah Administrative Code R317-2). Little Cottonwood Creek is not listed as impaired for any of these pollutants, nor were they mentioned by the watershed stakeholders during early project coordination as potential COCs. These contaminants are not causing the creek's beneficial uses to be impaired. In addition, transportation facilities are not identified as potential source(s) of these contaminants in Drinking Water Source Protection Plans. Disinfection residuals and disinfection byproducts, which also have drinking water standards, are not applicable to highway stormwater runoff.

Historically, UDOT only selectively sprays herbicides to control noxious weeds. Herbicides are not used for corridor-wide vegetation control. UDOT also does not use fertilizers when establishing or maintaining roadside vegetation. Instead, a vegetative growth medium, which is a thin layer of organic material, is used where existing topsoil is not available to support revegetation of disturbed areas. As described in Section 25.2.7, *Mitigation Measures for Impacts to Ecosystem Resources*, of the EIS, UDOT will coordinate with the USDA Forest Service and follow Salt Lake County watershed protection ordinances regarding the use of herbicides in Little Cottonwood Canyon.

Pathogens from illicit discharges, animal waste, transported livestock, illegal dumping, homeless camps, and garbage trucks can be found in a highway's stormwater drainage network. However, a transportation facility itself is unlikely to be the primary contributor of pathogenic pollution (NCHRP 2019). The action alternatives would not change the watershed protection ordinances and regulations that are in place to address these pollutants. Adding restrooms at the improved trailheads as proposed with the action alternatives would reduce the risk of pathogenic contamination entering Little Cottonwood Creek compared to the No-Action Alternative.

The proposed action alternatives were analyzed for stormwater runoff impacts to Little Cottonwood Creek. In addition to analyzing pollutants typically found in highway stormwater runoff, the EIS addresses several Safe Drinking Water Act COCs which were identified by stakeholders for analysis. The water quality model analysis found *de minimis* changes in analyzed COC concentrations between the No-Action and action alternatives. Therefore, the stormwater runoff from action alternatives to Little Cottonwood Creek should not affect treatment processes or Metropolitan Water's ability to deliver safe drinking water.

- L. *SLCDPU commented on the Final EIS and supplemental information reports that the SELDM model is a road-based model and is not an adequate tool to analyze water quality impacts from the gondola alternatives.*

UDOT disagrees that SELDM (Stochastic Empirical Loading and Dilution Model) is not an appropriate model. It is not strictly a road-based model and can be used to quantify resulting water quality impacts from a wide variety of land use changes and infrastructure that might contribute pollutant loads, in variable concentrations, to a water body. UDOT used the model to analyze the impacts from the increased impervious area within the watershed from the construction of parking structures, base stations, and roadways at the gondola alternatives base station and terminal stations. Metropolitan Water acknowledges, in its watershed management plan, that impervious surfaces are a concern that should be addressed. The gondola systems are not anticipated to generate pollutants. Mechanical equipment is enclosed, does not use oils or greases for lubrication, and, in working to address SLCDPU's concerns, UDOT included secondary containment with leak-detection monitors for fuel storage needed for the gondolas backup power generators. UDOT does not anticipate spills, and the system would be designed to capture any accidental releases.

## A32.13 Ecosystem Resources

- A. *Commenters on the Final EIS stated that the gondola alternatives would have a negative impact on wildlife. Several comments on the Final EIS referred to "new evidence" from Hawkwatch International that gondolas would harm birds during night migrations.*

The Enhanced Bus Service Alternative would have the least impact to wildlife habitat in Little Cottonwood Canyon since there would be no roadway improvements. The gondola alternatives would impact less wildlife habitat than would the Enhanced Bus Service in Peak-period Shoulder Lane Alternative and the Cog Rail Alternative, both of which require widening S.R. 210. Because none of the primary alternatives would increase roadway traffic and the road would operate with the same level of summer traffic, the impacts to wildlife crossing the road would be similar among the primary alternatives.

In Little Cottonwood Canyon, the gondola alternatives would convert about 12 acres of forest/woodland, shrubland, and developed and/or disturbed habitat to transportation use, or less than 0.5% of the habitat in the ecosystem resources impact analysis area. The loss of 12 acres of habitat would reduce habitat availability for terrestrial wildlife. Little Cottonwood Canyon is not considered a wildlife migration corridor; however, the presence of gondola towers and the increase in activity from gondola cabins moving overhead could slightly increase the barrier effect for

terrestrial mammals that use the canyon. Terrestrial mammals would eventually acclimate to the presence of the gondola. No federally threatened, endangered, or candidate species or habitat was identified in the impact analysis area; therefore, no impacts to threatened and endangered species would occur as a result of construction of the gondola system.

Suitable habitat for USDA Forest Service sensitive wildlife would be affected by removal of vegetation and disturbance from the operation of the gondola. The loss of 12 acres of habitat would reduce habitat availability for sensitive wildlife species. If suitable habitat is present, sensitive species could be temporarily displaced during construction, but no long-term impacts to populations would occur.

Birds might strike the gondola cables or towers. No data are available regarding the frequency of bird deaths due to striking gondola cables. A study of electrical transmission lines (many including red aircraft warning lights) found between 0 and 20 dead birds per kilometer (0.6 mile) of transmission line per year (Avian Conservation and Ecology 2013). Because there are many variables such as habitat type, bird type, and bird density, it is not possible to apply other studies to the specifics of Little Cottonwood Canyon. Nonetheless, it is possible that some birds would be killed by striking the gondola cables. Comments referencing new evidence on gondolas' impacts to birds did not cite the specific study conducted by Hawkwatch International. UDOT conducted a web search, including of Hawkwatch international's website, and could not locate any new research literature on this topic. UDOT did find other web references to "new evidence from Hawkwatch International," but they were limited to editorial comments that also did not provide any peer-reviewed literature.

The studies also found that red aircraft warning lights that are permanently on (always red) could attract birds and contribute to birds striking the towers or cables. The gondola towers might require aircraft obstruction lighting. The light system would be either flashing red lights or short-duration flashing red lighting that is activated only when an aircraft enters the canyon (this is infrequent and typically associated with emergency response helicopters). The flashing red lights have been shown to reduce bird fatalities by between 50% and 70% (Audubon, no date).

