Executive Summary

In a Record of Decision (ROD) issued by the Department of Energy (DOE) on April 8, 2004, the preferred mode to transport nuclear waste to Yucca Mountain, nationwide and within the State of Nevada, was identified as a mostly rail scenario. Within the same ROD, the CRC (CRC) was also identified by DOE as the preferred route to transport waste from the existing Union Pacific Railroad (UP) near Caliente to Yucca Mountain across Lincoln, Nye, and Esmeralda Counties. In the spring of 2007 Lincoln County, under the advisement of the Joint City County Impact Alleviation Committee (JCCIAC), determined it was important to conduct an independent study of the potential impacts of a proposed nuclear waste rail line through the County. Lincoln County contracted with Resource Concepts, Inc. (RCI), Robison/Seidler, Inc. and L&H Consulting to analyze the potential impacts to public lands, the citizens, and industry within Lincoln County, and to identify required mitigation measures to minimize impacts. The Project Team, consisting of those three companies listed above, was tasked with assessing the DOE proposed CRC and all proposed alternative segments within the County. In an effort to minimize impacts, the Project Team was asked to identify and analyze at least two alternative rail segments not considered by the DOE. All impacts and required mitigation identified in this report are preliminary and subject to change as more information is provided by DOE, or as construction and/or operations are initiated. Only the grazing allotment permittees, and property owners/managers directly impacted by the rail alignments were interviewed. Permittees, citizens and businesses impacted by construction or operational activities away from the alignment could not be identified without the DOE's cooperation in identifying construction and operational areas.

L&H Consulting identified potential alternative routes for analysis. However, the Project Team cooperatively with Lincoln County selected two alternatives to consider for further analysis. The two alternatives include the Lincoln County Cottontail Pass Alternative and the Lincoln County Short Route. The Cottontail Pass Alternative is a new alignment between Coal Valley and Sand Springs Valley that is intended to alleviate impacts to the Water Gap and Mike Heizer's "City" art project. The Lincoln County Short Route is a much longer segment that diverges from the DOE proposed route in Dry Lake Valley and more or less follows US Highway 93 and Nevada State Route 375 to the western portion of the County. The route passes over Hancock Summit and continues west across Tikaboo Valley along Groom Lake Road until it reaches the boundary with the Nevada Test and Training Site (NTTS). The necessary clearance was not provided to continue analysis of the route beyond that point or beyond the boundary of Lincoln County. In order to complete this route the DOE and Department of Defense (DOD) would have to work cooperatively to resolve national security and operational concerns within the NTTS. This approach would have some inherent advantages, as the overall length of new rail would be shorter than the DOE proposed CRC, and would cross the NTTS, which is already a highly disturbed area with limited public access. Routing of this portion of rail could follow a portion of the previously considered DOE Caliente-Chalk Mountain Route, which was previously dropped from consideration due to concerns raised by DOD. These inherent advantages warrant further efforts to alleviate DOD concerns, or aid in developing a similar alignment that avoids the DOD areas of concern.

A third alternative was identified by Jerry Parker of Energy and Railroad Consulting, in which the new rail alignment would depart the Union Pacific line at the Eccles Siding, cross US 93 by bridge at Indian Cove and proceed west through Antelope Canyon. From that point the alternative could either connect to the CRC or to the Lincoln County Short Route. Analyses of

the potential impacts of this Alternative were not considered in this report as it was outside of the scope of work and timeframe of the project. However, cursory reviews indicate a potential to reduce impacts to both public land grazing and private property. As part of a separate contract, Mr. Parker has developed a report discussing the feasibility of this Alternative (Parker, 2007).

RCI conducted the Public Lands Grazing Analysis. Background information was obtained from the Bureau of Land Management (BLM), and support mapping was developed prior to fieldwork. Impacts and needed mitigations were identified through personal interviews with affected public land grazing allotment permittees, and agency personnel. Interviews were conducted prior to release of the DOE *Draft Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada* (DEIS-RA). Much of the pertinent information regarding rail construction and operation was not known, and was not released to the Project Team despite attempts to obtain the information from the DOE. Certain assumptions, as discussed in Section 2, were made in order to standardize the interview process. It was assumed that the corridor would consist of a rail and single associated access road both located on a common raised roadbed. The final rail alignment would be located within a quarter-mile wide buffer of the alignment as provided by DOE, and consist of a 1,000'-wide construction corridor and 200'-wide operational corridor. DOE did not indicate if either of these corridors would be fenced, nor did they indicate anticipated train speeds or train frequencies. Permittees were asked to state a fencing preference, and all impacts and mitigations were assessed based on that choice. Construction and operational details were not available, so analysis focused primarily on the presence of the rail.

