

Lander County Rail Assessment



Submitted to
Lander County

Submitted by
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November 2006



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Executive Summary

There are two Union Pacific Railroad (UPRR) lines traversing northern Lander County. The westbound track, referred to as Track No. 1, is generally parallel to Interstate 80 (I-80) and goes through Battle Mountain. Track No. 2 is located north of Track No. 1 and carries eastbound trains. This study assesses utilization of the rail corridor, the condition of points where railroad tracks cross roadways, and safety issues. It also maps zoning and physical characteristics of the corridor.

Both rail lines have a Federal Railroad Administration (FRA) classification of Class 4, which allows for heavy haul trains with speeds over 50 miles per hour (mph). Typical speeds on the westbound track are 49 mph for freight and 59 mph for passenger trains, both are slowed to 45 mph though Battle Mountain. Speeds on the eastbound track are 70 mph for freight and 79 mph for passenger trains. There are approximately 15 eastbound and westbound freight trains per day. There is also a limited amount of local service, typically five trains per day, and daily AMTRAK service. The tracks have closely spaced timber ties and appear to be in good condition. Under normal operating conditions all eastbound trains use Track No. 2 and all westbound trains use Track No. 1. However, due to local traffic serving industrial uses in the area, trains could occasionally travel in either direction on either track.

The railroad crossings vary in condition, with several in need of repair. There is subsidence of the track bed in some of the older crossings. This is a common condition due to the difficulty of maintaining the area under the crossing panel. Railroads generally look to local communities to participate in funding upgrades and major repairs. A summary of railroad crossing conditions is provided in Table S1 and locations are shown in Figure S1.

Table S1 Assessment of Railroad Crossings

UPRR Track No. 2 Eastward		
1	Mote Road at Russell (25 Ranch Road per FRA Database) (UP/Track No. 2 -MP 582.12-Elko Subdivision-UP/WP Mainline)	The timber panels show deterioration. Some timber crossing panels are loose and bolts are missing. There is subsidence at the crossing structure. Crossbucks are located on both sides of the crossing.
2	State Highway 35 (North Battle Mountain Road) (UP/Track No. 2 -MP 589.05-Elko Subdivision-UP/WP Mainline)	There is deterioration of the crossing panels, the metal edges have separated from the concrete panels. This condition indicates instability of the panel attachment to the timber ties. There are crossbucks, train activated warning devices, gates, mast mounted flashing lights, and bells.
3	Industry Spur to FMC Distribution Facility East of North Battle Mountain	There are relatively new concrete crossing panels attached to timber ties on ballasted track. No warning devices are

Table S1 Assessment of Railroad Crossings		
	(UP/Track No. 2 -MP 590 (approximate) -Elko Subdivision-UP/WP Mainline)	located at this dirt access road crossing.
4	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 road can be used for emergency access.
5	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 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 indicates there is a “Private Railroad Crossing” sign and stop sign. There are no train activated warning devices.
6	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 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 indicates there is a “Private Railroad Crossing” sign and stop sign. There are no train activated warning devices.
7	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 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 indicates that there are no signs or signals. There is no train activated warning device.
UPRR Track No. 1 Westward		
8	North Second Street Crossing at Front Street –Battle Mountain (UPRR MP 475.05-Elko Subdivision-Overland Route)	The rubber panels, although relatively new, show some deterioration. Some of the rubber panels on the south side of the crossing are not flush with the pavement indicating deterioration of the trackbed. The crossing structure appears to have subsided. There are train activated warning devices, gates, mast mounted flashing lights, and bells.
9	Reese Street Crossing at Front Street –Battle Mountain- (UPRR MP 475.90-Elko Subdivision-Overland Route)	The rubber panels, although relatively new, show some deterioration. Rubber panels on the both side of the track are not flush with the pavement indicating deterioration of the trackbed. The crossing structure appears to have subsided. There are gates, mast mounted flashing lights, and bells. Just east of Reese crossing there is a turnout to an active siding with manual switches coupled with a switch derail.
10	Muleshoe Ranch Road Crossing – East of Battle Mountain(UPRR MP 478.45-Salt Lake Subdivision-Main Route)	The concrete panels are relatively new and in generally good condition. The track immediately ahead of the crossing shows some deterioration. There are train activated warning devices, gates, mast mounted flashing lights, and bells.
11	Private At-Grade Road Crossing – East of Battle Mountain (UPRR MP 484.70-Elko Subdivision-Overland Route)	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 indicates there is a “Private Railroad Crossing” sign and stop sign. There are no train activated warning devices.
12	Private At-Grade Road Crossing East of Muleshoe Ranch Road East of Battle Mountain (UPRR MP	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 indicates