UDOT would use helicopters to place some of the gondola towers, and this construction technique might displace, and temporarily disrupt the foraging behavior of, wildlife in the area, including special-status species. Helicopter flights during construction of the gondola system could disturb by noise and visual cues cliff-nesting raptors that fly within the flight path. UDOT expects that the gondola towers would be constructed spring through fall (as weather conditions allow). Although birds would be temporarily disturbed by helicopter noise and activity, the effect would be short-term and temporary. UDOT would coordinate with the USDA Forest Service before helicopter flights to determine whether there are any known raptor nests in the flight path. These nests would be avoided.

Noise monitoring was conducted at the Whistler Ski Resort 3S gondola to document baseline noise levels before and during the operation of the tram. The monitored noise conditions ranged from 49 to 55 A-weighted decibels (dBA), with an average reading of 54 dBA. Based on the noise monitoring, the operational noise of the gondola is expected to average 54 dBA, which is within the range that affects bird behavior but is not at a level likely to affect terrestrial mammals.

Chapter 13, *Ecosystem Resources*, of the EIS includes extensive mitigation measures to avoid, rectify, and minimize impacts to ecosystem resources.

## **A32.14 Floodplains**

No new comments were received on this section of the Final EIS.

## **A32.15 Cultural Resources**

No new comments were received on this section of the Final EIS. See Section A32.26, *Section 4(f) and Section 6(f) Evaluation*, of this appendix for a discussion on the impacts to a historic recreation site.

## **A32.16 Hazardous Materials and Waste Sites**

No new comments were received on this section of the Final EIS.

## **A32.17 Visual Resources**

No new comments were received on this section of the Final EIS.

## **A32.18 Energy**

No new comments were received on this section of the Final EIS.

## **A32.19 Construction Impacts**

No new comments were received on this section of the Final EIS. Also see response A32.3H of this appendix for comments regarding temporary construction roads in Inventoried Roadless Areas (IRAs).

## A32.20 Indirect Effects

- A. *Commenters stated that the gondola alternatives would increase summer visitation and have a positive effect on the economy. Others commented that the increase in use would have a negative impact on the environment in Little Cottonwood Canyon.*

See Chapter 20, *Indirect Effects*, of the EIS for an evaluation of summer gondola use on the ski resorts and the surrounding environment.

**Summer Use Estimates and Economic Benefits.** During the summer, the price of a ticket to ride the gondola would not be subsidized, which could discourage use since taking a personal vehicle would be often be faster and probably less costly. However, the summer operation of the gondola, which would have stops at the resorts only, could increase summer visitation to the resorts by about 198 people per day. Even with an increase in summer users, the resorts would still operate well below their wintertime usage. The additional summer users could increase crowds at both resorts including at restaurants, shops, and other resort attractions. This would provide an indirect economic benefit to the resorts.

**Recreation Impacts.** The additional summer gondola users might also decide to hike on trails at the resorts. UDOT does not anticipate that all 198 additional users per day would go to one resort, but that the additional users would be divided between Alta and Snowbird, with Snowbird receiving the majority of users because it would be the first gondola stop and has more amenities during the summer. Also, not all additional users would go hiking; some would stay within the developed resort area. Assuming that the 198 users per day would be spread throughout the day, trail use would spread throughout the day and would not increase to a point that would detract from users' outdoor recreation experience around the resorts.

**Environmental Impacts.** The most likely indirect effects on to environmental resources would be from summer hikers. Given the additional 198 summer users per day as described in Section 20.4.1.2.2, *Summer Visitation*, of the EIS, the increased trail use with the gondola alternatives could increase soil erosion and sediment delivery to local streams; water quality impacts to the watershed; loss of vegetation and impacts to sensitive plant species; spread of invasive plants; and disturbance of wildlife. Because not all 198 additional users per day would go hiking and because any hiking would be spread among the numerous existing trails surrounding the resorts, UDOT does not anticipate substantial indirect effects from the summer use of the gondola on water quality, vegetation, soil, or wildlife.

### What are indirect effects?

Indirect effects are effects that are caused by the proposed action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to the induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

- C. *Commenters stated that, if the primary alternatives are implemented, the ski resorts would become overcrowded, causing long lift lines. The increase in visitation would also cause the need for more facilities at the ski resorts, cause more demand for water and sewer capacity, and cause impacts to the environment.*

**Ski Resort Capacity.** See Section 20.4.2.2.2, *Recreation*, of the EIS regarding the indirect effects of increased visitation at the ski resorts from the primary alternatives. UDOT evaluated how the alternatives would increase winter use at the ski resorts and the impact of that use on the recreation experience. Changes in daily skier use with the primary alternatives could increase by about 2,283 skiers divided between the Snowbird and Alta resorts on a busy ski day, or about 1,141 skiers per resort. This increase in use would occur on about 49 busy ski days per year (weekends and holiday periods). Recreation users' perception of the additional skiers at each resort would vary. Most ski resort users expect some level of crowds and lift wait times. Not all recreationists perceive the environment in the same way; what is a quality ski experience to one person might be entirely undesirable to another. It is not possible to predict each user's recreation experience, but increased use of recreation areas and longer lift lines would tend to lower the quality of the recreation experience for most users.

The resorts would be responsible for managing the increased visitation. Representatives with the resorts were uncertain how additional skiers would change resort operations. With the potential for about 1,141 additional skiers at each resort, the resorts might want to change their operations such as limiting ticket sales or increasing the price of a ski ticket, increase ski lift capacity to maintain the skier experience and reduce lift lines, or add other infrastructure at larger base facilities. Increasing lift capacity could include replacing existing ski lifts with higher-capacity ski lifts or adding new ski lifts. It is not possible at this time to identify specific improvements, if any, the locations of the improvements, or the timing of improvement at the resorts.

