

5.0 Private Property Impacts Analysis

5.1 ISSUES EVALUATED

In our interviews with impacted property owners, nine issues were repeated by several of the owners. It is important to note that these interviews were conducted in such a manner that the respondent was asked to consider possible impacts. No guidance or examples were provided. It is quite likely that if this list was provided to those interviewed, the percentages for each issue would rise dramatically. The five basic stages of any project are:

1. planning/policy development
2. detailed planning/funding/impact assessment
3. construction/implementation
4. operation/maintenance, and
5. abandonment/decommissioning

For each issue evaluated, we evaluated in which stage(s) the stated concerns would possibly arise. The Caliente Rail Corridor (CRC) project is currently in the second stage of detailed planning and impact assessment. However policy development, part of the first stage, is ongoing.

5.1.1 Infrastructure

The primary concern of those interviewed was the impact the construction and operation of the Caliente Railroad would have on the local infrastructure. Almost one-fourth of those interviewed were concerned about infrastructure for health, safety, communications, housing, roads and education.

5.1.1.1 *Planning/policy development*

Impacts to infrastructure have not been experienced thus far in the planning/policy stage. It is not anticipated that any infrastructure impacts will occur in this stage.

5.1.1.2 *Detailed planning/funding/impact assessment*

Impacts to infrastructure have not been experienced thus far in the detailed planning/funding/impact assessment stage. It is not anticipated that any infrastructure impacts will occur in this stage. However, a formal framework for assessing and mitigating impacts needs to be established and should include specific impacts identified and appropriate mitigation measures for each phase of the project development. The Caliente Railroad, if constructed, would be the longest rail line built in the United States since the construction of the transcontinental railroad. Given the magnitude of this project, appropriate attention must be given to ensuring significant local involvement and control in impact identification and mitigation. Some of the public officials interviewed for this study indicated that it would be appropriate and beneficial for the Department of Energy (DOE) to cooperate and consult with all local governmental agencies with jurisdictional boundaries that encompass part of the proposed Caliente Railroad about various aspects of impact assessment and mitigation, including the following:

1. evaluating the impacts,
2. establishing appropriate mitigation measures,
3. monitoring the progress of the project to continue identifying new impacts,
4. monitoring the effectiveness of mitigation measures to determine needed alterations or revisions to the mitigation plan.

5.1.1.3 Construction/implementation

Significant infrastructure impacts are anticipated during this phase of the development. The significant influx of temporary workers coupled with the intense use of public roads for movement of the workers and the materials to construct the railroad will result in impacts to the public infrastructure that will need mitigation. Public infrastructure is meant to include all public services and facilities that are necessary to provide the same quality of life to the citizens of Lincoln County as are currently enjoyed. This includes, but is not limited to the following:

1. Emergency services, including police and fire protection
2. Public health, including hospital care, state or county health departments, and sanitation services
3. Public education
4. Public transportation, including construction and maintenance of public roadways and provision of mass transit services
5. Cultural and recreational activities and facilities, including parks, historical sites, and community shared-use facilities.

5.1.1.4 Operation/maintenance

Significant infrastructure impacts are anticipated during this phase of the development. These impacts will need to be mitigated.

5.1.1.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

5.1.2 Taking of Private Property

Lincoln County is a vast county with very minimal private land. Almost 18 percent of those interviewed found it unacceptable for the federal government to be considering taking more privately held land for their management and/or use.

5.1.2.1 Planning/policy development

On December 28, 2005, the Bureau of Land Management (BLM) granted DOE's application for land withdrawal and issued a Public Land Order withdrawing approximately 308,600 acres of public lands within the CRC, Nevada. While this withdrawal did not directly affect existing private property, it did prohibit certain activities, including the sale of that land should it become a candidate for disposal for a period of ten years.

5.1.2.2 Detailed planning/funding/impact assessment

Construction of the Caliente Railroad will require the acquisition of rights-of-way over private land. It is anticipated that this acquisition will commence during the detailed planning phase.

5.1.2.3 Construction/implementation

The magnitude of the Caliente Railroad construction project lends itself to unexpected, unplanned changes to the implementation plan as the project progresses. Thus, even if all of the land acquisition that is anticipated is accomplished in the previous phase, it is very likely that additional acquisition may be required as time goes on.

5.1.2.4 Operation/maintenance

It is not anticipated that additional impacts to private property will occur during this phase that were not already identified during previous phases, unless the scope of the shipping campaign substantially increases and requires expansion of staging yards or other such facilities.

5.1.2.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

5.1.3 Federal Infringement/Unfunded Mandates

5.1.3.1 Planning/policy development

No unfunded mandates have occurred thus far in the planning/policy development stage and it is not anticipated that any will occur in this stage. Federal infringement impacts refer to the public perception that the federal government is exerting undue control over land use or other activities within the State of Nevada. The western United States in general, and Nevada specifically, has a history of development that has led to a tenuous and often strained relationship between citizens and the federal government. This is especially true when it comes to land use issues. Those interviewed are generally supportive of the Caliente Railroad and even more supportive of Yucca Mountain as an appropriate site for disposal of used nuclear fuel and high-level radioactive waste. Still, they express concern that this is another example of the federal government dictating how the land in Nevada will and will not be used. This impact has been felt from the initial stage in development.

5.1.3.2 Detailed planning/funding/impact assessment

No unfunded mandates occurred thus far in the detailed planning/funding/impact assessment stage and it is not anticipated that any will occur in this stage. The impact regarding federal infringement remains and will persist without more significant and substantial inclusion of the citizens and governments in Lincoln County in the planning process.

5.1.3.3 Construction/implementation

Without full and appropriate mitigation it is anticipated that local governmental agencies, and any agency providing public services funded in part or in whole by federal or state funds, will be faced with unfunded mandates related to the Caliente Railroad and related activities in this stage. The impact regarding federal infringement will persist without more significant and substantial inclusion of the citizens and governments in Lincoln County in the planning process.

