

Chapter 16: Hazardous Materials and Waste Sites

16.1 Introduction

This chapter describes sites near the project alternatives that could contain hazardous materials and hazardous waste sites and analyzes the expected effects of the project alternatives on these sites. This chapter also analyzes the health and safety effects of constructing the action alternatives on construction workers or on people who live near the known sites that could contain hazardous materials.

Hazardous Materials Impact Analysis Area. The hazardous materials impact analysis area includes the area within 0.5 mile on each side of State Route (S.R.) 210 from Fort Union Boulevard through the town of Alta including the Alta Bypass Road (see Figure 16.3-1, *Hazardous Material Facilities in the Hazardous Materials Impact Analysis Area*, on page 16-3). The impact analysis area also includes the areas proposed for the gravel pit and 9400 South and Highland Drive mobility hubs.

What is the hazardous materials impact analysis area?

The hazardous materials impact analysis area includes the area within 0.5 mile on each side of S.R. 210 from Fort Union Boulevard through the town of Alta including the Alta Bypass Road. The impact analysis area also includes the areas proposed for the gravel pit and 9400 South and Highland Drive mobility hubs.

16.2 Regulatory Setting

Hazardous materials are regulated by the Resource Conservation and Recovery Act; by the Comprehensive Environmental Response, Compensation, and Liability Act; and by Utah Administrative Code Title 19, *Environmental Quality Code*. The following concerns are raised when a transportation project could affect sites with hazardous materials:

- The spread of existing soil or groundwater contamination through construction activities
- The potential for increased construction costs
- The potential for construction delays
- The health and safety of construction workers and people who live near the sites with hazardous materials
- The short-term and long-term liability associated with acquiring environmentally distressed properties

Section 16.3.2, *Facilities with Hazardous Materials in the Impact Analysis Area*, provides a preliminary identification of known parcels that contain hazardous materials. During the final design of the selected alternative and before any property is acquired, the Utah Department of Transportation (UDOT) would assess sites of concern to determine whether contamination is present and to establish the exact nature and limits of the potential hazard.

16.3 Affected Environment

16.3.1 Resource Identification Methods

To determine the presence of sites that could contain hazardous materials in the hazardous materials impact analysis area, UDOT reviewed the following private and public databases:

- Utah Division of Environmental Response and Remediation’s (DERR) Interactive Map (DERR 2020a)
- DERR’s Underground Storage Tank and Leaking Underground Storage Tank lists (DERR 2020b)
- U.S. Environmental Protection Agency’s (EPA) EnviroMapper database (EPA 2020)
- U.S. Geological Survey’s Mineral Resources Data System (USGS 2021)
- Utah Division of Oil, Gas and Mining’s Abandoned Mine Reclamation Program (Utah Division of Oil, Gas and Mining 2021)
- Utah Division of Solid and Hazardous Waste’s list of solid waste facilities (Utah Division of Solid and Hazardous Waste 2020)

Using these databases, UDOT identified the following types of sites in the hazardous materials impact analysis area:

- Underground storage tanks (USTs)
- Tier 2 facilities (facilities that store amounts of hazardous chemicals above EPA listed quantities)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites, commonly known as Superfund sites
- Voluntary Cleanup Program sites (designated where federal or state assistance has been provided to support the cleanup of CERCLA or other contaminated sites)
- Solid Waste facilities (facilities that treat or dispose of nonhazardous solid waste)
- Historic mine sites

