

CHAPTER 1
PROPOSED PLAN

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INTRODUCTION

The Idaho Power Company (IPCo) proposes to construct, operate, and maintain the Southwest Intertie Project (SWIP), a single-circuit, overhead 500kV transmission line between the existing Midpoint Substation near Shoshone, Idaho, and a proposed substation site in the Dry Lake Valley northeast of Las Vegas, Nevada. The line would be supported by V-guyed and self-supporting steel-lattice, and steel-pole H-frame structures placed an average of 1500 feet apart.

The IPCo is also proposing the construction, operation, and maintenance of a single-circuit, overhead 500kV transmission line to connect from a point near Ely, Nevada, east to a proposed substation near Delta, Utah. This segment of the SWIP is referred to in the Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA) as the Crosstie (hereafter referred to as the Ely to Delta segment). The line would be supported by self-supporting steel-lattice and steel-pole H-frame structures placed an average of 1500 feet apart. Land rights for the Ely to Delta segment would be obtained in the name of the IPCo. The IPCo has entered into an agreement with Los Angeles Department of Water and Power (LADWP) to convey this segment of the right-of-way grant with the approval of the BLM to the LADWP on behalf of the Utah-Nevada Transmission Project (UNTP). This is referred to as the "Delta Grant" in the agreement. The agreement further states that the IPCo would conduct the necessary environmental permitting for the Delta Grant and then request that the BLM assign it to the LADWP for construction, operation, and maintenance. The UNTP participants include utilities in Utah, Nevada, and California.

In 1988, the IPCo applied for a right-of-way grant to construct and operate a transmission interconnection from their 500kV Midpoint Substation near Shoshone, Idaho to a proposed substation site in the Delta, Utah area. In the Delta area, the IPCo was proposing to interconnect with and obtain transmission capacity on the UNTP, a proposed 500kV transmission line from Delta to a proposed substation site located approximately 13 miles southwest of Boulder City, Nevada. The proposal also included the line segment between Ely and Delta, which was proposed to be developed as a second phase of the UNTP.

In early 1990, the IPCo determined that the UNTP would be fully subscribed and would not be able to provide the transmission capacity for the SWIP to reach the proposed substation near Boulder City, Nevada. The IPCo decided that the SWIP would have to be extended south from the Ely area in order to meet the purpose and need for the SWIP project to interconnect in the Las Vegas area. In June 1990, the SWIP studies were expanded to include routes from the Ely, Nevada area to a proposed substation site northeast of Las Vegas in the Dry Lake valley.

The SWIP Ely to Delta segment was originally a joint SWIP and UNTP transmission line segment. When the SWIP right-of-way application to the Bureau of Land Management (BLM) was amended in June 1990, the IPCo's need for the Ely to Delta segment changed. However, the Ely to Delta segment remains an important part of the UNTP and the need for it remains unchanged.

The lead federal agency for the SWIP, the BLM, recommended that this transmission segment be retained in the SWIP Environmental Impact Statement/Plan Amendment (EIS/PA) process. This

nearly 160-mile transmission line segment would extend east from the vicinity of Ely, Nevada, to near Delta, Utah. The right-of-way for this segment would be granted to the IPCo, who would request that the BLM assign it to the LADWP. The LADWP would, on behalf of the UNTP participants, construct, operate, and maintain this portion of the line and a proposed substation near the Intermountain Generating Station near Delta, Utah.

The IPCo proposes to assign the Ely to Delta portion of the right-of-way grant, if approved, to the LADWP. The LADWP has been involved in all aspects of the EIS process. The BLM Ely (Nevada) and Richfield (Utah) District have also participated in every step of the EIS process, and will be involved in the decision process with the rest of the potentially affected BLM districts. If a right-of-way grant is assigned for the SWIP Ely to Delta segment, the BLM would coordinate directly with the UNTP participants during development of the Construction, Operation, and Maintenance Plans, as well as the actual construction, operation, and maintenance of the project. Also refer to the expanded discussion of Purpose and Need in Chapter 3 of this document.