5.1.3.4 Operation/maintenance

Without full and appropriate mitigation it is anticipated that local governmental agencies, and any agency providing public services funded in part or in whole by federal or state funds, will be faced with unfunded mandates related to the Caliente Railroad and related activities in this stage. The impact regarding federal infringement will persist without more significant and substantial inclusion of the citizens and governments in Lincoln County in the planning process.

5.1.3.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed. Based on knowledge of previous government projects, it is very likely that a possibility for unfunded mandates in this stage will occur without full and appropriate mitigation.

5.1.4 Effects on Property Values

5.1.4.1 Planning/policy development

Some of those interviewed indicated they already have felt an impact from the proposed project that resulted in lost economic opportunities related to the possible sale of their property.

5.1.4.2 Detailed planning/funding/impact assessment

The impact of the Caliente Railroad on property values continues to concern citizens. The vast majority is concerned about possible devaluation of their property as a result of the specific loss or disruption of use on their property and/or the stigma associated with the nature of the shipments that will be transported on the Caliente Railroad to Yucca Mountain.

5.1.4.3 Construction/implementation

The value of property directly traversed by the railroad or directly impacted by the various activities needed to construct the railroad will definitely be impacted. Whether the potential increase in market pressure will drive surrounding property values higher or the stigma will result in a loss of economic opportunity will need to be closely monitored. Impacts to the community result with either scenario and should be mitigated.

5.1.4.4 Operation/maintenance

In this stage there will be impacts similar to those that occurred in the previous stage. Whether the potential increase in market pressure will drive surrounding property values higher or the stigma will result in a loss of economic opportunity will need to be closely monitored. Impacts to the community result with either scenario and should be mitigated.

5.1.4.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed. However, if the DOE plans on abandoning or decommissioning the railroad, nationwide experience with the abandonment of railroads and federal projects show that significant impacts often occur.

5.1.5 Impacts on Scenic Vistas

5.1.5.1 Planning/policy development

Impacts to scenic vistas have not been experienced thus far in the planning/policy stage to our knowledge. It is not anticipated that any such impacts will occur in this stage.

5.1.5.2 Detailed planning/funding/impact assessment

It is not anticipated that any impacts to scenic vistas will occur in this stage.

5.1.5.3 Construction/implementation

Construction of the Caliente Railroad will unavoidably impact the scenic vistas in Lincoln County.

5.1.5.4 Operation/maintenance

Operation of the Caliente Railroad will unavoidably impact the scenic vistas in Lincoln County.

5.1.5.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

5.1.6 Additional Operational Costs for Governmental Agencies and Other Public Service Providers

5.1.6.1 Planning/policy development

Impacts to the operational costs have been experienced, but mitigated through the provision of oversight funding. Funding for the Affected Units of Local Governments has failed to meet the programmatic requirements for all of the agencies. Therefore, less analysis and planning can take place than the local governments would desire. Furthermore, the restrictions on the funding have at times prevented the governments from maximizing the beneficial use of funding.

5.1.6.2 Detailed planning/funding/impact assessment

Operational costs for governmental agencies will continue to increase for those governments with jurisdiction over lands included in the CRC. So long as adequate oversight funding is provided to Lincoln County, these costs should be able to be mitigated appropriately.

5.1.6.3 Construction/implementation

Operational costs for governmental agencies will significantly change in size and scope. No longer will planning and impact assessment be the sole thrust of the expenses. Expenses for public services and infrastructure will be required.

5.1.6.4 Operation/maintenance

Operational costs for governmental agencies will be more similar to the construction/implementation phase.

5.1.6.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

5.1.7 Interference with Recreational Activities

5.1.7.1 Planning/policy development

Impacts to recreational activities have not been experienced thus far in the planning/policy stage. It is not anticipated that any such impacts will occur in this stage.

5.1.7.2 Detailed planning/funding/impact assessment

Impacts may occur as rights-of-way are granted on private and public lands during this phase.

5.1.7.3 Construction/implementation

Those interviewed expressed concerns regarding the impact construction of a railroad would have on traditional recreational activities, both organized activities and independent activities.

5.1.7.4 Operation/maintenance

Those interviewed expressed concerns regarding the impact that the operation of a railroad would have on traditional recreational activities, both organized activities and independent activities.

5.1.7.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

5.1.8 Inflate the Cost of Living

5.1.8.1 Planning/policy development

Impacts to the cost of living have not been experienced thus far in the planning/policy stage. It is not anticipated that any such impacts will occur in this stage.

5.1.8.2 Detailed planning/funding/impact assessment

As planning progresses, market forces may inflate the cost of living for the citizens of Lincoln County.

5.1.8.3 Construction/implementation

During construction of the Caliente railroad, market forces may inflate the cost of living for the citizens of Lincoln County.

5.1.8.4 Operation/maintenance

Throughout the operation of the Caliente railroad, market forces may inflate the cost of living for the citizens of Lincoln County.

5.1.8.5 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

5.1.9 Wildlife/Open Country

Some of those interviewed expressed concerns regarding issues such as migration routes for wildlife and access to the open country. There is a distinction between these issues and the issues analyzed in depth in Section 4.0 of this volume that addresses public grazing and ranching issues

5.1.9.1 Planning/policy development

Impacts to the wildlife/open country have not been experienced thus far in the planning/policy stage. It is not anticipated that any such impacts will occur in this stage.

5.1.9.2 Detailed planning/funding/impact assessment

It is not anticipated that any impacts to wildlife/open country will occur in this stage.
Construction/implementation

Those interviewed expressed concerns regarding the impact construction of a railroad would have on wildlife and access to the open country.