The public lands grazing analysis, discussed further in Section 4.0, concluded that a suite of impacts to public lands grazing operations would result from the construction and operation of any of the studied routes and alternatives. Some key impacts include: conflicts with land and/or water base property as defined by the Taylor Grazing Act, loss of functionality for existing fencing, destruction of capital improvements, destruction or loss of functionality of water sources, stockwaters, and pipelines, loss or restriction of access to allotments, temporary and permanent loss of forage, fragmentation of allotments, loss or restriction of livestock movement and distribution within allotments, establishment of invasive species, establishment of noxious weeds, short-term deferment or loss of grazing rights due to construction, and long-term deferment or loss of grazing rights due to operations. Many of these impacts would be highly detrimental to existing public lands grazing operations unless mitigation actions were carried out. Working from east to west, the DOE Proposed Eccles Alternative had relatively few impacts, including restricted livestock movement and permittee access to grazing allotments, while the DOE Proposed Caliente Alternative had no impacts to grazing allotments as it is situated primarily on private lands. The portion of the DOE Proposed Common Segment 1, east of the point of divergence with the Lincoln County Short Route, had profound affects on grazing operations in the Bennett Pass area. The winding rail alignment needed to traverse the east side of Bennett Pass resulting in significant segmentation of several allotments, and the isolation of Bennett Springs, which is circled by the rail on three sides. These allotments run sheep, and stage their operations on private property around Bennett Springs thereby magnifying the impact of the rail. The anticipated impacts were so severe that several of the permittees indicated that even with mitigation, the rail would likely put them out of business due to the severe level of disturbance it would create within their grazing allotments and associated private lands. These portions of rail, the Eccles and Caliente Alternatives and Common Segment 1 prior to the point of divergence, would be common to both the CRC and the Lincoln

County Short Route. The only means of alleviating most impacts in this Section would be a route across Indian Cove and through Antelope Canyon.

The Lincoln County Short Route was compared with the DOE Preferred Alternative from the point of divergence of the two routes on the west side of Bennett Pass near The Bluffs. West of the point of divergence only one allotment, the Ely Springs Cattle Allotment, would be impacted by both routes. The Ely Springs Cattle Allotment is one of the most intensely managed operations in the entire county. The CRC poses serious impacts to that system, while the Lincoln County Short Route greatly reduces the impacts. All other allotments were only impacted by one route, either the DOE proposed CRC and alternatives or the Lincoln County Short Route. Three allotments along a loop in the rail alignment extending north into Nye County were included in the assessment of the DOE Preferred Alternative as the permittees run livestock operations across multiple allotments within Lincoln County. The majority of their operations are in Lincoln County with those allotments in Nye County serving as their base of operations. Overall, the impacts of the Lincoln County Short Route would be less than those of the DOE Preferred Alternative. However, both routes resulted in heavy impacts on permittees, with several along either route who indicated that the rail would likely put them out of business even with mitigation, due to the high level of disruption and fragmentation of their allotments.

None of the DOE Proposed Garden Valley Alternatives were different with regard to having fewer impacts than the others. The Cottontail Pass Alternative would not result in significant impact reduction as compared to the other DOE Proposed Garden Valley Alternatives. Permittees in the area described the alternative as shifting the burden of impacts without a major reduction of impacts.