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The Agency Preferred Alternative is to grant the IPCo a 200-foot right-of-way across nearly 700 miles of lands administered by the BLM, Forest Service (FS), Bureau of Reclamation, and private owners. This route is a combination of Routes A and G, for the Midpoint to Dry Lake segment of the SWIP and the 230kV Corridor Route for the Ely to Delta segment of the SWIP (refer to Figure 1-1 for a map of the Proposed Plan and to the Alternative Routes map in the Map Volume accompanying the SWIP DEIS/DPA). The Agency Preferred Alternative also includes four proposed substations or series compensation sites, expansion of the Midpoint Substation in southern Idaho, a series compensation station in the Delamar Valley in southeastern Nevada (exact site not yet selected and subject to additional environmental permitting) and the 13 sites for microwave communication facilities. The Proposed Plan Amendment is to designate a utility corridor along the Agency Preferred Alternative to accommodate the SWIP 500kV transmission line where this route deviates from agency designated and planning corridors.

Midpoint to Dry Lake Segment

The SWIP Midpoint to Dry Lake segment is proposed as a 500,000-volt (500kV) alternating current (AC) transmission line with an estimated capacity rating of 1200 megawatt (MW). The over 500-mile long line would extend from the existing Midpoint Substation near Shoshone, Idaho to a proposed substation near the Dry Lake Valley northeast of Las Vegas, Nevada.

The towers for the Midpoint to Dry Lake segment would range from 90-160 feet in height, but would average 120-130 feet. Towers would be spaced approximately 1200-1500 feet apart depending upon terrain and other construction factors. The SWIP Midpoint to Dry Lake segment would be constructed generally using the following tower types:

- V-guyed (or other guyed) steel lattice or self-supporting steel lattice
- steel-pole H-frame in agricultural areas
- self-supporting steel lattice at specific intervals for lateral support

The Midpoint to Dry Lake segment would involve crossing several districts of the BLM in Idaho and Nevada. The section of this chapter - Proposed Plan Amendments lists the BLM Districts and Resource Area land use plans that would be affected by the Plan Amendment. Figure 1-1 illustrates the Agency Preferred Alternative for the Midpoint to Dry Lake segment in relation to the alternatives compared in the SWIP DEIS/DPA (a combination of Routes A and G) that would utilize Links 10, 20, 41, 40, 50, 70, 711, 714, 101, 715, 713, 110, 130, 150, 151, 152, 200, 221, 223, 212, 230, 241, 242, 244, 270, 291, 293, 310, 340, 362, 363, 669, 670, 672, 673, 675, 690, 700, and 720 (also refer to Figure 1-1 in this document or the Alternative Routes map in the Map Volume accompanying the SWIP DEIS/DPA Map Volume).

The Agency Preferred Alternative would require equipment additions to the Midpoint Substation, one proposed substation near Ely, Nevada, and a proposed substation in the Dry Lake Valley in southern Nevada. A Series compensation station would be needed to increase the electrical performance of the system northeast of Wells, Nevada, which is about halfway between the two northern substation sites. This series compensation station near Wells may be expanded to accommodate switching equipment (substation) in the future. Another series compensation station would be required in the Delamar Valley in southern Nevada.

The proposed substation and series compensation sites for the Midpoint to Dry Lake segment include:

- Site 4 at the Thousand Springs Series Compensation Siting Area northeast of Wells, Nevada
- Site 10 at the Robinson Summit Substation Siting Area near Ely, Nevada
- Delamar Valley Series Compensation Siting Area (If this facility is required the specific location would be determined later with a separate Environmental Assessment prior to construction.)
- One of the three proposed substation sites (Site 17, 18, or 20) at the Dry Lake Substation Siting Area (Site selection would depend on the final routing decision for the Marketplace-Allen Transmission (MAT) Project. If the MAT is routed south through the Apex Industrial Area the Agency Preferred Alternative site would be either Site 17 or 18. If the MAT is routed south and east of the Dry Lake Range the Agency Preferred Alternative site would either be Site 18 or 20).

