Chapter 3: Land Use

3.1 Introduction

This chapter describes the existing land uses, adopted general plans and zoning ordinances, and current state of land use planning in the land use impact analysis area. This chapter also analyzes the environmental consequences of the No-Action and action alternatives.

Land Use Impact Analysis Area. The land use impact analysis area is 3,353 acres and comprises the area within 1,000 feet of the centerline of State Route (S.R.) 210 from Fort Union Boulevard to the town of Alta and the surface disturbance footprints of the proposed mobility hubs (see Figure 3.4-1 through Figure 3.4-3, Zoning Classifications on Private Land in the Impact Analysis Area for the Enhanced Bus Service Alternatives, beginning on page 3-13). Land use and planning in the impact analysis area are regulated by Cottonwood Heights City, Sandy City, the Town of Alta, Salt Lake County, and the U.S. Department of Agriculture (USDA) Forest Service.

What is the land use impact analysis area?

The land use impact analysis area is 3,353 acres and comprises the area within 1,000 feet of the centerline of S.R. 210 from Fort Union Boulevard to the town of Alta and the surface disturbance footprints of the proposed mobility hubs.

The Utah Department of Transportation (UDOT) selected this analysis area because all proposed traffic and parking improvements would occur within this area, and this area provides an appropriate context for the types of land uses that could be affected by the proposed improvements.

3.2 Regulatory Setting

The Federal Highway Administration's (FHWA) Technical Advisory T 6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, states that environmental documents for projects prepared under the National Environmental Policy Act (NEPA) should identify and review development trends, area growth, and land use plans and policies in the area that would be affected by the proposed project (FHWA 1987). The land use discussion should assess the consistency of the alternatives with the area's plans and any secondary impacts associated with substantial, foreseeable, induced development for each alternative.

The Utah legislature has delegated responsibility for land use planning and regulation to the state's Counties and Cities. These local governments develop general or comprehensive plans for land development within their jurisdictional boundaries. These plans provide the parameters for future land use as well as infrastructure needs. The public has the opportunity to participate in the land-planning process by reviewing and commenting on draft land use and zoning plans before they are approved by local officials.

All plans discussed in Section 3.3.2.1, Planning, have been developed in accordance with this general approach and, therefore, represent the type of land use and community that each local government desires.

National Forest System (NFS) lands in the land use impact analysis area are managed according to the *Revised Forest Plan: Wasatch-Cache National Forest* (USDA Forest Service 2003). The preparation of the

Forest Plan was guided by the National Forest Management Act (16 United States Code [USC] Section 1600 and subsequent sections), implementing regulations, and many other documents. The *Forest Plan* guides all natural resource management activities and sets management direction for the Wasatch-Cache (WCNF) portion of the Uinta-Wasatch-Cache National Forest. The *Forest Plan* provides broad program-level direction for managing the Wasatch-Cache portion of the Uinta-Wasatch-Cache National Forest and its resources, such as desired future conditions and management prescriptions, and does not contain commitments to implement specific projects.

3.3 Affected Environment

This section describes the existing land use in the land use impact analysis area as well as the applicable local and regional land use plans and policies. The land use patterns described in this section are the product of interdependent decisions by numerous parties including local elected officials, local planning staff, developers, citizens, regional planning authorities, and many other public and private entities.

3.3.1 Current Land Use and Land Ownership

The land use impact analysis area includes both urban and nonurban land uses. The S.R. 210 corridor through Little Cottonwood Canyon is mostly undeveloped and is a mix of private and federal government ownership. There are also pockets of undeveloped land along S.R. 210 on the east bench of the Salt Lake Valley. These areas have steep terrain and are not likely to be developed. The remainder of the impact analysis area is urbanized and fully developed. Current land use is summarized in Table 3.3-1 below.

Current land uses in the impact analysis area include forestry and recreation, residential, public facilities, mixed use, and commercial. The most dominant land use in the impact analysis area is forestry and recreation, followed by residential. UDOT calculated the acreages of land use types using general zoning categories from Cottonwood Heights City, Sandy City, the Town of Alta, and Salt Lake County. The land use types are based on associated general zoning categories. For example, the residential land use type includes all densities of housing, and the commercial land use type includes both neighborhood and regional commercial uses. Although the forestry and recreation zoning category is the most dominant zoning category in the impact analysis area, no timber harvest is occurring on these lands. Instead, these areas are used primarily for watershed protection, natural vegetation, and recreation purposes.

Land ownership in the impact analysis area also includes about 1,709 acres of privately owned land, about 1,631 acres administered by the USDA Forest Service, and about 13 acres administered by the U.S. Bureau of Land Management.

Table 3.3-1. Current Land Use Types in the Land Use Impact Analysis Area

Land Use Type	Acreage in Analysis Area	Percent of Analysis Area	Description
Commercial *Includes the following zoning classifications:* • *Regional Commercial – CR (Cottonwood Heights)* • *Neighborhood Commercial – NC (Cottonwood Heights)* • *Convenience Commercial District – CvC (Sandy)* • *Base Facilities – BF-10 (Alta)*	36	1%	This land use occurs in isolated areas along Wasatch Boulevard and in the center of the town of Alta. This land use includes commercial areas in a neighborhood setting that provide services and conveniences used primarily by local residents. Buildings are designed and oriented to promote a walk-in clientele and to encourage pedestrian activity. Residential mixed use is encouraged in the zoning classifications that make up the commercial land use type to further enhance the transition between neighborhood commercial and adjacent residential uses. This land use also includes regional commercial areas that serve the community, the region, and the traveling public by providing larger-scale commercial uses that are typically land-intensive and are not well-suited to being located in neighborhoods.
Foothill Residential/Recreational *Includes the following zoning classifications:* • *Foothill Residential – F-1-21 (Cottonwood Heights)* • *Foothill Recreational – F-20 (Cottonwood Heights)*	264	8%	This land use occurs entirely east of Wasatch Boulevard along the foothills of the Wasatch Mountains. This land use provides residential development and recreation opportunities for property owners within areas of steep slopes and hillsides while providing preservation of the natural landscape of hillsides.
Forestry and Recreation *Includes the following zoning classifications:* • *Forestry and Recreation – FR-0.5 (Salt Lake County)* • *Forestry and Recreation – FR-20 (Salt Lake County)* • *Forestry and Recreation – FR-1 (Salt Lake County)* • *Forestry and Recreation – FR-50 (Salt Lake County)*	2,159	64%	This land use includes most of the impact analysis area north and south of S.R. 210 in Little Cottonwood Canyon and just northeast of S.R. 210 outside the entrance to the canyon. This land use includes development for forestry, recreation, and other specified uses to the extent that such development is compatible with the protection of the natural and scenic resources of the area. Recreation in Little Cottonwood Canyon includes hiking, climbing, camping, biking, skiing, snowboarding, snowshoeing, picnicking, sightseeing, and other outdoor recreation activities.
Forestry Multi-family *Includes the following zoning classifications:* • *Forestry Multi-family – FM-10 (Salt Lake County)* • *Forestry Multi-family – FM-20 (Salt Lake County)*	107	3%	This land use applies to the residential and commercial areas at the Snowbird resort. Forestry multi-family areas allow development of certain areas in Little Cottonwood Canyon for high-density residential, limited commercial, and other specified uses to the extent that such development is compatible with the protection of the natural and scenic resources of these areas.
Mixed Use *Includes the following zoning classifications:* • *Mixed Use – MU (Cottonwood Heights)*	11	< 1%	This land use occurs near the entrance to Big Cottonwood Canyon southwest of the intersection of Fort Union Boulevard and Wasatch Boulevard. This land use provides for medium- to high-density residential mixed-use developments.

(*continued on next page*)

Table 3.3-1. Current Land Use Types in the Land Use Impact Analysis Area

Land Use Type	Acreage in Analysis Area	Percent of Analysis Area	Description
Public Facility *Includes the following zoning classifications:* • *Public Facility – PF (Cottonwood Heights)*	36	1%	This land use includes the Little Cottonwood Water Treatment Plant, which is near the entrance to Little Cottonwood Canyon; Golden Hills Park, which is east of Wasatch Boulevard at about 8300 South; and a park-and-ride lot on the west side of Wasatch Boulevard north of Golden Hills Park.
Residential *Includes the following zoning classifications:* • *Residential Multi-family – RM (Cottonwood Heights)* • *Residential Multi-family – R-2-8 (Cottonwood Heights)* • *Residential Single Family – R-1-6 (Cottonwood Heights)* • *Residential Single Family – R-1-8 (Cottonwood Heights)* • *Residential Single Family – R-1-15 (Cottonwood Heights)* • *Rural Residential – RR-1-43 (Cottonwood Heights)* • *Rural Residential – F-1-43 (Cottonwood Heights)* • *Rural Residential – RR-1-21 (Cottonwood Heights)* • *Residential – R-2-10 (Salt Lake County)* • *Peruvian Estates Zone – PE-0.5 (Alta)*	739	22%	Most of this land use is in Cottonwood Heights along the east and west sides of Wasatch Boulevard up to the entrance to Little Cottonwood Canyon. Residential areas in the impact analysis area include single-family homes organized in low- and medium-density neighborhoods characteristic of traditional suburban residential developments. Residential areas in the impact analysis area also include two-family residential development organized in medium-density neighborhoods characteristic of traditional suburban residential developments. The impact analysis area also includes areas with high-density residential development.
Open Space *Includes the following zoning classifications:* • *Open Space – OS (Sandy)*	1	< 1%	Undeveloped open space.
Total	**3,353**	**100%**	

Sources: Cottonwood Heights City (2019a); Salt Lake County (2020a); Sandy City (2020); Town of Alta (2019)

3.3.2 Planning and Zoning

The land use impact analysis area intersects the city of Cottonwood Heights, the city of Sandy, the town of Alta, and parts of unincorporated Salt Lake County. Within unincorporated Salt Lake County are areas managed by the USDA Forest Service. There are also NFS lands within the municipal boundary of the town of Alta.

3.3.2.1 Planning

This section reviews the applicable parts of local planning documents that are relevant to the land use impact analysis area, which include plans developed by Cottonwood Heights City, Sandy City, Granite Community, the Town of Alta, Salt Lake County, and the USDA Forest Service. General plans and master plans typically include guidelines for regulating growth and future development. They are developed with public input and adopted by each area's respective planning commission or planning department. The USDA Forest Service's forest planning process is conducted by an interdisciplinary planning team and also includes a public involvement component.

3.3.2.1.1 Cottonwood Heights General Plan

The *Cottonwood Heights General Plan* was established in July 2005 (Cottonwood Heights City 2005). Regarding transportation, the plan identifies a goal to manage the city's road network to balance access, mobility, and safety. To address this goal, the plan establishes a policy of designating road candidates for widening, spot intersection improvements, signal timing, or other related improvements. The plan also recognizes Cottonwood Heights as a gateway to Big and Little Cottonwood Canyons and the natural and recreation opportunities they provide.

3.3.2.1.2 Wasatch Boulevard Master Plan

The *Wasatch Boulevard Master Plan* was completed in July 2019 (Cottonwood Heights City 2019b). This plan, which was developed by Cottonwood Heights City, focuses on the corridor between Interstate 215 (I-215) and the entrance to Little Cottonwood Canyon and addresses transportation, land use, and other aspects of the corridor. The plan is a partnership with the Wasatch Front Regional Council in collaboration with UDOT. One of the objectives of the plan is to balance livability, roadway capacity, and sustainable canyon access south of Big Cottonwood Canyon. This objective includes such strategies as adding roadway capacity sensitively, improving neighborhood access, limiting additional canyon parking, and preserving and enhancing key views. Goals of the plan include preserving and enhancing the character and livability of existing residential neighborhoods, moving people through the corridor reliably and safely, enhancing opportunities for recreation along the corridor, and promoting and prioritizing sustainable solutions for Little Cottonwood Canyon access at a local and regional scale.

3.3.2.1.3 Town of Alta General Plan

The *Town of Alta General Plan* acknowledges existing parking limitations in Alta and notes that it would not be rational to engage in large-scale improvements to increase the capacity of S.R. 210 (Town of Alta 2016). This plan also states that attention must be given to the Snowbird area when addressing parking and road issues for Alta. Regarding land use, the *Town of Alta General Plan* states that existing zoning of all areas should continue, including current residential development, current commercial development, currently

planned ski area expansion, current camping and hiking use, current backcountry winter recreation use, and other existing uses.

3.3.2.1.4 Wasatch Canyons Master and General Plans

Some of the land in the land use impact analysis area is unincorporated Salt Lake County land that is covered by the *Wasatch Canyons Master Plan* (Salt Lake County Public Works Department 1989). The plan states that the primary land use in Little Cottonwood Canyon is recreation, including hiking, rock climbing, camping, picnicking, skiing, resort activities, and sightseeing.

No master plan has been completed specifically for Little Cottonwood Canyon. The *Wasatch Canyons Master Plan* includes several policies pertaining to Little Cottonwood Canyon. Although the *Wasatch Canyons Master Plan* includes recommendations for planning on NFS lands, the County does not have jurisdiction on federal lands. However, the USDA Forest Service worked closely with Salt Lake County on the recent *Wasatch Canyons General Plan Update* (Salt Lake County 2020b) to attempt to ensure consistency between the County's plan objectives and USDA Forest Service standards, guidelines, and priorities.

The policies in the *Wasatch Canyons Master Plan* include preserving White Pine Canyon and its current uses; expanding the ski area within existing USDA Forest Service permit boundaries; allowing additional ski area parking on private lands only if consistent with resolving transportation problems and improving the physical environment; pursuing a reduction of winter vehicle traffic through incentives for mass transit use, disincentives for private car use during peak periods, and multijurisdictional/ski resort cooperation; and constructing small, unobtrusive parking lots for dispersed recreation use on a case-by-case basis.

Some of the land in the impact analysis area is unincorporated Salt Lake County land that is covered in the *Wasatch Canyons General Plan Update*, which was adopted in June 2020 (Salt Lake County 2020b). This 2020 plan updates the 1989 *Wasatch Canyons Master Plan* and covers Parley's Canyon, Mill Creek Canyon, Big Cottonwood Canyon, Little Cottonwood Canyon, and the unincorporated foothill areas between the entrances to the canyons. The plan acknowledges that Little Cottonwood Canyon is experiencing all-time high levels of traffic resulting in adverse impacts to travel, parking, and the visitor and resident experience. Traffic issues in Little Cottonwood Canyon are particularly problematic during the winter, especially on weekends and busy ski days, when morning traffic can back up past the entrance to the canyon to the entrance to Big Cottonwood Canyon and beyond. Parking at the Alta and Snowbird ski resorts is also constrained, limiting the number of visitors who can gain access to the ski areas. The general plan update includes the following strategies:

- Support for mixed-use mobility centers, which should be located outside the canyon but within short distances, and should include transit, parking, daily services, and should be near or mixed in with residential dwellings and businesses
- Support for rideshare parking, bus stops, and electrical vehicle charging at key nodes
- Support for increased transit frequency at key locations throughout the canyons
- Support for year-round transit service within the canyon
- Support for carpooling programs
- Assistance in developing parking structures for the purpose of canyon transit and carpooling
- Formalization of parking areas and elimination of roadside parking

3.3.2.1.5 Granite Community Master Plan

The *Granite Community Master Plan* (Granite Community Council and Salt Lake County Public Works Department 1993) addresses a community that covers about 5 square miles at the entrance to Little Cottonwood Canyon. The community is generally bounded on the north, west, and south by the city of Sandy and on the east by the Uinta-Wasatch-Cache National Forest boundary.