**Indirect Effects from Increased Visitation and Potential Resort Expansion.** Representatives with the resorts were uncertain how additional skiers would change resort operations. With the potential for about 1,141 additional skiers at each resort, the resorts might want to change how they operate (limit lift tickets or increase price), increase ski lift capacity to maintain the skier experience and reduce lift lines, or add other infrastructure at larger base facilities. Increasing lift capacity could include replacing existing ski lifts with higher-capacity ski lifts or new ski lifts. It is not possible at this time to identify specific improvements, the locations of the improvements, if any, or the timing. Any improvements at the resorts have the potential to cause the following impacts:

- Temporary loss of soil productivity from construction compaction
- Soil erosion and sediment delivery to local streams
- Water quality impacts to the watershed
- Fill placed in wetlands
- Loss of vegetation and impacts to sensitive plant species
- Spread of invasive plants
- Loss of wildlife habitat
- Loss of cultural resources
- Change in the visual landscape character
- Improved access for skiers

If a resort were to propose to expand lift capacity or add other infrastructure on National Forest System lands to address an increased number of skiers, the USDA Forest Service would prepare an environmental document under NEPA. The environmental document would assess the impacts from and mitigation for the proposed improvements for consideration by the USDA Forest Service in its decision regarding whether to issue an approval. The resort would also need to obtain other environmental permits. The resorts work with the USDA Forest Service on master development planning and specific projects in accordance with their ski area special-use permits.

The resorts would also need to work within the limits of existing culinary water allotments (provided by Salt Lake City) and sanitary sewer capacity. According to discussions with a representative with Salt Lake County Service Area #3, which manages drinking water and sewer use in Little Cottonwood Canyon, contracted water use is about 34% of the total available amount, and sewer capacity is about 6%. Overall, the representative with Service Area #3 believes that there is enough water and sewer capacity to accommodate the increased use generated by the primary alternatives.

- F. *Commenters including the Metropolitan Water District of Salt Lake and Sandy stated that the primary alternatives would result in more development in Little Cottonwood Canyon or would further commercialize the resort areas to bring in more tourists.*

As discussed in Section 20.4.1.2.1, *Winter Visitation*, of the EIS, the primary alternatives could result in about 1,141 more skiers per resort on each of about 49 busy ski days per year. With the increase in skiers, the resorts might want to improve some infrastructure to handle the increased demand. See Section 20.4.2.2.2, *Recreation*, of the EIS for more information regarding adding lift capacity at the resorts. Beyond lift improvements, the resorts might also want to add other facilities such as more restrooms and additional lodge capacity. These infrastructure improvements that would result from the increased visitation would not change the existing resort-based land uses and so would not result in an indirect effect on land use. Any changes to the resorts would require an update to each resort's master development plan and any further NEPA review and documentation based on such requested changes.

- H. *Commenters including the Salt Lake City Department of Public Utilities and the Central Wasatch Commission suggested that the gondola base station would induce development, thereby creating more hotels and other commercial developments at the entrance to Little Cottonwood Canyon. The commenters suggested that these developments would increase traffic and increase the risk of environmental impacts including those to water quality near an intake to Metropolitan Water's water treatment plant.*

As discussed in Section 20.4.4, *Gondola Alternative B (Starting at La Caille)*, of the Final EIS, because the La Caille Center and Villages development would be built with or without Gondola Alternative B, the proposed gondola base station at this location would not induce development, and no indirect effects on land development and associated environmental resources would occur. However, the location of the gondola base station adjacent to the La Caille Center and Villages development could provide an economic benefit to the planned hotels, shops, and restaurants. See Section 6.4.5.2.3, *Effects of Operation*, of the Final EIS for more information about the potential economic impacts of implementing Gondola Alternative B. Also see response A32.12A in this appendix, which discusses the expected water quality impacts near the base station.

- U. *The Salt Lake City Department of Public Utilities (SLCDPU) commented that the EIS does not address water resources, including water rights, water quality, and infrastructure from the additional users caused by the primary alternatives.*

Chapter 20, *Indirect Effects*, of the Final EIS addresses the increase in both winter and summer visitation caused by the primary alternatives. The increased number of visitors to the resorts during the summer would be below the number of visitors during the winter, so the resorts have the infrastructure to support the use and would likely open the necessary facilities to accommodate the use. The additional 198 people per day during the summer caused by the gondola and cog rail alternatives are anticipated to stay around the immediate resort area or hike on the trails surrounding the resorts. Because not all 198 additional users per day would go hiking and because any hiking would be spread among the numerous existing trails surrounding the resorts, UDOT does not anticipate substantial indirect effects from summer use of the gondola on water quality, vegetation, soil, or wildlife.

For winter use, UDOT analyzed the potential for increased visitation to impact water resources. The analysis states that the increase would be at the resorts, which have the facilities to accommodate users. The EIS states that the resorts would also need to work within the limits of existing culinary water allotments (provided by Salt Lake City) and sanitary sewer capacity. According to discussions with a representative with Salt Lake County Service Area #3, which manages drinking water and sewer use in Little Cottonwood Canyon, contracted water use is 34% of the total available amount, and sewer use is about 6%. Overall, the representative with Service Area #3 believes that there is enough water and sewer capacity to accommodate the increased use generated by the primary alternatives.

UDOT is committed to working with SLCDPU regarding water requirements for the proposed transit facilities in Little Cottonwood Canyon.

## A32.21 Cumulative Impacts

- C. *Commenters asked what are the cumulative impacts to the ecosystem from increased visitation in Little Cottonwood Canyon and what are the increased costs for watershed management, and stated that these costs should be included in the EIS.*

As stated in Chapter 21, *Cumulative Impacts*, of the EIS, continued population growth along the Wasatch Front is also anticipated to increase the number of people visiting the central Wasatch Mountains for recreation purposes. Overall visitation in Little Cottonwood Canyon could increase from 2.1 million to 3.4 million over an entire year by 2050. See Section 1.4.2.2, *Recreation and Tourism Access*, and Section 1.4.3, *Current and Future Transportation System Needs*, of the Final EIS. Aquatic ecosystems (for example, lakes, waterfalls, and streams) and adjacent terrestrial ecosystems are popular recreation destinations for hikers and other visitors to the mountains. High levels of use, especially when not appropriately managed, can damage and reduce the functionality of aquatic ecosystems. Increased visitation will strain the limited existing staff, budget, and other agency resources for law enforcement and visitor management. If visitation exceeds the

ability of agencies to manage recreation users, the function of these ecosystems could further decline in the future. See Section 21.3.2, *Cumulative Impacts to Water Resources*, of the Final EIS.

