

Chapter 9: Considerations Related to Pedestrians and Bicyclists

9.1 Introduction

This chapter describes the existing and planned pedestrian and bicyclist facilities in the pedestrian and bicyclist impact analysis area, and the effects of the project alternatives on pedestrian and bicyclist facilities and movement in the impact analysis area.

Pedestrian and Bicyclist Impact Analysis Area. The pedestrian and bicyclist impact analysis area includes the existing and planned facilities that parallel, cross over, or cross under State Route (S.R.) 210 from Fort Union Boulevard to the town of Alta and includes the facilities near the existing 9400 South and Highland Drive park-and-ride lot (see Figure 9.3-1, *Existing Pedestrian and Bicyclist Facilities in the Pedestrian and Bicyclist Impact Analysis Area*, on page 9-5).

What is the pedestrian and bicyclist impact analysis area?

The pedestrian and bicyclist impact analysis area includes the existing and planned facilities that parallel, cross over, or cross under S.R. 210 from Fort Union Boulevard to the town of Alta and includes the facilities near the existing 9400 South and Highland Drive park-and-ride lot.

9.2 Regulatory Setting

When the Utah Department of Transportation (UDOT) develops a project, it considers the economic, social, and environmental effects of the project, including disruption or destruction of human-made facilities and services. Under 23 United States Code (USC) Section 109(m), if a proposed project would sever an existing major route for nonmotorized traffic, the project must provide a reasonable alternate route for the nonmotorized traffic, or UDOT must show that a reasonable route exists (FHWA 2015). In addition, UDOT encourages bicycle use on and connecting with its facilities that are suitable for bicycle use. Bicycle facilities or improvements for bicycle transportation are included in UDOT's project development and highway programming processes.

For a detailed discussion of trails that are regulated under Section 4(f) of the Department of Transportation Act, see Chapter 26, *Section 4(f) and Section 6(f) Evaluation*. For information about other recreation resources, see Chapter 4, *Community and Property Impacts*.

9.3 Affected Environment

This section describes the existing pedestrian and bicyclist facilities that parallel, cross over, or cross under S.R. 210, 9400 South (S.R. 209), or Highland Drive, and proposed facilities for the jurisdictions of Cottonwood Heights, Sandy, Alta, and Salt Lake County. For this Environmental Impact Statement (EIS), the existing pedestrian and bicyclist facilities are considered major routes under 23 USC Section 109(m).

9.3.1 Existing Facilities

S.R. 210 from Fort Union Boulevard to the entrance to Little Cottonwood Canyon is a heavily traveled road that is popular with cyclists. There are existing bicycle lanes in each travel direction along S.R. 210 in this segment. The standard shoulder width for bicycle lanes should be 8 feet along Wasatch Boulevard. The current shoulder width on S.R. 210 varies from 4 feet to 10 feet, with 4 feet being the typical width. Along this segment of S.R. 210, pedestrian facilities are incomplete, with many segments having no sidewalks, though there are crosswalks at each signalized intersection.

In contrast with S.R. 210 from Fort Union Boulevard to the entrance to Little Cottonwood Canyon, S.R. 210 in Little Cottonwood Canyon experiences half the amount of vehicles per day and is very popular with cyclists, runners, and recreationists visiting the canyon. Cycling the canyon is listed on several cycling websites as a challenging but scenic ride. In the past the Tour of Utah, an annual professional cycling race, had a stage during this multiday event that uses Little Cottonwood Canyon Road. This event attracted hundreds of riders and thousands of spectators.

S.R. 210 in Little Cottonwood Canyon lacks dedicated bicyclist and pedestrian facilities, and it has steep grades and narrow shoulders that are a safety concern for cyclists and pedestrians. Roadway conditions contribute to a number of bicycle safety issues in some parts of the canyon. Since the roadway has no dedicated paths or sidewalks, cyclists must share the roadway and the limited shoulders with vehicles moving through the canyon. This can lead to conflicts on the narrow canyon road. Where shoulders are available, they are often in poor condition and littered with road debris, which can be dangerous for cyclists. In other places, shoulders are narrow or are obstructed by vehicles parked on the roadside. In some cases, cyclists must move into the travel lane to avoid vehicle doors or parked vehicles (Mountain Accord 2017).

Several bicycle and pedestrian routes connect to S.R. 210 and support residents and tourists who are staying or live nearby. These connecting routes are Fort Union Boulevard, Big Cottonwood Canyon Road, Bengal Boulevard, Creek Road, Wasatch Boulevard, 3500 East, Danish Road, Top of the World Drive, Kings Hill Drive, Golden Hills Avenue, and 9400 South/Little Cottonwood Road. See Table 9.3-1 and Figure 9.3-1 for existing bicyclist and pedestrian facilities.

There are a multitude of trails in the cities of Cottonwood Heights and Sandy. Depending on the trail, its surface material, and its grades, a person can walk, run, or mountain bike. See Chapter 4, *Community and Property Impacts*, for a description of the trails in the community impact analysis area.

What are bicycle lanes, buffered bicycle lanes, bicycle routes, and multipurpose trails?

A bicycle lane is a portion of the roadway designated exclusively for cyclists.

A buffered bicycle lane is similar to a bicycle lane but is designated with a buffered space separating the bicycle lane from vehicle traffic.