Table S1 Assessment of Railroad Crossings

Table S1 Assessment of Railroad Crossings		
	487.5-Elko Subdivision-Overland Route)	there is a "Private Railroad Crossing" sign and stop sign. There are no train activated warning devices.
13	Private At-Grade Road Crossing at Barium Products Road East of Battle Mountain (UPRR MP 488.16-Elko Subdivision-Overland Route)	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 indicates there is a "Private Railroad Crossing" sign and stop sign. There are no train activated warning devices.
14	Baker –Hughes INTEQ Road Crossing – East of Battle Mountain (UPRR MP 488.90-Elko Subdivision-Overland Route)	The timber panels show deterioration especially at the ends. Some timber crossing panels are loose and bolts are missing. The crossing structure appears to have subsided. There are train activated warning devices, gates, mast mounted flashing lights, and bells.
15	Private At-Grade Road Crossing at T Lazy S Ranch Road – East of Battle Mountain near Beowawe (UPRR MP 492.98-Elko Subdivision-Overland Route)	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 indicates there is a "Private Railroad Crossing" sign and stop sign. There are no train activated warning devices.

Source: Parsons Brinckerhoff, 2005

There are five sidings on Track No. 2 Eastward within Lander County, according to UPRR track charts and field investigations. These sidings include the following:

- 1) Russells siding
- 2) FMC Distribution industrial spur with a turnout at MP 477.4
- 3) Rennox, east of FMC with a turnout at MP 478.3,
- 4) Jenkins, a two track siding with the main branch track turnout at MP 478.8 used by Dyno Nobel
- 5) Kampos, a two-track siding with turnout at MP 491.2

There are eight sidings on Track No. 1 Westward within Lander County, according to UPRR track charts and field investigations. These sidings are listed below. Rail siding locations are illustrated in Figure S2.

- 1) Piute siding
- 2) MI Battle Mountain Plant industrial spur, a turnout at approximately MP 474.46
- 3) Chevron Oil Products industrial spur, which handles ethanol and diesel fuel
- 4) East of Reese Street is a two mile siding with a turnout at MP 475.95
- 5) A spur with a turnout at Muleshoe Road
- 6) Rosny siding
- 7) Baker Hughes INTEQ with a turnout at MP 498.2
- 8) Mosel siding with a turnout at MP 491.9