## **A32.22 Short-term Uses versus Long-term Productivity**

No new comments were received on this section of the Final EIS.

## **A32.23 Irreversible and Irretrievable Commitment of Resources**

No new comments were received on this section of the Final EIS.

## **A32.24 Permits, Reviews, Clearances, and Approvals**

No new comments were received on this section of the Final EIS.

## **A32.25 Mitigation Summary**

- B. Save Our Canyons commented that UDOT should consider mitigation measures to avoid and minimize impacts, including improving trails and land use regulations. EPA commented on the Final EIS that the mitigation measures listed in Chapter 25, Mitigation Summary, of the Final EIS need to provide a clearer connection between the anticipated impacts and the proposed mitigation measures.*

UDOT, in conjunction with the EIS cooperating agencies, developed appropriate mitigation measures when required for the resources evaluated in the EIS. The mitigation measures are detailed in Chapter 25, *Mitigation Summary*, of the Final EIS. UDOT is not required to develop mitigation measures that are not related to the impacts considered in the EIS.

Each environmental resource is discussed in a separate chapter in the EIS, and each chapter includes specific mitigation measures designed to avoid, minimize, rectify, reduce, or compensate for impacts from the action alternatives to that resource. Chapter 25 provides a summary for convenience. The connection between the impacts and proposed mitigation is explained in each resource chapter.

## A32.26 Section 4(f) and Section 6(f) Evaluation

- A. *The National Park Service and the Utah State Historic Preservation Officer (SHPO) concurred with the Section 4(f) and Section 6(f) evaluation in the Final EIS and in the Revised Draft Chapter 26, Section 4(f) and Section 6(f) Evaluation.*

Comment noted.

- B. *The Salt Lake Climbers Alliance (SLCA) commented that the Gate Buttress climbing area (the Little Cottonwood Canyon Climbing Area Historic District) is a Section 4(f) resource, and additional Section 4(f) analysis is required in the EIS. Other commenters stated that it should be a Section 4(f) property because of its historical and cultural significance (because it has been climbed since the 1930s). Another commenter stated that the Gate Buttress parking area provides access to public lands and thus should be considered a Section 4(f) resource.*

*Comments on the Final EIS stated that the indirect effects analysis for the gondola alternatives, which resulted in a no adverse effects determination under Section 106 of the National Historic Preservation Act and no constructive use under Section 4(f) of the Department of Transportation Act of 1966, was not appropriate and that the viewshed is an important attribute of the historic climbing district.*

**Gate Buttress as a Section 4(f) Resource.** UDOT reviewed a copy of the May 23, 2017, lease between the Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints (LDS Church) and the SLCA for the Gate Buttress climbing area and has determined that the area is not subject to protection under Section 4(f). For a recreation area to be a Section 4(f) property, the land occupied by the area must, among other things, be publicly owned—that is, owned by a governmental body on behalf of the public. The Section 4(f) statute itself states that its protections apply to “the use of any *publicly owned land* from a public park [or] recreation area,” and the Section 4(f) regulations define “Section 4(f) property” as “*publicly owned land* of a ... recreation area ...” See 23 United States Code Section 138(a) and 23 Code of Federal Regulations Section 774.17.

Section 3.1 of FHWA’s *Section 4(f) Policy Paper* (FHWA 2012) says, “Section 4(f) requires consideration of ... [p]arks and recreation areas of national, state or local significance *that are both publicly owned and open to the public*” and “*When private institutions, organizations, or individuals own ... recreational areas ... Section 4(f) does not apply, even if such areas are open to the public.*” (Also see Section 1.3 of the *Policy Paper*.) The *Section 4(f) Policy Paper* does recognize that, under certain circumstances, a recreation area that is open to the public might be entitled to Section 4(f) protection where a governmental body owns less than a fee interest in the property—that is, “if a governmental body has a permanent proprietary interest in the land (such as a permanent easement, or in some circumstances, a long-term lease)”. But where no governmental agency or entity owns any interest in the property, Section 4(f) by definition does not apply.

### What is Section 4(f)?

Section 4(f) is an element of law and FHWA regulations that requires a project to avoid the use of protected historic properties and park and recreation areas unless there is no feasible and prudent alternative to such use or unless the lead agency determines that the impacts would be *de minimis*. If the project would use protected properties, all possible planning must be undertaken to minimize harm to these properties.

The commenter includes a citation to the answer to Question 1B in the *Policy Paper*, which mentions “non-profit groups or other advocacy organizations” and “non-public groups” in a discussion of whether an easement or encumbrance on private property can result in Section 4(f) protection. This discussion first simply recognizes that such groups or organizations might hold conservation easements or other interests in land that can be encountered by transportation agencies during project development, and then notes that there might be instances in which the identity of the party that obtained a conservation easement (public agency or private organization) might be a factor (which could, of course, be a disqualifying factor) in determining whether there was a sufficient public ownership interest to make the land a Section 4(f) property. Nowhere does the guidance say that a property in which no public agency or entity owns *any* interest can be a Section 4(f) property, nor could it say that without being contrary to the express language of the statute and the regulations.

In sum, because the Gate Buttress climbing area is owned in fee by the LDS Church and leased to the SLCA, a nonprofit corporation, neither of which is a public agency or entity, the area is not publicly owned and thus is not a property that is subject to Section 4(f) protection.

**Gate Buttress as a Historic Climbing Resource.** After the Draft EIS was released, UDOT received comments that climbing routes in Little Cottonwood Canyon are historic resources. To evaluate these comments, UDOT conducted an evaluation of the climbing resources in consultation with the USDA Forest Service and the Utah SHPO. The findings of the evaluation are described in the *Third Addendum for the Class III Archaeological Inventory for Little Cottonwood Canyon Environmental Impact Statement, Salt Lake County, Utah* (Mark and others 2022). Based on this evaluation, UDOT identified 25 climbing areas and 79 routes associated with a significant period of development spanning from 1960 to 1974. The climbing areas and routes have been documented as contributing resources to a newly defined historic district, the Little Cottonwood Canyon Climbing Area Historic District (site 42SL968).