A bicycle route is a designated route along a roadway for cyclists.

A multipurpose trail is a two-way, off-street trail for pedestrian and bicyclist use.

Table 9.3-1. Existing On-street Bicyclist and Pedestrian Facilities

Map Label ^a	Route	Type of Bicycle Facility	Type of Pedestrian Facility	Comfort Rating ^b	Description
A	Big Cottonwood Canyon Road	Signed bicycle route	Narrow paved shoulders	Low	Big Cottonwood Canyon Road, though it lacks dedicated on-street bicycle and pedestrian facilities, is a popular route with cyclists and runners.
B	Wasatch Boulevard from Big Cottonwood Canyon to North Little Cottonwood Road	Bicycle lanes on both sides of the road	Incomplete sidewalk network	Low	This segment of Wasatch Boulevard is an important road connecting both Cottonwood Canyons for cyclists and pedestrians.
C	Wasatch Boulevard from North Little Cottonwood Road to S.R. 209/Little Cottonwood Canyon Road	Not applicable	Paved shoulders on both sides of the road; incomplete sidewalk network	Low	This segment of Wasatch Boulevard connects pedestrian and cyclists with Little Cottonwood Canyon and Wasatch Boulevard. A large residential development, Big Rock Estates, is being constructed on this segment of Wasatch Boulevard.
D	S.R. 210/Little Cottonwood Canyon Road	Signed bicycle route	Narrow paved shoulders	Low	Little Cottonwood Canyon Road, though it lacks dedicated on-street bicycle and pedestrian facilities, is a popular route with cyclists and runners.
E	Fort Union Boulevard	Bicycle lanes on both sides of the road	Incomplete sidewalk network on north side of road	Medium	Fort Union Boulevard is used by cyclists to access Wasatch Boulevard and Big Cottonwood Canyon.
F	Bengal Boulevard	Bicycle lanes on both sides of the road	Sidewalks on both sides of the road	Medium	Bengal Boulevard connects pedestrians and cyclists from Cottonwood Heights with Wasatch Boulevard.
G	Top of the World Drive	Signed bicycle route	Sidewalks on both sides of the road	Not rated	Top of the World Drive connects residents with Wasatch Boulevard and both Cottonwood Canyons.
H	Kings Hill Drive and Golden Hills Avenue	Signed bicycle route	Sidewalks on both sides of the road	Not rated	Kings Hill Drive and Golden Hills Avenue connect residents with Wasatch Boulevard and both Cottonwood Canyons.
I	Creek Road	Bicycle lanes on both sides of the road	Sidewalks on both sides of the road	Medium	Creek Road connects pedestrians and cyclists from Cottonwood Heights with Wasatch Boulevard.
J	3500 East	Signed bicycle route	Sidewalk on west side of the road	High	3500 East connects pedestrians and cyclists from Cottonwood Heights with Wasatch Boulevard.
K	Danish Road	Signed bicycle route; wide paved shoulders	Sidewalks on both sides of the road	Medium	Danish Road connects pedestrians and cyclists from Cottonwood Heights with Wasatch Boulevard.

(continued on next page)

Table 9.3-1. Existing On-street Bicyclist and Pedestrian Facilities

Map Label ^a	Route	Type of Bicycle Facility	Type of Pedestrian Facility	Comfort Rating ^b	Description
L	9400 South	Signed bicycle route	Narrow paved shoulders	Low	9400 South connects pedestrians and cyclists from Sandy to Little Cottonwood Canyon.
M	Highland Drive north of 9400 South	Bicycle lanes on both sides of the road	Sidewalks on both sides of the road	Medium	Highland Drive connects pedestrian and cyclists in Sandy with 9400 South.
N	Highland Drive south of 9400 South	Not applicable	Sidewalk and pathway on both sides of the road	Medium to low	Highland Drive connects pedestrian and cyclists in Sandy with 9400 South.

Sources: Bicycle and pedestrian route and facility information was obtained from Salt Lake County (2019), Sandy City (2019), UDOT (2015), and WFRC (2019). Comfort ratings were obtained from the Salt Lake City Transportation Department (2019).

^a These facilities are shown in Figure 9.3-1 below.