5.1.9.3 Operation/maintenance

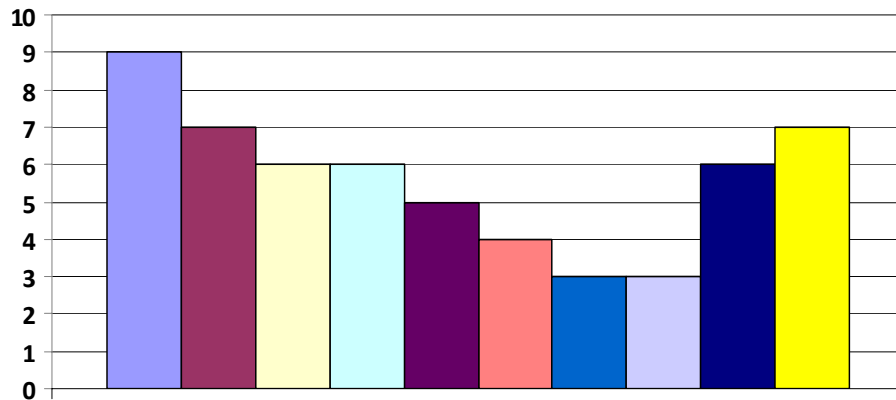
Those interviewed expressed concerns regarding the impact that the operation of a railroad would have on wildlife and access to the open country.

5.1.9.4 Abandonment/decommissioning

More detailed information is needed from the DOE regarding future possible plans for abandonment or decommissioning of the railroad before impacts can be properly assessed.

Figure 5.1: Impacts Identified by Those Surveyed

- infrastructure
- taking away private property
- federal infringement/mandates
- property values
- scenic vistas
- governmental and service operational expenses
- recreation interference
- cost of living
- wildlife/open country
- other



5.2 IMPACTS OF PROPOSED RAIL CORRIDORS AND ALTERNATIVES

This Section includes a summary of the impacts to Lincoln County and private property owners that were identified by the project team along the DOE proposed Caliente Rail Alignment and Alternatives, Lincoln County Cottontail Pass Alternative, and the Lincoln County Short Route Alternative.

The precise alignment is still unknown, making it difficult to effectively evaluate the potential impacts to private property. Therefore, four buffer zone areas were established: The first is within 50 feet on either side of the preferred alignment and alternatives, as they are understood to be. The other buffer zones are at 200 feet, 500 feet, and one-half mile on either side of the alignments and alternatives. Literally hundreds of parcels fall within the mile-wide corridor. A more manageable number lie within the other buffer zones. However, impacts from staging yards and other facilities were not evaluated at all and could likely fall well outside the 500 foot buffer zone.

The DOE identified a nominal width of approximately 31 meters, or about 100 feet, as the preferred width for a construction right-of-way (ROW), where practicable in areas with private land. Therefore, this is the absolute minimum of the properties that will lie within the construction ROW. Along the Caliente Alternative, there are 29 parcels within this boundary. The Eccles Alternative contains four parcels within this nominal width. Additionally, the Caliente Common Segment 1 contains three parcels within this width.

The DOE identified the operations ROW as having a nominal width of 122 meters, or about 400 feet, generally. It is likely that this is the true minimum width of direct and irreversible impacts during the construction and operation of the Caliente Railroad. Along the Caliente Alternative, there are 58 parcels within this boundary. The Eccles Alternative contains four parcels within this nominal width. Additionally, the Caliente Common Segment 1 contains three parcels within this width.

The DOE identified the general construction ROW for the Caliente Railroad as having a nominal width of 300 meters, or about 1,000 feet. While they state they will try to limit that where there is private property, there are no commitments, let alone guarantees. Therefore, it is highly likely that all of the properties within this boundary will be seriously impacted during the construction and operation of the Caliente Railroad. Along the Caliente Alternative, there are 89 parcels within this boundary. The Eccles Alternative contains five parcels within this nominal width. Additionally, the Caliente Common Segment 1 contains three parcels within this width.

5.2.1 DOE Proposed Corridor and Alternatives

The naming convention for the various segments of the DOE Proposed Caliente Corridor was adopted to match those designated in the Draft EIS.

5.2.1.1 DOE Caliente Alternative Segment

The Caliente Alternative Segment impacts numerous private parcels. Eighty-nine (89) of these parcels are within 500 feet of the assumed centerline of the proposed route. Detailed information on each of these parcels, including a map of the parcel showing the location of the parcel in relation to the proposed route is included in Appendix 2.0, Parcel Specific Analyses, of this report.

In addition to the private property specific impacts, the project team evaluated other community-wide impacts to the extent possible during the course of this project. These impacts included infrastructure (i.e., roads and public utilities), recreation, wildlife, mining and natural resource impacts.

INFRASTRUCTURE

The Caliente Alternative will potentially impact two power lines, 14 county roads, one Nevada State Highway, two U.S. highways and three public utilities.

RECREATION AND WILDLIFE

Mule deer migration routes and winter range are bisected on both the east and west sides of Meadow Valley. The Caliente Alternative impacts small game and birds. If fencing is mandatory, Nevada Department of Wildlife (NDOW) has game fencing that would allow both deer and pronghorn antelope to safely cross the CRC. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The CRC in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County, and the private sale of thousands of acres under the Lincoln County Land Act will seriously impact the wildlife in Lincoln County.

MINING

Two mining claims exist in the vicinity of the Caliente Alternative.

NATURAL RESOURCES

Natural resources within the immediate vicinity of the Caliente Alternative include 21 wells and four springs. The *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), Summary indicates that ground water withdrawals during the construction phase of Meadow Valley (Panaca Valley) area are projected by DOE to require the drilling of six new wells (DOE, 2007). These new wells are located in Meadow Valley between Indian Cove and Common Segment 1 of the CRC. During an eight-month growing season twenty high production agricultural wells (500-1,000 gallons per minute) are pumping at full capacity in the same area. In addition within two miles west of Common Segment 1, four more high production irrigation wells are in operation. Twenty-five more agricultural wells could be impacted in the same Meadow Valley water basin. Panaca and Caliente both draw their culinary water from the same water basin as well as a large number of shallow private culinary wells in the valley. The private wells, because of their shallow depth, would be impacted first, potentially leaving hundreds of people with no water. Approximately one half of Lincoln Counties' residential population could be impacted.