None of the primary alternatives would result in a direct impact to or direct use of any land within the historic district; therefore, there would be no Section 4(f) direct use. FHWA has determined that a constructive use does not occur when compliance with the requirements of 36 Code of Federal Regulations (CFR) Section 800.5 for proximity impacts (from noise and visual impacts, for example) of the proposed action, on a site listed on or eligible for the National Register of Historic Places, results in an agreement of **no historic properties affected** or **no adverse effect** [see 23 CFR Section 774.15(f)(1)]. UDOT determined that the Enhanced Bus Service Alternative would have no effect and the Enhanced Bus Service in Peak-period Shoulder Lane Alternative, gondola alternatives, and Cog Rail Alternative would have no adverse effect on the historic district.

A visual indirect impacts assessment was conducted for the Little Cottonwood Canyon Climbing Area Historic District. The gondola alternatives would introduce a visual intrusion of modern infrastructure. However, visual impacts would not substantially affect the character-defining features or important characteristics of the historic district, nor the district’s ability to convey its historic significance. Therefore, the impacts would not alter the ability of the site to be eligible for listing in the National Register of Historic Places, and the finding of effect (**no adverse effect**) is appropriate. The Utah SHPO concurred with those findings on May 13, 2022 (see Appendix 15B, *Determinations of Eligibility and Findings of Effect*, of the Final EIS). Therefore, there would be no

constructive use pursuant to 23 CFR Section 775.15(f)(1). The U.S. Department of the Interior, National Park Service, also concurred with the final Section 4(f) evaluation on October 12, 2022.

*KK. Several commenters stated that UDOT is disregarding existing protections (for example, Inventoried Roadless Areas and the Roadless Area Conservation Rule and the Scenic Byways designation). Save Our Canyons further commented that S.R. 210 and Inventoried Roadless Areas should be protected under Section 4(f).*

The 2001 Roadless Rule refers to Inventoried Roadless Areas on National Forest System lands. The intent of the rule is to provide varying levels of protection for Inventoried Roadless Areas within the National Forest System in the context of multiple-use management.

As described in Section 26.2.1 of the Final EIS Chapter 26, *Section 4(f) and Section 6(f) Evaluation*:

Section 4(f) applicability for multiple-use public land holdings such as the Uinta-Wasatch-Cache National Forest is defined in 23 CFR Section 774.11(d). Section 4(f) applies only to those portions of lands that function for or are designated in USDA Forest Service plans as being for significant park, recreation, or wildlife and waterfowl refuge purposes. The determination regarding which lands so function or are so designated, and the significance of those lands, is made by the USDA Forest Service as the official(s) with jurisdiction.

UDOT worked with the USDA Forest Service to determine which portions of multiple-use public lands, including Inventoried Roadless Areas, should be protected by Section 4(f). Section 4(f) recreation resources are identified in Table 26.4-2, *Section 4(f) Parks and Recreation Resources in the Study Area*, of the Final EIS. Also see response 32.26LL in Chapter 32, *Response to Comments*, of the Final EIS.

As described in Section 26.4.1.2.2, *Properties Evaluated but Determined Not To Be Section 4(f) Properties*, of the EIS, two scenic byways were evaluated but determined not to be Section 4(f) properties. In accordance with Question 22 of FHWA's *Section 4(f) Policy Paper*, designating a road as a scenic byway does not create a park or recreation area as defined under Section 4(f); therefore, neither scenic byway is considered a Section 4(f) property. In order for a recreation area to qualify for Section 4(f), it must be officially designated as a park or recreation area, and the officials with jurisdiction of the land must determine that its primary purpose is as a park or recreation area. UDOT is the official with jurisdiction over S.R. 210 and has determined that its primary purpose is for transportation, not recreation. For this reason, S.R. 210 does not qualify as a Section 4(f) resource.

## **A32.27 Public and Agency Consultation and Coordination**

No comments were received on this section of the Final EIS.

## A32.28 U.S. Department of Agriculture Forest Service Forest Plan Amendments

- A. *A commenter stated that FHWA’s determination regarding whether they would appropriate lands under 23 United States Code (USC) Section 317 must be made and included in the EIS in order to determine the feasibility of the primary alternatives.*

To ensure that the analysis in the EIS is adequate to support USDA Forest Service decision-making, the analysis assumes that FHWA might not appropriate lands for the project and that USDA Forest Service actions and approvals might be needed. Any of the primary and sub-alternatives can be implemented with or without FHWA appropriations, so all of the alternatives are reasonable and can be implemented in regard to FHWA actions. FHWA stated that it will provide a decision regarding land appropriation after a final alternative is selected in the ROD, and that it did not want to influence or predetermine an outcome, and ensure that a fair comparison of the alternatives could be made. The appropriation of lands by FHWA is in the form of an easement but not a complete transfer of property ownership. The underlying *Forest Plan’s* objectives, management prescriptions, standards, and guidelines (or “management objectives” as described in Section 12.4.8, *Forest Plan–related Management Objectives*, of the Final EIS) would still apply to those lands within any transfer easement not being directly used for transportation purpose.

- H. *SLCDPU commented that, regarding the transfer of lands under 23 United States Code Section 317, the City requests that any lands transferred from National Forest System management to UDOT due to this project be maintained for watershed and water quality purposes.*

The appropriation of lands by FHWA is in the form of an easement but not a complete transfer of property ownership. The underlying *Forest Plan’s* watershed-related objectives, management prescriptions, standards, and guidelines (or “management objectives” as described in Section 12.4.8, *Forest Plan–related Management Objectives*, of the EIS) would still apply to those lands within the transfer easement not being directly used for transportation, such as a roadway travel lanes. The area under the gondola alignment, for example, would remain under USDA Forest Service management, and all watershed management objectives would still apply. Also see responses A32.28A and A32.2.6W in this appendix.