Figure S1 Lander County At-Grade Railroad Crossings

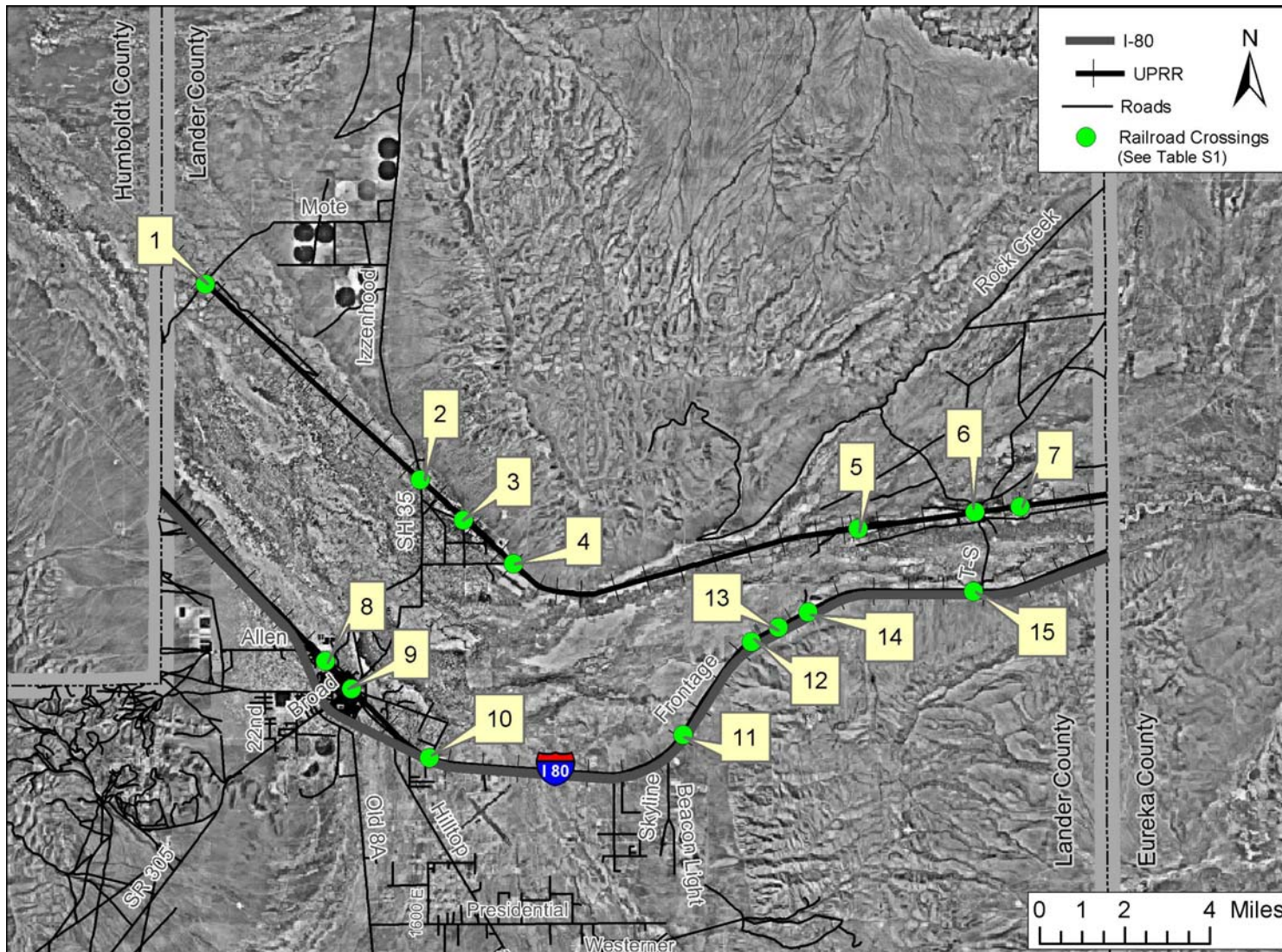
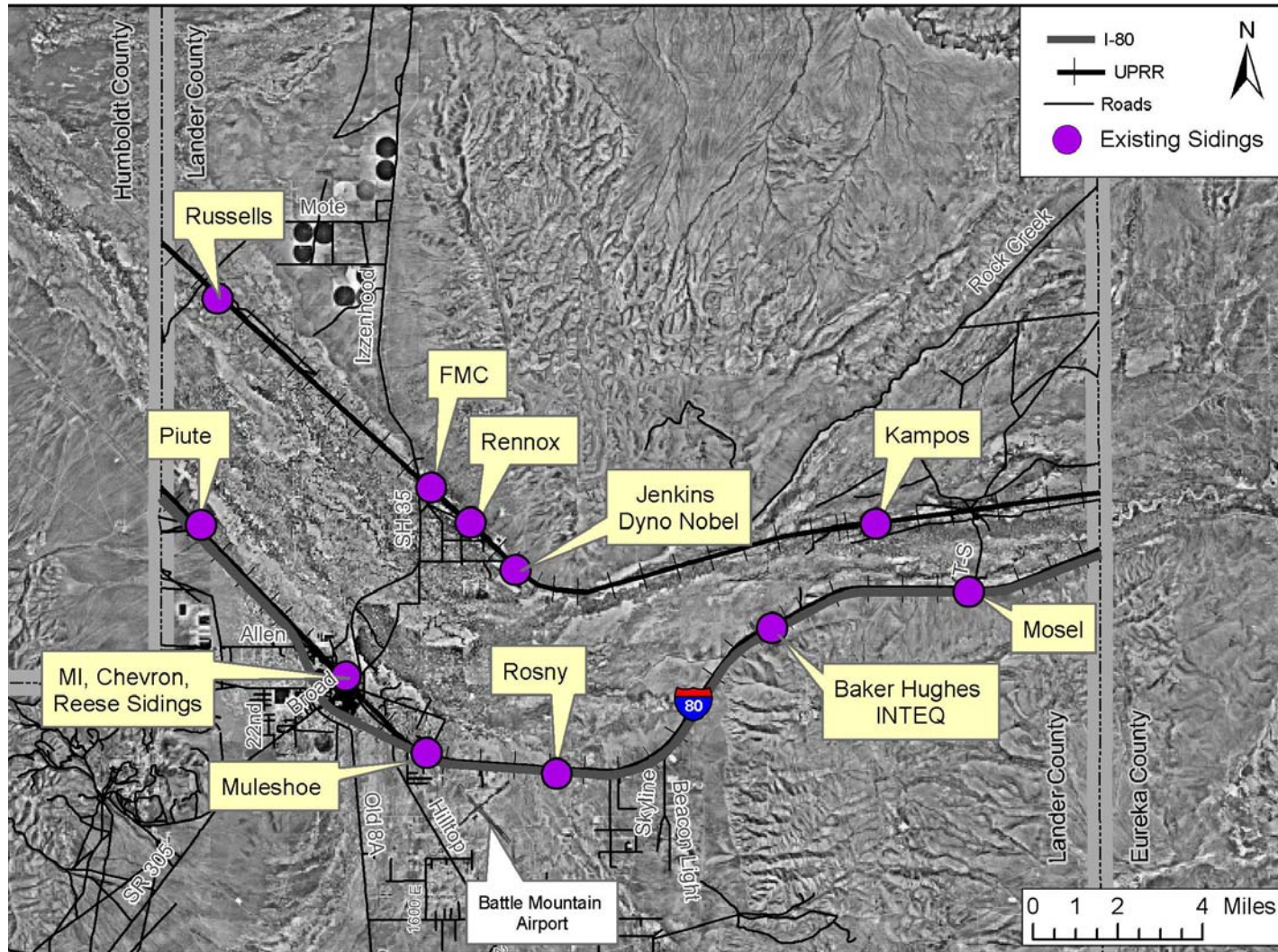