Regarding transportation, the *Granite Community Master Plan* acknowledges a need to improve public transportation in the community so that residents are encouraged to ride the bus rather than use their cars. The master plan also states that the park-and-ride lot at the entrance to Little Cottonwood Canyon helps address roadside parking that nearby residents have complained about. The *Granite Community Master Plan* further states that residents oppose any additional or expanded park-and-ride facilities but acknowledges that this view must be analyzed with respect to the overall county need for park-and-ride lots. The plan also acknowledges that illegal roadside parking continues to pose a safety problem. The *Granite Community Master Plan* calls for residents to have input on any proposals for additional park-and-ride lots in the community.

3.3.2.1.6 Sandy City General Plan

The *Sandy City General Plan* is an official collection of the Sandy City Council's major policies concerning future physical development, and the plan sets community goals that reflect the expressed desire of citizens (Sandy City Council 2017). The *Sandy City General Plan* includes goals such as the following:

- Provide for orderly and efficient development that will be compatible with the natural and built environment
- Provide regional mobility through a variety of interconnected transportation choices
- Integrate local land-use with regional transportation systems
- Protect and enhance the environment
- Increase transportation mode share and convenience of transit service within the city

3.3.2.1.7 Revised Forest Plan for the Wasatch-Cache National Forest

The land use impact analysis area includes about 2,358 acres of NFS land managed by the USDA Forest Service under the guidance of the *Revised Forest Plan: Wasatch-Cache National Forest* (USDA Forest Service 2003). The management prescriptions (MP) for these 2,358 acres are existing wilderness/ opportunity Class II (MP 1.2; 300 acres), existing wilderness/opportunity Class III (MP 1.3; 33 acres), undeveloped areas (MP 2.6; 61 acres), watershed emphasis (MP 3.1W; about 957 acres), and developed recreation areas (MP 4.5; 297 acres).

- **Existing wilderness/opportunity Class II (MP 1.2) areas** are designated wilderness areas under the authority of the Wilderness Act of 1964 (16 USC Chapter 23, Section 1131, and subsequent sections) characterized by a predominantly unmodified natural environment where human-induced change is evident but the landscape will recover. Outstanding opportunities for solitude and unconfined recreation exist, and encounters with other humans are more frequent than in Class I areas.
- **Existing wilderness/opportunity Class III (MP 1.3) areas** are designated wilderness areas under the authority of the Wilderness Act of 1964 (16 USC Chapter 23, Section 1131, and subsequent sections) characterized by a predominantly unmodified natural environment where impacts could persist from year to year. During peak season and in popular areas, concentrated use is more common, and opportunities for solitude and unconfined recreation are more limited.
- **Undeveloped areas (MP 2.6)** are managed to protect undeveloped landscapes in a manner other than formal recommended wilderness. Although other uses and activities could occur, the primary emphasis in managing undeveloped areas is protection to ensure that the values and unique qualities associated with undeveloped areas are recognized and preserved.
- The **watershed emphasis management prescription (MP 3.1W)** seeks to maintain or improve the quality of watershed conditions and aquatic habitats. Areas that serve as municipal watersheds and public drinking water sources are managed to maintain or improve soil processes and watershed conditions.
- **Developed recreation areas (MP 4.5)** include developed facilities such as campgrounds, trailheads, and resorts under special-use permits, as well as adjacent areas associated with these sites. High levels of visitor interaction can be expected where sights and sounds of others are noticeable and there are moderate to high opportunities for social interaction.

In addition, about 710 acres of private lands are intermingled with NFS lands that are not covered by any management prescriptions. These private lands are typically adjacent to or surrounded by NFS lands and are referred to as “intermingled public/private lands” in the *Forest Plan*. Management emphasis for NFS lands in these areas is to cooperate with adjacent landowners to manage for diverse interests. In an urban or town interface, the emphasis is on protecting natural ecosystem components from degradation while allowing for high levels of day use. In a rural interface, the emphasis is on protecting natural ecosystem components from degradation while allowing moderate use.

The *Forest Plan* includes a desired future condition that, in the tri-canyon area (Mill Creek, Big Cottonwood, and Little Cottonwood Canyons), the parking capacities of the canyon parking lots (ski areas, summer-use homes, and developed and dispersed recreation sites) will not exceed the number of parking spaces that existed in 2000 unless modification is needed for watershed protection or to facilitate mass transit. Mass transit will be commonly used during winter, reducing crowding and increasing safety for users of the

canyons. The USDA Forest Service will work actively with other parties to explore options for reducing private vehicle use in these canyons. Desired future conditions are not standards or requirements but are the expected resource conditions in 50 to 100 years if *Forest Plan* objectives are achieved.

The *Forest Plan* also includes a desired future condition that the integrity of the stream corridor and side drainages in Little Cottonwood Canyon will be an emphasis given the opportunity that public lands adjoining the stream provide. The desired future condition includes the following priorities (USDA Forest Service 2003):

- The USDA Forest Service's decisions responding to increasing recreation demands will first consider desired water quality and riparian conditions and the limited wildlife habitat in the Little Cottonwood Canyon watershed.
- The USDA Forest Service will make provisions for a wide range of recreation uses including access and sanitation facilities that prevent watershed conditions from deteriorating.
- Major trailheads and restrooms will be provided and maintained in cooperation with partners such as Salt Lake City.
- The USDA Forest Service will protect the watershed and educate the public about appropriate behavior in the watershed in cooperation and partnership with other agencies.

3.3.2.1.8 Cottonwood Canyons Scenic Byways Corridor Management Plan

S.R. 210 is designated as a State Scenic Byway and is managed according to the *Cottonwood Canyons Scenic Byways Corridor Management Plan* (Cottonwood Canyons Scenic Byways Committee 2008). The *Corridor Management Plan* was developed by communities and stakeholders to help define and enhance the byway's intrinsic qualities and character. See Chapter 17, Visual Resources, for the expected visual resources impacts from the project alternatives.

3.3.2.1.9 2009 Salt Lake County Water Quality Stewardship Plan

The *2009 Salt Lake County Water Quality Stewardship Plan* (Salt Lake County and others 2009) provides a framework of goals and policies that seek to make water quality stewardship in Salt Lake County consistent with congressional, state, and local agency goals and to represent the needs of the population of Salt Lake County. The guiding principles of the *Water Quality Stewardship Plan* include protecting the physical, biological, and chemical components of watershed health. See Chapter 12, Water Resources, for the expected water quality impacts from the project alternatives.

3.3.2.1.10 2015 Salt Lake County Integrated Watershed Plan

The *2015 Salt Lake County Integrated Watershed Plan* (Salt Lake County and HDR 2017) is the update to the *2009 Salt Lake County Water Quality Stewardship Plan*. This plan updates data and information to better address ongoing area-wide water quality planning and watershed planning. It analyzes current land use projections, population projections, and monitoring data that have been gathered since the 2009 plan was published to provide an updated picture of current watershed conditions in Salt Lake County. See Chapter 12, Water Resources, for the expected water quality impacts from the project alternatives.

3.3.2.2 Zoning

Municipalities use zoning as a tool to implement the land use goals in the general plans described in the previous sections. The management prescriptions that the USDA Forest Service applies to NFS lands serve a similar function as zoning. UDOT reviewed zoning ordinances from each jurisdiction in the land use impact analysis area as well as management prescriptions for the Uinta-Wasatch-Cache National Forest. The predominant zoning classifications in the impact analysis area are associated with forestry and recreation, followed by residential, with smaller areas zoned for commercial, public facilities, and mixed use. The acreages of each land use type in the impact analysis area, based on zoning classifications, are listed above in Table 3.3-1, Current Land Use Types in the Land Use Impact Analysis Area.

3.4 Environmental Consequences and Mitigation Measures

3.4.1 Methodology

To analyze the expected impacts to land use, UDOT determined the acres of land ownership, zoning classifications, and USDA Forest Service management prescriptions that would be affected by the project alternatives. UDOT also analyzed the alternatives' consistency with applicable zoning classifications, USDA Forest Service management prescriptions, and applicable land use plans (as listed in Section 3.3.2.1, Planning). County zoning classifications apply only to private land and do not apply to NFS lands. The zoning classification figures in this chapter show only zoning classifications on private land.

3.4.2 No-Action Alternative

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

3.4.2.1 S.R. 210 – Wasatch Boulevard

With the No-Action Alternative, S.R. 210 would not be widened. Therefore, there would be no impacts to, or conflicts with, existing land ownership and zoning. However, this alternative would not address goals and objectives in plans such as the *Cottonwood Heights General Plan* and the *Wasatch Boulevard Master Plan*, which seek to address issues such as roadway capacity and safety.

3.4.2.2 S.R. 210 – North Little Cottonwood Road to Alta

With the No-Action Alternative, S.R. 210 would not be improved. Therefore, there would be no impacts to, or conflicts with, existing land ownership and zoning. However, this alternative would not address goals and objectives in applicable land use plans, such as the *Wasatch Canyons General Plan Update*'s strategy to support increased transit frequency at key locations throughout the canyons and to support year-round transit service in the canyon.

3.4.2.3 Mobility Hubs

3.4.2.3.1 Gravel Pit

With the No-Action Alternative, the mobility hub at the gravel pit would not be constructed. Therefore, there would be no impacts to, or conflicts with, existing land ownership and zoning at this location. However, this alternative would not address goals and objectives in applicable land use plans, such as the *Cottonwood Heights General Plan*'s goal of balancing access, mobility, and safety.

What is a mobility hub?

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

This alternative would also not address the *Wasatch Canyons General Plan Update*'s support for mixed-use mobility centers outside the canyon but within short distances that include transit and parking, or the plan's strategy to support rideshare parking and bus stops. The No-Action Alternative would also not address the *Granite Community Master Plan*'s concerns about illegal roadside parking.

What is the gravel pit?

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

With the No-Action Alternative, the site of the existing aggregate mine is planned to be developed. Cottonwood Heights City and the owner of the property are planning a large commercial and residential development at this location.

3.4.2.3.2 9400 South and Highland Drive

With the No-Action Alternative, there would be no change to the existing park-and-ride lot operated by the Utah Transit Authority (UTA) at 9400 South and Highland Drive. The No-Action Alternative would not conflict with existing land ownership or zoning. The No-Action Alternative would not address the *Sandy City General Plan*'s goal to increase transportation mode share and convenience of transit service in the city.

3.4.2.4 Avalanche Mitigation

With the No-Action Alternative, no snow sheds or berms would be constructed, and S.R. 210 would not be realigned. Therefore, there would be no impacts to land ownership, zoning, or planning resulting from snow sheds, berms, or road realignment.

3.4.2.5 Trailhead Parking

With the No-Action Alternative, no trailhead parking improvements would be made. Therefore, there would be no impacts to, or conflicts with, existing land ownership and zoning. However, this alternative would not address the *Wasatch Canyons General Plan Update*'s strategy to formalize parking areas and eliminate roadside parking.

3.4.2.6 No Winter Parking

With the No-Action Alternative, no existing roadside parking spots would be removed near the ski resorts during the winter. Therefore, there would be no impacts to, or conflicts with, existing land ownership and zoning. However, this alternative would not address the *Wasatch Canyons General Plan Update*'s strategy to formalize parking areas and eliminate roadside parking.

3.4.3 Enhanced Bus Service Alternative

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

3.4.3.1 S.R. 210 – Wasatch Boulevard

This section describes the land use impacts of the Imbalanced-lane Alternative and the Five-lane Alternative, which would both widen the Wasatch Boulevard segment of S.R. 210.

3.4.3.1.1 Imbalanced-lane Alternative

With the Imbalanced-lane Alternative, the proposed road widening would overlap about 48 acres of various residential zoning classifications, about 5 acres of the public facility zoning classification, and less than 1 acre of commercial, foothill recreational, and mixed-use zoning classifications (see Figure 3.4-1 through Figure 3.4-3 below). All of these lands are private. The proposed widening would be consistent with these zoning classifications because roads are an essential component of the allowed uses within these zoning classifications. However, because the widening would replace existing uses with new roadway, the widening would change the existing land uses within its footprint.

The proposed road widening would overlap about 53 acres of private lands, and UDOT would need to acquire these lands through purchase. Most of this private land has no buildings or other structures; however, one home would be directly affected by proposed surface disturbance. This home has been purchased by UDOT and would be demolished (for more information, see Section 4.4.2.1, S.R. 210 – Wasatch Boulevard, in Chapter 4, Community and Property Impacts). About 49 acres of right of way would be needed as well as about 4 acres of easements for construction access and potentially for cut slopes.

This alternative would be consistent with the *Cottonwood Heights General Plan*'s goal of balancing access, mobility, and safety. To meet this goal, the *Cottonwood Heights General Plan* includes a strategy to widen certain roads, including widening Wasatch Boulevard between 7800 South and S.R. 210 (Cottonwood Heights City 2019b). The proposed improvements to bus service on Wasatch Boulevard and the proposed widening of Wasatch Boulevard would help address access, mobility, and safety, particularly in regard to Cottonwood Heights' status as the gateway to Little Cottonwood Canyon's natural and recreation opportunities. The proposed widening of Wasatch Boulevard is consistent with the *Cottonwood Heights General Plan*'s road widening strategy.

This alternative would be consistent with the *Wasatch Boulevard Master Plan*'s objective of balancing livability, roadway capacity, and sustainable canyon access south of Big Cottonwood Canyon. The alternative addresses the plan's strategies of adding roadway capacity sensitively through the proposed widening of Wasatch Boulevard. This alternative also addresses the plan's goals of moving people through the corridor reliably and safely, enhancing opportunities for recreation along the corridor, and promoting and prioritizing sustainable solutions for Little Cottonwood Canyon access at a local and regional scale. These goals are addressed through improving bus service along Wasatch Boulevard and adding a pedestrian path.