UDOT conducted an extensive analysis of each of the reasonable alternatives. The alternatives would not cause water quality impacts since the quantitative modeling analysis shows *de minimis* changes to the water quality of Little Cottonwood Creek. In addition, the alternatives would not conflict with drinking water Source Water Protection Plans. Therefore, drinking water, water quality, and watershed health would be maintained under any of the alternatives.

Chapter 3, *Land Use*, of the EIS states the amount of NFS lands that might be necessary for the alternatives (see Table 3.4-1, *Summary of Acres of Land Required in USDA Forest Service Management Prescriptions and Total Acres of Land Required from Project Component*, of the EIS).

If a special-use permit or other special authorization is required, UDOT will work with the Forest Service regarding the conditions of the permits or authorizations. At this time, it has not been determined which lands would be appropriated and which would require a special-use permit. The type of land transfer would be determined once an alternative is selected and after coordinating with FHWA.

## A32.29 Other

- R. *Commenters suggested that a temporary transit system be implemented while waiting for the selected transit alternative to be constructed. Others commenters asked for a phased plan that can start with immediate short-term solutions including adding more buses, increased parking at the mobility hubs, tolling, reducing vehicle occupancy, implementing more remote avalanche systems, better winter tire enforcement, and improving access to S.R. 210 from the ski resorts. The commenters stated that the project should be phased with less impactful options implemented first to determine whether they are successful before implementing more impactful alternatives.*

Many commenters suggested implementing just portions of the primary alternatives to determine how they work before implementing the next phase. The alternatives being evaluated are based on a 2050 planning horizon. All of the components identified with each of the primary alternatives are necessary to meet the project purpose in 2050. Implementing part of an alternative would not meet the project purpose. However, UDOT can phase in the implementation of alternatives and sub-alternatives based on funding availability and transportation demand.

The selected primary alternative is Gondola Alternative B. It was selected primarily for its reliability characteristics. The alternative would have a high travel reliability because it would be on a separate alignment and would operate independently from the road. Snow, vehicle slideoffs and crashes, and snow- and avalanche-removal operations would not affect the gondola service. If S.R. 210 were closed because of avalanche debris on the road or a vehicle crash, the gondola could still operate and be used as an alternative to personal vehicle use. By contrast, enhanced bus service would be less reliable because it would run in mixed traffic and would be subject to the same factors that influence the road's reliability and mobility, which are traffic congestion, avalanche mitigation closures, weather (snow) and resulting road conditions, and roadway incidents (crashes and slide-offs). Also see response A32.2.6S in this appendix.

However, considering that safety, mobility, and reliability are issues on S.R. 210 today, and that it takes time to fund and complete construction of Gondola Alternative B, UDOT's selected alternative includes implementing components of the Enhanced Bus Service Alternative (improved and increased bus service similar to that described under the Enhanced Bus Service Alternative but smaller in scale to meet the demands associated with earlier years of operation, bus maintenance and storage facility), a mobility hub at the gravel pit, and tolling pending completion of Gondola Alternative B. Because all of the elements of the selected alternative, as well as the combined impacts, were evaluated in the Final EIS, and because the combined impacts do not introduce significant environmental impacts, UDOT selected this approach, which is to use elements of different primary and sub-alternatives evaluated in the Final EIS to implement an action that addresses the mobility, safety, and reliability issues that exist on S.R. 210 today and are best meets reliability needs in the long term. Also see responses A32.1.2H and A32.2.6S in this appendix.

- VV. *During the public comment period for the supplemental information reports that address the Roadless Area Conservation Rule (RACR) and air quality analysis from March 19 to April 18, 2023, commenters provided comments not related to the information contained in the supplemental reports. These comments were related to information in the Draft and Final EISs.*

During the comment period for the supplemental information reports, UDOT was accepting only comments specifically related to the information and analysis in those reports. The public has had the opportunity to provide comments on the content in the Draft EIS during the 70-day public comment period from June 25 to September 3, 2021, on a Revised Draft Chapter 26, *Section 4(f) and Section 6(f) Evaluation*, from to December 10 to January 10, 2022, and on the Final EIS during a 45-day comment period from to September 2 to October 17, 2022. In general, comments received during the comment period on the supplemental information reports that were related to other topics were responded to in Chapter 32, *Response to Comments*, of the Final EIS and in this appendix.

## **APPENDIX B**

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### Pertinent Correspondence

**MEMORANDUM OF AGREEMENT  
AMONG  
THE UTAH DEPARTMENT OF TRANSPORTATION;  
THE U.S. FOREST SERVICE, UINTA-WASATCH-CACHE NATIONAL FOREST;  
AND THE UTAH STATE HISTORIC PRESERVATION OFFICER**

**REGARDING**

**PROJECT #: S-R299(281)0;  
Little Cottonwood Canyon EIS, Salt Lake County, Utah**

**WHEREAS**, the Utah Department of Transportation (UDOT), in partnership with the U.S. Department of Agriculture Forest Service (USFS), proposes to undertake **PROJECT #: S-R299(281)0; Little Cottonwood Canyon EIS, Salt Lake County, Utah**, which will develop an integrated transportation system that improves the reliability, mobility, and safety for all users on SR-210 from Fort Union Boulevard through the Town of Alta; and

**WHEREAS**, in accordance with Parts 3.1.1 and 3.2 of the *Memorandum of Understanding Between the Federal Highway Administration and the Utah Department of Transportation Concerning State of Utah's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 USC §327* (renewed May 26, 2022), the UDOT assumes responsibility, assigned by the Federal Highway Administration (UDOT), for ensuring compliance with Section 106 of the NHPA; and

**WHEREAS**, the UDOT taken into account the effects of **PROJECT #: S-R299(281)0; Little Cottonwood Canyon EIS, Salt Lake County, Utah**, on historic properties and has determined that this undertaking will have an adverse effect on two archaeological sites eligible for inclusion in the National Register of Historic Places. UDOT has consulted with the Utah State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

**WHEREAS**, in accordance with 36 CFR 800.6(a)(1), the UDOT has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination with specified documentation and the Council has chosen not to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii); and