16.3.2 Facilities with Hazardous Materials in the Impact Analysis Area

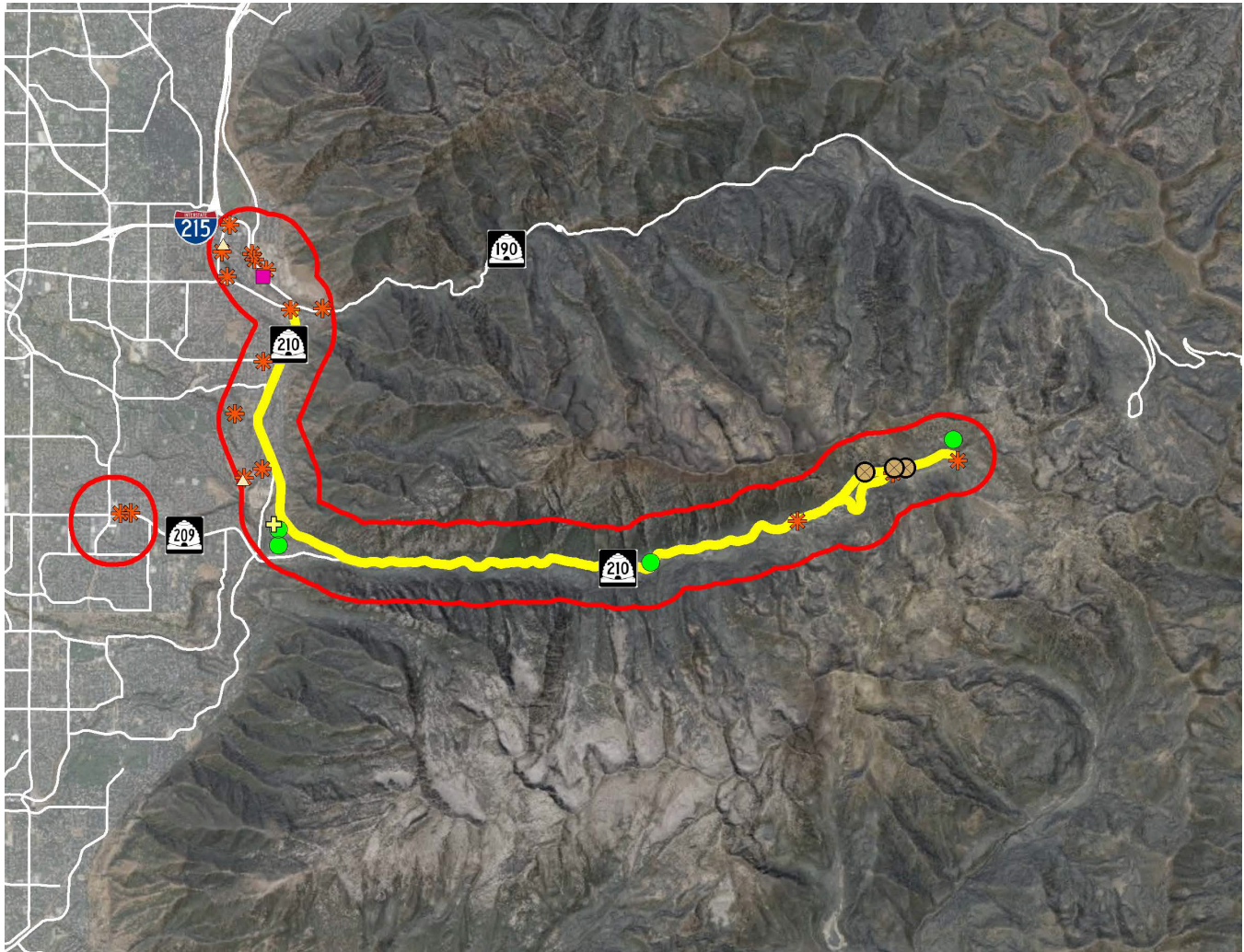
Table 16.3-1 lists and Figure 16.3-1 shows the 27 sites in the hazardous materials impact analysis area that are known to contain or have previously contained hazardous materials. These sites are described in detail beginning on page 16-5.

A few locations have multiple sites (for example, the gravel pit has three records of previous USTs) or are sites of greater concern, such as the Flagstaff Smelter and the Jones and Pardee Smelter. These sites are shown in Figure 16.3-2.

Table 16.3-1. Hazardous Materials Sites in the Hazardous Materials Impact Analysis Area

Facility Type	Number of Facilities
Underground storage tanks (USTs)	18
Tier 2 facilities	3
Superfund (CERCLA) sites	4
Voluntary Cleanup Program sites	1
Solid Waste facilities	1
Historic mine sites	3

Figure 16.3-1. Hazardous Material Facilities in the Hazardous Materials Impact Analysis Area