Figure 3.4-1. Zoning Classifications on Private Land in the Impact Analysis Area for the Enhanced Bus Service Alternatives (1 of 3)

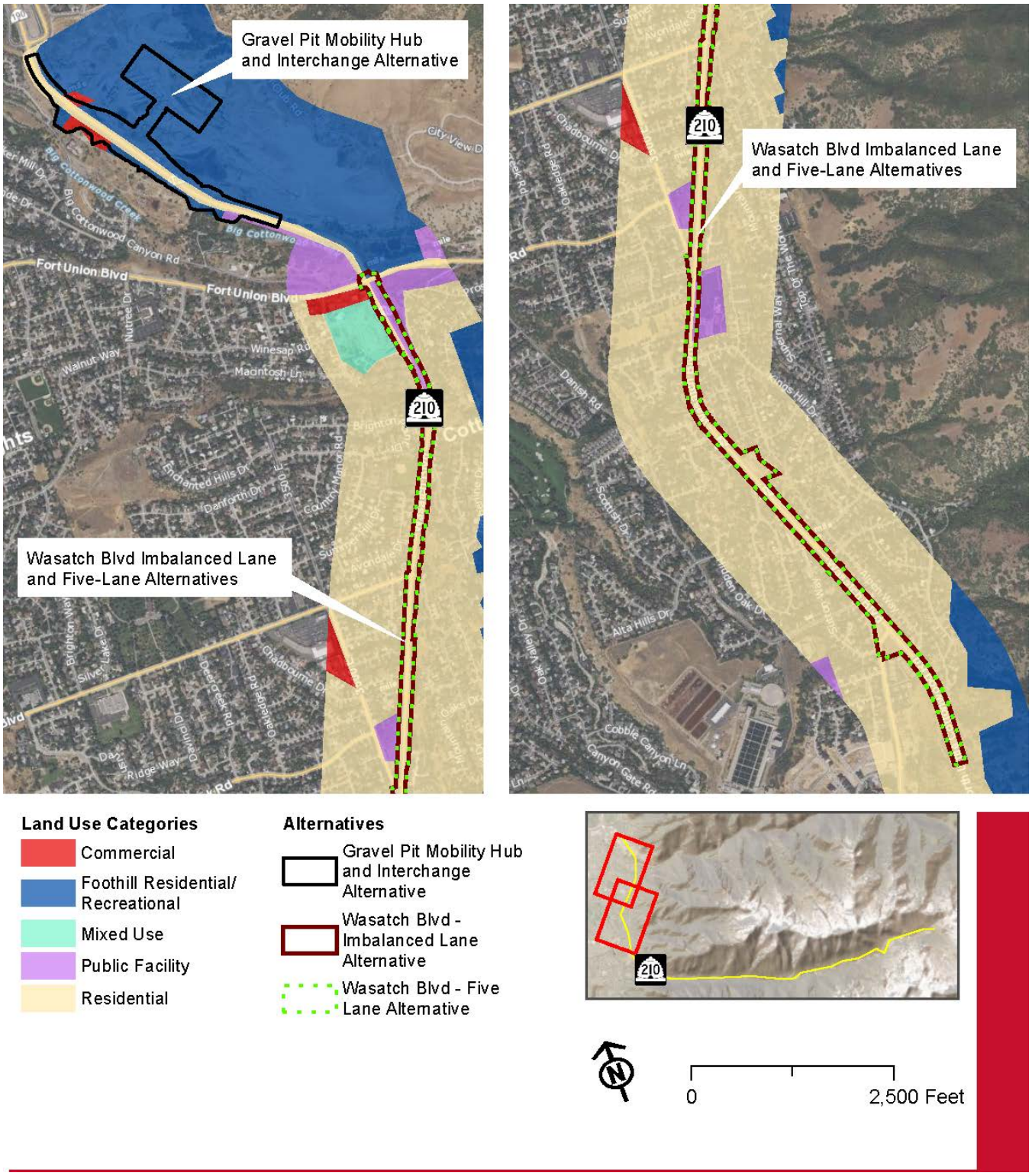


Figure 3.4-2. Zoning Classifications on Private Land in the Impact Analysis Area for the Enhanced Bus Service Alternatives (2 of 3)

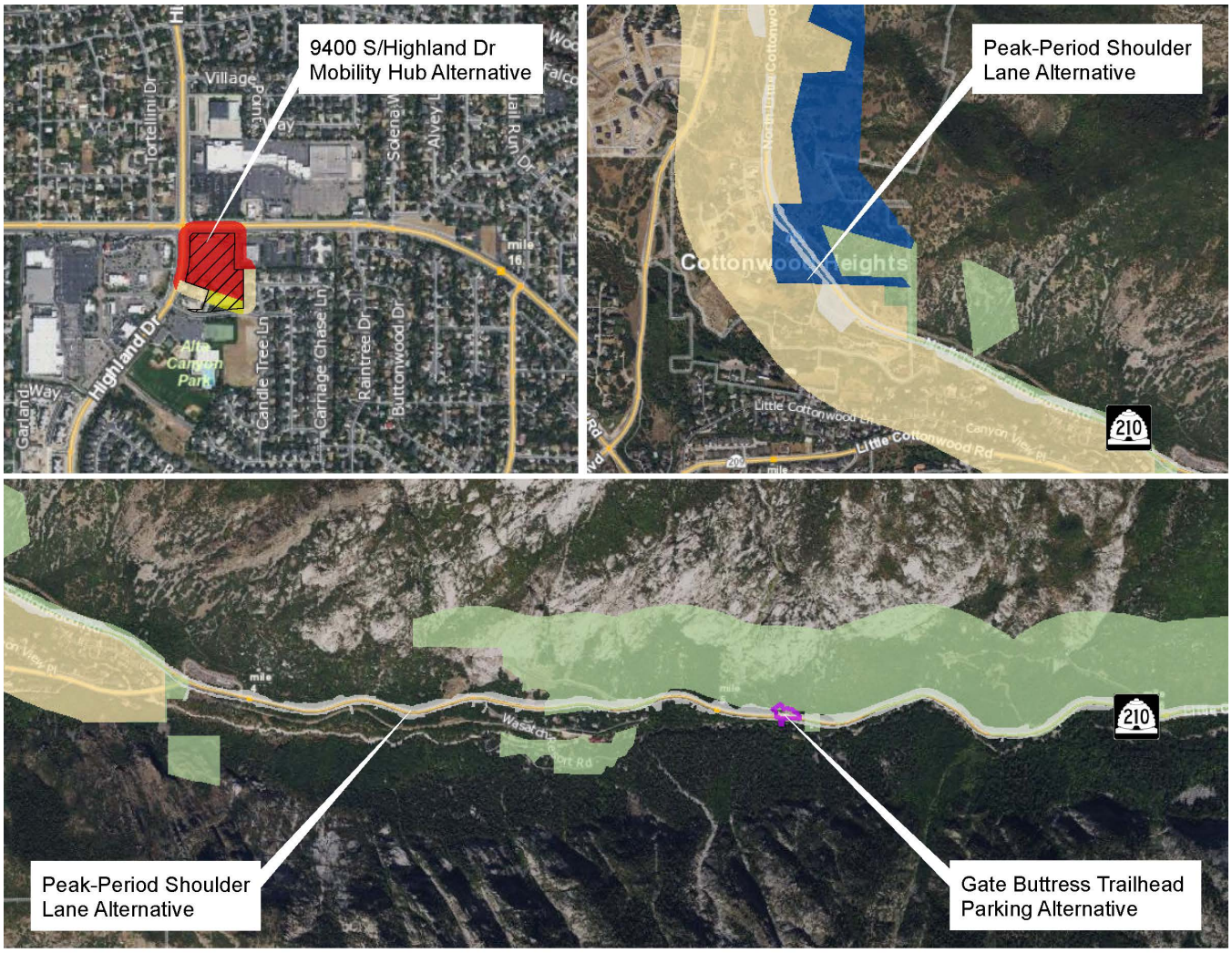
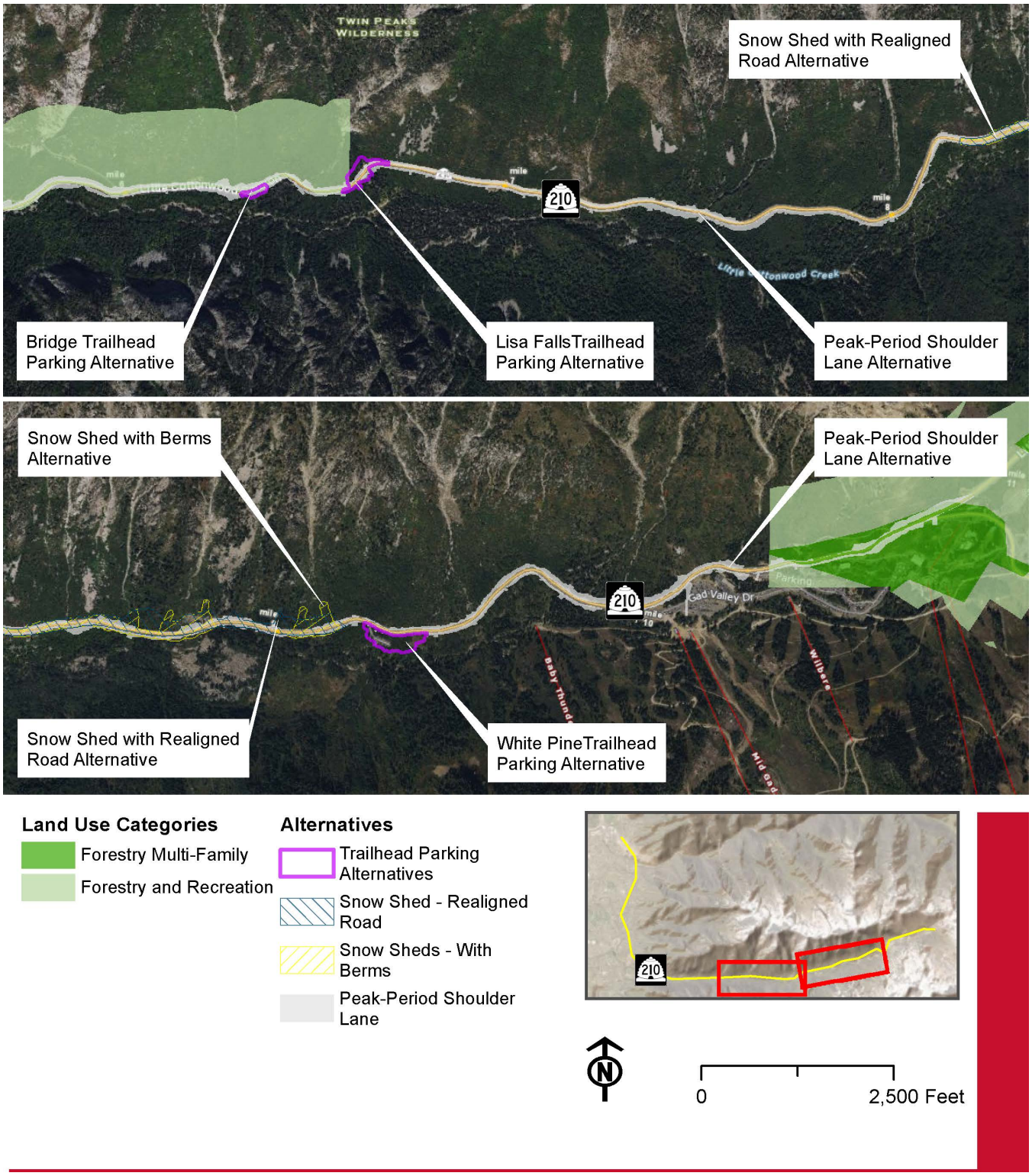


Figure 3.4-3. Zoning Classifications on Private Land in the Impact Analysis Area for the Enhanced Bus Service Alternatives (3 of 3)



3.4.3.1.2 Five-lane Alternative

With the Five-lane Alternative, the proposed widening on S.R. 210 would overlap about 49 acres of various residential zoning classifications, about 5 acres of the public facility zoning classification, and less than 1 acre of commercial, foothill recreational, and mixed-use zoning classifications (see Figure 3.4-1 through Figure 3.4-3 above). All of these lands are private. The proposed widening would be consistent with these zoning classifications because roads are an essential component of the allowed uses within these zoning classifications. However, because the widening would replace existing uses with new roadway, the widening would change the existing land uses within its footprint.

The proposed road widening would overlap about 54 acres of private lands, and UDOT would need to acquire these lands through purchase. Most of this private land has no buildings or other structures; however, one home would be directly affected by proposed surface disturbance. This home has been purchased by UDOT and would be demolished. One other home would also be affected by the proposed surface disturbance, and UDOT might need to acquire this home as well (for more information, see Section 4.4.2.1, S.R. 210 – Wasatch Boulevard, in Chapter 4, Community and Property Impacts). About 50 acres of right of way would be needed as well as about 4 acres of easements.

This alternative would be consistent with the *Cottonwood Heights General Plan* and the *Wasatch Boulevard Master Plan* for the same reasons described in Section 3.4.3.1.1, Imbalanced-lane Alternative.

3.4.3.2 S.R. 210 – North Little Cottonwood Road to Alta

With the Enhanced Bus Service Alternative, there would be no change to the existing S.R. 210 roadway except the addition of a tolling gantry (single pole over the westbound travel lane) immediately adjacent to the travel lane just west of Snowbird Entry 1. Overall, there would be no impacts to land uses or land ownership. This alternative's enhanced bus service would address the *Wasatch Canyons General Plan Update*'s strategies to support increased transit frequency at key locations throughout the canyons. The Enhanced Bus Service Alternative would be consistent with a desired future condition in the *Forest Plan*, which states that the USDA Forest Service will work actively with other parties to explore options for reducing private vehicle use in Little Cottonwood Canyon.

3.4.3.3 Mobility Hubs Alternative

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

3.4.3.3.1 Gravel Pit

With the Enhanced Bus Service Alternative, the mobility hub at the gravel pit would overlap about 12 acres of foothill recreational zoning classification, 10 acres of single-family residential zoning classification, 1 acre of commercial zoning classification, and less than 1 acre of public facility zoning classification (see Figure 3.4-1 through Figure 3.4-3 above). All of these lands are private. This mobility hub would be consistent with these zoning classifications because roads and parking areas are an essential component of the allowed uses within these zoning classifications. Despite the zoning classifications, the proposed mobility hub would be entirely within an existing gravel pit operation. This mobility hub would not be consistent with the gravel pit operation. However, the gravel pit operation is scheduled to complete mining and end its operations, and long-term plans are to develop the site with commercial and residential land

uses. The mobility hub would be consistent with these future land uses because the parking could be shared with the future commercial uses.

This mobility hub would be consistent with the *Cottonwood Heights General Plan*'s goal of balancing access, mobility, and safety. The establishment of the mobility hub and parking structure would help address access, mobility, and safety, particularly in regard to Cottonwood Heights' status as the gateway to Little Cottonwood Canyon's natural and recreation opportunities. This mobility hub would also be consistent with the *Granite Community Master Plan*'s interest in addressing illegal roadside parking and increasing public transit options.

This mobility hub would be consistent with the *Wasatch Boulevard Master Plan*'s objective of balancing livability, roadway capacity, and sustainable canyon access south of Big Cottonwood Canyon. This alternative also addresses the plan's goals of moving people through the corridor reliably and safely, enhancing opportunities for recreation along the corridor, and promoting and prioritizing sustainable solutions for Little Cottonwood Canyon access at a local and regional scale. The objective and goals are addressed through the mobility hub, which would improve reliable and safe access to recreation opportunities in Little Cottonwood Canyon by helping to reduce traffic and roadside parking in the canyon.