**WHEREAS**, the UDOT has consulted with the Ute Indian Tribe of the Uintah and Ouray Reservation, Shoshone-Bannock Tribe, Eastern Shoshone Tribe of the Wind River Reservation, Northwestern Band of Shoshone Nation, Skull Valley Band of Goshute Indians, Confederated Tribes of the Goshute Reservation, the Cedar and Shivwits Bands of the Paiute, as well as the Utah Division of Indian Affairs; the Tribes have been afforded an opportunity to review the project and have not responded with objections; and

**WHEREAS**, the UDOT has consulted with the Friends of Alta, Alta Historical Society, Alta Community Enrichment, Cottonwood Heights Historic Committee, Cottonwood Heights Certified Local Government, Wasatch Mountain Club, Cottonwood Canyons, Foundation, Save Our Canyons, Preservation Utah, the Utah Professional Archaeological Council, and the Church of Jesus Christ of Latter-day Saints; none have responded with objections concerning cultural resources during this consultation; and

**NOW, THEREFORE**, the UDOT, USFS and the Utah SHPO agree that upon UDOT's decision to proceed with the undertaking, UDOT shall ensure that the following stipulations are implemented in order to take into account the effects of the undertaking on historic properties, and the stipulations shall govern the undertaking and all of its parts until this MOA expires or is terminated.

## STIPULATIONS

The UDOT shall ensure that the following measures are carried out:

### I. MITIGATION OF SITE 42SL52

- A. UDOT will conduct archaeological investigation of the possible adit identified as Feature 3 and testing of the adjacent gondola base station.
  - a. A research design and data recovery plan shall be developed by UDOT, in consultation with the consulting parties, to guide these activities. The data recovery plan shall focus on determining the function of Feature 3 and the presence of any site features within the gondola base station area. The data recovery plan shall include the research questions, testing and analysis methods, the disposition of any recovered materials, and a proposed schedule for the submission of progress reports.
  - b. The data recovery plan shall be submitted to the SHPO and USFS for a 30-day review period. Unless any of these parties object within 30 days after receipt of the data recovery plan, UDOT shall ensure that it is implemented in advance of construction.
- B. UDOT, in consultation with the USFS, shall provide archaeological survey and updated documentation of the entire site. Site documentation will include determination of an accurate site boundary, current site conditions, a summary of past archaeological work, results of the data recovery included in Stipulation I.A, and any additional historic research.
- C. UDOT shall conduct archaeological monitoring of all ground-disturbing construction activity within the site boundary. Prior to construction, a monitoring plan will be developed in consultation with the SHPO and USFS to establish monitoring methodology, reporting and discovery procedures.
- D. UDOT shall provide \$15,000 to the Town of Alta to assist in the stabilization of the stone Tom Moore restroom building.

### II. MITIGATION OF SITE 42SL419

- A. UDOT shall salvage stone from the retaining wall to re-use as facing material on the snow shed wing walls and external retaining walls. The facing material shall be installed to express the feeling of the original retaining wall.
- B. UDOT shall conduct archaeological monitoring of all ground-disturbing construction activity within the site boundary. Prior to construction a monitoring plan will be developed in consultation with the SHPO and USFS to establish monitoring methodology, reporting and discovery procedures.
- C. UDOT shall conduct additional survey and documentation of the historic railroad route with a focus on identifying any previously unknown segments of the site. This and all previous research concerning Site 42SL419 shall be included in an updated site form.
- D. If practical, UDOT shall name the corresponding snow shed after the railroad. Any signage or aesthetic treatments shall be done in accordance with USFS policy.

### III. INTERPRETIVE DISPLAYS

- A. UDOT shall develop interpretive displays for the public on the railroad, mining and ski history of Alta. These displays will be included in the mobility hub, resort bus stops, and gondola facilities, as constructed. Interpretive information may also be included in USFS kiosks where practical. The content of these displays shall be provided to SHPO and USFS for review prior to installation.

**IV. REPORTING:** The UDOT shall ensure that any/all reports on activities carried out pursuant to this agreement are provided to the SHPO, the Council, the signatories to this MOA, and upon request, to any other interested parties.

**V. PERSONNEL QUALIFICATIONS:** The UDOT shall ensure that all historic work carried out pursuant to this agreement is completed by or under the direct supervision of a person or persons meeting or exceeding the Secretary of the Interior's Historic Preservation Professional Qualification Standards for History (36 CFR 61 Appendix A).

**VI. DURATION:** This agreement will be null and void if its terms are not carried out within ten (10) years from the date of its execution. Prior to such time, the UDOT may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation VII below.

**VII. DISCOVERY:** The following measures regarding inadvertent discoveries of historic properties, archaeological sites, and paleontological resources will be implemented:

- A. In accordance with Stipulation XI.B of the *Third Amended Programmatic Agreement among the UDOT, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed August 23, 2017), and pursuant to 36 CFR 800.13(b), the UDOT and the UDOT are providing for the protection, evaluation, and treatment of any historic property discovered prior to or during construction. Should a discovery occur, construction will stop immediately and the UDOT and the UDOT will consult with the SHPO, Native American tribes, and any other identified interested parties, toward developing and implementing an appropriate treatment plan prior to resuming construction. If neither the SHPO nor a Tribe file an objection within 72 hours to UDOT's plan for addressing the discovery, UDOT may carry out the requirements of 36 CFR 800.13 on behalf of FHWA, and the Council does not need to be notified.
- B. UDOT Standard Specifications Section 01355, Part 1.13, Discovery of Historical, Archaeological or Paleontological Objects, Features, Sites, or Human Remains (or similar specification), will be enforced during this project. This specification stipulates procedures to be followed should any archaeological, historic, or paleontological resources be discovered during construction of the project. These procedures are as follows:
  - 1) Immediately suspend construction operations in the vicinity of the discovery if a suspected historic, archaeological or paleontological item, feature, or site is encountered or if suspected human remains or encountered.
  - 2) Verbally notify the Engineer of the nature and exact location of the findings.
  - 3) The Engineer contacts the UDOT region staff archaeologist, who will assess the nature of the discovery and determine the necessary course of action.
  - 4) Protect the discovered objects or features and provide written confirmation of the discovery to the Engineer within two calendar days.
  - 5) The Engineer keeps the Contractor informed concerning the status of the restriction:
    - 1) the time necessary for the Department to handle the discovered item, feature, or site is variable, dependent on the nature and condition of the discovered item; and 2) the Engineer will provide written confirmation when work may resume in the area.