A new microwave communication system to operate the system would also be required between Midpoint Substation and the proposed substation at Dry Lake. The 13 proposed microwave communication sites for the Midpoint to Dry Lake segment include:

- | | |
|-------------------|--|
| • Hansen Butte | developed site, power supply exists |
| • Cottonwood | undeveloped site, install solar power system |
| • Ellen D | developed site, install solar power system |
| • Six Mile | 1/2 mile from developed site, install solar power system |
| • Rocky Point | developed site, power supply exists |
| • Spruce Mountain | developed site, install solar power system |
| • Long Valley | undeveloped site, install solar power system |
| • Copper | developed site, power supply exists |
| • Cave Mountain | developed site, power supply exists |

- Mount Wilson developed site, power supply exists
- Highland Peak developed site, power supply exists
- Beaver Dam Mountain developed site, power supply exists
- Glendale developed site, power supply exists

The microwave communication sites would be located on developed sites to the extent possible. No ground disturbing activities would occur at three of these sites: Hansen Butte, Beaver Dam Mountain, and Glendale. At these sites, changes would consist of the addition of some equipment and a dish at the existing microwave communication facilities.

Ground wire having fiber optic capability may be installed rather than traditional ground wire to serve the needs of commercial communication companies. If this is done the fiber optic network could also be used to facilitate project communication needs. If installed, access to the fiber optic ground wire by a commercial communications company would only be allowed upon completion of all environmental permitting activities (e.g., National Environmental Policy Act) and obtaining the right-of-way. Regeneration stations would be needed at 20-40 mile intervals along the transmission line right-of-way and are typically small concrete buildings approximately 10 feet by 10 feet. They would likely be placed on or immediately adjacent to the SWIP right-of-way (also refer to Potential Fiber Optic Ground Wire in the Cumulative Effects section of Chapter 3 of this document and Right-of-Way Acquisition and Communication Facilities in the SWIP DEIS/DPA).

Where the Midpoint to Dry Lake segment would parallel the UNTP, the rights-of-way of the SWIP and the UNTP would need sufficient separation to meet reliability and outage criteria of the Western States Coordinating Council (WSCC) (also refer to page 1-2 of the SWIP DEIS/DPA and the section on Right-of-Way in Chapter 3 of this document). The UNTP and the Midpoint to Dry Lake segment of the SWIP would converge near Robber's Roost Hills (Link 675 - milepost 12), and would travel parallel for approximately 88.5 miles (Links 690, 700, and 720 - milepost 15) into Coyote Spring Valley in southern Nevada, where the UNTP would continue south and the Midpoint to Dry Lake segment of the SWIP would cross through the southern end of the Arrow Canyon Range into the Dry Lake Valley. The involved regional utilities would coordinate with the Las Vegas District of the BLM on the final configuration of this corridor (i.e., tower spacing, separation, crossings, etc.)

The Midpoint to Dry Lake segment, with its proposed southern connection to the Dry Lake substation, would require interconnection with the Marketplace-Allen Transmission Project (MAT). The Notice to Proceed for construction of the SWIP, from Ely to Dry Lake, would be contingent on approval of the MAT or a similar transmission facility which would interconnect the proposed Dry Lake Substation to the proposed marketplace substation (also refer to the Cumulative Effects section in Chapter 3).

The Midpoint to Dry Lake segment of the SWIP is scheduled to begin commercial operation by late 1997. Construction would begin in 1995. Refer to Table 1-1 of this document for a comparison of environmental impacts between routes.

Ely to Delta Segment

The SWIP Ely to Delta segment is proposed as a 500kV AC transmission line with an estimated capacity rating of 1100 MW. The nearly 160-mile long line would extend from a proposed

substation near the Intermountain Power Facilities near Delta, Utah, to a proposed substation located in the vicinity of Ely, Nevada (same substation near Ely as for the Midpoint to Dry Lake segment).

The Ely to Delta segment is a joint effort between the UNTP participants and the SWIP participants. Idaho Power Company, on behalf of the SWIP, is responsible for the licensing and permitting. The LADWP on behalf of the UNTP, would construct and operate the SWIP Ely to Delta segment.

The towers for the Ely to Delta segment would range from 90-160 feet in height, but would average 120-130 feet. Towers would be spaced approximately 1200 to 1500 feet apart, depending upon terrain and other construction factors. The Ely to Delta segment would be constructed using:

- self-supporting steel lattice structures
- steel pole H-Frame structures for visual mitigation and agricultural areas

The Ely to Delta segment would cross three different BLM Districts in Utah and Nevada and a portion of the Humboldt National Forest in Nevada. The section on Proposed Plan Amendments later in this chapter lists the BLM Districts and Resource Areas that would be affected by the proposed Plan Amendment. Figure 1-1 illustrates the 230kV Corridor Route as the Agency Preferred Alternative for the Ely to Delta segment, which includes Links 350, 351, 352, 370, 380, 460, 461, 462, 464, 466, 468, 470, 471, 473, 540, 571, 572, 580, 581, and 582 (also refer to the Alternative Routes map in the Map Volume accompanying the SWIP DEIS/DPA).