5.2.1.2 DOE Eccles Alternative Segment

The Eccles Alternative Segment impacts private parcels, five of which are within 500 feet of the assumed centerline of this Alternative. Detailed information on each of these parcels, including a map of the parcel showing the location of the parcel in relation to this Alternative is included in Appendix 3.0, Parcel Specific Analyses, of this report.

In addition to the private property specific impacts, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife, mining and natural resource impacts.

INFRASTRUCTURE

The Eccles Alternative will potentially impact two power lines, 12 county roads, one U.S. highway and two public utilities.

RECREATION AND WILDLIFE

The Eccles Alternative impacts mule deer winter range. If fencing is mandatory, NDOW has game fencing that would allow both deer and pronghorn antelope to safely cross the CRC. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The CRC in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County and the private sale of thousands of acres under the Lincoln County Land Act will seriously impact the wildlife in Lincoln County.

The Eccles Alternative will also potentially impact up to five existing and future trailheads, trails and crossings.

MINING

Two mining claims exist in the vicinity of the Eccles Alternative.

NATURAL RESOURCES

Natural resources within the immediate vicinity of the Eccles Alternative include five wells and eight springs. The DEIS-RA, Summary indicates that ground water withdrawals during the construction phase of Meadow Valley (Panaca Valley) area are projected by DOE to require the drilling of six new wells (DOE, 2007). These new wells are located in Meadow Valley between Indian Cove and Common Segment 1 of the CRC. During an eight-month growing season twenty high production agricultural wells (500-1,000 gallons per minute) are pumping at full capacity in the same area. In addition, within two miles west of Common Segment 1, four more high production irrigation wells are in operation. Twenty-five more agricultural wells could be impacted in the same Meadow Valley water basin. Panaca and Caliente both draw their culinary water from the same water basin as well as a large number of shallow private culinary wells in the valley. The private wells because of their shallow depth would be impacted first, potentially leaving hundreds of people with no water. Approximately one half of Lincoln Counties' residential population could be impacted.

5.2.1.3 DOE Common Segment 1

The DOE Common Segment impacts private parcels, three of which are within 500 feet of the assumed centerline of this alternative. Detailed information on each of these parcels, including a map of the parcel showing the location of the parcel in relation to this alternative is included in Appendix 3.0, Parcel Specific Analyses, of this report.

In addition to the private property specific impacts, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife, mining and natural resource impacts.

INFRASTRUCTURE

The DOE Common Segment 1 will potentially impact two power lines, 52 county roads and one Nevada State highway. Caliente Public Utilities connects to Lincoln County Power substation in Antelope Canyon near Jim Wilkin Trucking. A new Caliente Public Utility building is under construction next to the Lincoln County Power Substation yard as of November 13, 2007. These facilities are within one quarter mile of Common Segment 1. Impacts to Caliente Public Utility Power Lines will occur as the CRC line exits the City of Caliente. CRC Common Segment 1 will intersect the Lincoln County Power mainline at least two times as it winds over Bennett Pass. This will not require major modifications to the power line.

RECREATION AND WILDLIFE

Mule Deer migration routes and winter range are bisected on both the east and west sides of Meadow Valley. Bennett Pass is a mule deer range, migration route and watering site. Dry Lake Valley, White River, Coal Valley, Garden Valley and Railroad Valley are all pronghorn antelope habitat. Migration routes, watering sites and hunter access would all need to be carefully addressed. White River and Warm Springs are both sage grouse habitat. Sage grouse are being considered for the Endangered Species list. Winter migration patterns are north to south. Fencing the CRC would seriously impact these migrations. If fencing is mandatory NDOW has game fencing that would allow both deer and pronghorn antelope to safely cross the CRC. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The CRC in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County and the private sale of thousands of acres under the Lincoln County Land Act will seriously impact the wildlife in Lincoln County.

Lincoln County is a popular, sought after hunting area. Deer, antelope, elk and wild bird hunting as well as fishing are popular. No fishing areas are within Common Segment 1. Echo Dam and Eagle Valley State Park are ten and twenty miles away. Deer and elk hunting areas include Bennett Pass, Ely Springs and Highland Peak. Many deer hunting roads will be crossed by the CRC. Deer and elk migration routes will be bisected by the CRC which could impact the number of animals available to hunt. Dry Lake Valley is a popular antelope hunting area. The presence of the railroad will bisect antelope migration routes which could impact the numbers of antelope available to hunt. Chukar hunting is popular in the mountain areas around the springs. Ely, Bennett, Deadman, and Hamilton Spring areas are near the CRC route as it leaves Meadow Valley and crosses Dry Lake Valley. Quail, duck and goose hunting will be seriously impacted during the construction phase and for some time after in Meadow Valley as the CRC travels directly through the habitat of these birds. Mountain lion, coyote, and rabbit hunting are also popular hunting activities that occur on a regular basis along the CRC in Lincoln County. Coyote, bobcat, fox, and badger are animals that are trapped by many people in Lincoln County. This activity occurs along the full length of the CRC and will directly impact the road travel to and from trapping areas. Rail crossings at non-marked areas could be very common.

The DOE Common Segment 1 would intersect ATV and jeep trails on the Bennett Pass and multiple times in Dry Lake Valley. A marked network of Nevada state trails has been marked and is still in the development stage. Other areas are being considered. The impact on these trails would be significant due to the fact that ATV travel would be compromised if extensive travel were required to reach rail crossings. ATV activity in Lincoln County has grown tremendously in the last five years. People from Las Vegas come on weekends and holidays in droves to enjoy the wide open spaces on their all terrain vehicles. This phenomenon will directly impact the CRC.

MINING

Mining land use conflicts along the CRC will occur in DOE Common Segment 1. Jim Wilkin Trucking operates a gravel pit and rock quarry in Antelope Canyon in Caliente. The public gravel pit is also located in this area. These mining activities are located within one quarter mile west of this Segment as it exits Caliente going north. This gravel pit is in use every working day. The Short Route Alternative would also impact this mining activity.