**VIII. DISPUTE RESOLUTION:** Should any party to this agreement object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the UDOT shall consult with the objecting parties to resolve the objection. If the UDOT determines, within 30 days, that the objection(s) cannot be resolved, the UDOT will:

- A. Forward all documentation relevant to the dispute to the Council in accordance with 36 CFR 800.2(b)(2). Upon receipt of adequate documentation, the Council shall review and advise the UDOT on the resolution of the objection within 30 days. Any comment provided by the Council, and all comments from the parties to the MOA, will be taken into account by the UDOT in reaching a final decision regarding the dispute.
- B. If the Council does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, the UDOT may render a decision regarding the dispute. In reaching its decision, the UDOT will take into account all comments regarding the dispute from the parties to the MOA.
- C. The UDOT's responsibilities to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. The UDOT will notify all parties of its decision in writing before implementing that portion of the undertaking subject to dispute under this stipulation. The UDOT's decision will be final.
- D. Further, at any time during implementation of the measures stipulated in this agreement should an objection to any such measure be raised by a member of the public, the UDOT shall take the objections into account and consult as needed with the objecting party, the SHPO, or the Council to resolve the objection.

**IX. AMENDMENTS AND NONCOMPLIANCE:** If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed with the Council. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VIV, below.

**X. TERMINATION:** If an MOA is not amended following the consultation set out in Stipulation VII and Stipulation VIII, it may be terminated by any signatory or invited signatory. Within 30 days following termination, the UDOT shall notify the signatories if it will initiate consultation to execute an MOA with the signatories under 36 CFR 800.6(c)(1) or request the comments of the Council under 36 CFR 800.7(a) and proceed accordingly.

**XI. EXECUTION:** Execution of this Memorandum of Agreement by the UDOT and the Utah SHPO, and the USFS, and the submission of documentation and filing of this Memorandum of Agreement with the Council pursuant to 36 CFR 800.6(b)(1)(iv) prior to UDOT's approval of this undertaking, and implementation of its terms, serves as evidence that the UDOT has taken into account the effects of this undertaking on historic properties, and has afforded the Council an opportunity to comment on **PROJECT#: S-R299(281)0; Little Cottonwood Canyon EIS, Salt Lake County, Utah.**

**SIGNATORIES:**

UTAH DEPARTMENT OF TRANSPORTATION



05/10/2023

Robert Stewart, UDOT Region Director

Date

U.S. FOREST SERVICE, UINTA-WASATCH-CACHE NATIONAL FOREST

**DAVID WHITTEKIEND**

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Date: 2023.05.19 12:33:15 -06'00'

David Whittekiend, USDA Forest Service

Date

UTAH STATE HISTORIC PRESERVATION OFFICE



05/19/2023

Christopher Merritt, Utah SHPO

Date



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Utah Division**

June 26, 2023

2520 West 4700 South, Suite 9-A  
Salt Lake City, UT 84129-1874  
801-955-3520  
FAX 801-955-3539

In Reply Refer To:  
HDA-UT

Naomi Kisen  
Utah Department of Transportation  
4501 South 2700 West  
Salt Lake City, UT 84129

SUBJECT: Project Level Conformity Determination  
PIN 16092 – Little Cottonwood Canyon EIS, Salt Lake County, Utah.

Dear Ms. Kisen:

The Federal Highway Administration (FHWA) received the request from the Utah Department of Transportation (UDOT) for a project-level air quality conformity determination for the Little Cottonwood Canyon Environmental Impact Statement (EIS) in Salt Lake County, Utah. Gondola Alternative B was identified as the preferred alternative in the EIS which consists of a phased approach to implement enhanced bus service from the mobility hubs to the Snowbird and Alta ski resorts until construction for the gondola is completed in a later project phase. The proposed action also includes roadway widening and other improvements to Wasatch Boulevard, constructing snow sheds, and trailhead and roadside parking improvements.

This project is located within Salt Lake County which is in nonattainment of the National Ambient Air Quality Standards (NAAQS) for particulate matter (PM) 2.5 and a maintenance area for PM10. The project is included in the Wasatch Front Regional Council (WFRC) 2023-2050 Regional Transportation Plan (RTP) which was determined to conform to the State Implementation Plan (SIP) on May 31, 2023. WFRC's FY2023-2028 Transportation Improvement Program (TIP) was recently amended on June 15, 2023, to include the next phase of the project.

UDOT initiated interagency consultation in 2020 which provided FHWA, FTA, and EPA an ongoing opportunity to review and comment on UDOT's air quality analysis documentation. All comments have been addressed and EPA concurred with the analysis. The analysis demonstrates that the project will not create any new violations of the standards or increase the severity or number of existing violations. Based on our review of the information provided by UDOT, FHWA and FTA have determined that this project meets the air quality conformity requirements and conforms with the SIP in accordance with 40 CFR 93. This letter constitutes the joint FHWA and FTA conformity determination for the subject project.

If you have any questions, please contact Peter Hadley, FTA, at (303) 362-2393, or Jennifer Elsken, FHWA, at (801) 955-3528.

Sincerely,

**IVAN  
MARRERO**

Ivan Marrero, P.E.  
Division Administrator

Digitally signed by IVAN  
MARRERO  
Date: 2023.06.26  
09:06:36 -06'00'

ecc: Andrew Gruber, Kip Billings - WFRC  
Ben Huot, Andrea Olson, Jay Aguilar - UDOT  
Autumn Hu, Alex Beim - UTA  
Bryce Bird, Becky Close, Greg Mortensen - UDAQ  
Greg Lohrke - EPA Region 8  
Cindy Terwilliger, Tracey MacDonald, Peter Hadley, Robyn Kullas - FTA Region 8  
Brigitte Mandel, Jennifer Elsken - FHWA Utah Division