The Agency Preferred Alternative would require a proposed substation near Ely, Nevada, and a proposed substation near Delta, Utah. The proposed substation sites for the Ely to Delta segment include:

- Site 14 at the Intermountain Substation Siting Area near Delta, Utah
- Site 10 at the Robinson Summit Substation Siting Area near Ely, Nevada (same as above for the Midpoint to Dry Lake segment)

With some minor modifications the Agency Preferred Alternative route from the proposed substation in the Ely area to the proposed substation near Delta is the same as the 230kV Corridor Route described and analyzed on pages 2-56 through 2-58 in the SWIP DEIS/DPA. A localized modification was made to the 230kV Corridor Route in response to public comment received on the SWIP DEIS/DPA (refer to Sacramento Pass Mitigation Reroute in Chapter 3 of this document).

The Agency Preferred Alternative would utilize utility corridors in accordance with the direction in the BLM's House Range Resource Management Plan (RMP), the Warm Springs RMP, and the Schell Management Framework Plan (MFP). Because the 230kV Corridor Route and the Cutoff Route have similar environmental impacts (refer to environmentally preferred route discussion in Chapter 2 of the SWIP DEIS/DPA, and Table 1-2 and the Cumulative Effects section in Chapter 3 of this document) and this route best fulfills Federal Land Policy and Management Act's (FLPMA) mandate to consolidate corridors where possible, the BLM favors the 230kV Corridor Route as the agencies' preferred routing alternative. In addition, the 230kV Corridor Route is preferred environmentally because this route and substation would best minimize environmental impacts from the reasonably foreseeable future construction of the White Pine Power Project and from the interconnections with the 230kV transmission system in the Ely area. Refer to the Cumulative Effects section in Chapter 3 of this document for the discussion of "buildout" scenarios for the Ely area.

An existing microwave communication system may be used on the transmission line system between Ely, Nevada, and Delta, Utah.

The Ely to Delta segment is scheduled to begin commercial operation in 1998. Construction would begin in 1996.

Selecting the Proposed Plan

The Proposed Plan was selected by the BLM as the lead agency and the Forest Service, the National Park Service (NPS), the Bureau of Indian Affairs (BIA), and the Bureau of Reclamation as cooperating agencies. After reviewing the recommendations of the various District Managers, the Idaho State Director approved the Proposed Plan with consideration of several criteria:

- the issues and concerns identified during scoping and throughout the planning process
- oral comments received during formal public meetings and written comments received during the public review of the SWIP DEIS/DPA
- formal consultation and coordination with other agencies
- the results of the impact analysis of the Agency Preferred Alternative and other alternatives compared in the SWIP DEIS/DPA
- the decision criteria developed and considered by management, including 1) provide capacity for future utilities, 2) minimize new access roads needed for construction and operation, 3) public preferences expressed during the process, 4) avoid agricultural lands to the degree possible, 5) use existing utility and planning corridors, 6) minimize visual impacts, 7) minimize impacts to environmental resources (e.g., wildlife, cultural, and historical resources), 8) minimize conflicts with military airspace, and 9) allow for good transmission system reliability

The National Park Service does not agree with the Agency Preferred Alternative for the Ely to Delta segment. Because of visual impacts to Great Basin National Park and to visitors driving to the park, the National Park Service recommends rejection of the 230kV Corridor Route.

Process for Selecting the Environmentally Preferred Alternative

From the beginning of the environmental studies for the SWIP, a geographic information system (GIS) was used to help compile, organize, evaluate, and summarize environmental data. Opportunity and constraints analysis conducted using GIS during the regional environmental studies helped planners identify the alternative transmission line corridors in Phase I of the SWIP EIS process (refer to the SWIP Regional Environmental Report, April 1989).

In Phase II, a set of "assumed centerlines" for alternative routes were identified within the regional study corridors. These assumed centerlines were sited to avoid sensitive resource features and values identified during the regional environmental study and to respond to public concerns

identified during scoping. Interdisciplinary resource data were collected and input into GIS for a corridor from 1/2 to 3 miles (depending on the resource) on either side of these assumed centerlines for the detailed analysis reported in the SWIP DEIS/DPA.