NATURAL RESOURCES

Natural resources within the immediate vicinity of the DOE Common Segment 1 include 22 wells and four springs.

5.2.1.4 DOE Garden Valley Alternative Segments

No private parcels lie within 500 feet of the assumed centerline of any of the DOE Garden Valley Alternative Segments 1, 2, 3 or 8. Therefore, detailed information on the private parcels that are impacted by these alternatives is not included in Appendix 3.0, Parcel Specific Analyses, of this report. The private land that is directly impacted by all of these alternatives is owned by Michael Heizer and is home to a major art project, 'City'. Mr. Heizer's concerns are shared by many in the art community and some others in Lincoln County.

Each of the DOE Garden Valley Alternative segments will negatively impact the scenic vistas that are the background for Mr. Heizer's art. The only acceptable mitigation measure according to Mr. Heizer is to avoid the impact by not building a rail line through Garden Valley at all. This can be accomplished by adopting the Lincoln County Short Route or by shipping the material by truck in Nevada. Either of these options seems potentially acceptable to Mr. Heizer.

In addition to the private property impacts noted above, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife, mining and natural resource impacts.

INFRASTRUCTURE

The Garden Valley Alternatives will potentially impact up to one power line and 12 county roads. Mount Wheeler Power provides power to Adaven and nearby areas in the Grant Mountain Range. These areas are outside of Lincoln County but some of the cabins and properties are owned by Lincoln County residents. The CRC will parallel the power line for many miles but will not cross it in any of the proposed CRC alignments in Garden Valley.

RECREATION AND WILDLIFE

Dry Lake Valley, White River, Coal Valley, Garden Valley and Railroad Valley are all pronghorn antelope habitat. Migration routes, watering sites and hunter access would all need to be carefully addressed. White River and Warm Springs are both sage grouse habitat. Sage grouse are being considered for the Endangered Species list. Winter migration patterns are north to south. Fencing the CRC would seriously impact these migrations. If fencing is mandatory NDOW has game fencing that would allow both deer and pronghorn antelope to safely cross the CRC. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The CRC in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County and the private sale of thousands of acres under the Lincoln County Land Act will seriously impact the wildlife in Lincoln County.

MINING

Ten mining claims exist in the vicinity of the Garden Valley Alternative 2.

NATURAL RESOURCES

Natural resources within the immediate vicinity of the Garden Valley Alternatives include up to two wells and three springs.

5.2.1.5 DOE Common Segment 2

The DOE Common Segment does not impact private parcels within Lincoln County. The project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife and natural resource impacts.

INFRASTRUCTURE

The DOE Common Segment 2 will potentially impact 10 county roads. Mount Wheeler Power provides power to Adaven and nearby areas in the Grant Mountain Range. These areas are outside of Lincoln County but some of the cabins and properties are owned by Lincoln County residents. The CRC will parallel the power line for many miles but will not cross it in any of the proposed CRC alignments in Garden Valley.

RECREATION AND WILDLIFE

Dry Lake Valley, White River, Cole Valley, Garden Valley and Railroad Valley are all pronghorn antelope habitat. Migration routes, watering sites and hunter access would all need to be carefully addressed. White River and Warm Springs are both sage grouse habitat. Sage grouse are being considered for the Endangered Species list. Winter migration patterns are north to south. Fencing the CRC would seriously impact these migrations. If fencing is mandatory NDOW has game fencing that would allow both deer and pronghorn antelope to safely cross the CRC. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The CRC in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County and the private sale of thousands of

acres under the Lincoln County Land Act will seriously impact the wildlife in Lincoln County.

Coal Valley and Garden Valley are antelope and deer hunting areas. The CRC Common Segment 2 will cross many of the roads used to travel to deer hunting areas. The most common deer hunting areas are in the Grant Range in Nye County. The CRC would intersect both deer and antelope migration trails and could impact the deer and antelope populations. Chukar and quail are also hunted. The CRC Common Segment 2 would not interfere with these birds' habitat. Mountain lion, coyote, and rabbit hunting are also popular hunting activities that occur on a regular basis along the CRC in Lincoln County. Coyote, bobcat, fox, and badger are trapped by many people in Lincoln County. This activity occurs along the full length of the CRC and will directly impact the road travel to and from trapping areas. Rail crossings at non-marked areas could be very common.

The remote areas along the proposed and CRC route are popular areas for hiking, camping and rock climbing. Travel to remote areas will be impacted by the construction of the CRC. It is anticipated that those individuals participating in these activities would use appropriate rail crossings.

Many Native American sites are found along the proposed CRC. Travel to these sites will not be hindered by the CRC.

Many prospectors roam the far reaches of Lincoln County looking for the 'Mother Lode'. Every mountain range has the remnants of some old 'diggings'. Travel to these areas should not be restricted by the CRC.

MINING

Mining land use conflicts may occur in Common Segment 2 as the CRC exits Garden Valley going west. The Frieburg Mining District in the Worthington Mountains contains patented mining claims that are not in operation at this time. Gold and silver were mined in this area and rumor indicates that this area may again be active as gold and silver prices continue to climb. The CRC exits Garden Valley through McCutcheon Pass one mile west of the Frieburg Mining District.

NATURAL RESOURCES

Natural resources within the immediate vicinity of the DOE Common Segment 2 include three wells and one spring.

5.2.2 Lincoln County Short Route

The Lincoln County Short Route would share the same impacts as either the DOE Caliente Alternative or the DOE Eccles Alternative. Therefore, these impacts have not been repeated in this Section. Maps and parcel-level details of the private property along the remainder of the Lincoln County Short Route were not available to the project team. Therefore detailed information on each of the parcels along the Lincoln County Short Route other than those affected by the Caliente and Eccles Alternatives were not included in Appendix 3.0, Parcel Specific Analyses, of this report.

In addition to the private property specific impacts, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife, mining and natural resource impacts.

INFRASTRUCTURE

The Lincoln County Short Route will potentially impact three power lines, 11 county roads, three Nevada State highways, three U.S. highways and four public utilities.