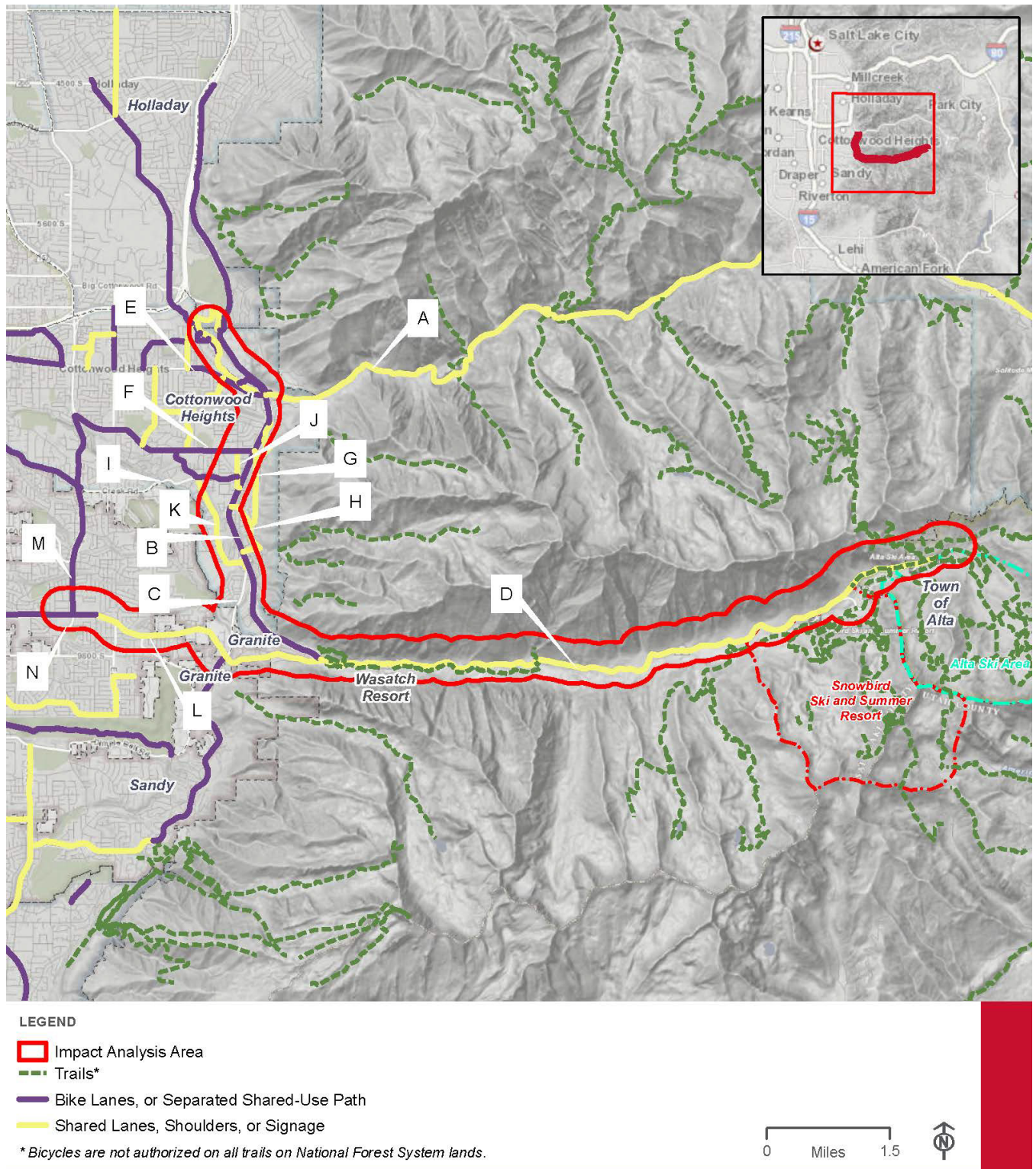
^b **High comfort:** Off-road trails, on-road lanes with physical separation from traffic, and streets with low motor vehicle speeds and/or volumes.

Medium comfort: Painted bicycle lanes on moderate-volume roads, bicycle lanes with painted buffers on higher-volume roads, and shared lanes with slower travel speeds.

Low comfort: Bicycle lanes or shoulders on busy streets, and important connections without bicycle facilities on roads with moderate traffic volumes.

Extremely low comfort: Routes that are not recommended for bicycle travel but have no practical alternative for some trips.

Figure 9.3-1. Existing Pedestrian and Bicyclist Facilities in the Pedestrian and Bicyclist Impact Analysis Area



9.3.2 Future Facilities

Several proposed pedestrian and bicyclist improvement projects would connect to S.R. 210 (WFRC 2019). These proposed improvements are listed in Table 9.3-2 and shown in Figure 9.3-2.