Project planners used the GIS to perform impact assessment models developed to evaluate the following:

- the effects of ground disturbance during construction, operation, and maintenance
- potentially increased public accessibility into remote areas
- visual contrast of the project with the existing environment

These impact assessment models formed the basis for quantifying the potential effects of the construction and operation of the proposed 500kV transmission line. A total of 21 impact assessment models were developed to identify and document potential resource impacts.

The GIS was also used to assist planners in summarizing the environmental data during inventory and impact assessment/mitigation planning process. Data summaries and maps assisted resource specialists and project reviewers in identifying specific resources issues and potential impacts, as well as providing decision makers with the information for comparing routing alternatives.

Identifying Alternative Transmission Line Routes A network of over 140 individual routing segments or "links" were identified and studied in detail for the SWIP DEIS/DPA. The National Environmental Policy Act (NEPA) of 1969 requires that "reasonable and feasible" alternatives be compared in EIS/Pas. The number of possible routing alternatives that could be assembled from the numerous links would easily number in the hundreds, and would not be easy to compare in an EIS. Subsequently, it was necessary to determine environmental preferences for localized routing alternatives by what is termed the *subroute evaluation process*.

Each *subroute* is composed of individual links or combinations of several links that begin and end at common junction points in localized areas. A total of 25 subroute sets were evaluated (refer to Appendix D of the SWIP DEIS/DPA). The potential impacts of each subroute within a set were summarized from the detailed impact data of the five major resource disciplines: biological resources, earth resources, visual resources, land uses, and cultural resources. Project planners and resource specialists analyzed and compared the impact data and then ranked each subroute for environmental preference.

The links selected as the environmentally preferred subroutes narrowed down the number of possible link combinations, or routes, to a reasonable number to compare in an EIS. Links in areas where no other localized alternatives occurred, are termed "connectors". Connectors combined with the preferred link combinations of selected subroutes were used to assemble the alternative routes.

The environmentally preferred subroutes and their connectors were further evaluated in a GIS process that determined the path of least impact for each resource discipline (e.g., visual, biology, etc.). The GIS searched the environmental database containing the results of the impact assessment for a particular resource and tabulated the miles of impacts along the possible route segments searching for the route with the least significant impacts to that resource.

The identification of *resource preferred routes* for visual resources, biological resources, land use, earth resources, and cultural resources and the *subroute evaluation process* assisted project planners to assemble seven alternative routes on the Midpoint to Dry Lake segment and four alternative routes on the Ely to Delta segment for comparison in the SWIP DEIS/DPA.

Substation and Series Compensation Stations Substations, series compensation stations, and microwave communication facility sites were evaluated as part of the environmental studies for the alternative routes. Siting areas for substation and series compensation station facilities were inventoried by the same methods and for the same resource categories as the routing alternatives (study corridors).

Alternative sites were selected for substations and series compensation stations using environmental and engineering criteria and the GIS to generate opportunities and constraints mapping. Composite constraints and opportunity maps were analyzed to identify potential locations for facility sites where the potential for impacts would be minimized. Impacts were then assessed and mitigation planned for each alternative site (also refer to Appendix E of the SWIP DEIS/DPA).

A total of twenty (20) sites were compared for the construction and operation of the five proposed substations and series compensation stations. Selection of the environmentally preferred route was also considered during the final selection of the substation and series compensation station sites.

Microwave Communication Facilities Alternative microwave communication facility sites were identified through a review of existing developed microwave communication sites provided by the district offices of the BLM, and a review of other potential sites that met some or all of the following engineering and operational criteria: line of sight between sites (with a specified clearance), good access, available power source, 35 to 40 miles between sites, and a 1/4 acre of relatively flat ground. A total of 17 sites were identified.

Similar to the substation and series compensation station analysis, impacts for each of the alternative microwave communication facilities sites was assessed. A string of microwave communication facilities sites were then assembled into two (2) alternative microwave communication paths to facilitate the remote operation of the proposed substation and series compensation station sites (also refer to Appendix F of the SWIP DEIS/DPA). Selecting individual microwave communication facility sites included consideration of the engineering criteria described above (e.g., line-of-sight), as well as the potential environmental effects. The selection of the preferred microwave communications path depended on the final substation and series compensation station sites selected with the environmentally preferred route.

