of hydrologic features. A substantial proportion of the land between and north of the railroad tracks contain wetlands, as identified by the US Fish and Wildlife Service National Wetlands Inventory (NWI). Mapping of the floodplain is provided in Section 8.1.

The majority of land adjacent to the railroad is zoned for agricultural uses. There are additional parcels zoned for industrial and commercial uses, with many of these other zoning districts concentrated in Battle Mountain. Mapping of zoning districts is provided in Section 9.1.

1.0 Rail Corridor Characteristics

There are two rail lines traversing northern Lander County. The first was formerly owned by the Southern Pacific Railroad (Track No. 1) and was part of the original transcontinental railroad. This rail alignment is generally parallel to Interstate 80 (I-80) and goes directly through Battle Mountain. This is designated as Track No. 1 Westward in this report. The second line, located north of Track No. 1, is the old Western Pacific Railroad and is designated as Track No. 2 Eastward. Both railroads are now owned and operated by Union Pacific Railroad (UPRR). Both these rail lines offer east/west operation and both are heavily utilized. An on-site inspection and data survey was conducted of the rail lines through Lander County.

The old Nevada Northern rail line connected I-80 and the town of Austin, Nevada. This line provided facilities for ore shipments to the railhead on the Southern Pacific Line. This line no longer exists.

1.1 Train Speeds

UPRR- Track No 2 Eastward

The speeds on this track are 79 miles per hour (mph) for passenger service and 70 mph for freight service. These speeds generally remain constant throughout Lander County.

UPRR- Track No 1 Westward

The speeds on this track are 59 mph for passenger service and 49 mph for freight. In Battle Mountain the speeds are reduced to 45 mph for both passenger and freight trains.

1.2 Number of Trains

The UPRR Track No. 2 has approximately 15 trains a day traveling eastbound with some local service. The UPRR Track No. 1 has approximately 14 to 16 trains a day including local service (typically five trips a day). There is also daily AMTRAK service in both directions.

1.3 Direction of Train Travel

Under normal operating conditions all eastbound trains use the Track No. 2 line and all westbound trains use Track No. 1. UPRR operations have the ability to

run trains in the opposite direction, which is done to accommodate some local service. For local service, after all deliveries are made, the train would continue in the same direction until the two tracks merge. At this point, the train would switch onto the other track.

2.0. Location and Condition of Existing Crossings, Sidings, and Switching Areas

Both Track No 2 Eastward and Track No 1 Westward in Lander County have single track operation with industrial spurs and sidings. The rail lines do not connect within Lander County, but do connect west of Winnemucca and at Wells, Nevada. The UPRR data shows Track No 1 Westward crossing the western county line of Lander County at around MP 470 and the eastern county line at MP 496.28. The town of Battle Mountain is at MP 475.90.

2.1 Existing Grade Crossings

A description and assessment of existing at-grade railroad crossings is provided below.

2.1.1 UPRR- Track No.2 Eastward

Mote Road at Russell (25 Ranch Road per FRA Database)
(UP/Track No. 2 -MP 582.12-Elko Subdivision-UP/WP Mainline)

Figure 1 Mote Road Crossing UPRR Track No. 2 Eastward - View Looking South

Track No.2 Eastward crosses Mote Road at Russell. The track crossing is made of solid timber panels through this dirt road. The timber panels show significant deterioration, especially at the ends. Some timber crossing panels are loose and bolts are missing, which generally requires a major maintenance effort to repair. The track is ballasted using 136 RE rails sections continuously welded and fastened to timber ties by cut spikes. The ties spacing is 19 inches through the crossing. The track grade is relatively flat, with grades between 0.05% and 0.07%. Ballast material is a combination of crushed dark volcanic rock and crushed river rock.

The crossing structure appears to have subsided. This is indicated by fine aggregate rising to the surface of the timber crossties, a condition primarily due to heavy vehicular traffic. There is no active warning device, but there are crossbucks before and after the crossing.

Mote Road is a dirt road with a defined crowned section and travel lanes in each direction sloping to a bladed ditch on both sides. Mote Road starts from I-80, (Exit 222) and continues north, passing Twenty Five Ranch Road on the west side before crossing Track No 2 at Russell, thence continuing northward to connect to Izzenhood Road. This road serves the agricultural land north of I-80.

Figure 2 Timber Panels on Track No. 2 Eastward at Mote Road Crossing

State Highway 35 (North Battle Mountain Road)
(UP/Track No. 2 - MP 589.05-Elko Subdivision-UP/WP Mainline)

Track No.2 Eastward crosses State Highway (SH) 35 at North Battle Mountain. The track crossing is made up of reinforced concrete panels through the paved SH 35.

The concrete crossing panel has metal edges that make up the wheel flange ways. There is noticeable deterioration of the crossing panels, with the metal edges separated from the concrete panels. This condition indicates instability of the panel attachment to the timber ties and is primarily attributable to subsidence and the presence of moisture. Heavy highway traffic contributes to this condition as further indicated by the spalling[1] of the asphalt concrete (AC) paving before and after the crossing.

The track in this area is ballasted using 136 RE rail sections continuously welded and fastened to timber ties by cut spikes. The ties spacing is 19 inches through the crossing. The track grade is relatively flat, with a grade between 0.05% and 0.07%. Ballast material is a combination of crushed dark volcanic rock and crushed river rock. There are train activated warning devices, gates, mast mounted flashing lights, and bells. SH 35 is the main road leading from Battle Mountain to agricultural lands farther north.

Figure 3 SH 35 Crossing UPRR Track No 2 at North Battle Mountain – DOT Number 833442F

[1] Spalling is the loss of pieces of the concrete surface.