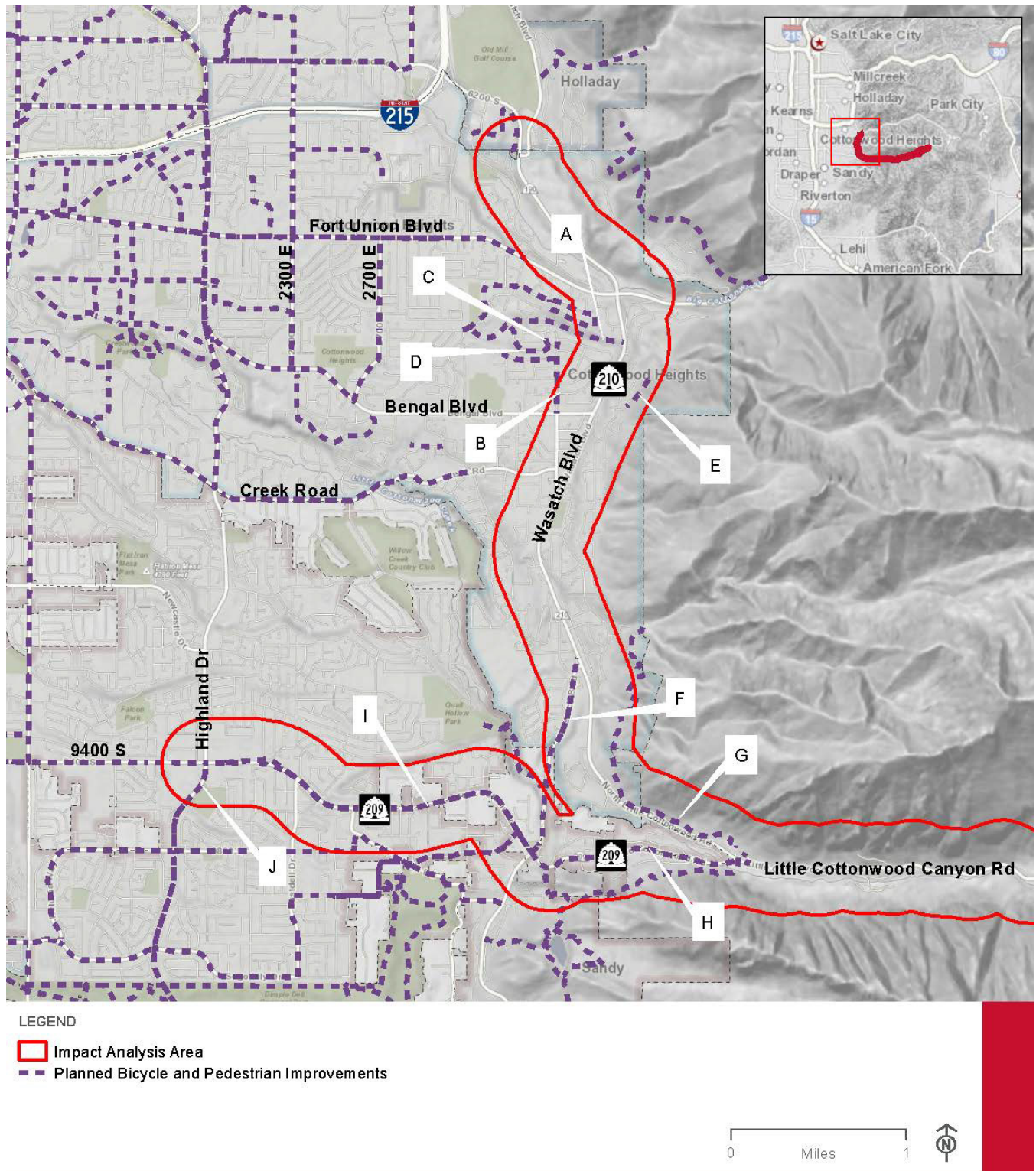
Table 9.3-2. Proposed Pedestrian and Bicyclist Improvement Projects

Map Label ^a	Route	Project	Description
A	7400 South Trail	Shared-use path	A shared-use path is proposed for the Ferguson Canyon drainage connecting Wasatch Boulevard and 7400 South.
B	3500 East	Shared lane markings	This project would connect Bengal Boulevard and Enchanted Hills Drive with shared lane markings.
C	Magic Hills Drive	Shared lane markings	This project would connect Enchanted Hills Drive and the proposed 7400 South shared-use trail with shared lane markings.
D	Enchanted Hills Drive	Shared lane markings	This project would connect 3500 East and a proposed shared-use trail with shared lane markings.
E	Timberline Drive	Shared lane markings	This project would connect Timberline Drive to Top of the World Drive with shared lane markings.
F	Wasatch Boulevard	Bicycle lanes	This project would connect S.R. 210 and S.R. 209 with bicycle lanes.
G	North Little Cottonwood Road	Bicycle lanes	This project would connect North Little Cottonwood Road and Wasatch Boulevard with bicycle lanes.
H	Little Cottonwood Canyon Road	Buffered bicycle lane	This project would connect 9375 South to Little Cottonwood Canyon Road.
I	Little Cottonwood Canyon Road	Multipurpose trail	This project would connect the existing multipurpose trail along 9400 South near Highland Drive with Little Cottonwood Canyon Road.
J	Highland Drive south of 9400 South	Bicycle lanes	A bicycle lane is proposed for the full length of Highland Drive from Cottonwood Heights to Draper. The bicycle lanes on Highland Drive north of 9400 South are complete.

Source: WFRC 2019

^a These facilities are shown in Figure 9.3-2 below.

Figure 9.3-2. Proposed Pedestrian and Bicyclist Improvements in the Pedestrian and Bicyclist Impact Analysis Area



9.4 Environmental Consequences and Mitigation Measures

9.4.1 Methodology

To assess the expected impacts to pedestrian and bicyclist facilities from the action alternatives, UDOT used data in geographic information systems (GIS) format to identify the pedestrian and bicyclist facilities intersected by the action alternatives' cut-and-fill boundaries.

9.4.2 No-Action Alternative

This section describes the impacts to pedestrian and bicyclist facilities from 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.

9.4.2.1 S.R. 210 – Wasatch Boulevard

With the No-Action Alternative, no improvements to Wasatch Boulevard would be made. In 2050, Wasatch Boulevard is projected to operate at a failing level of service (LOS F) from Fort Union Boulevard to Kings Hill Drive and at major intersections [see Table 7.4-1, *Wasatch Boulevard – Level of Service by Segment for the Existing Conditions (2018) and the No-Action Alternative (2050)*, and Table 7.4-2, *Wasatch Boulevard – Level of Service by Intersection for the Existing Conditions (2018) and the No-Action Alternative (2050)*, in Chapter 7, *Traffic and Transportation*].