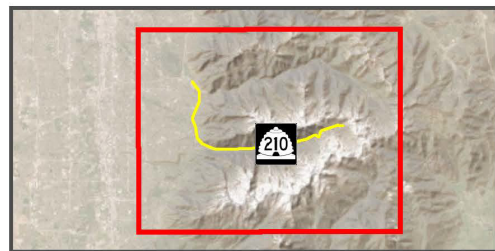


Hazardous Materials Impact Analysis Area

S.R. 210 Study Limits

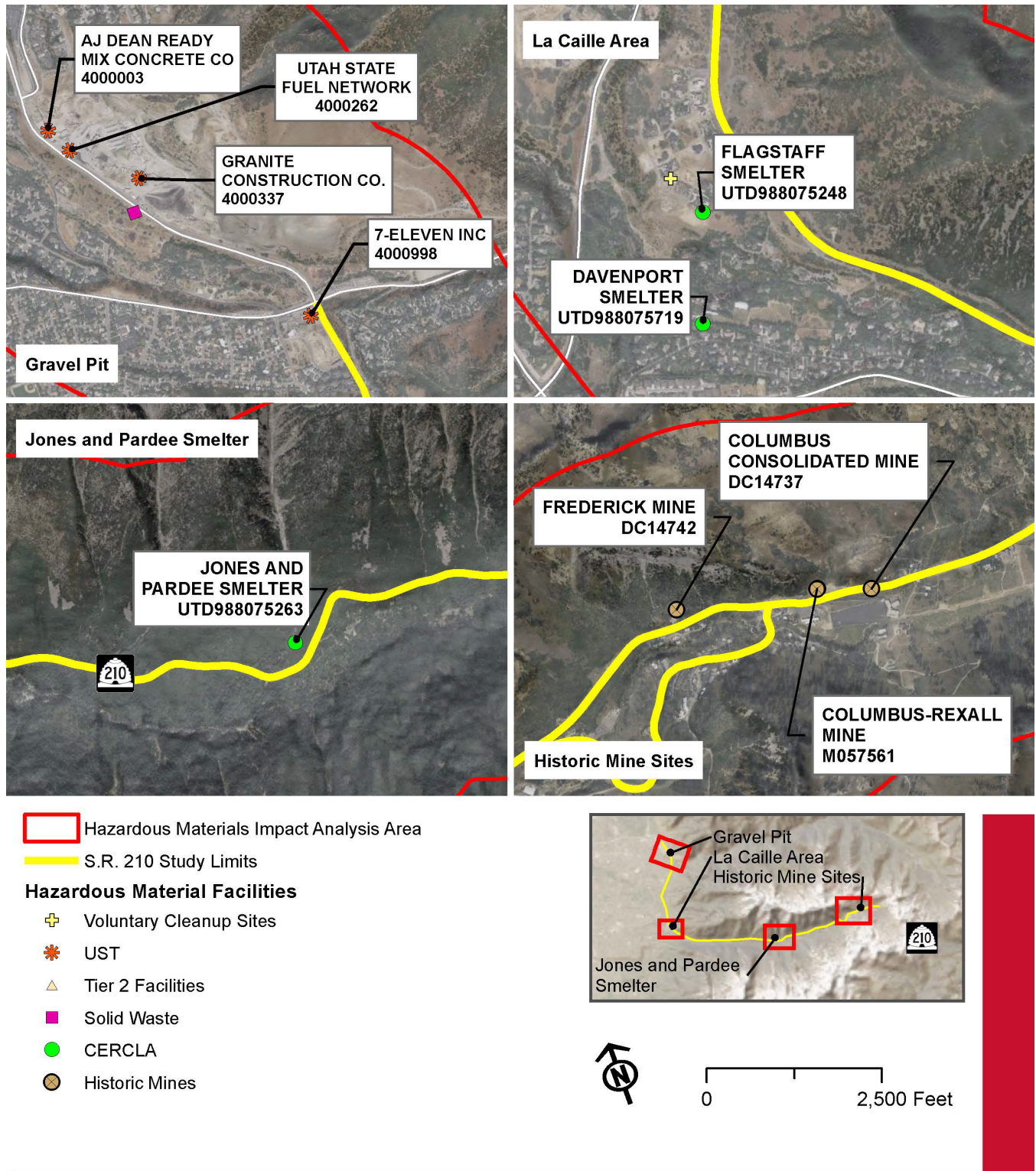
Hazardous Material Facilities

- Voluntary Cleanup Sites
- UST
- Tier 2 Facilities
- Solid Waste
- CERCLA
- Historic Mines



0 1 2 Miles

Figure 16.3-2. Hazardous Material Facilities of Greater Concern in the Hazardous Materials Impact Analysis Area



16.3.2.1 Underground Storage Tanks (USTs)

7-Eleven Gas Station at 3720 East 7000 South (DERR ID 4000998). The 7-Eleven gas station at 3720 East 7000 South is an active UST site with two gasoline tanks and one diesel tank. The tanks currently in use were installed in 2012 (DERR 2020a).

7-Eleven Gas Station at 2175 East 9400 South (DERR ID 4000999). The 7-Eleven gas station at 2175 East 9400 South is an active UST site with three gasoline tanks. The tanks currently in use were installed in 1989 (DERR 2020a).

Big Cottonwood Water Treatment Plant (DERR ID 4000838). One tank was previously located at this facility on the north side of S.R. 209 at the Big Cottonwood Water Treatment Plant and has been permanently removed.

Evangelical Free Church (DERR ID 4001679). One tank was previously located at this facility on the southeast corner of S.R. 190 and 3000 East and has been permanently removed.

Gravel Pit Area (DERR IDs 4000003, 4000262, 4000337). The gravel pit on the east side of S.R. 190/Wasatch Boulevard and north of Big Cottonwood Canyon has three records that include 13 diesel or gasoline USTs. All of these tanks were closed in the late 1980s or 1990s and are listed as permanently out of use. There are no records of current, active USTs at this location.