Selecting an Environmentally Preferred Route The seven alternative routes for the Midpoint to Dry Lake segment and the four alternative routes on the Ely to Delta segment were compared and the environmental, agency, and utility preferred route(s) for each segment were identified in the SWIP DEIS/DPA.

The environmentally preferred route was selected based on a comparison of the miles of potential impacts to resource features and values, and their significance nationally, regionally, and locally. Each alternative route was evaluated based on the following criteria to determine the environmentally preferred route:

- minimizes potential impacts to environmental resources (e.g., biological resources, visual resources, land use, earth resources, cultural resources)

- minimizes ground disturbance and an increased level of public access (e.g., miles of new access roads needed)
- ability to meet the purpose and need
- responds to public issues and concerns
- compliance with agency management plans (e.g., uses existing utility and planning corridors)

Considering these criteria, the environmentally preferred route was selected by evaluating and comparing each alternative route by: 1) the environmental resource data and miles of potential residual impacts (summarized in Tables 1-1 and 1-2 at the end of this chapter), and 2) evaluating cumulative effects associated with each alternative route.

Differences Between the Agency Preferred Alternative and the Environmentally Preferred Alternative

Midpoint to Dry Lake Segment

The Agency Preferred Alternative and the Environmentally Preferred Route (as described in the SWIP DEIS/DPA) for the Midpoint to Dry Lake segment of the SWIP are the same, with a few minor variations, and both are environmentally sound. Differences occur where the Agency Preferred Alternative considers the BLM's specific knowledge of localized situations. Difference occurs in the area of Jackpot, Nevada where Link 72 is environmentally preferred because it parallels the Midpoint-Valmy 345kV transmission line across Salmon Falls Creek, minimizing visual impacts to recreational users on the creek. The Agency Preferred Alternative would use Links 711 and 714 to reduce visual impacts by crossing Salmon Falls Creek at a narrower portion of the canyon roughly parallel and to the west of the existing 138kV transmission line. These links would also cross a smaller portion of the Salmon Falls Creek Special Recreation Management Area.

A second difference occurs in the vicinity of Contact, Nevada where Link 102 is environmentally preferred because it would parallel the Midpoint-Valmy 345kV transmission line reducing visual impacts associated with structure contrast and minimize visual impacts to residences in the Contact area. The Agency Preferred Alternative in this area utilizes Links 715 and 713 because the crossing of U.S. Highway 93 would better screen towers adjacent to the highway from the views of highway travelers. However, one tower on Link 713 would cause high visual impacts to views from a nearby residence.

A third difference occurs in the vicinity of the Winecup Ranch northeast of Wells, Nevada. Links 160, 161, 162, and 1612 are environmentally preferred because they would parallel the existing Upper Salmon to Wells 138kV transmission line (except Link 1612) which would reduce visual contrasts along U.S. Highway 93 and minimize potential predation impacts to sage grouse. The Agency Preferred Alternative would utilize Links 150 and 151 because they would minimize visual impacts to highway travelers (greater distance from the highway). Further, it would cross the California National Historic Trail near the Winecup Ranch minimizing visual impacts to the trail (due to existing visual contrasts of the ranch operations).

During the formal public meetings for the SWIP DEIS/DPA in Wells, Nevada on August 4, 1992, residents of Oasis opposed the preferred alternatives in the SWIP DEIS/DPA that would pass west of Oasis along the base of the Pequop Mountains (Link 211). Their opposition was based on

proposed development plans by Northern Holdings, Inc. and CSY Investments. Previously, Link 211 was preferred because it would be a less visually intrusive crossing of Interstate 80, a low visibility corridor designated by the Elko District of the BLM and managed under VRM Class II (refer to Visual Resources section in Chapter 3 and 4 of the SWIP DEIS/DPA). With the dark colors of the Pequop Mountains as a backdrop, Link 211 would result in weaker visual contrast to travelers on Interstate 80. Links 221 and 223 would better utilize the BLM utility planning corridor which follows the railroad corridor through the center of Goshute Valley.