This mobility hub would be consistent with the *Wasatch Canyons General Plan Update* because it would address the plan's support for mixed-use mobility centers outside the canyon but within short distances that include transit and parking. This alternative's proposed parking structures would also address the plan's strategy to support rideshare parking and bus stops. This alternative's enhanced bus service would address the *Wasatch Canyons General Plan Update*'s strategies to support increased transit frequency at key locations throughout the canyons and to support year-round transit service in the canyon.

3.4.3.3.2 9400 South and Highland Drive

With the Enhanced Bus Service Alternative, the mobility hub at 9400 South and Highland Drive would overlap about 8 acres of commercial zoning classification, 1 acre of single-family residential zoning classification, and 1 acre of open space zoning classification (see Figure 3.4-1 through Figure 3.4-3, Zoning Classifications on Private Land in the Impact Analysis Area for the Enhanced Bus Service Alternatives, above). All of these lands are private. This mobility hub would be within an existing bus park-and-ride area, so it would be consistent with existing land use.

This mobility hub would be consistent with the *Sandy City General Plan*'s goal to increase transportation mode share and convenience of transit service in the city. It would also be consistent with the *Granite Community Master Plan*'s interest in addressing illegal roadside parking and increasing public transit options.

3.4.3.4 Avalanche Mitigation Alternatives

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

3.4.3.4.1 Snow Sheds with Berms Alternative

With the Snow Sheds with Berms Alternative, about 15 acres of USDA Forest Service lands would be affected by construction of the snow sheds and berms. NFS lands are managed according to the management prescriptions shown in Figure 3.4-4 through Figure 3.4-6 below and listed in Table 3.4-1 on page 3-43. These same 15 acres are also under the USDA Forest Service watershed emphasis management prescription (see Figure 3.4-4 through Figure 3.4-6 below). The snow sheds would not be consistent with the watershed emphasis management prescription (MP 3.1W).

To address this inconsistency, FHWA would likely appropriate the approximately 15 acres from the USDA Forest Service for transfer to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317, or UDOT would obtain an easement or other special-use authorization from the USDA Forest Service to allow construction, operation, and maintenance of the snow sheds and berms. If FHWA appropriates the NFS lands, the *Forest Plan* and its management prescription would no longer apply to those lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If UDOT obtains an easement or other special-use authorization from the USDA Forest Service, the *Forest Plan* and its management prescription would still apply, and the USDA Forest Service would need to amend the *Forest Plan* to address the snow sheds and berms since they would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of road construction (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

Because the snow sheds would be mostly within the existing S.R. 210 roadway, they would be consistent with current roadway use. However, the portions of the berms and snow sheds that extend outside the existing roadway would not be consistent with existing undeveloped NFS lands. The additional disturbance would be a 15-acre increase in the overall surface disturbance associated with the roadway.

Figure 3.4-4. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Enhanced Bus Service Alternatives (1 of 3)

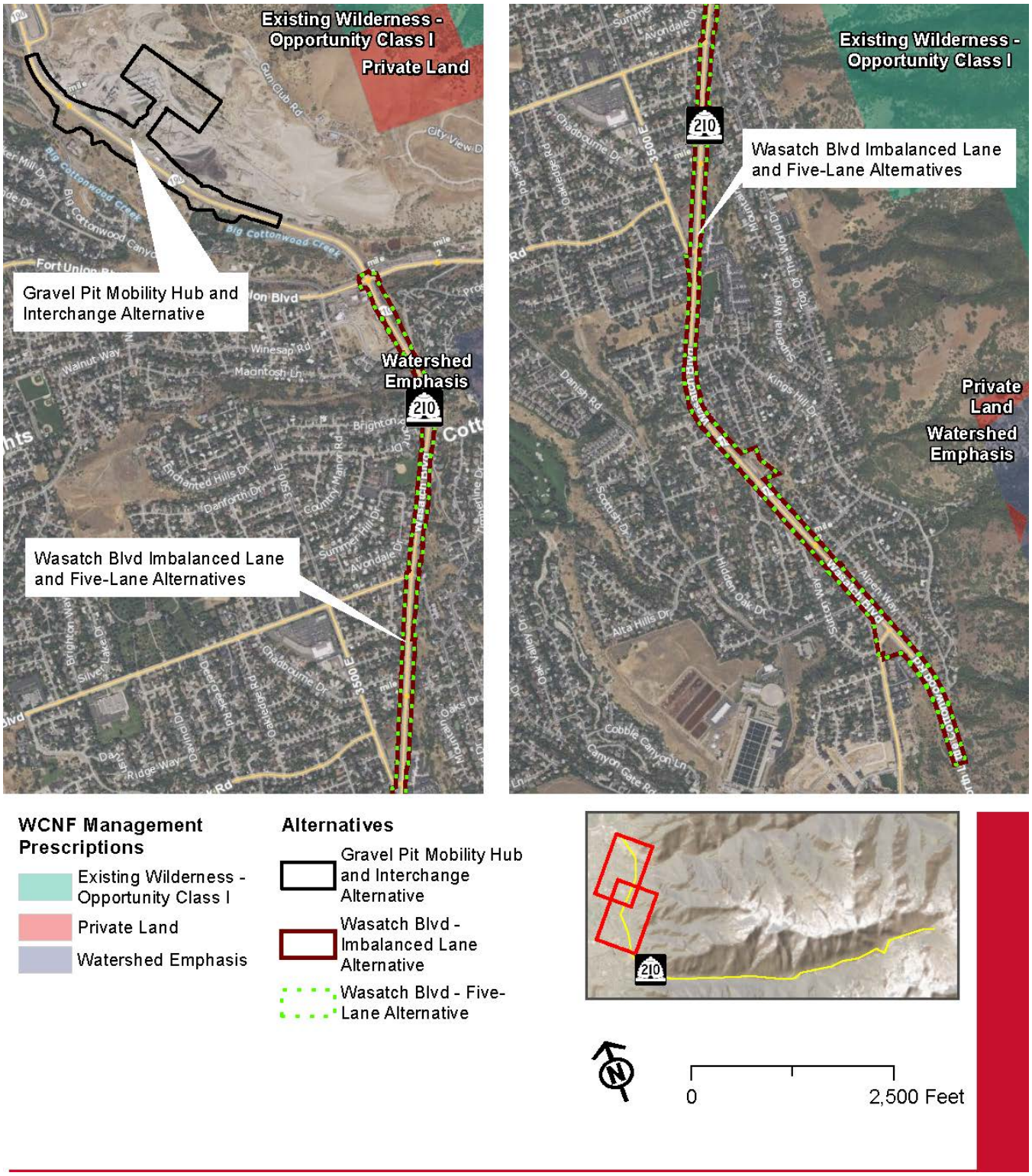


Figure 3.4-5. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Enhanced Bus Service Alternatives (2 of 3)

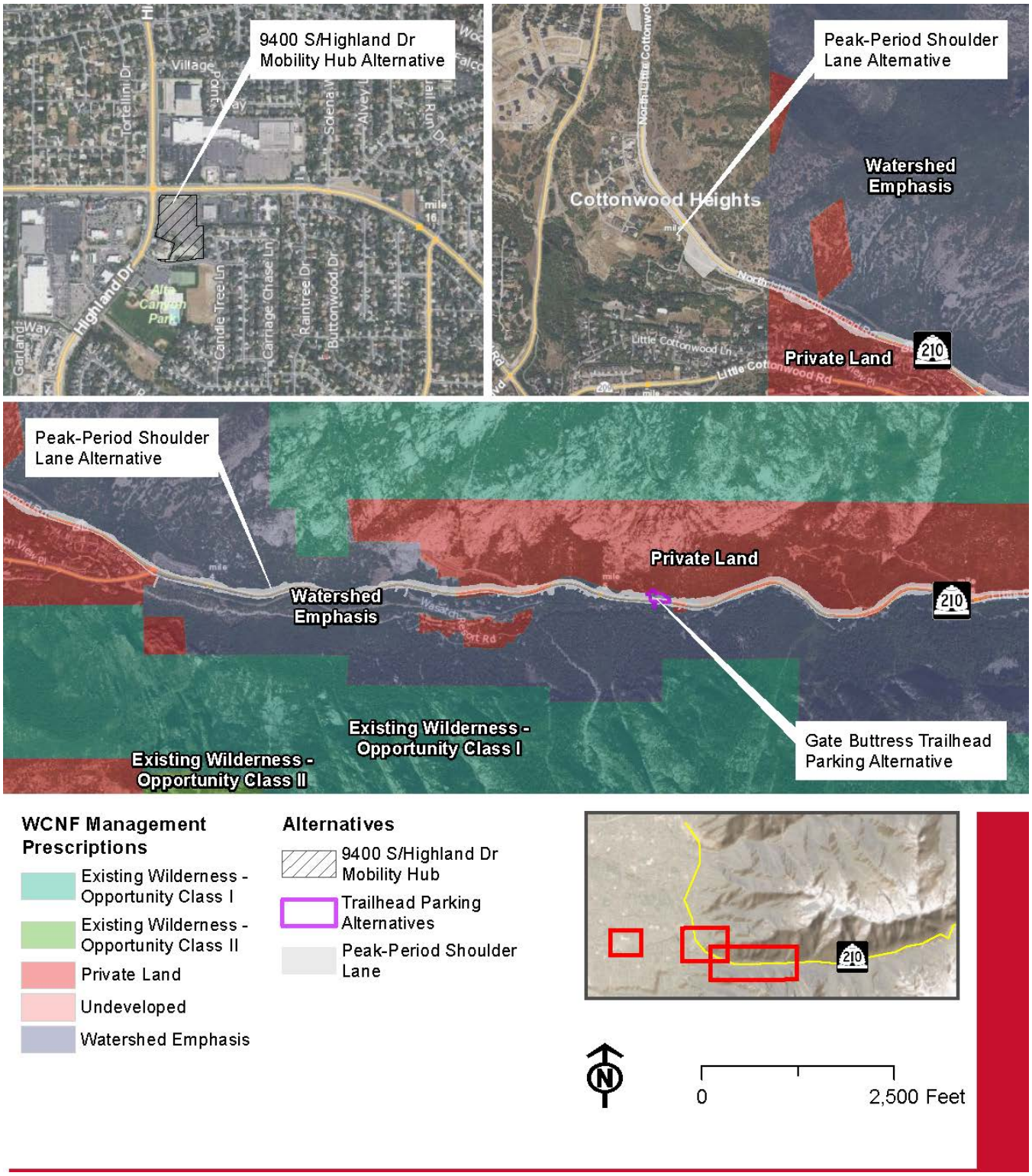
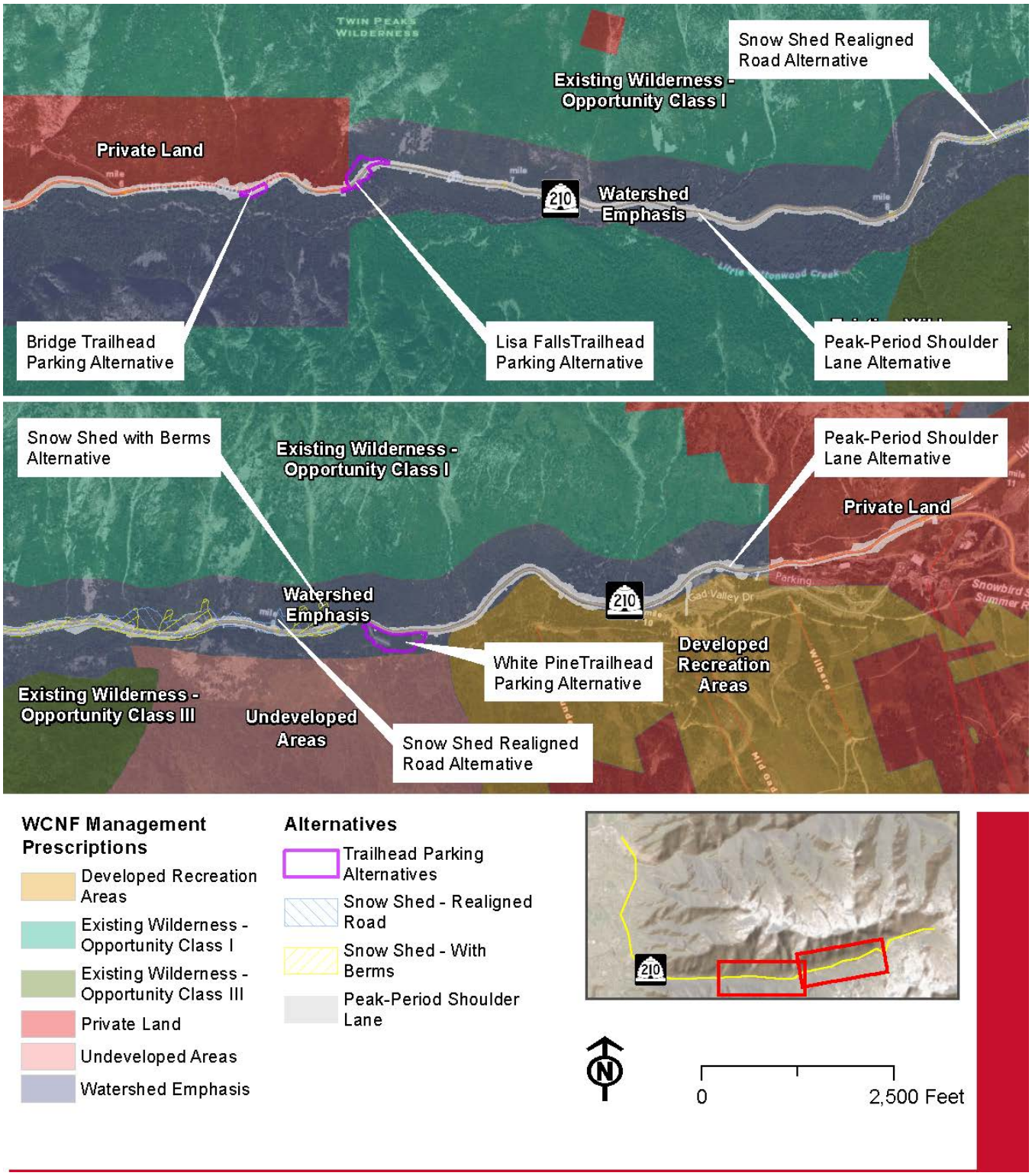


Figure 3.4-6. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Enhanced Bus Service Alternatives (3 of 3)



3.4.3.4.2 Snow Sheds with Realigned Road Alternative

With the Snow Sheds with Realigned Road Alternative, about 19 acres of NFS lands would be affected by construction of the sheds and realigned road. NFS lands are managed according to the management prescriptions shown in Figure 3.4-4 through Figure 3.4-6 above and listed in Table 3.4-1 on page 3-43. The proposed snow sheds and realigned road would also overlap about 19 acres under the USDA Forest Service watershed emphasis management prescription (MP 3.1W) (see Figure 3.4-4 through Figure 3.4-6 above). The snow sheds would not be consistent with the watershed emphasis management prescription (MP 3.1W).