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.

Little Cottonwood Water Treatment Plant (DERR ID 4000833). Two tanks are located at this facility on Danish Road and are currently in use.

Maintenance Facility near Alta Peruvian Lodge (DERR ID 4000019). One gasoline tank is located at this facility and is currently in use. Also, a chemical storage area (Tier 2) is located at this site.

Memorial Estates Mountain View (DERR ID 4001808). One tank was previously located at this facility north of Fort Union Boulevard and has been permanently removed.

Smith's Gas Station at 3470 East 7800 South (DERR ID 4002318). Two underground gasoline tanks and one underground diesel tank are located at this facility. All three tanks are currently in use.

Smith's Gas Station at 2095 East 9400 South (DERR ID 4000757). Two underground gasoline tanks and one underground diesel tank are located at this facility. All three USTs are currently in use.

Snowbird Vehicle Maintenance Facility (DERR ID 4000951). One gasoline tank and one diesel tank are located at this facility on Gad Valley Drive and are currently in use.

U.S. West Utility at 3480 E. Danish Road (DERR ID 4000590). A diesel UST was located at 3480 E. Danish Road. This underground tank was closed in 1994 and is permanently out of use.

U.S. West Utility near Alta Peruvian Lodge (DERR ID 4001799). A diesel tank was located on the north side of S.R. 210 across from the Alta Peruvian Lodge. This underground tank was closed in 1998 and is permanently out of use.

UDOT Station #2433 (DERR ID 4001397). Two tanks had previously been located at this facility, and both have been permanently removed.

Vehicle Maintenance Building at Alta (DERR ID 4000020). One gasoline UST and two diesel USTs are located at this facility. All three tanks are currently in use.

W.W. Steed and Sons (DERR ID 4001236). Three tanks had previously been located at this facility, and all three have been permanently removed.

16.3.2.2 Tier 2 Facilities

Alta Peruvian Lodge (DERR ID 8628). The permitted Tier 2 facility is located at the Alta Peruvian Lodge.

Utah Fleet, UDOT Cottonwood Station #223 (DERR ID 6939). The permitted Tier 2 facility is located at the UDOT Cottonwood Station at 6601 South 3000 East.

Verizon Wireless Facility (DERR ID 7258). The permitted Tier 2 facility is located at the Little Cottonwood Water Treatment Plant on Danish Road.

16.3.2.3 Superfund (CERCLA) Sites, Voluntary Cleanup Program Sites, and Historic Mining Sites

Davenport Smelter (DERR ID UTD988075719) and **Flagstaff Smelter** (DERR ID UTD988075248; Voluntary Cleanup Program site C032). The Davenport and Flagstaff Smelters are considered a single Superfund (CERCLA) site under the EPA's National Priorities List (NPL) designation. EPA placed the site on the Superfund program's NPL in April 2003. A portion of the combined Davenport and Flagstaff Smelters NPL site, prior to the NPL listing, had been in the state's Voluntary Cleanup Program. The historic Davenport Smelter site is about 6 acres and is now a residential area within 0.5 mile south of S.R. 210 at about 9565 S. Wasatch Boulevard. The old smelter site processed lead and copper ores from Little Cottonwood Canyon. It was in operation from 1872 to 1875.

The historic Flagstaff Smelter site is located within 0.5 mile south of S.R. 210 at about 9500 South. According to DERR, this was a lead smelter that operated from 1870 to 1873. The main driver for NPL listing was lead and arsenic contamination from the two smelters. Throughout this site, cleanup activities were performed which included excavation and treatment of soils to a depth of 18 inches, off-site disposal, and site restoration with a cap of clean fill. Waste remains in place at depth, is managed through institutional controls, and is subject to the Salt Lake County Soil Ordinance (Title 9.50.060). The site reached the Superfund milestone "construction complete" in August 2012. With the completion of all response actions, the site was deleted from the NPL on July 27, 2018 (DERR 2020a). Although this site was deleted from the NPL, it could contain contaminated materials or hazardous substances.

Jones and Pardee Smelter (DERR ID UTD988075263). The historic Jones and Pardee Smelter is a site located north of S.R. 210 about 6 miles east of the intersection of S.R. 210 and S.R. 209. This site is across the road from Tanners Flat Campground. According to DERR, this site was a lead smelter that operated from 1871 to 1873. This smelter site was investigated under Superfund (CERCLA) authority in coordination with EPA. Preliminary Assessments were conducted at the site, and it was determined at the time that the threat to human health and/or the environment was not sufficient for further CERCLA consideration or for inclusion on the NPL. Despite this determination, there could still be mining wastes at these sites that, if disturbed, would need to be managed in a protective manner. Also, this site is within the Tanners avalanche path.