RECREATION AND WILDLIFE

Mule deer migration routes and winter range are bisected on both the east and west sides of Meadow Valley. The Short Route Alternative impacts small game and birds. If fencing is mandatory NDOW has game fencing that would allow both deer and pronghorn antelope to safely cross the rail corridor. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The Lincoln County Short Route in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County and the private sale of thousands of acres under the Lincoln County Land Act could seriously impact the wildlife in Lincoln County.

The proposed Lincoln County Short Route will impact Desert Big Mountain Sheep habitat and hunting as it enters Pahranaagat Valley through Crystal Wash and exits Pahranaagat Valley on Hancock Summit. Hancock Summit is also a popular deer and bird hunting area. Hunting roads would be crossed. Four bird guzzlers are within ¼ mile of the Lincoln County Short Route on the Hancock Summit. The Key Pitman Wildlife Management area is within one quarter mile of the Lincoln County Short Route as it crosses Pahranaagat Valley. This area is a popular fishing and bird hunting area. Impact should be minimal if the rail route stays near the highway ROW.

The Lincoln County Short Route would intersect ATV and jeep trails on the Bennett Pass and multiple times in Dry Lake Valley. A marked network of Nevada state trails has been marked and is still in the development stage. Other areas are being considered. The impact on these trails would be significant due to the fact that ATV travel would be compromised if extensive travel was required to reach rail crossings. ATV activity in Lincoln County has grown tremendously in the last five years. People from Las Vegas come on weekends and holidays in droves to enjoy the wide open spaces on their all terrain vehicles. This phenomenon will directly impact the Lincoln County Short Route.

MINING

The Lincoln County Short Route comes within the vicinity of 12 mining claims.

NATURAL RESOURCES

Natural resources within the immediate vicinity of the Lincoln County Short Route include seven wells and four springs.

5.2.3 Cottontail Pass Alternative

Following analysis, the project team determined that there were no significant impacts to the community at large or specific private parcels from the use of this Alternative that had not already been analyzed. Furthermore, it was determined that no community at large or specific private parcel impacts were successfully avoided through the use of this Alternative.

5.3 SUGGESTED MANAGEMENT ACTIONS TO MITIGATE POTENTIAL ADVERSE IMPACTS

This Section includes a summary of the mitigation actions that were identified by the project team. Mitigations were assessed through interviews with community stakeholders and private property owners. These mitigation measures should be considered preliminary, and subject to change based on final rail alignment and operational criteria. Lincoln County and the City of Caliente should be included in the placement, planning and design of any and all mitigation measures pertinent to the planning, design, construction, operation and possible abandonment or decommissioning of the railroad that lies within their respective jurisdictions.

The Council of Environmental Quality (CEQ) has defined impact management techniques as follows:

1. Avoid
2. Minimize
3. Rectify
4. Reduce or eliminate
5. Compensate

5.3.1 DOE Proposed Corridor and Alternatives

The naming convention for the various segments of the DOE Proposed Caliente Corridor was adopted to match those designated in the Draft EIS.

5.3.1.1 DOE Caliente Alternative Segment

The Caliente Alternative Segment impacts numerous private parcels. Eighty-nine (89) of these parcels are within 500 feet of the assumed centerline of the proposed route. Detailed information on the proposed mitigation measures for each of these parcels is included in Appendix 2.0, Parcel Specific Analyses, of this report. The Parcel Specific Analyses did not detail the recommendations for avoiding the impacts by choosing a different alignment or mode of transportation as it is intended to describe the mitigation measures recommended should that alignment be selected. However, it is important to note that many of those private property owners interviewed indicated a mitigation preference of avoidance through the implementation of truck shipments in Nevada. The general consensus among property owners interviewed is that if the impacts cannot be avoided, they expect fair compensation not only for the actual ROW required for the construction and operation of the railroad, but also for whatever impact that acquisition has on the remainder of the property.

In addition to the private property specific mitigation, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife and natural resource impacts.

INFRASTRUCTURE

It is recommended that infrastructure upgrades occur prior to the first shipments arriving in Nevada.

RECREATION AND WILDLIFE

More detailed information regarding the design, construction plans, operational plans and possible abandonment or decommissioning is needed to recommend effective mitigation measures. It is recommended that local stakeholders be involved extensively in planning for each of these stages to help ensure the avoidance, minimization, rectification and/or reduction of impacts to the maximum extent practicable.

NATURAL RESOURCES

The potentially drastic impact on water resources that the construction of the Caliente Railroad will have on the citizens of Lincoln County and the City of Caliente needs to be more fully evaluated before appropriate mitigation measures can be recommended.

5.3.1.2 DOE Eccles Alternative Segment

The Eccles Alternative Segment impacts private parcels, five of which are within 500 feet of the assumed centerline of this alternative. Detailed information on the proposed mitigation measures for each of these parcels is included in Appendix 3.0, Parcel Specific Analyses, of this report. The Parcel Specific Analysis did not detail the recommendations for avoiding the impacts by choosing a different alignment or mode of transportation as it is intended to describe the mitigation measures recommended should that alignment be selected. However, it is important to note that many of those private property owners interviewed indicated a mitigation preference of avoidance through the implementation of truck shipments in Nevada. The general consensus among property owners interviewed is that if the impacts cannot be avoided, they expect fair compensation not only for the actual ROW required for the construction and operation of the railroad, but also for whatever impact that acquisition has on the remainder of the property.

In addition to the private property specific mitigation, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife and natural resource impacts.

INFRASTRUCTURE

It is recommended that infrastructure upgrades occur prior to the first shipments arriving in Nevada.

RECREATION AND WILDLIFE

More detailed information regarding the design, construction plans, operational plans and possible abandonment or decommissioning is needed to recommend effective mitigation measures. It is recommended that local stakeholders be involved extensively in planning for each of these stages in to help ensure the avoidance, minimization, rectification and/or reduction of impacts to the maximum extent practicable.