To address this inconsistency, FHWA would likely appropriate the approximately 19 acres from the USDA Forest Service for transfer to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317, or UDOT would obtain an easement or other special-use authorization from the USDA Forest Service to allow construction, operation, and maintenance of the snow sheds and berms. If FHWA appropriates the NFS lands, the *Forest Plan* and its management prescriptions would no longer apply to those lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If UDOT obtains an easement or other special-use authorization from the USDA Forest Service, the *Forest Plan* and its management prescription would still apply, and the USDA Forest Service would need to amend the *Forest Plan* to address the snow sheds and realigned road since they would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of road construction (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

Because the proposed snow sheds would be mostly within the existing roadway, they would be consistent with current roadway use. However, the portions of the snow sheds that extend outside the existing roadway, as well as the portion of the road that would be realigned, would not be consistent with existing undeveloped NFS lands.

3.4.3.5 Trailhead Parking Alternatives

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

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

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

With this trailhead parking alternative and the Enhanced Bus Service Alternative, about 7 acres of NFS lands and 0.5 acre of private lands would be impacted by construction of the trailheads. The NFS lands are under the watershed management prescription (MP 3.1W). The private lands are under the foothill recreational zoning classification. The Lisa Falls, White Pine, and new Bridge Trailheads are on NFS lands. The Gate Buttress Trailhead is on private land.

Improvements to the existing Lisa Falls and White Pine Trailheads would not be consistent with the current NFS management prescription (MP 3.1W) and would require a plan amendment. The new Bridge Trailhead would be constructed along S.R. 210, would not be consistent with the current NFS management prescription (MP 3.1W), and would also require a *Forest Plan* amendment. Improvement of the Gate Buttress Trailhead, on private land, would be consistent with the foothill recreational zoning classification.

FHWA may appropriate the 7 acres of NFS land to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317, or UDOT would obtain an easement or other special-use authorization to allow construction, operation, and maintenance of the trailhead parking areas. If these lands are appropriated by FHWA, the USDA Forest Service watershed emphasis management prescription (MP 3.1W) would no longer apply. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If the lands are not appropriated by FHWA and the USDA Forest Service authorizes the action through issuance of an easement or other special-use authorization to UDOT, the *Forest Plan* and its watershed emphasis management prescription (MP 3.1W) would still apply, and the USDA Forest Service would need to amend the *Forest Plan* since the trailhead improvements would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of new recreation facilities (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

The proposed improvements to trailhead parking areas would be consistent with existing uses because these areas are already used for parking. The areas of proposed disturbance that would fall outside already disturbed parking areas would not be consistent with the existing land use because these areas would overlap undeveloped NFS lands. However, the surface disturbance from the proposed parking improvements would be a 7-acre increase of an already existing land use.

The elimination of roadside parking on S.R. 210 within ¼ mile of trailheads would not affect existing land uses because these roadside parking areas would be replaced by the proposed trailhead parking improvements. This alternative would reduce the number of parking spaces, so it would be consistent with the *Forest Plan* desired future conditions in terms of not exceeding the number of parking spaces that existed in 2000.

This alternative would be consistent with the *Wasatch Canyons General Plan Update*'s strategy to formalize parking areas and eliminate roadside parking. This alternative would also be consistent with the existing *Revised Forest Plan: Wasatch-Cache National Forest* requirement that parking capacities in the tri-canyon area (Mill Creek, Big Cottonwood, and Little Cottonwood Canyons) not exceed the levels in 2000 unless modification is needed for watershed protection or to facilitate mass transit (USDA Forest Service 2003). Removing roadside parking within ¼ mile of the White Pine, Lisa Falls, Bridge, and Gate Buttress Trailheads and replacing the roadside parking with formalized parking areas would ensure that the number of parking spaces in Little Cottonwood Canyon would not be expanded beyond current levels.

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

The impacts to land use and consistency with plans from this alternative would be the same as with the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative.

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

Because there would be no trailhead improvements and no roadside parking with this alternative, there would be no impacts to, or conflicts with, existing land ownership, land use, or existing plans.

3.4.3.6 No Winter Parking Alternative

Eliminating about 230 roadside parking spots during the winter near the ski resorts would result in no impacts to, or conflicts with, existing land ownership, land use, or existing plans.

3.4.4 Enhanced Bus Service in Peak-period Shoulder Lane Alternative

This section describes the land use impacts of the Enhanced Bus Service in Peak-period Shoulder Lane Alternative, which includes improvements to the Wasatch Boulevard segment of S.R. 210, improvements to the segment of S.R. 210 from North Little Cottonwood Road to the town of Alta, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

3.4.4.1 S.R. 210 – Wasatch Boulevard

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

3.4.4.2 S.R. 210 – North Little Cottonwood Road to Alta

Adding a peak-period shoulder lane and tolling gantry would affect about 34 acres of private lands and 52 acres of NFS lands. UDOT would need to acquire the private lands through purchase. FHWA would appropriate NFS lands under the authority of 23 USC Section 317 to allow construction, operation, and maintenance of the peak-period shoulder lane. About 49 acres of the proposed roadway improvements would occur within the existing right of way. About 4 acres of additional right of way and about 32 acres of construction access easements or cut-slope easements would also be needed.

On 34 acres of private land, the proposed peak-period shoulder lane would overlap forestry and recreation, residential, forestry multi-family, and foothill recreational zoning classifications. The proposed peak-period shoulder lane would be consistent with these zoning classifications because roads are an essential component of allowed uses within these zoning classifications.

On NFS lands, the peak-period shoulder lane would overlap about 50 acres under the USDA Forest Service watershed emphasis management prescription (MP 3.1W) and 2 acres under the USDA Forest Service developed recreation areas management prescription (MP 4.5). Because these lands would likely be appropriated by FHWA, USDA Forest Service management prescriptions would no longer apply. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If the lands are not appropriated by FHWA and the USDA Forest Service authorizes the action through issuing an easement or other special-use authorization to UDOT, the *Forest Plan* and its watershed emphasis management prescription (MP 3.1W) would still apply, and the USDA Forest Service would need to amend the *Forest Plan* since the peak-period shoulder lane would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of road construction (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

The proposed peak-period shoulder lane would convert existing undeveloped lands to new roadway. However, the proposed surface disturbance would be an increase of an already existing land use. The Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be consistent with a desired future condition in the *Forest Plan*, which states that the USDA Forest Service will work actively with other parties to explore options for reducing private vehicle use in Little Cottonwood Canyon.

This alternative would be consistent with the *Town of Alta General Plan* because it would help address parking limitations in Alta through improvements to bus service in Little Cottonwood Canyon. The addition of a new shoulder lane to S.R. 210 in Little Cottonwood Canyon would stop at the Alta Bypass Road and would not extend into the town of Alta. This alternative's enhanced bus service would address the *Wasatch Canyons General Plan Update*'s strategies to support increased transit frequency at key locations throughout the canyons, improve roadway design that increases mobility, and integrate active transportation planning. Because this alternative would reduce vehicle use in Little Cottonwood Canyon, it would not conflict with the goal that transit facilities and operations should be designed to avoid degrading watershed health and water quality.

3.4.4.3 Mobility Hubs Alternative

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

3.4.4.4 Avalanche Mitigation Alternatives

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

3.4.4.5 Trailhead Parking Alternatives

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

3.4.4.6 No Winter Parking Alternative

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

3.4.5 Gondola Alternative A (Starting at Canyon Entrance)

This section describes the land use impacts of Gondola Alternative A, which includes a gondola alignment from the entrance to Little Cottonwood Canyon to the Snowbird and Alta ski resorts, improvements to the Wasatch Boulevard segment of S.R. 210, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

What are base, angle, and terminal stations?

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

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

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

A *tower* supports the gondola cable.

3.4.5.1 S.R. 210 – Wasatch Boulevard

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

3.4.5.2 S.R. 210 – North Little Cottonwood Road to Alta

With this alternative, there would be no improvements to the S.R. 210 roadway except the addition of a tolling gantry (single pole over the westbound travel lane) immediately adjacent to the travel lane just west of Snowbird Entry 1. However, the proposed gondola towers, gondola stations, and the easement underneath the gondola lines would parallel the roadway. The land underneath the proposed gondola lines (there would be no ground disturbance under the gondola lines), gondola towers, and stations would comprise about 70 acres of NFS lands and 19 acres of private lands. UDOT would need to acquire the private lands affected by the gondola towers and stations through purchase and would need to obtain permission from the private landowners for the easement underneath the gondola lines. Either FHWA would likely need to appropriate NFS lands for transfer to UDOT (typically in the form of a highway easement) under the authority of 23 USC Section 317 or UDOT would need to obtain an easement or other special-use authorization from the USDA Forest Service.

On 19 acres of private land, the proposed gondola towers and stations would overlap the foothill recreational, forestry multi-family, forestry and recreation, and commercial zoning classifications (see Figure 3.4-7 and Figure 3.4-8 below). The easement under the gondola lines on 17 acres of private land would overlap the forestry and recreation, forestry multi-family, and commercial zoning classifications.

If NFS lands are appropriated by FHWA, then the *Forest Plan* and its management prescriptions would no longer apply to the 70 acres of NFS lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If the lands are not appropriated by FHWA and the USDA Forest Service authorizes the action through issuance of an easement or other special-use authorization to UDOT, then the *Forest Plan* and its watershed emphasis (MP 3.1W) and developed recreation (MP 4.5) management prescriptions would still apply. Because a gondola system is not considered a motor vehicle travelway, it would be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of new road construction, and a *Forest Plan* amendment would not be needed (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

NFS lands are managed according to the management prescriptions shown in Figure 3.4-9 and Figure 3.4-10 below. The proposed gondola lines (there would be no ground disturbance under the gondola lines), towers, and stations would overlap about 55 acres under the USDA Forest Service watershed

emphasis management prescription (MP 3.1W) and 15 acres under the USDA Forest Service developed recreation areas management prescription (MP 4.5) (see Figure 3.4-9 and Figure 3.4-10 below).

Gondola Alternative A would include reconstructing the Alpenbock Trailhead, which would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of new recreation facilities and would require an amendment to the *Forest Plan* (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

The proposed gondola system would overlap mostly undeveloped NFS lands and would not be consistent with existing land uses. Although the proposed gondola system would mostly parallel an existing road that provides access to the canyon for recreational and other purposes, it would still be an increase in surface disturbance for transportation and recreational land use. Gondola Alternative A would be consistent with a desired future condition in the *Forest Plan*, which states that the USDA Forest Service will work actively with other parties to explore options for reducing private vehicle use in Little Cottonwood Canyon.

Gondola Alternative A would be consistent with the *Town of Alta General Plan* because it would address existing parking limitations and avoid large-scale improvements to increase the capacity of S.R. 210. It would help to address parking limitations in the town of Alta through the implementation of the proposed gondola system in Little Cottonwood Canyon. It would also avoid large-scale improvements to increase the capacity of S.R. 210 because it would implement a gondola system rather than adding lanes to S.R. 210 or making other large-scale capacity improvements. The proposed gondola system would also help address parking issues at the Snowbird and Alta ski resorts.

Gondola Alternative A would be consistent with the *Wasatch Canyons General Plan Update* because it would help address the plan's strategies to support increased transit frequency at key locations throughout the canyons and to support year-round transit service in the canyon. Because this alternative would reduce vehicle use in Little Cottonwood Canyon and would include appropriate water quality best management practices, this alternative would not conflict with the goal that transit facilities and operations should be designed to avoid degrading watershed health and water quality.

3.4.5.3 Mobility Hubs Alternative

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

3.4.5.4 Avalanche Mitigation Alternatives

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

3.4.5.5 Trailhead Parking Alternatives

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

3.4.5.6 No Winter Parking Alternative

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

Figure 3.4-7. Zoning Classifications on Private Land in the Impact Analysis Area for the Gondola Alternatives (1 of 2)

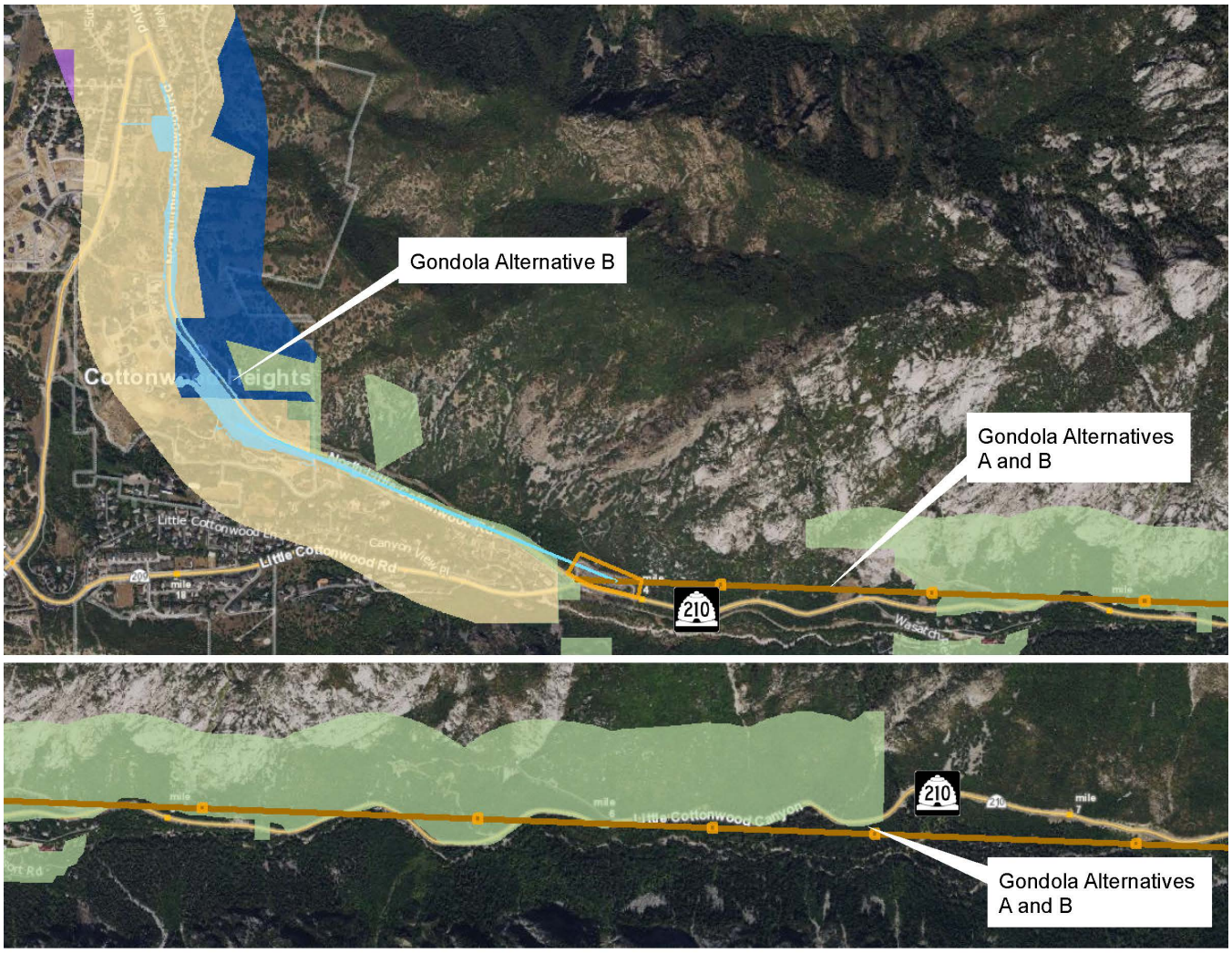


Figure 3.4-8. Zoning Classifications on Private Land in the Impact Analysis Area for the Gondola Alternatives (2 of 2)