In addition, no bicycle lanes would be added and no pedestrian facility improvements would be made. Increased traffic congestion would increase safety-related issues for motorists, cyclists, and pedestrians, and this congestion would reduce overall mobility on S.R. 210 with this alternative.

What is level of service?

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

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

With the No-Action Alternative, there would be no improvements to S.R. 210 and no increase in bus service. Traffic backups and travel times are projected to increase with the No-Action Alternative, and therefore mobility and safety would decrease at the entrance of the canyon for pedestrians and cyclists as they navigate congested neighborhood streets and intersections. An increase in the number of vehicles in the canyon would increase safety-related issues for motorists, cyclists, and pedestrians, which would reduce overall mobility on S.R. 210 with this alternative.

9.4.2.3 Mobility Hubs

9.4.2.3.1 Gravel Pit

With the No-Action Alternative, a mobility hub would not be built at the gravel pit. Cottonwood Heights City would go forward with plans to allow developing the gravel pit. Current plans include a mix of commercial and residential uses. It is unknown at this time whether developing the gravel pit would increase congestion on Wasatch Boulevard and how it would affect mobility for cyclists and pedestrians along Wasatch Boulevard.

What is a mobility hub?

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

9.4.2.3.2 9400 South and Highland Drive

With the No-Action Alternative, there would be no change to the operation of the park-and-ride lot at 9400 South and Highland Drive as a bus park-and-ride lot. Therefore, the bicyclist and pedestrian facilities would be similar to existing conditions.

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.

9.4.2.4 Avalanche Mitigation Alternatives

With the No-Action Alternative, canyon closures and avalanche-mitigation work are projected to increase due to the greater risk with higher traffic volumes accessing the canyon in the future. Canyon closures in the winter increase traffic backups and travel times, and therefore mobility and safety decrease on the main roads (S.R. 210 and S.R. 209) leading to Little Cottonwood Canyon, which also leads to congestion in the surrounding neighborhoods. The increase in congestion on these roads decreases safety for pedestrians and cyclists as they navigate congested neighborhood streets and intersections.

9.4.2.5 Trailhead Parking Alternatives

With the No-Action Alternative, there would be no change to trailhead parking and no elimination of roadside parking near trailheads. When roadside parking is allowed, some shoulder areas are blocked, and cyclists and pedestrians are forced into the roadway travel lane, which creates a safety concern. Roadside parking also increases damage to the pavement edge, further reducing the travel area for cyclists.

9.4.2.6 No Winter Parking Alternative

With the No-Action Alternative, there would be no change to roadside winter parking.

9.4.3 Enhanced Bus Service Alternative

This section describes the impacts to pedestrian and bicyclist facilities from 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.

9.4.3.1 S.R. 210 – Wasatch Boulevard

This section describes the impacts to pedestrian and bicyclist facilities from the Imbalanced-lane Alternative and the Five-lane Alternative, which would both widen the Wasatch Boulevard segment of S.R. 210.

9.4.3.1.1 *Imbalanced-lane Alternative*

With the Imbalanced-lane Alternative, an additional travel lane would be added to Wasatch Boulevard, and the level of service and associated congestion levels would improve, thereby increasing comfort for pedestrians and cyclists as they travel along Wasatch Boulevard compared to No-Action conditions. UDOT is not proposing to increase the speed limit of vehicles on Wasatch Boulevard. The Imbalanced-lane Alternative incorporates many safety updates that benefit cyclists and pedestrians, including improved sight distances, increased shoulder widths, and a 10-foot-wide continuous multi-use path on the east side of the road. The 10-foot-wide path would provide an interconnected trail system with other existing trails to facilitate pedestrian access along the 2.2-mile segment of Wasatch Boulevard between Fort Union Boulevard and North Little Cottonwood Road.

The existing bicycle lane on each side of Wasatch Boulevard would be improved from its current state. The existing bicycle lane has a variable width and is not uniformly striped along Wasatch Boulevard. With the Imbalanced-lane Alternative, a consistent 6-foot-wide striped bicycle lane would be constructed within the 10-foot roadway shoulder.

9.4.3.1.2 *Five-lane Alternative*

The transportation benefits from the Five-lane Alternative would be the same as those from the Imbalanced-lane Alternative because all key cyclist and pedestrian design updates would be the same.

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

With the Enhanced Bus Service Alternative, there would be no improvements to S.R. 210, but bus service would be substantially increased and personal vehicle use on S.R. 210 in Little Cottonwood Canyon would be reduced by implementation of a toll (cyclists would not pay a toll). A reduced number of vehicles in the canyon would increase the comfort and safety of pedestrians and cyclists. In addition, increased transit use would decrease traffic backups and congestion at the entrance of the canyon, thereby increasing mobility and safety on neighborhood streets and intersections.

9.4.3.3 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.

9.4.3.3.1 Gravel Pit

With this mobility hub alternative, a 1,500-space parking garage would be built at the gravel pit, and Cottonwood Heights City would go forward with plans to develop the gravel pit with commercial and residential uses. The gravel pit mobility hub would include a diamond interchange designed to handle the volume of traffic and thereby minimize congestion impacts on Wasatch Boulevard. Bicycle and pedestrian travel would be accommodated on Wasatch Boulevard through the mobility hub diamond interchange, and there would be no substantial change from existing conditions.