NATURAL RESOURCES

The potentially drastic impact on water resources that the construction of the Caliente Railroad will have on the citizens of Lincoln County and the City of Caliente needs to be more fully evaluated before appropriate mitigation measures can be recommended.

5.3.1.3 DOE Common Segment 1

The DOE Common Segment 1 impacts private parcels, three of which are within 500 feet of the assumed centerline of this alternative. Detailed information on the proposed mitigation measures for each of these parcels is included in Appendix 3.0, Parcel Specific Analyses, of this report. The Parcel Specific Analyses did not detail the recommendations for avoiding the impacts by choosing a different alignment or mode of transportation as it is intended to describe the mitigation measures recommended should that alignment be selected. However, it is important to note that many of those private property owners interviewed indicated a mitigation preference of avoidance through the implementation of truck shipments in Nevada. The general consensus among property owners interviewed is that if the impacts cannot be avoided, they expect fair compensation not only for the actual ROW required for the construction and operation of the railroad, but also for whatever impact that acquisition has on the remainder of the property.

In addition to the private property specific mitigation, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife and natural resource impacts.

INFRASTRUCTURE

It is recommended that infrastructure upgrades occur prior to the first shipments arriving in Nevada.

RECREATION AND WILDLIFE

More detailed information regarding the design, construction plans, operational plans and possible abandonment or decommissioning is needed to recommend effective mitigation measures. It is recommended that local stakeholders be involved extensively in planning for each of these stages in to help ensure the avoidance, minimization, rectification and/or reduction of impacts to the maximum extent practicable.

NATURAL RESOURCES

The potentially drastic impact on water resources that the construction of the Caliente Railroad will have on the citizens of Lincoln County and the City of Caliente needs to be more fully evaluated before appropriate mitigation measures can be recommended.

5.3.1.4 DOE Garden Valley Alternative Segments

No private parcels lie within 500 feet of the assumed centerline of any of the DOE Garden Valley Alternative Segments 1, 2, 3 or 8. Therefore, detailed information on the private parcels that are impacted by these Alternatives is not included in Appendix 3.0, Parcel Specific Analyses, of this report. The private land that is directly impacted by all of these Alternatives is owned by Michael Heizer and is home to a major art project, 'City'. Mr. Heizer's concerns are shared by many in the art community as well as others in Lincoln County.

Each of the DOE Garden Valley Alternative Segments will negatively impact the scenic vistas that are the background for Mr. Heizer's art. The only acceptable mitigation measure according to Mr. Heizer is to avoid the impact by not building a rail line through Garden Valley at all. This can be accomplished by adopting the Lincoln County Short Route or by shipping the material by truck in Nevada. Either of these options seem potentially acceptable to Mr. Heizer.

In addition to the private property impacts noted above, the project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife and natural resource impacts.

INFRASTRUCTURE

It is recommended that infrastructure upgrades occur prior to the first shipments arriving in Nevada.

RECREATION AND WILDLIFE

More detailed information regarding the design, construction plans, operational plans and possible abandonment or decommissioning is needed to recommend effective mitigation measures. It is recommended that local stakeholders be involved extensively in planning for each of these stages to help ensure the avoidance, minimization, rectification and/or reduction of impacts to the maximum extent practicable.

NATURAL RESOURCES

The potentially drastic impact on water resources that the construction of the Caliente Railroad will have on the citizens of Lincoln County and the City of Caliente needs to be more fully evaluated before appropriate mitigation measures can be recommended.

5.3.1.5 DOE Common Segment 2

The DOE Common Segment does not impact private parcels within Lincoln County. The project team evaluated other community-wide impacts to the extent possible during the course of this project including infrastructure (i.e., roads and public utilities), recreation, wildlife and natural resource impacts.

INFRASTRUCTURE

It is recommended that infrastructure upgrades occur prior to the first shipments arriving in Nevada.

RECREATION AND WILDLIFE

More detailed information regarding the design, construction plans, operational plans and possible abandonment or decommissioning is needed to recommend effective mitigation measures. It is recommended that local stakeholders be involved extensively in planning for each of these stages to help ensure the avoidance, minimization, rectification and/or reduction of impacts to the maximum extent practicable.

NATURAL RESOURCES

The potentially drastic impact on water resources that the construction of the Caliente Railroad will have on the citizens of Lincoln County and the City of Caliente needs to be more fully evaluated before appropriate mitigation measures can be recommended.

5.3.2 Lincoln County Short Route

The Lincoln County Short Route would share the same impacts and recommended mitigation measures as either the DOE Caliente Alternative or the DOE Eccles Alternative. Therefore, these mitigation measures have not been repeated in this Section. Maps and parcel-level details of the private property along the remainder of the Lincoln County Short Route were not available to the project team. Therefore detailed information on each of the parcels along the Lincoln County Short Route other than those affected by the Caliente and Eccles Alternatives were not included in Appendix 3.0, Parcel Specific Analyses, of this report.

5.3.3 Cottontail Pass Alternative

Following analysis, the project team determined that there were no significant impacts to the community at large or specific private parcels from the use of this Alternative that had not already been analyzed. Furthermore, it was determined that no community at large or specific private parcel impacts were successfully avoided through the use of this alternative. Therefore, no additional mitigation measures have been recommended.

5.3.4 Corridor-wide Mitigation Recommendations

5.3.4.1 Infrastructure

Those interviewed repeatedly recommended upgrading infrastructure PRIOR to the commencement of shipping. The consensus was that the federal government should fund the upgrades, but significant local control would be beneficial.

5.3.4.2 Taking of Private Property

The suggested mitigation measures for the impacts to private property were somewhat diverse. Most agreed that economic benefits for locals should be maximized as they are among the most impacted populations. Others, either in conjunction with or in place of recommending the maximization of economic benefits suggested various ways to avoid private property. Some suggested constructing a rail line that bypasses private property to the maximum amount practicable through a more direct route such as the Caliente-Chalk Mountain route or the Lincoln County Short Route. Others suggested intermodal or highway trucking of the shipments as a way to reduce the impact on private property.