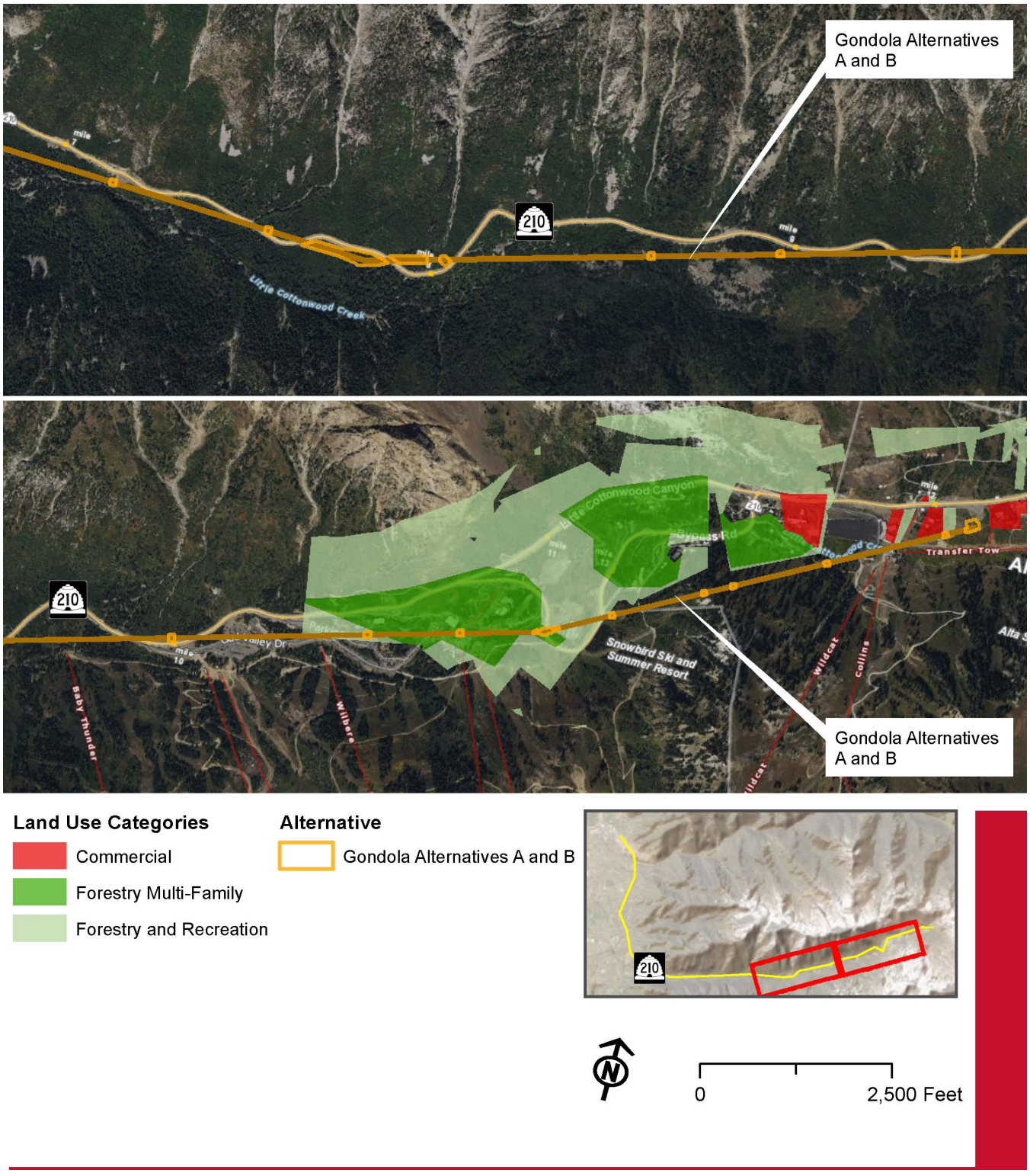


Figure 3.4-9. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Gondola Alternatives (1 of 2)

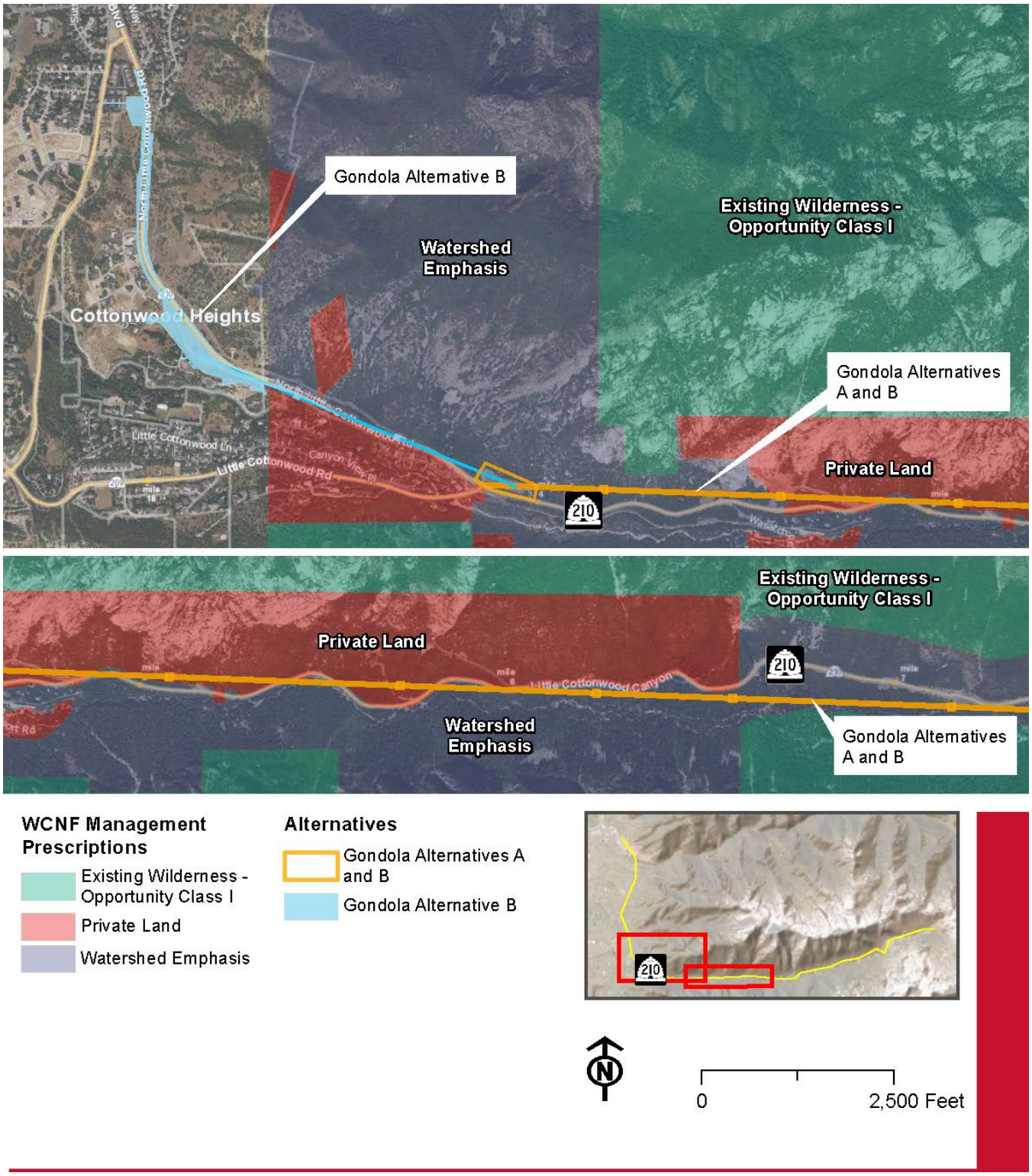
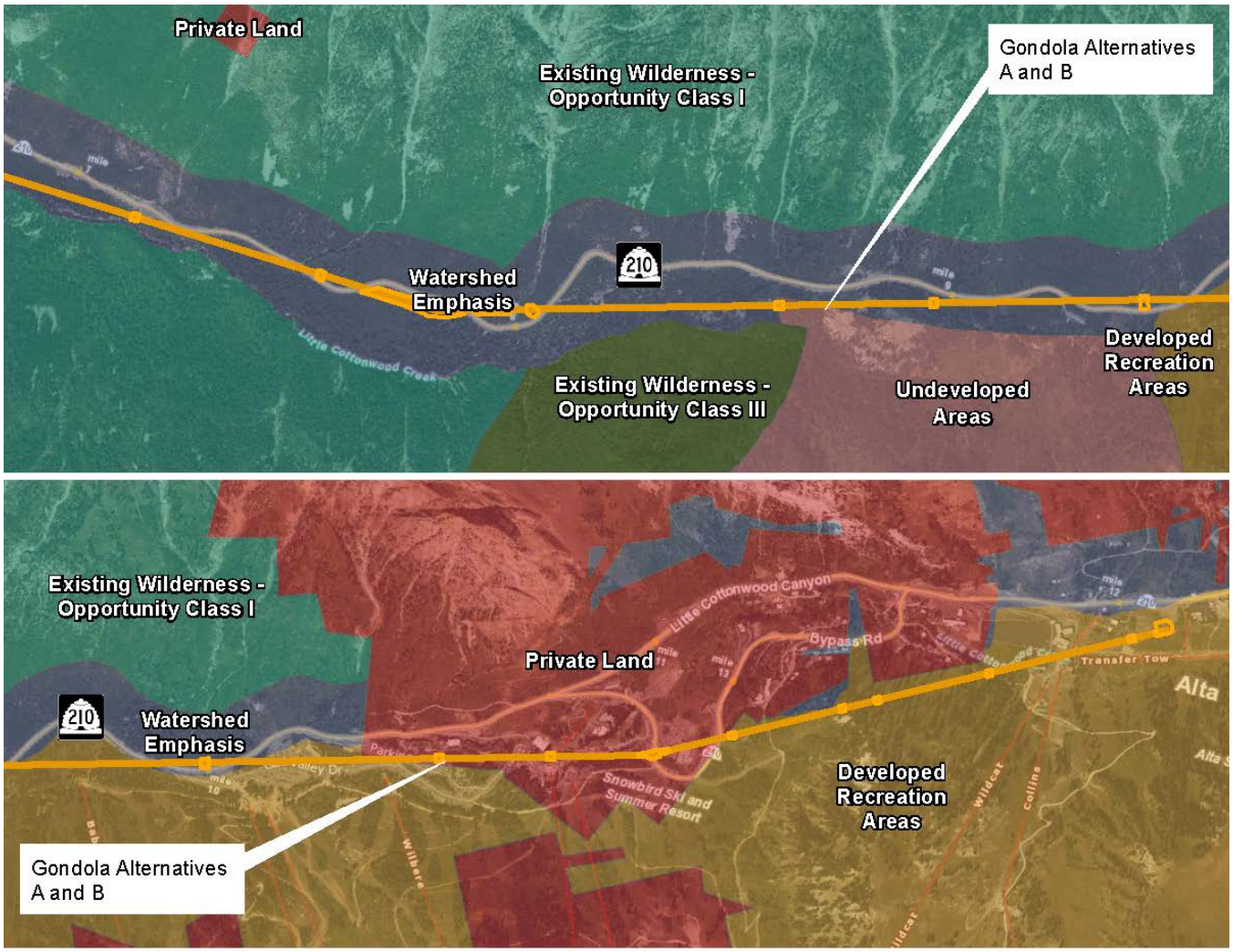


Figure 3.4-10. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Gondola Alternatives (2 of 2)



3.4.6 Gondola Alternative B (Starting at La Caille)

This section describes the land use impacts of Gondola Alternative B, which includes a gondola alignment from La Caille to the Snowbird and Alta ski resorts, improvements to the Wasatch Boulevard segment of S.R. 210, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

3.4.6.1 S.R. 210 – Wasatch Boulevard

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

3.4.6.2 S.R. 210 – North Little Cottonwood Road to Alta

The land use impacts from Gondola Alternative B would be the same as with Gondola Alternative A except for the impacts from adding 0.75 mile to the gondola alignment (see Figure 3.4-7 through Figure 3.4-10 above). The land use impacts of the additional 0.75 mile are discussed in this section. The 0.75 mile of additional gondola alignment would parallel the southwest side of S.R. 210 and would overlap currently vacant land that has no residences, businesses, or other structures.

The 0.75 mile of additional gondola alignment would result in surface disturbance on about 29 acres of private lands and about 1 acre of NFS lands, all within the boundary of Cottonwood Heights. The 29 acres of private lands consist of the residential, foothill residential/recreational, and forestry and recreation zoning classifications. The area underneath the gondola line (which would remain undisturbed) would include about 7 acres of private land and about 2 acres of NFS lands. The 7 acres of private land would include the residential and forestry and recreation zoning classifications.

The NFS lands affected by surface disturbance from the 0.75 mile of additional gondola alignment would consist of less than 1 acre of watershed emphasis (MP 3.1W). The gondola line would overlap about 3 acres of watershed management prescription (MP 3.1W).

UDOT would need to acquire the private lands affected by the gondola towers, station, and other proposed surface disturbance through purchase and would need to obtain permission from the private landowners for the easement underneath the gondola lines. Either FHWA would need to appropriate NFS lands for transfer to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317 or UDOT would need to obtain an easement or other special-use authorization from the Forest Service. If NFS lands are appropriated, then the *Forest Plan* and its watershed emphasis management prescriptions (MP 3.1W) would no longer apply to NFS lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If the lands are not appropriated by FHWA and the USDA Forest Service authorizes the action through issuance of an easement or other special-use authorization to UDOT, the *Forest Plan* and its watershed emphasis management prescription (MP 3.1W) would still apply. Because a gondola system is not considered a motor vehicle travelway, it would be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of new road construction, and a *Forest Plan* amendment would not be needed (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

Gondola Alternative B would include reconstructing the Alpenbock Trailhead, which would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of new recreation facilities

and would require an amendment to the *Forest Plan* (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

Gondola Alternative B would help address the *Cottonwood Heights General Plan*'s goals of improving mobility and access, especially access to the natural and recreation opportunities in Little Cottonwood Canyon. The proposed parking area would likely be consistent with existing zoning because it would represent an essential component of the allowed uses within the residential, recreational, and forestry zoning classifications. However, the proposed gondola alignment and base station would likely be inconsistent with the current zoning, particularly the residential zoning classification.