North Star Smelter (DERR ID UTD988075289). The historic North Star Smelter is a site located north of Alta across S.R. 210 in Grizzly Gulch. The smelter was likely operated starting in 1866 and was in operation for about 1 year. The waste at this site contains slag, which has high concentrations of heavy metals. The site is about 13 acres. This smelter site was investigated under Superfund (CERCLA) authority in coordination with EPA. Preliminary Assessments were conducted at the site, and it was determined at the time that the threat to human health and/or the environment was not sufficient for further CERCLA consideration or for inclusion on the NPL. Despite this determination, there could still be mining wastes at these sites that, if disturbed, would need to be managed in a protective manner.

16.3.2.4 Solid Waste Facilities

Walker Development Recycling (DERR ID SW246). This facility was located at 6845 S. Big Cottonwood Canyon Road. No reports have been filed since 2009. This facility appears to be inactive.

16.3.2.5 Historic Mine Sites

Frederick Tunnel/Frederick Mine (USGS MRDS ID DC14742). The site of the historic Frederick Tunnel/Frederick Mine is located on the north side of S.R. 210 north of Hellgate Road near milepost 11.31. This site was a past producer of silver and lead. Only point data are available. No polygons or official mapping of the site is available from the data source.

Columbus-Rexall Mine (USGS MRDS ID M057561). The site of the historic Columbus-Rexall Mine is located on the north side of S.R. 210 across from the access to the Alta Wildcat Base area/Goldminer's Daughter near milepost 11.70. This site was a past producer of copper, gold, silver, lead, and zinc. Only point data are available. No polygons or official mapping of the site is available from the data source.

Columbus Consolidated Mine/Wasatch Drain Tunnel (USGS MRDS ID DC14737). The site of the historic Columbus Consolidated Mine/Wasatch Drain Tunnel is located on the current alignment of S.R. 210 east of the access road to the Alta Wildcat Base area/Goldminer's Daughter near milepost 11.84. This site was a past producer of lead, copper, and silver. Only point data are available. No polygons or official mapping of the site is available from the data source. This site is not within an area proposed for improvements with any of the action alternatives and is not discussed further in this chapter.

16.3.3 Avalanche Artillery Shells

The most critical avalanche paths with respect to uncontrolled, observed road events and residual avalanche risk are the Tanners, White Pine Chutes, White Pine, and Little Pine avalanche paths. UDOT's active avalanche-control program in these paths consists primarily of using artillery to cause a controlled avalanche release. From 2004 to 2017, an average of 163 artillery shells per ski season were fired into these avalanche paths (Dynamic Avalanche Consulting 2019). In the spring, UDOT surveys the avalanche paths for artillery shells. Artillery fragments from exploded artillery are not removed.

16.4 Environmental Consequences and Mitigation Measures

16.4.1 Methodology

UDOT's first step in evaluating impacts to or disturbances of hazardous material sites of concern was to categorize the types of sites identified in the hazardous materials impact analysis area by the relative likelihood of finding contamination. The second step was to conduct a "windshield" (drive-through) survey to validate the locations of hazardous material sites. Sites were categorized as having a high, moderate, or low probability of environmental degradation.

High Probability of Environmental Degradation. The following sites have a high probability of existing soil or groundwater degradation:

- Active Superfund (CERCLA) sites
- Historic mine sites from the U.S. Geological Survey's Mineral Resources Data System
- Closed and/or inactive Superfund (CERCLA) sites

Moderate Probability of Environmental Degradation. The following sites have a moderate probability of environmental degradation:

- Active UST sites
- Tier 2 sites

Low Probability of Environmental Degradation. The following sites have a low probability of environmental degradation:

- Removed and closed USTs

16.4.2 No-Action Alternative

This section describes the impacts to and from hazardous materials and hazardous waste sites with 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.

With the No-Action Alternative, the improvements associated with the S.R. 210 Project would not be made. Therefore, no impacts to or disturbances of hazardous material sites would occur from the roadway improvements made as part of the project. Existing sites would continue to be managed in accordance with state and federal regulations. With the No-Action Alternative, UDOT is evaluating opportunities to phase out the use of artillery shells to conduct avalanche mitigation.

16.4.3 Enhanced Bus Service Alternative

This section describes the impacts to and from hazardous materials and hazardous waste sites with 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.

16.4.3.1 S.R. 210 – Wasatch Boulevard

This section describes the impacts to and from hazardous materials and hazardous waste sites with the Imbalanced-lane Alternative and the Five-lane Alternative, which would both widen the Wasatch Boulevard segment of S.R. 210.