9.4.3.3.2 9400 South and Highland Drive

With this mobility hub alternative, a 1,000-space parking garage would be built at the existing Utah Transit Authority (UTA) park-and-ride lot at 9400 South and Highland Drive. Given the current site configuration, no additional access or access improvements would be required. During peak ski days, more vehicle traffic would access the park-and-ride lot; however, during the winter, fewer pedestrians and cyclists would use the surrounding facilities. Outside the winter ski season, bicycle and pedestrian travel would not change substantially from existing conditions.

9.4.3.4 Avalanche Mitigation Alternatives

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

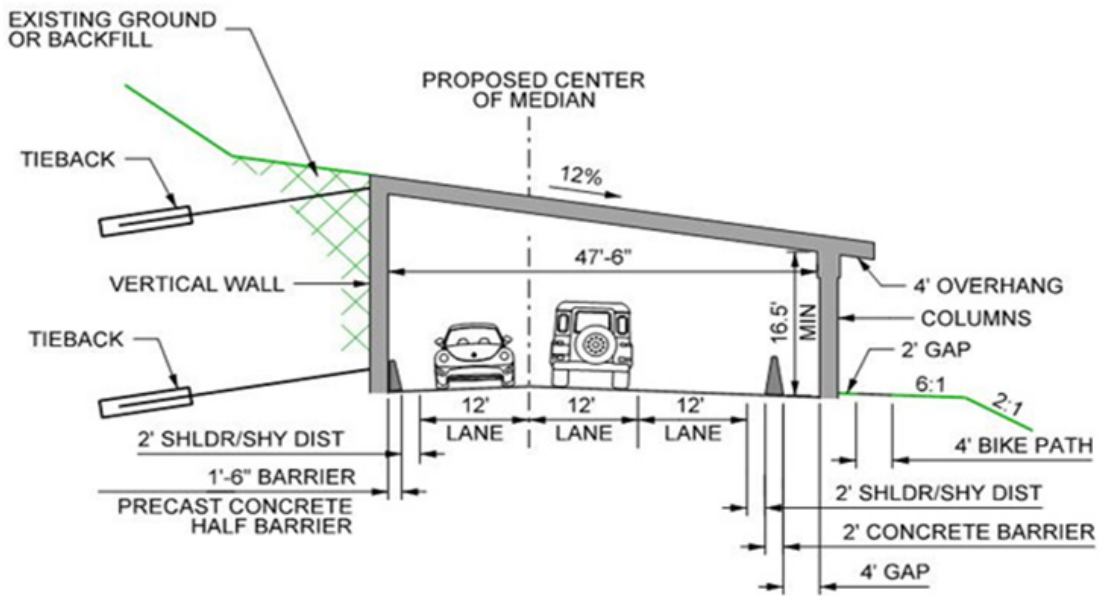
9.4.3.4.1 Snow Sheds with Berms Alternative

With the Snow Sheds with Berms Alternative, the snow sheds would reduce the number of days and hours of S.R. 210 closures from avalanches. A reduction in closures for avalanche-mitigation work would decrease traffic backups and congestion at the entrance of the canyon, increasing mobility and safety on neighborhood streets and intersections. Outside the winter ski season, uphill bicycle travel would be accommodated by a 4-foot-wide bicycle path on the outside of the sheds (Figure 9.4-1) (cyclists would also be allowed to travel in the snow sheds). During the winter, if cyclists are riding uphill on S.R. 210, they would need to ride inside the snow shed between the roadside barrier and the snow shed wall. Downhill cyclists would continue in the downhill, westbound shoulder during the entire year and would ride inside the snow shed. The snow sheds would have interior lighting for safety; this lighting would keep cyclists and vehicles visible as they travel through the snow shed.

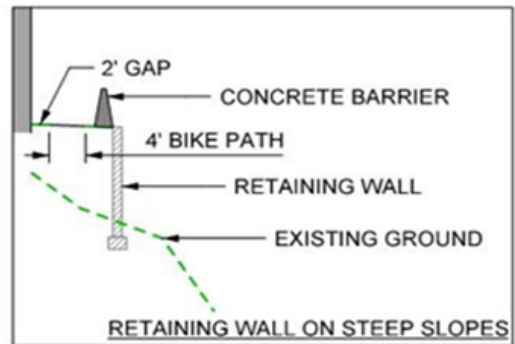
9.4.3.4.2 Snow Sheds with Realigned Road Alternative

The impacts to bicyclist and pedestrian facilities from the Snow Sheds with Realigned Road Alternative would be the same as from the Snow Sheds with Berms Alternative.

Figure 9.4-1. Snow Shed Design with Bicycle Path



NOTE:
 A 4' MINIMUM GAP ALLOWS FOR EGRESS AND MAINTENANCE ACCESS IN THE TUNNEL AND FROM UDOT STANDARD BA-1E, ELIMINATES THE NEED FOR THE COLUMNS TO BE DESIGNED FOR CRASH IMPACTS.