3.4.6.1 Mobility Hubs Alternative

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

3.4.6.2 Avalanche Mitigation Alternatives

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

3.4.6.3 Trailhead Parking Alternatives

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

3.4.6.4 No Winter Parking Alternative

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

3.4.7 Cog Rail Alternative

This section describes the land use impacts of the Cog Rail Alternative, which includes a cog rail alignment from La Caille to the Snowbird and Alta ski resorts, improvements to the Wasatch Boulevard segment of S.R. 210, improvements to the segment of S.R. 210 on North Little Cottonwood Road, two mobility hubs, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

What are cog rail base and terminal stations?

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

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

3.4.7.1 S.R. 210 – Wasatch Boulevard

With the Cog Rail Alternative, the impacts to land use from the improvements to Wasatch Boulevard would be the same as with the Enhanced Bus Service Alternative.

3.4.7.2 S.R. 210 – North Little Cottonwood Road to Alta

The cog rail base station with the Cog Rail Alternative would overlap an additional approximately 1 acre of NFS land and about 21 acres of private land.

On the 21 acres of private land, the zoning classifications overlapped by the cog rail base station would be the residential, foothill residential/recreational, and forestry and recreation zoning classifications (Figure 3.4-11 and Figure 3.4-12 below, Zoning Classifications Overlapped by the Cog Rail Alternative). On the 35 acres of private land, the zoning classifications overlapped by the cog rail alignment parallel to S.R. 210 and North Little Cottonwood Road would be the forestry and recreation, forestry multi-family, residential, commercial, foothill residential/recreation, and forestry zoning classifications (see Figure 3.4-11 and Figure 3.4-12 below, Zoning Classifications Overlapped by the Cog Rail Alternative). About 4 acres of this would be within the existing right of way, and 28 acres would require new right of way. An additional about 3 acres of private land would require an easement.

NFS lands are managed according to the management prescriptions shown in Figure 3.4-13 and Figure 3.4-14 below and listed in Table 3.4-1 on page 3-43. The cog rail alignment adjacent to S.R. 210 and North Little Cottonwood Road would overlap about 64 acres of NFS land. About 16 acres of this would be within the existing right of way, and 41 acres would require new right of way. An additional approximately 7 acres of NFS lands would require an easement. Either FHWA would need to appropriate NFS lands for transfer to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317 or UDOT would need to acquire an easement or other special-use authorization from the USDA Forest Service.

NFS lands are managed according to the management prescriptions shown in Figure 3.4-13 and Figure 3.4-14 below and listed in Table 3.4-1 on page 3-43. The USDA Forest Service management prescriptions overlapped by the cog rail line parallel to S.R. 210 and North Little Cottonwood Road would include about 63 acres of watershed emphasis management prescription (MP 3.1W) and less than 1 acre of developed recreation area management prescription (see Figure 3.4-13 and Figure 3.4-14 below). Within the watershed emphasis management prescription (MP 3.1W), about 16 acres would be existing right of way, 40 acres would be new right of way, and 7 acres would be an easement. Within the developed recreation area management prescription, less than 1 acre would be an easement. A cog rail line would not be consistent with the watershed emphasis management prescription (MP 3.1W). The Cog Rail Alternative

would be consistent with a desired future condition in the *Forest Plan*, which states that the USDA Forest Service will work actively with other parties to explore options for reducing private vehicle use in Little Cottonwood Canyon.

To address this inconsistency, either FHWA could appropriate the approximately 64 acres of NFS lands for transfer to UDOT (typically in the form of a highway easement deed) under the authority of 23 USC Section 317, or UDOT would obtain an easement or other special-use authorization from the USDA Forest Service for those lands. If FHWA appropriates the NFS lands, the *Forest Plan* and its watershed emphasis (MP 3.1W) and development recreation (MP 4.5) management prescriptions would no longer apply to those lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If the lands are not appropriated by FHWA and the USDA Forest Service authorizes the action through issuance of an easement or other special-use authorization to UDOT, the *Forest Plan* and its watershed emphasis (MP 3.1W) and developed recreation (MP 4.5) management prescriptions would still apply, and the USDA Forest Service would need to amend the *Forest Plan* to address the cog rail line (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

The Cog Rail Alternative would include reconstructing the Alpenbock and Grit Mill Trailheads, which would not be consistent with the watershed emphasis management prescription's (MP 3.1W) prohibition of new recreation facilities and would require an amendment to the *Forest Plan* (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

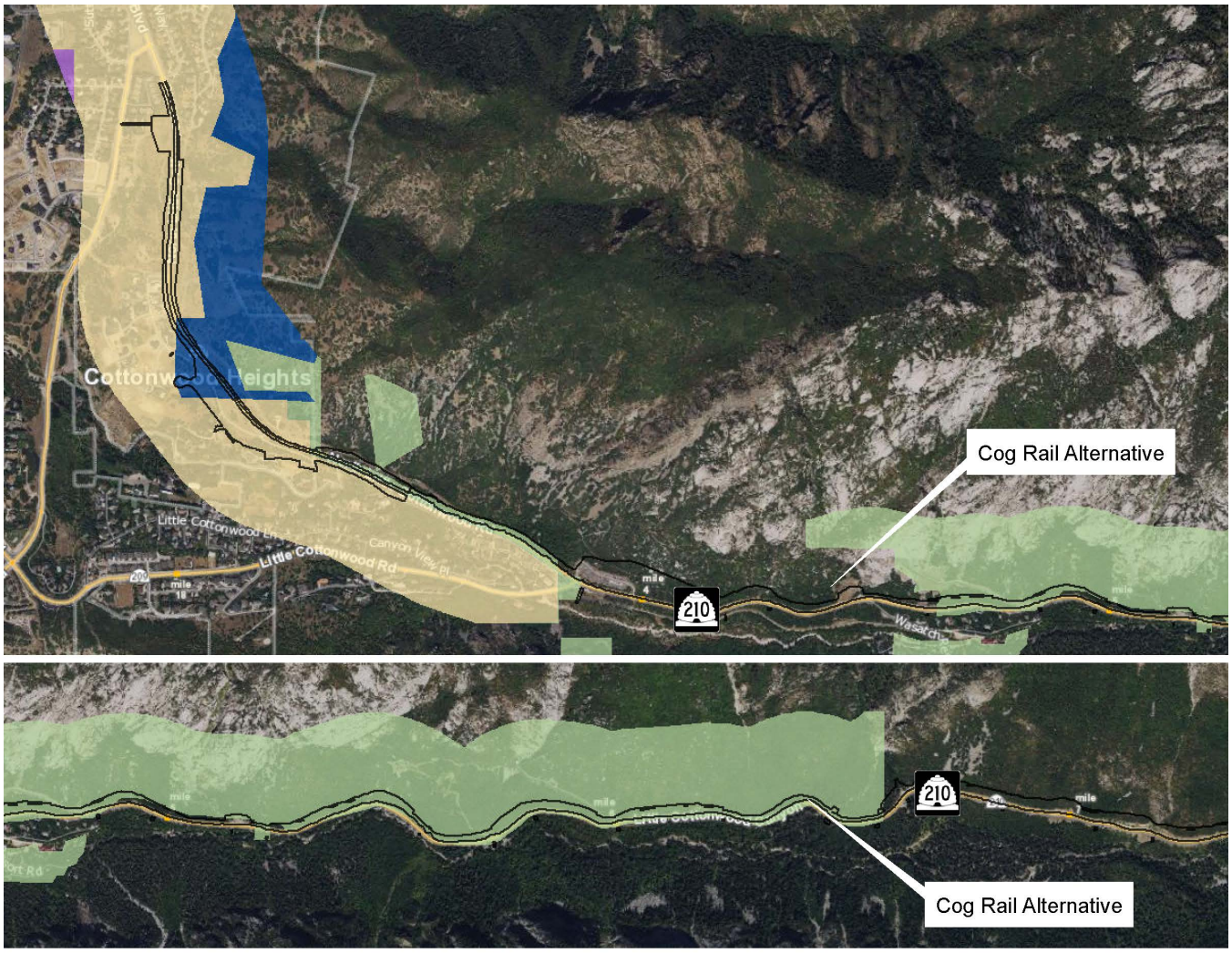
The majority of the cog rail alignment would overlap undeveloped NFS lands adjacent to the existing S.R. 210 roadway. Although the rail alignment would run adjacent to an existing road that provides access to the canyon for recreation and other purposes, it would still represent an incremental increase in surface disturbance for transportation and recreational land use.

The Cog Rail Alternative would help address the goal in the *Cottonwood Heights General Plan* of improving mobility and access, especially access to the natural and recreation opportunities in Little Cottonwood Canyon. The proposed parking area would likely be consistent with existing zoning because it would represent an essential component of the allowed uses within the residential, recreational, and forestry zoning classifications. However, the cog rail base station and cog rail alignment over North Little Cottonwood Road would likely be inconsistent with the existing zoning, particularly the residential zoning classification and visual goals of matching the surrounding environment established in the *Cottonwood Heights General Plan*.

The Cog Rail Alternative would be consistent with the *Town of Alta General Plan* because it would address existing parking limitations and avoid large-scale improvements to increase the capacity of S.R. 210. It would help to address parking limitations in the town of Alta by allowing visitors to access the town via rail rather than by using individual personal vehicles. It would also avoid large-scale improvements to increase the capacity of S.R. 210 because it would implement a rail line rather than adding lanes to S.R. 210 or making other large-scale capacity road improvements.

The Cog Rail Alternative would be consistent with the *Wasatch Canyons General Plan Update* because the rail line would help address the plan's strategies to support increased transit frequency at key locations throughout the canyons and to support year-round transit service in Little Cottonwood Canyon. Because this alternative would reduce vehicle use in Little Cottonwood Canyon and would include appropriate water quality best management practices, it would not conflict with the goal that transit facilities and operations should be designed to avoid degrading watershed health and water quality.

Figure 3.4-11. Zoning Classifications on Private Land in the Impact Analysis Area for the Cog Rail Alternative (1 of 2)

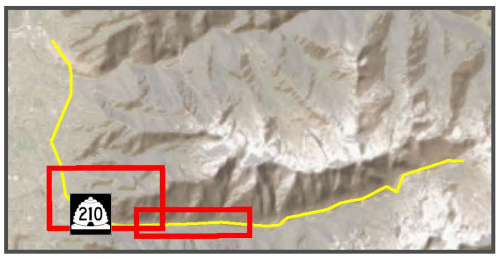


Land Use Categories

- Foothill Residential/ Recreational
- Forestry and Recreation
- Public Facility
- Residential

Alternatives

- Cog Rail Alternative Impact Boundary



N

0 2,500 Feet

Figure 3.4-12. Zoning Classifications on Private Land in the Impact Analysis Area for the Cog Rail Alternative (2 of 2)

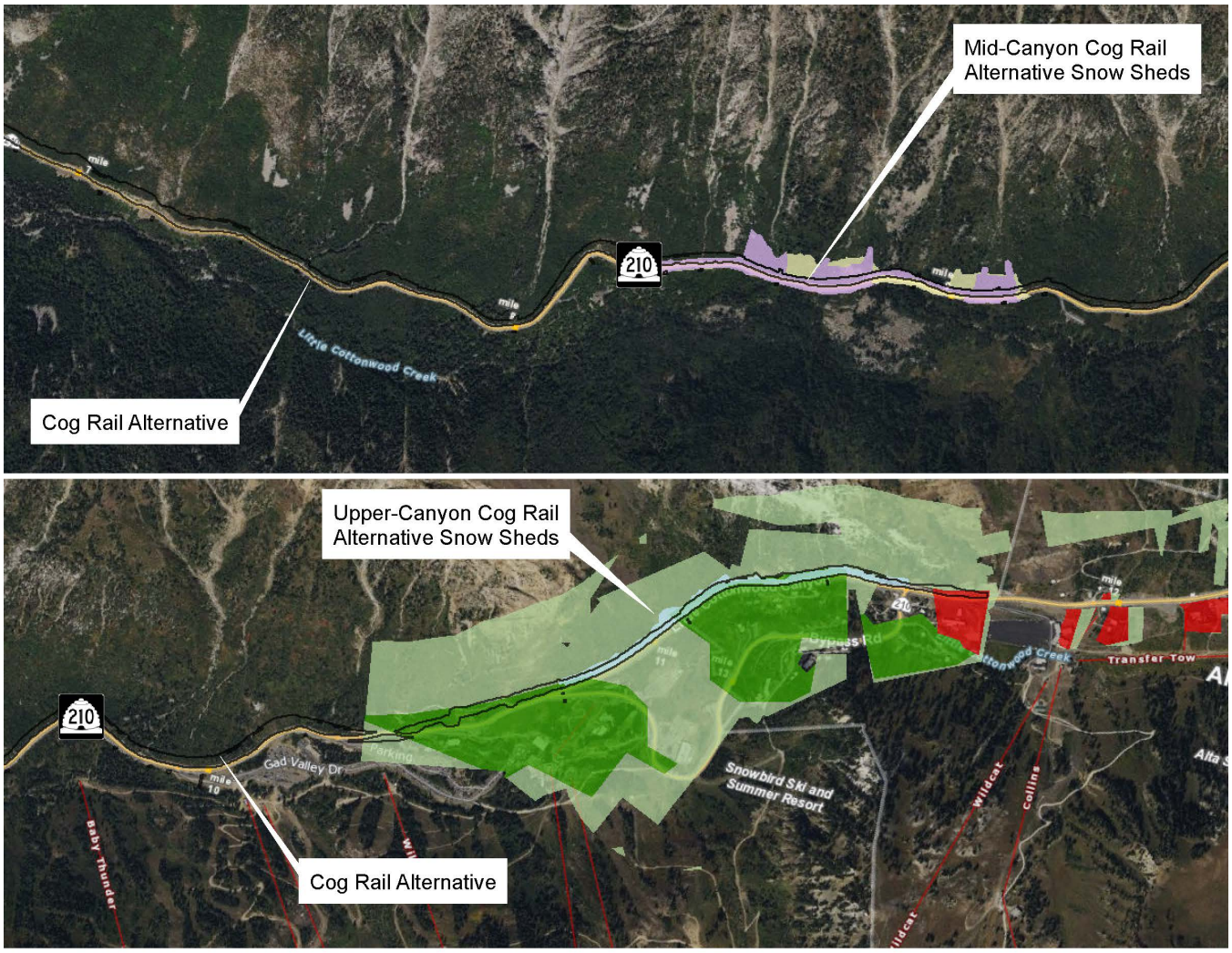


Figure 3.4-13. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Cog Rail Alternative (1 of 2)