Figure 4 Concrete Crossing Panels through the Paved State Highway 35 Crossing UPRR Track No 2 at North Battle Mountain – DOT Number 833442F

Industry Spur to FMC Distribution Facility East of North Battle Mountain (UP/Track No. 2 - MP 590 (approximate) -Elko Subdivision-UP/WP Mainline)

FMC Distribution, located east of North Battle Mountain, has an industrial spur. The spur crosses the dirt access road to the facility. The spur is relatively new as evidenced by newer concrete crossing panels attached to timber ties on ballasted track.

Figure 5 FMC Distribution –Industrial Spur– Track and Crossing Concrete Panels in Good Condition

Private At-grade Crossing east of FMC Facility
(UP/Track No. 2 - MP 591.70-Elko Subdivision-UP/WP Mainline)

Adjacent to FMC (to the east) is a multiple track siding called "Rennox," followed by another two track siding called "Jenkins." FMC starts at MP 477.19[2] and the third set ends at approximately MP 478 (Track No. 2-MP 591). The distance covered by the three sidings is approximately two miles. Entries into the sidings are westbound only.

Private At-grade Crossing east of FMC Facility (UP/Track No. 2 -MP 744.5-Elko Subdivision-UP/WP Mainline)

This at-grade crossing has been closed, although the access road leading to it has remained intact to serve agricultural lands south of the track. The road can also be used for emergency access to the track.

[2] Referenced milepost for Track No. 1, per the UPRR Track Chart. It is assumed the milepost for Track No. 2 at this point would be approximately MP 590

Figure 6 Closed Private Access Road Leading to a Previous At-Grade Crossing of the Tack No 2 – East of FMC Facility

Private At-Grade Road Crossing at T Lazy S Ranch – northeast of Battle Mountain (UP/Track No. 2 - MP 600.56-Elko Subdivision-UP/WP Mainline)

This is a private at-grade crossing of Track No.2 Eastward northeast of Battle Mountain. This private crossing is not accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory information identifies the crossing as having signs such as “Private Railroad Crossing” with a stop sign. There are no train activated warning devices.

Private At-Grade Road Crossing at T Lazy S Ranch – northeast of Battle Mountain (UP/Track No. 2 - MP 603.30-Elko Subdivision-UP/WP Mainline)

This is a private at-grade crossing of Track No.2 Eastward northeast of the Town of Battle Mountain. This private crossing is not easily accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory Information identifies the crossing as having signs such as “Private Railroad Crossing” with a stop sign and there are no train activated warning devices.

Private At-Grade Road Crossing – (field-to-field access) - northeast of Battle Mountain (UP/Track No. 2 -MP 604.5-Elko Subdivision-UP/WP Mainline)

This is a private at-grade crossing of Track No.2 Eastward northeast of Battle Mountain. This private crossing is not accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory Information identifies the crossing as having no signs or signals and there are no train activated warning devices.

2.1.2 UPRR- Track No.1 Westward

North Second Street Crossing at Front Street – Battle Mountain (UPRR MP 475.05-Elko Subdivision-Overland Route)

The Track No.1 Westward crosses North Second Street west of Battle Mountain. The track crossing is made up of rubber panels through this paved road. The rubber panels, although relatively new, show some deterioration due primarily to underlying subgrade instability. Some of the rubber panels on the south side of the crossing are not flush with the AC pavement, indicating deterioration of the trackbed. This condition requires minor maintenance to stabilize the trackbed and refasten the rubber panels. The track in the area is ballasted using 119 RE rails sections continuously welded and fastened to timber ties by cut spikes. The tie spacing is 19 inches through the crossing. The track grade is relatively flat, with grades between 0.05% and 0.07%. Ballast material is mostly crushed river rock.

The crossing structure appears to have subsided, as shown by fine aggregate rising to the surface of the timber crossties. This condition is due primarily to heavy vehicular traffic. There are train activated warning devices; gates, mast mounted flashing lights, and bells.

North Second Street connects with Front Street and serves as the main access for the residences north of the tracks as well as the MI Battle Mountain Aggregate plant just east of the crossing.

Figure 7 North Second Street Crossing Track No 1 – View Looking North

Figure 8 Rubber Crossing Panels at North Second Street- View Looking South

Reese Street Crossing at Front Street –Battle Mountain-
(UPRR MP 475.90-Elko Subdivision-Overland Route)

The Track No.1 Westward crosses Reese Street in the middle of Battle Mountain. The track crossing is made up of rubber panels through this paved road. The rubber panels, although relatively new, show some deterioration mainly due to underlying subgrade instability. Rubber panels on the both side of the track are not flush with the AC pavement indicating deterioration of the trackbed. This condition requires minor maintenance to stabilize the trackbed and refasten the rubber panels. The track in the area is ballasted using 119 RE rails sections continuously welded and fastened to timber ties by cut spikes. The tie spacing is 19 inches through the crossing. The track grade is relatively flat. Ballast material is mostly crushed river rock possibly coming from local source.

The crossing structure appears to have subsided, as shown by fine aggregate rising to the surface of the timber crossties. This condition is primarily due to heavy vehicular traffic through the crossing. There are train activated warning devices, gates, mast mounted flashing lights, and bells.

Reese Street connects with Front Street and is the main access road to and from the agricultural and industrial area north of Battle Mountain. Front Street is the main thoroughfare through town from I-80.

Just east of the Reese crossing there is a turnout to an active siding with manual switches coupled with a switch derail. The turnout appears to be in the trailing movement assuming the predominant train passing through is westward. This siding is laid out easterly to a stub end, for a total of approximately 2 miles in length.

Figure 9 Active Siding east of Reese Crossing