16.4.3.1.1 Imbalanced-lane Alternative

With the Imbalanced-lane Alternative, there would be no impacts to sites with hazardous materials. One site with a moderate probability of environmental degradation, the active UST site at the 7-Eleven gas station at 3720 East 7000 South, would be adjacent to the Imbalanced-lane Alternative. However, no impacts to the active UST site are anticipated with the Imbalanced-lane Alternative.

16.4.3.1.2 Five-lane Alternative

The impacts to sites with hazardous materials from the Five-lane Alternative would be the same as those from the Imbalanced-lane Alternative.

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

With the Enhanced Bus Service Alternative, there would be no change to S.R. 210 from North Little Cottonwood Road through Alta. Therefore, with this alternative, there would be no impacts to sites with hazardous materials on S.R. 210 between North Little Cottonwood Road and Alta. The two proposed bus stops at Snowbird Entry 1 and on the south side of S.R. 210 immediately west of Alta's Rustler Lodge would not be located on existing known hazardous materials sites; however, there is the potential for waste rock from the Flagstaff mine at the Alta Ski Resort bus stop. The site would be monitored during construction to determine whether any hazardous materials are present at the site. If contamination is found, an avoidance or a remediation plan would be developed.

16.4.3.3 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.

The gravel pit site has three records with DERR that include 13 diesel or gasoline USTs. All of these tanks were closed in the late 1980s or 1990s and are listed as permanently out of use. There are no records of current, active USTs at this location. There are no known active hazardous material sites at the gravel pit. However, because the gravel pit site has had continued mining and processing activities, prior to construction UDOT

What is a mobility hub?

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

would conduct an environmental site investigation to determine the extent of potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of a former UST is required, it is possible that remediation could delay the project at the location of the UST and increase this alternative's construction cost.

16.4.3.4 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.

16.4.3.4.1 Snow Sheds with Berms Alternative

There would be no impacts to sites with hazardous materials from the Snow Sheds with Berms Alternative. UDOT also considered the use of artillery shells when evaluating avalanche mitigation. From 2004 to 2017, an average of 163 artillery shells per ski season were fired into the avalanche paths crossed by S.R. 210 in Little Cottonwood Canyon. With the Snow Shed with Berms Alternative, UDOT anticipates that artillery use could be reduced by 80% to about 31 artillery shells per season (Dynamic Avalanche Consulting 2019). During the spring, UDOT surveys the avalanche paths for artillery shells.

16.4.3.4.2 Snow Sheds with Realigned Road Alternative

The impacts to sites with hazardous materials and the use of artillery shells from the Snow Sheds with Realigned Road Alternative would be the same as from the Snow Sheds with Berms Alternative.

16.4.3.5 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

16.4.3.5.1 Trailhead Improvements and No S.R. 210 Roadside Parking within ¼ mile of Trailheads Alternative

There would be no impacts to sites with hazardous materials from this alternative.

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

There would be no impacts to sites with hazardous materials from this alternative.

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

There would be no impacts to sites with hazardous materials from this alternative.

16.4.3.6 No Winter Parking Alternative

There would be no impacts to sites with hazardous materials from the No Winter Parking Alternative.

16.4.4 Enhanced Bus Service in Peak-period Shoulder Lane Alternative

This section describes the impacts to and from hazardous materials and hazardous waste sites with 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.

16.4.4.1 S.R. 210 – Wasatch Boulevard

The impacts to sites with hazardous materials from the Imbalanced-lane and Five-lane Alternatives with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

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

The Enhanced Bus Service in Peak-period Shoulder Lane Alternative would widen S.R. 210. Substantial mining activity has occurred in Little Cottonwood Canyon; therefore, construction activities on or adjacent to S.R. 210 would impact soils that could contain higher levels of contaminants. The two proposed bus stops at Snowbird Entry 1 and on the south side of S.R. 210 immediately west of Alta's Rustler Lodge would not be located on existing known hazardous materials sites; however, there is the potential for waste rock from the Flagstaff mine at the Alta Ski Resort bus stop. The site would be monitored during construction to determine whether any hazardous materials are present at the site. If contamination is found, an avoidance or a remediation plan would be developed.

The area of widening near Tanner's Flat (about mileposts 7.9 to 8.2) would be adjacent to a site with a high probability of contamination: the Jones and Pardee Smelter Superfund (CERCLA) site that is located on the north side of S.R. 210 in this area. Prior to construction, UDOT would conduct an environmental site investigation to determine the extent of the potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of the Pardee Smelter site is required, it is possible that remediation could delay the project at the location of the remediation and increase this alternative's construction cost.

16.4.4.3 Mobility Hubs Alternative

The impacts to sites with hazardous materials 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.