Mitigation measures that would be required in order to keep livestock operations viable include: maintenance, relocation and/or improvements to, fences, springs, wells, pipelines, stockwaters, roads, and trails to keep infrastructure functional. The installation of new fencing, gates, and cattleguards would be required to maintain the viability of existing allotment and pasture fences. Livestock movement and distribution within allotments must be maintained through the use of either at-grade crossings or underpasses where cuts and fills become too great for livestock to cross the tracks. Some permittees prefer that the right-of-way (ROW) be fenced, while others felt that compensation for lost livestock would be adequate. Many permittees indicated a need for more detailed information before indicating a ROW fencing preference. All permittees indicated an absolute necessity to keep construction disturbance and the operational footprint to a minimum. Measures were identified to minimize the establishment and spread of invasive species and noxious weeds. Some of the permittees suggested alignment adjustments within their allotment in order to help minimize impacts. None of the current livestock operations would remain viable in the absence of mitigation, and some of the more heavily impacted allotments may not be viable even with mitigation.

Each allotment would require an allotment-specific mitigation plan that was cooperatively developed and agreed upon by the Permittee, BLM, DOE, and at the invitation of the permittee, JCCIAC staff, and/or the N-4 State Grazing Board. Every allotment would have to alter its current grazing system for both construction and operation of the rail. This could include increased labor expenses, deferred or lost grazing rights, and infrastructure relocation, repair or replacement. Interim grazing management plans should be developed for each allotment for the construction phase, and new or revised long-term allotment management plans (AMPs) should be developed for the operational phase.

Even with mitigation, there are some unavoidable adverse impacts to public land allotment permittees. Some may lose the ability to operate a viable grazing enterprise. To a large extent the intrinsic values of solitude, isolation, and tranquility will be infringed upon. The physical environment as well as vegetative communities will be permanently altered. Every permittee will be negatively impacted economically as short and long-term deferment or loss of grazing rights is anticipated in addition to increased capital costs in order to acclimate to, and function around, rail construction and operations. All of these negative impacts serve to threaten the family traditions, rural lifestyle, and culture of Lincoln County.

Robison/Seidler, Inc. and L&H Consulting addressed the Community at Large Analysis. Personal interviews were the primary means of identifying potential impacts and baseline mitigations. The analysis concluded that significant impacts to private property and quality of life would result from the construction and operation of any of the studied routes and alternatives. Working from east to west, the DOE Proposed Eccles Alternative had relatively few private property impacts in terms of the number of affected parcels. However, the private property impacts were still substantial in terms of the acreage that would be impacted. The DOE Proposed Caliente Alternative had a significantly greater number of private parcels that would be impacted. The portion of the DOE Proposed Common Segment 1, east of the point of divergence with the Lincoln County Short Route, affected a few private parcels. These portions of rail would be common to both the DOE Proposed Caliente Corridor and the Lincoln County Short Route.

The Lincoln County Short Route as described in this report would have additional private property impacts. L&H Consulting did not have sufficient access to the necessary maps and parcel detail information to fully describe these impacts. However, there are alternative routes that are similar to the Lincoln County Short Route that would potentially eliminate these additional private property impacts.

None of the DOE Proposed Alternatives in Garden Valley had fewer impacts than the others. The Cottontail Pass Alternative would not result in significant impact reduction as compared to the other DOE Proposed Garden Valley Alternatives.

Section 5.3 summarizes the mitigation measures identified by the stakeholders interviewed. Nearly every property owner preferred that the impacts be avoided through the selection of an alternative alignment or through the selection of truck transportation as the primary mode of transportation for these shipments within the State of Nevada. If avoidance of the impacts was not possible, nearly all of those interviewed indicated that compensation for the entire parcel would be necessary.

This report does not advocate a given rail alignment, nor a preferred mode of transportation of nuclear waste across Lincoln County. The intent of this report is to identify the potential impacts to the Public Land Grazing Operations and the Community at Large in Lincoln County, Nevada as a result of the construction and operation of a new rail corridor. This report establishes baseline mitigation that would be required for the citizens and enterprises within Lincoln County to maintain some semblance of the lifestyle and culture they currently possess. The impacts and mitigations identified need to be refined as new or more detailed information becomes available, or as the project moves forward.

There is no way to completely avoid serious impacts to the community and public land uses within Lincoln County if a new rail is constructed. The use of alternative corridors can reduce impacts at the cost of shifting the burden of those impacts from one group to another. It is essential for those who establish policy within Lincoln County to recognize these impacts and baseline mitigations in order to best represent their constituents.