9.4.3.5 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

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

This alternative would reduce travel friction between roadside parked cars and cyclists and pedestrians adjacent to trailheads. Eliminating roadside parking within ¼ mile of the trailheads would reduce conflicts between vehicles and cyclists (both roadside parked vehicles and vehicles in the travel lane), thereby improving the overall safety of the transportation system. In addition, pedestrians would no longer need to park along the road and walk to the trailheads along the road, which is a safety conflict. Instead, pedestrians would park in the improved trailheads off S.R. 210.

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

The transportation impacts from this alternative would be similar to those from the Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ Mile of Trailheads Alternative. However, because this alternative would remove all roadside parking in Little Cottonwood Canyon, the travel friction between roadside parked cars and cyclists and pedestrians in the travel lane would be eliminated, which would further improve mobility.

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

The transportation impacts from this alternative would be the same from the Trailhead Improvements and No Roadside Parking from S.R. 209/S.R. 210 Intersection to Snowbird Entry 1 Alternative in terms of the elimination of roadside parking. However, there would be no improvements to the substandard access points at the Lisa Falls and White Pine Trailheads. Both of the access points to these trailheads have limited sight distances, which makes entering and exiting the trailheads difficult and reduces safety for cyclists and pedestrians at these two locations.

9.4.3.6 No Winter Parking Alternative

The elimination of roadside parking along S.R. 210 in certain locations could benefit both cyclists and pedestrians who use S.R. 210 in the winter by reducing the number of roadside parked vehicles that could force cyclists and pedestrians into the travel lanes.

9.4.4 Enhanced Bus Service in Peak-period Shoulder Lane Alternative

This section describes the impacts to pedestrian and bicyclist facilities from 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.

9.4.4.1 S.R. 210 – Wasatch Boulevard

The cyclist and pedestrian safety and mobility benefits from the Imbalanced-lane Alternative and the Five-lane Alternative with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

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

With the Enhanced Bus Service Alternative in Peak-period Shoulder Lane Alternative, dedicated bus shoulder lanes would be added on S.R. 210 from North Little Cottonwood Road to the Alta Bypass Road. As with the Enhanced Bus Service Alternative, a toll would be implemented on S.R. 210 in Little Cottonwood Canyon with the goal of reducing personal vehicle use by about 30%.

The cyclist and pedestrian benefits from the Enhanced Bus Service Alternative in Peak-period Shoulder Lane Alternative would be similar to the impacts from the Enhanced Bus Service Alternative. However, the dedicated bus shoulder lane would be available for use by cyclists and pedestrians, thereby increasing mobility and safety in the canyon. From mid-April to late November and during non-peak travel periods in the winter, the shoulder lane would be available to pedestrians and cyclists. The shoulder lane would be wide enough to accommodate both modes of travel and allow room for cyclists to make emergency repairs on bicycles if needed. No vehicle parking would be allowed in the shoulder lane. The Enhanced Bus Service in Peak-period Shoulder Lane Alternative would substantially improve safety for cyclists and pedestrians over the current conditions.

9.4.4.3 Mobility Hubs Alternative

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

9.4.4.4 Avalanche Mitigation Alternatives

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

9.4.4.5 Trailhead Parking Alternatives

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

9.4.4.6 No Winter Parking Alternative

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

9.4.5 Gondola Alternative A (Starting at Canyon Entrance)

This section describes the impacts to pedestrian and bicyclist facilities from 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.

9.4.5.1 S.R. 210 – Wasatch Boulevard

The cyclist and pedestrian safety and mobility benefits from the Imbalanced-lane Alternative and the Five-lane Alternative with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

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

With Gondola Alternative A, there would be no improvements to S.R. 210 in Little Cottonwood Canyon, but the gondola system would be used along with a toll on personal vehicle use on S.R. 210 in Little Cottonwood Canyon to substantially reduce personal vehicle use. Similar to the Enhanced Bus Service Alternative, the goal of the toll would be to reduce personal vehicle use during the winter by about 30%. The cyclist and pedestrian benefits from Gondola Alternative A would be the same as those from the Enhanced Bus Service Alternative.

The gondola might operate in the summer; therefore, some vehicle traffic on S.R. 210 could be reduced as recreationists decide to take the gondola to the ski resorts instead of their personal vehicles. Although the reduction is likely to be small, cyclists could benefit from a reduction in vehicle/cyclist conflicts on the road.

9.4.5.3 Mobility Hubs Alternative

The cyclist and pedestrian impacts and benefits from the mobility hubs with Gondola Alternative A would be the same as those with the Enhanced Bus Service Alternative.

9.4.5.4 Avalanche Mitigation Alternatives

The cyclist and pedestrian benefits from the avalanche mitigation alternatives with Gondola Alternative A would be the same as those with the Enhanced Bus Service Alternative.

What are gondola base, angle, and terminal stations?

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

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

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

9.4.5.5 Trailhead Parking Alternatives

The cyclist and pedestrian benefits from the trailhead parking alternatives with Gondola Alternative A would be the same as those with the Enhanced Bus Service Alternative.

9.4.5.6 No Winter Parking Alternative

The cyclist and pedestrian benefits from the No Winter Parking Alternative with Gondola Alternative A would be the same as those with the Enhanced Bus Service Alternative.