16.4.4.4 Avalanche Mitigation Alternatives

The impacts to sites with hazardous materials and the use of artillery shells from the avalanche mitigation alternatives with the Enhanced Bus Service in Peak-period Shoulder Lane Alternative would be the same as with the Enhanced Bus Service Alternative.

16.4.4.5 Trailhead Parking Alternatives

The impacts to sites with hazardous materials 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.

16.4.4.6 No Winter Parking Alternative

The impacts to sites with hazardous materials 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.

16.4.5 Gondola Alternative A (Starting at Canyon Entrance)

This section describes the impacts to and from hazardous materials and hazardous waste sites with 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.

16.4.5.1 S.R. 210 – Wasatch Boulevard

The impacts from the Imbalanced-lane and Five-lane Alternatives to sites with hazardous materials with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

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

Substantial mining activity has occurred in Little Cottonwood Canyon; therefore, construction activities on or adjacent to S.R. 210 would impact soils that could contain higher levels of contaminants.

Gondola tower 9 and the angle station near Tanner’s Flat would both be adjacent to a site with a high probability of contamination: the Jones and Pardee Smelter Superfund (CERCLA) site that is located on the north side of S.R. 210 in this area. Prior to construction, UDOT would conduct an environmental site investigation to determine the extent of the potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of the Pardee Smelter site is required, it is possible that

What are gondola base, angle, and terminal stations?

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

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

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

A *tower* supports the gondola cable.

remediation could delay the project at the location of the remediation and increase this alternative's construction cost.

No other sites with hazardous materials would be impacted by Gondola Alternative A on S.R. 210 between North Little Cottonwood Road and Alta.

16.4.5.3 Mobility Hubs Alternative

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

16.4.5.4 Avalanche Mitigation Alternatives

The impacts to sites with hazardous materials and the use of artillery shells from the avalanche mitigation alternatives with Gondola Alternative A would be the same as with the Enhanced Bus Service Alternative.

16.4.5.5 Trailhead Parking Alternatives

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

16.4.5.6 No Winter Parking Alternative

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

16.4.6 Gondola Alternative B (Starting at La Caille)

This section describes the impacts to and from hazardous materials and hazardous waste sites with 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.

The hazardous material and waste impacts from Gondola Alternative B, including the impacts from the improvements to Wasatch Boulevard, mobility hubs, avalanche mitigation, trailhead parking improvements, and no winter parking, would be the same as with Gondola Alternative A.

16.4.6.1 S.R. 210 – Wasatch Boulevard

The impacts to sites with hazardous materials from the Imbalanced-lane and Five-lane Alternatives with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

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

In addition to the Gondola Alternative A impacts, the Gondola Alternative B base station near 9500 South would be located on a site with a high probability of contamination: the former Flagstaff Smelter and Davenport Smelter NPL Superfund (CERCLA) site that is located on the south side of S.R. 210 in this area.

Prior to construction, UDOT would coordinate with DERR and EPA and conduct an environmental site investigation to determine the extent of the potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of the former Flagstaff Smelter and Davenport Smelter site is required, it is possible that remediation could delay the project at the location of the remediation and increase this alternative's construction cost.

16.4.6.3 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 hazardous materials impacts to 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 and access road at the Gondola Alternative B base station is included in Section 16.4.6.2, *S.R. 210 – North Little Cottonwood Road to Alta*.

16.4.6.4 Avalanche Mitigation Alternatives

The impacts to sites with hazardous materials and the use of artillery shells from the avalanche mitigation alternatives with Gondola Alternative B would be the same as with the Enhanced Bus Service Alternative.

16.4.6.5 Trailhead Parking Alternatives

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

16.4.6.6 No Winter Parking Alternative

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

16.4.7 Cog Rail Alternative (Starting at La Caille)

This section describes the impacts to and from hazardous materials and hazardous waste sites with 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.

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.

16.4.7.1 S.R. 210 – Wasatch Boulevard

The impacts to sites with hazardous materials from the Imbalanced-lane and Five-lane Alternatives with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative.

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

The impacts from the Cog Rail Alternative would be similar to the impacts from Gondola Alternative A. Substantial mining activity has occurred in Little Cottonwood Canyon, so construction activities on or adjacent to S.R. 210 would impact soils that could contain higher levels of contaminants.

The Cog Rail Alternative would cross an area near Tanner's Flat that is adjacent to a site with a high probability of contamination: the Jones and Pardee Smelter Superfund (CERCLA) site on the north side of S.R. 210 in this area. Prior to construction, UDOT would conduct an environmental site investigation to determine the extent of the potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of the Pardee Smelter site is required, remediation could delay the project schedule at the location of the remediation and increase this alternative's construction cost.