5.3.4.3 Federal Infringement/Unfunded Mandates

Many of those interviewed feel disenfranchised by the public consultation process of the DOE. Even those who support the Caliente Railroad, which is the majority of those interviewed, are somewhat disillusioned with the process the DOE has utilized thus far. More local involvement in the planning process is highly recommended to mitigate this impact. Additionally, many believe the DOE and the federal government could do a lot more to maximize the local economic benefit of this project as there are plenty of existing positive examples from both the federal sector and the private nuclear industry sector.

5.3.4.4 Effects on Property Values

The recommended mitigation measures for the effects on property values are similar to those recommended for mitigating the taking of private property-construction of a direct route/bypass private property, compensation, and maximization of economic benefit for locals.

5.3.4.5 Impacts on Scenic Vistas

Truck shipping was the primary recommended mitigation measure as any railroad constructed in Lincoln County will impact the scenic vistas. The secondary preferred mitigation measure is to construct a more direct route that traverses the Nevada Test Site (NTS). In summary, as one interviewee stated, the only mitigation of this impact is to “keep it out of sight”.

5.3.4.6 Additional Operational Costs for Governmental Agencies and Other Public Service Providers

Additional operational costs for governmental agencies and other public service providers need to be mitigated through a combination of three things:

1. Federal funding should be provided for an direct cost.
2. Economic opportunities should be maximized for locals to give companies and industries incentives to relocate.
3. Payments equal to taxes must be paid, even on the ROW, as if it were privately owned land and equipment.

5.3.4.7 Interference with Recreational Activities

Those interviewees who expressed concern with the potential interference with recreational activities believed these impacts could be mitigated with meaningful local involvement in planning. Other mitigation measures mentioned were to construct a more direct route or ship the material by truck.

5.3.4.8 Inflate the Cost of Living

This impact is a result of market pressures that are largely out of the control of the DOE. Therefore, the interviewees who mentioned this impact primarily suggested maximizing the economic benefit of the project for locals as the only possible mitigation.

5.3.4.9 Wildlife/Open Country

Those interviewees who expressed concern with the potential impact to wildlife and access to open country believed these impacts could be mitigated with meaningful local involvement in planning. Other mitigation measures mentioned were to construct a more direct route or ship the material by truck.

Table 5.1: Summary of Recommended Mitigation Measures

IMPACTS	MITIGATION
infrastructure	infrastructure upgrades PRIOR to shipments
taking away private property	direct route/bypass private property, compensation, truck shipments, maximize economic benefit for locals
federal infringement/mandates	local involvement in planning, local control, federal funding, maximize economic benefit for locals
property values	direct route/bypass private property, compensation, federal funding, maximize economic benefit for locals
scenic vistas	direct route/bypass private property, keep out of sight, truck shipments
governmental and service operational expenses	federal funding
recreation interference	local involvement in planning, direct route, truck shipments
cost of living	direct route/bypass private property, compensation, federal funding, maximize economic benefit for locals
wildlife/open country	local involvement in planning, direct route/bypass private property, truck shipments

5.4 COMPARATIVE ANALYSIS OF PROPOSED RAIL CORRIDORS

The private parcel and community at large impacts are largely the same when compared between the DOE proposed routes and the Lincoln County assessed routes (Lincoln County Short Route and Cottontail Pass). The largest differences are between the two initiating Segments-Caliente Alternative versus Eccles Alternative.

5.4.1 Private Property

The Caliente Alternative Segment impacts numerous private parcels. Eighty-nine (89) of these parcels are within 500 feet of the assumed centerline of the proposed route. The Eccles Alternative also impacts private parcels, but only five of these parcels are within 500 feet of the assumed centerline of the proposed route.

5.4.2 Infrastructure

The Caliente Alternative will potentially impact two power lines, 14 county roads, one Nevada State highway, two U.S. highways and three public utilities. The Eccles Alternative will potentially impact two power lines, 12 county roads, one U.S. highway and two public utilities.

5.4.3 Recreation and Wildlife

Mule deer migration routes and winter range are bisected on both the east and west sides of Meadow Valley. The Caliente Alternative impacts small game and birds. If fencing is mandatory NDOW has game fencing that would allow both deer and pronghorn antelope to safely cross the CRC. If a well is developed for construction wildlife may grow dependent on it as a watering site. If the well is removed after construction the wildlife may die due to the fact that they have grown dependent on the watering site. The CRC in combination with power generating windmills on Mt. Wilson, construction of the water pipeline to Clark County and the private sale of thousands of acres under the Lincoln County Land Act will seriously impact the wildlife in Lincoln County.

The Eccles Alternative will impact wildlife less, but will still impact mule deer winter range. The Eccles Alternative will also potentially impact up to five existing and future trailheads, trails and crossings.

5.4.4 Mining

Two mining claims exist in the vicinity of the Caliente Alternative and the Eccles Alternative.

5.4.5 Natural Resources

Natural resources within the immediate vicinity of the Caliente Alternative include 21 wells and four springs. Natural resources within the immediate vicinity of the Eccles Alternative include five wells and eight springs.

The DEIS-RA Summary indicates that ground water withdrawals during the construction phase of Meadow Valley (Panaca Valley) area are projected by DOE to require the drilling of six new wells. These new wells are located between in Meadow Valley between Indian Cove and the Common Segment 1 of the CRC. During an eight month growing season twenty high production agricultural wells (500-1,000 gallons per minute) are pumping at full capacity in the same area. In addition within two miles west of Common Segment 1, four more high production irrigation wells are in operation. Twenty-five more agricultural wells could be impacted in the same Meadow Valley water basin. Panaca and Caliente both draw their culinary water from the same water basin as well as a large number of shallow private culinary wells in the valley. The private wells because of their shallow depth would be impacted first, potentially leaving hundreds of people with no water. Approximately one half of Lincoln Counties' residential population could be impacted. These impacts will likely be comparable no matter which alternative is selected.