Figure S2 Lander County Rail Sidings



There is a substantial level of switching operations occurring in the corridor. The switching activity is due mainly to loading and unloading materials for the industrial uses along these lines and is typically accomplished using local trains. On Track No. 2 Eastward, the main switching areas are the FMC Distribution and Rennox facilities. The FMC facilities are used in the distribution of sodium cyanide and other materials for the mining industry. The most heavily used siding on Track No. 1 Westward is west of Battle Mountain. This is an active siding for delivery of aggregates, mostly used for the construction industry.

The number of accidents on the rail line has decreased since UPRR assumed management of the corridor. The most significant recent events are three derailments that occurred during 2001 and 2002. These events caused an increased attention to track maintenance in an effort to prevent future problems. The crossing at Magnet Cove, which experienced the greatest number of train crashes, has been closed. A summary of train safety incidents is provided in Table S2.

Table S2 Railroad Accident History	
Location	Description
DOT 833442F – State Highway 35 (North Battle Mountain Road) – MP 589.05 (in North Battle Mountain)	6/20/02, 10:44PM - Eastbound train traveling at 79 mph struck unoccupied motor vehicle, no injuries and \$4,000 in property damage.
DOT 740815T – Magnet Cove (Public) – MP 475.30 (1/2 mile west of Battle Mountain) – Closed 8/14/87	<p>3/7/84, 9:15PM – Eastbound train traveling at 5 mph, driver in motor vehicle stopped, then proceeded across crossing and was struck by train. No injuries and property damage estimated \$250.</p> <p>10/17/83, 7:50PM – Westbound train traveling at 45 mph, motor vehicle struck by train. Two fatalities and \$5,000 in property damage.</p> <p>12/29/82, 3:00AM – Westbound train traveling at 5 mph, train struck occupied motor vehicle, no injuries and \$750 in damage.</p> <p>5/1/80, 9:20AM – Westbound train traveling at 45 mph struck occupied motor vehicle, no injuries and \$1,000 in damage.</p> <p>8/3/78, 5:25PM – Westbound train traveling at 45 mph struck occupied motor vehicle, no injuries and \$5,000 in damage.</p> <p>1/9/78, 8:45AM – Westbound train traveling at 43 mph, train struck occupied motor vehicle, no injuries and \$750 in damage.</p>

Table S2 Railroad Accident History	
	8/12/76, 3:50PM – Westbound train traveling at 25 mph hit unoccupied motor vehicle in crossing. Property damage estimated at \$2,500.
DOT 740816A – Reese Street (Public) – MP 475.90 (in Battle Mountain)	4/7/82, 8:57PM - Westbound train traveling at 10 mph struck occupied motor vehicle, no injuries and \$100 in damage.
DOT 740817G – Muleshoe Ranch (Private) – MP 478.40 (2.6 miles east of Battle Mountain)	7/26/77, 7:50PM - Westbound train traveling at 1 mph struck occupied motor vehicle, no injuries and \$350 in damage.
DOT 740821W – INTEQ Products (Private) – MP 488.90 (13.1 miles east of Battle Mountain)	4/18/77, 8:15AM - Westbound train traveling at 50 mph struck occupied motor vehicle, no injuries and \$2,000 in damage.
DOT 740822D – T Lazy S Ranch (Private) – MP 492.98 (17.18 miles east of Battle Mountain)	11/14/93, 10:50AM - Westbound train traveling at 47 mph, train struck occupied motor vehicle, one fatality and \$2,600 in damage.
Lander County (unknown mile marker)	10-05-02, a 17 mph freight train had ten cars derail due to track conditions. It caused \$19,523 in railroad equipment damage and \$103,324 in track damage. There were no injuries.
Lander County (unknown mile marker)	3-1-01, a 50 mph freight train had one car derail due to equipment failure. There was \$19,048 in railroad equipment damage and \$350,737 in track damage. There were no injuries.
Lander County (unknown mile marker)	6-25-01, a 46 mph freight train had 43 cars derail due to track conditions. There was \$1,391,144 in railroad equipment damage and \$358,194 in track damage. There were no injuries.

Source: Federal Railroad Administration Office of Safety Analysis, 2005

Introduction of nuclear waste shipments to Yucca Mountain using the UPRR tracks and the proposed Carlin and Mina rail routes have minimal potential to conflict with other rail shipments. Train movements through the county are coordinated by UPRR central dispatching. However, security could become an issue if trains are halted due to issues on the mainline. Maintenance of way activity, such as capital improvements, also impact existing rail service and should be timed to minimize impacts to train service.

The dominant hydrologic feature in the corridor is the Humboldt Rive, which other features including the Reese Rive, Rock Creek, Boulder Creek, McIntyre Sough, Blue house Ditch, and White House Ditch. Much of the corridor is in or near the 100 year floodplain adjacent to the Humboldt River. There are multiple crossings