The cog rail base station at La Caille would also have similar impacts as the Gondola Alternative B base station near 9500 South. Both base stations would be in the same location and would be located on a site with a high probability of contamination: the former Flagstaff Smelter and Davenport Smelter NPL Superfund (CERCLA) site on the south side of S.R. 210 in this area. Prior to construction, UDOT would coordinate with DERR and EPA and conduct an environmental site investigation to determine the extent of the potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of the former Flagstaff Smelter and Davenport Smelter site is required, remediation could delay the project schedule at the location of the remediation and increase this alternative's construction cost.

Based on data from the U.S. Geological Survey's Mineral Resources Data System, the eastern end of the Cog Rail Alternative alignment in Alta would be located near two historic mine sites. The site of the historic Frederick Tunnel/Frederick Mine is located on the north side of S.R. 210 north of Hellgate Road. This site was a past producer of silver and lead. The site of the historic Columbus-Rexall Mine is located on the north side of S.R. 210 across from the access to the Alta Wildcat Base area/Goldminer's Daughter. This site was a past producer of copper, gold, silver, lead, and zinc. It is unknown what, if any, remediation activities occurred at these mine sites, so they are both considered sites with a high probability of contamination. Prior to construction, UDOT would conduct an environmental site investigation to determine the extent of the

potential contamination, if any. If contamination is found, an avoidance or a remediation plan would be developed. If remediation of the Frederick Tunnel/Frederick Mine or Columbus-Rexall Mine sites is required, remediation could delay the project schedule at the location of the remediation and increase this alternative's construction cost.

No other sites with hazardous materials would be impacted by the Cog Rail Alternative on S.R. 210 between North Little Cottonwood Road and the town of Alta.

16.4.7.3 Mobility Hubs Alternative

Because the cog rail 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. Therefore, the impacts to sites with hazardous materials from the mobility hubs with the Cog Rail Alternative would be the same as with Gondola Alternative B. The analysis of the 2,500-space parking structure and access road at the cog rail base station at La Caille is included in Section 16.4.7.2, *S.R. 210 – North Little Cottonwood Road to Alta*.

16.4.7.4 Avalanche Mitigation Alternatives

The impacts from the mid-canyon avalanche mitigation alternatives to sites with hazardous materials and the use of artillery shells would be the same as with the Enhanced Bus Service Alternative. There are no hazardous materials or waste sites at or adjacent to the upper-canyon snow sheds; therefore, no impacts would occur from constructing or operating the upper-canyon snow sheds.

16.4.7.5 Trailhead Parking Alternatives

The impacts to sites with hazardous materials from the trailhead parking alternatives with the Cog Rail Alternative would be the same as with the Enhanced Bus Service Alternative.

16.4.7.6 No Winter Parking Alternative

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

16.4.8 Mitigation Measures

Site investigations conducted by UDOT during the final design of the selected alternative will determine potential hazards, if any, and the appropriate protective measures. In the case of an identified chemical hazard, UDOT will negotiate the site remedy with the property owner before property is acquired and through possible coordination with EPA and DERR. If a smelter site or historic mine site in Little Cottonwood Canyon is impacted, UDOT will also coordinate with the U.S. Department of Agriculture Forest Service and the Salt Lake City Department of Public Utilities to address each Department's watershed concerns.

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

measures. Hazardous materials will be handled according to UDOT Standard Specifications and the requirements and regulations of DERR.

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

Engineering controls (such as dust mitigation, temporary soil covers, and groundwater extraction) and personal protective equipment for construction workers will be used to reduce the potential for public or worker exposure to hazardous materials as determined necessary by UDOT.

16.5 References

[DERR] Utah Division of Environmental Response and Remediation

2020a Interactive Map viewer. <http://enviro.deq.utah.gov>. Accessed May 2020.

2020b UST and LUST Lists. <http://deq.utah.gov/legacy/divisions/environmental-response-remediation/branches/underground-storage-tanks>. Accessed May 2020.

Dynamic Avalanche Consulting

2019 Little Cottonwood Canyon (S.R. 210) Environmental Impact Statement – Snow Shed Lengths and Mitigation Memo. April 18.

[EPA] U.S. Environmental Protection Agency

2020 Envirofacts web page. <https://www.epa.gov/enviro>. Accessed May 2020.

[USGS] U.S. Geological Survey

2021 Mineral Resources Data System. <https://mrdata.usgs.gov/mrds/>. Accessed February 2021.

Utah Division of Oil, Gas and Mining

2021 Abandoned Mine Reclamation Program. <https://ogm.utah.gov/amr/amrtemp/default.html>. Accessed February 2021.

Utah Division of Solid and Hazardous Waste

2020 Utah Solid Waste Facilities. <https://deq.utah.gov/waste-management-and-radiation-control/solid-waste-program>. Accessed May 2020.

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