9.4.6 Gondola Alternative B (Starting at La Caille)

This section describes the impacts to pedestrian and bicyclist facilities from 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, improvements to the segment of S.R. 210 on North Little Cottonwood Road, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

9.4.6.1 S.R. 210 – Wasatch Boulevard

The cyclist and pedestrian impacts from the Imbalanced-lane Alternative and the Five-lane Alternative with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

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

The cyclist and pedestrian impacts and benefits from Gondola Alternative B would be the same as with Gondola Alternative A except for changes made to North Little Cottonwood Road and Wasatch Boulevard for the gondola base station access at La Caille.

North Little Cottonwood Road is a popular cyclist route; it has a paved shoulder and is planned to have striped bicycle lanes. Gondola Alternative B would include multiple access points to North Little Cottonwood Road, which would introduce safety conflicts between vehicles entering or leaving the base station and cyclists using the road. Some of the access points from the base station to North Little Cottonwood Road could have limited sight distances for vehicles to see cyclists. To minimize conflicts, bicycle lanes would be appropriately striped, and signs would be posted for drivers to look for cyclists before crossing a bicycle path and entering North Little Cottonwood Road.

Wasatch Boulevard from North Little Cottonwood Road to S.R. 209 is a popular cyclist route; it has paved shoulders and is planned to have striped bicycle lanes. Gondola Alternative B would include one new access point north of the La Caille restaurant entrance on the east side of Wasatch Boulevard which would introduce a new safety conflict between vehicles entering the base station and cyclists using the road. To minimize conflicts, bicycle lanes would be appropriately striped at the new access point. The sight distance at the new access point would be good, allowing drivers heading north on Wasatch Boulevard to clearly see cyclists riding on the shoulder.

9.4.6.3 Mobility Hubs Alternative

Because the Gondola Alternative B base station at La Caille would include a 2,500-space parking structure, there would be no need for mobility hubs at the gravel pit or at the existing 9400 South and Highland Drive park-and-ride lot. The changes to pedestrian and cyclist routes at the gravel pit and the existing 9400 South and Highland Drive park-and-ride-lot with Gondola Alternative B would be the same as with the No-Action Alternative.

The analysis of the 2,500-space parking structure at the Gondola Alternative B base station is included in Section 9.4.6.2, *S.R. 210 – North Little Cottonwood Road to Alta*.

9.4.6.4 Avalanche Mitigation Alternatives

The cyclist and pedestrian benefits from the avalanche mitigation alternatives with Gondola Alternative B would be the same as those with the Enhanced Bus Service Alternative.

9.4.6.5 Trailhead Parking Alternatives

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

9.4.6.6 No Winter Parking Alternative

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

9.4.7 Cog Rail Alternative (Starting at La Caille)

This section describes the cyclist and pedestrian impacts from 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, avalanche mitigation alternatives, trailhead parking alternatives, and the No Winter Parking Alternative.

9.4.7.1 S.R. 210 – Wasatch Boulevard

The cyclist and pedestrian impacts from the Imbalanced-lane Alternative and the Five-lane Alternative with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative.

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

The cyclist and pedestrian impacts from the Cog Rail Alternative at the cog rail base station at La Caille would be the same as from the gondola base station for Gondola Alternative B.

With the Cog Rail Alternative, no improvements would be made to S.R. 210 except for adding an 8-foot-wide roadway shoulder between the downhill travel lane (westbound) and the cog rail alignment. The shoulder

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.

would benefit mobility and safety for both cyclists and pedestrians in the canyon on S.R. 210. However, no improvements would be made to the uphill lanes of S.R. 210, and conditions would be similar to existing conditions with no benefit to cyclist and pedestrian mobility and safety.

The cog rail service would reduce personal vehicle use on S.R. 210 in Little Cottonwood Canyon. A reduced number of vehicles in the canyon would increase the comfort and safety of pedestrians and cyclists. In addition, the cog rail system would decrease traffic backups and congestion at the entrance of the canyon, thereby increasing mobility and safety on neighborhood streets and at intersections.

9.4.7.3 Mobility Hubs Alternative

The cyclist and pedestrian impacts from the mobility hubs at the gravel pit and at 9400 South and Highland Drive would be the same as with Gondola Alternative B. The analysis of the 2,500-space parking structure at the cog rail base station at La Caille is included in Section 9.4.7.2, *S.R. 210 – North Little Cottonwood Road to Alta*.

9.4.7.4 Avalanche Mitigation Alternatives

The cyclist and pedestrian impacts from the mid-canyon snow sheds with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative. However, with the Cog Rail Alternative, two additional snow sheds would be constructed in the upper canyon between the west- and east-end connections of the Alta Bypass Road to S.R. 210 to minimize avalanche risk to the cog rail system. The upper-canyon snow sheds would cover the cog rail alignment only, not the roadway, so pedestrian and cyclist mobility and safety would not change in this segment of S.R. 210 except that an 8-foot-wide shoulder for snow storage would be added adjacent to the snow shed. The shoulder would improve downhill cyclists' safety in this segment of S.R. 210 outside the winter season.

9.4.7.5 Trailhead Parking Alternatives

The cyclist and pedestrian impacts from the trailhead parking alternatives with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative.

9.4.7.6 No Winter Parking Alternative

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

9.4.8 Mitigation Measures

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

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

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

9.5 References

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