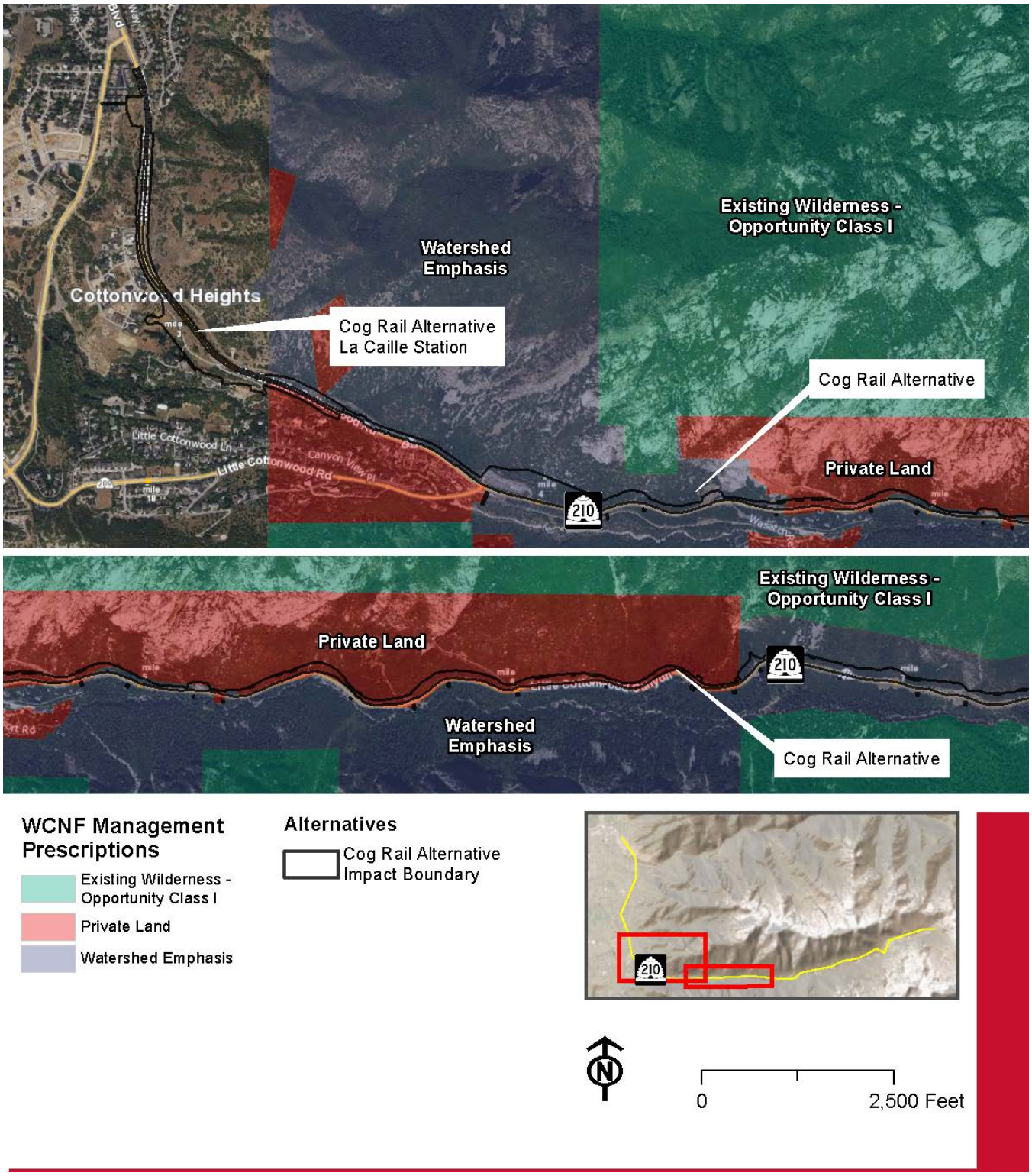
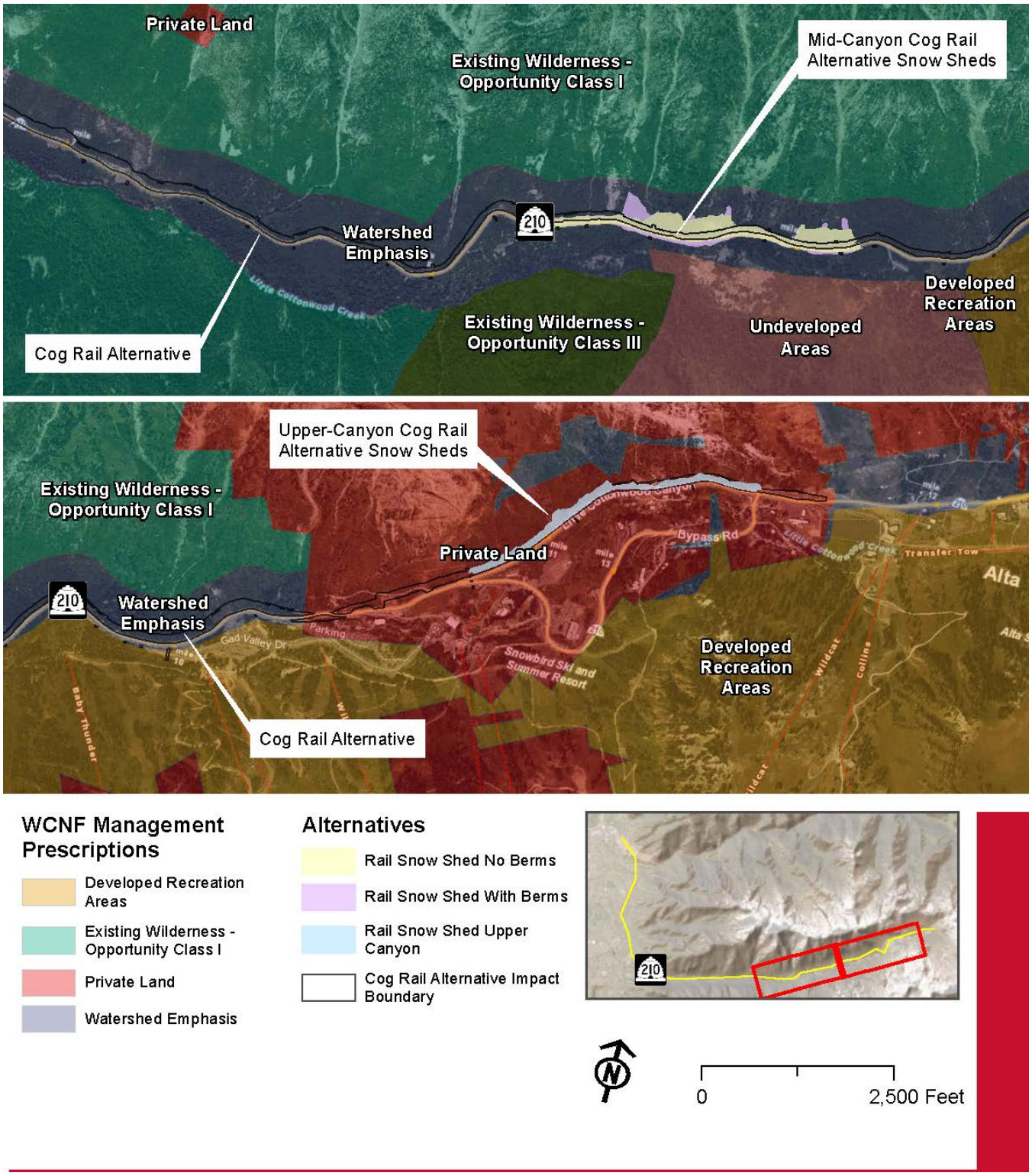


Figure 3.4-14. USDA Forest Service Management Prescriptions in the Impact Analysis Area for the Cog Rail Alternative (2 of 2)



3.4.7.3 Mobility Hubs Alternative

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

3.4.7.4 Avalanche Mitigation Alternatives

3.4.7.4.1 Snow Sheds with Berms Alternative

With the Snow Sheds with Berms Alternative, about 18 acres of NFS lands would be impacted by construction of the mid-canyon snow sheds and berms. These same 18 acres are also under the USDA Forest Service watershed emphasis management prescription (MP 3.1W) (see Figure 3.4-13 and Figure 3.4-14 above). The mid-canyon snow sheds would not be consistent with the watershed emphasis management prescription (MP 3.1W).

To address this inconsistency, FHWA would likely appropriate the 18 acres from the USDA Forest Service for transfer to UDOT (typically in the form of a highway deed easement) under the authority of 23 USC Section 317, or UDOT would obtain an easement or other special-use authorization from the USDA Forest Service to allow construction, operation, and maintenance of the snow sheds and berms. If FHWA appropriates the NFS lands, the *Forest Plan* and its management prescription would no longer apply to those lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If UDOT obtains an easement or other special-use authorization from the USDA Forest Service, the *Forest Plan* and its management prescription would still apply, and the USDA Forest Service would need to amend the *Forest Plan* to address the snow sheds (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

The upper-canyon snow sheds would also overlap about 9 acres of private land which would overlap the forestry and recreation, forestry multi-family, and residential zoning classifications.

Because the snow sheds would be mostly within the existing S.R. 210 roadway, they would be consistent with the current land use. However, the portions of the berms and snow sheds that extend outside the existing roadway would not be consistent with existing land use because these areas would overlap undeveloped NFS lands.

3.4.7.4.2 Snow Sheds with Realigned Road Alternative

With the Snow Sheds with Realigned Road Alternative, about 20 acres of NFS lands would be affected by construction of the mid-canyon snow sheds and realigned road. These same 20 acres are also under the USDA Forest Service watershed emphasis management prescription (MP 3.1W) (see Figure 3.4-13 and Figure 3.4-14 above). The mid-canyon snow sheds would not be consistent with the watershed emphasis management prescription (MP 3.1W).

To address this inconsistency, FHWA would likely appropriate the approximately 20 acres of NFS lands for transfer to UDOT (typically in the form of a highway deed easement) under the authority of 23 USC Section 317, or UDOT could obtain an easement or other special-use authorization from the USDA Forest Service to allow construction, operation, and maintenance of the snow sheds. If FHWA appropriates the NFS lands, the *Forest Plan* and its management prescription would no longer apply to those lands. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan*. If UDOT

obtains an easement or other special-use authorization from the USDA Forest Service, the *Forest Plan* and its management prescription would still apply, and the USDA Forest Service would need to amend the *Forest Plan* to address the snow sheds (see Chapter 28, U.S. Department of Agriculture Forest Service Land Use Plan Amendments).

The upper-canyon snow sheds would also overlap about 9 acres of private land which would overlap the forestry and recreation, forestry multi-family, and residential zoning classifications.

3.4.7.5 Trailhead Parking Alternatives

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

With this trailhead parking alternative and the Cog Rail Alternative, about 0.3 acre of private land and 4 acres of NFS lands would be impacted by the construction of the trailheads. The NFS lands are under the watershed management prescription (MP 3.1W). The private lands are under the foothill recreational zoning classification.

The trailhead improvements would also overlap about 4 acres under the USDA Forest Service watershed emphasis management prescription (MP 3.1W). Improvements to the existing White Pine Trailhead would not be consistent with the current USDA Forest Service management prescription (MP 3.1W) and would require a *Forest Plan* amendment. The new Bridge Trailhead would be constructed along S.R. 210 and also would not be consistent with existing management prescription (MP 3.1W).

FHWA may appropriate these 4 acres of NFS lands for transfer to UDOT (typically in the form of a highway easement deed) from USDA Forest Service under the authority of the 23 USC Section 317 to allow construction, operation, and maintenance of the trailhead parking areas. If these lands are appropriated by FHWA, the USDA Forest Service watershed emphasis management prescription (MP 3.1W) would no longer apply. However, with the appropriation the USDA FS may potentially need to amend the *Forest Plan.* If the lands are not appropriated by FHWA and the USDA Forest Service authorizes the action through issuance of an easement or other special-use authorization to UDOT, the *Forest Plan* and its watershed emphasis management prescription (MP 3.1W) would still apply. Because the trailhead improvements would not be consistent with the management prescriptions, the USDA Forest Service would need to amend the *Forest Plan* if UDOT obtains an easement or other special-use authorization from the USDA Forest Service.

The proposed improvements to trailhead parking areas would be consistent with existing uses because these areas are already used for parking. The areas of proposed disturbance that would fall outside already disturbed parking areas would not be consistent with existing land use because these areas would overlap undeveloped NFS lands. This alternative would reduce the number of parking spaces, so it would be consistent with the *Forest Plan* desired future conditions in terms of not exceeding the number of parking spaces that existed in 2000.

The improvements to trailhead parking areas would be consistent with existing uses, zoning, and applicable land use plans for the same reasons described for the Enhanced Bus Service Alternative (Section 3.4.3.5.1, Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative).

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

With this trailhead parking alterative and the Cog Rail Alternative, the impacts to land use and consistency with plans would be the same as with the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative and the Cog Rail Alternative.

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

Because there would be no trailhead improvements and no roadside parking with this alternative, there would be no impacts to, or conflicts with, existing land ownership, land use, or existing plans.

3.4.7.6 No Winter Parking Alternative

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

3.4.8 Summary of Land Use Impacts

Table 3.4-1 below summarizes the acres of land required by each alternative by USDA Forest Service management prescription. There would be no disturbance under the gondola cable alignment, only at the tower locations and base stations.

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

Project Component	Acres in Watershed Emphasis Management Prescription (MP 3.1W) / % of MP 3.1W in Analysis Area	Acres in Developed Recreation Management Prescription (MP 4.5) / % of MP 4.5 in Analysis Area	Total Acres on NFS Lands	Total Acres on Private Lands	Grand Total (acres)
Imbalanced-lane (Wasatch Boulevard)	0 / 0	0 / 0	0	53	53
Five-lane (Wasatch Boulevard)	0 / 0	0 / 0	0	54	54
Gravel Pit Mobility Hub	0 / 0	0 / 0	0	23	23
9400 South and Highland Drive Mobility Hub	0 / 0	0 / 0	0	10	10
Snow Sheds with Berms	15 / 1.6%	0 / 0	15	0	15
Snow Sheds with Realigned Road	19 / 2.0%	0 / 0	19	0	19
Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads	7 / 0.7%	0 / 0	7	0.5	7.5
Trailhead Improvements and No Roadside Parking from S.R. 209/ S.R. 210 Intersection to Snowbird Entry 1	7 / 0.7%	0 / 0	7	0.5	7.5
No Trailhead Improvements and No Roadside Parking from S.R. 209/ S.R. 210 Intersection to Snowbird Entry 1	0 / 0	0 / 0	0	0	0
No Winter Parking	0 / 0	0 / 0	0	0	0
Enhanced Bus Service Peak-period Shoulder Lane Alternative	50 / 5.2%	2 / 0.7%	52	34	86
Gondola Alternative A (starting at Canyon Entrance)	55 / 5.7%	15 / 5.1%	70	19	89
Gondola Alternative B (starting at La Caille)	58 / 6.0%	15 / 5.1%	73	29	102
Cog Rail Alternative	64 / 6.7%	1 / 0.3%	64	56	120
Snow Sheds with Berms under Cog Rail Alternative	18 / 1.9%	0 / 0	18	9	27
Snow Sheds with Realigned Road under Cog Rail Alternative	20 / 2.1%	0 / 0	20	9	29

3.4.9 Mitigation Measures

No mitigation measures are proposed.

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