In response to the public comments and the planned developments of CSY Development and Northern Holdings, Inc., the Agency Preferred Alternative through this area was revised to use Links 221 and 223 along the railroad corridor through the center of Goshute Valley. These links would completely avoid future potential conflicts with the planned developments for Northern Holdings properties and would minimize impacts to significant portions of the planned developments of CSY Investments. Cumulative effects have been identified for these foreseeable future actions (refer to the Cumulative Effects section in Chapter 3 of this document).

The last difference occurs at the Elko-White Pine county line. In this area, Links 250, 259, and 260 are environmentally preferred because they would avoid a known cultural site and cause fewer mile of moderate impacts to pronghorn antelope, long-billed curlew, and sandhill crane habitat. The Agency Preferred Alternative would use Links 241, 243, and 245 because they are within the BLM designated utility corridor in accordance with the Wells Resource Management Plan.

The Agency Preferred Alternative and the Environmentally Preferred Route are the same for the remainder of the Midpoint to Dry Lake segment of the SWIP.

Ely to Delta Segment

The Agency Preferred Alternative for the Ely to Delta segment of the SWIP is the 230kV Corridor Route and the least impact route is the Cutoff Route (as described in the DEIS/DPA). Links 350, 351, 352, 370, 380, 460, and 461 of the 230kV Corridor Route and Links 262, 263, 265, 266, 267, and 268 of the Cutoff Route have similar environmental impacts (refer to Environmentally Preferred Alternative in the SWIP DEIS/DPA and Table 1-2 at the end of this chapter - formerly Table 2-5 in the SWIP DEIS/DPA). The remainder of these routes (Links 462, 470, 540, 571, 572, 580, 581, and 582) in Utah are the same.

Because of the utilities future need to interconnect with the 230kV system in the Ely area, the potential cumulative environmental effects from the Cutoff Route would be more significant than the cumulative effects from the 230kV Corridor Route (refer to the Cumulative Effects section in Chapter 3 of this document). Therefore, because the 230kV Corridor Route would likely cause fewer future cumulative effects in the Ely area, this route is environmentally preferred (refer to Cumulative Effects in Chapter 3 of this document).

The Agency Preferred Alternative for the Ely to Delta segment of the SWIP is the 230kV Corridor Route (described in the SWIP DEIS/DPA) because the 230kV Corridor Route would parallel two existing 230kV transmission lines for its entire length. This route would best meet the mandate of Section 503 of FLPMA to utilize existing utility corridors where possible, and would utilize utility corridors in accordance with the BLM's House Range Resource Management Plan (RMP), the Warm Springs RMP, and the Schell Management Framework Plan (MFP).

Environmental concerns expressed by the public about the Cutoff Route include potential impacts to biological, cultural, land uses, and visual resources. Concerns about the 230kV Corridor Route include proximity to homes, health effects, land use conflicts, effects on property values, and visual impacts to views from Great Basin National Park. Although the Cutoff Route was found to have slightly fewer significant environmental effects, when cumulative effects are considered the 230kV Corridor Route would be environmentally preferred (refer to the Cumulative Effects section on page 3-12 in Chapter 3 of this document).

Comments received at the public meetings and comment letters on the SWIP DEIS/DPA generally expressed favor for the placement of new lines in existing utility corridors to minimize adverse impacts and to maintain open space values in previously undeveloped areas. The Cutoff Route was favored by some of the public because it would be located in more remote areas and would not be seen by tourists and visitors to Great Basin National Park.

Several letters were received on the SWIP DEIS/DPA expressing concerns about the crossing of private lands and crossing of the U.S. Highway 6/50 in the Sacramento Pass area by the 230kV Corridor Route. These comments led to identifying and studying several reroute alternatives to mitigate the potential impacts to agricultural uses and private lands, and to evaluate alternative crossings of the highway leading to Great Basin National Park (U.S. 6/50). Further, the Ely District of the BLM is developing a campground and recreation area in this area. Resource inventory data were collected for the three mitigation reroute alternatives during February 1993. These data were incorporated into the GIS database and impacts were assessed. The affected environment and environmental consequences of these mitigation reroute alternatives are described (including maps, tables, and photo simulations) under the Sacramento Pass Mitigation Reroute section in Chapter 3 of this document. Because Subroute 3 (Links 464, 466, 468, 471, and 473) would avoid crossing private lands and minimize visual impacts to views from U.S. Highway 6/50, it is the environmentally preferred mitigation reroute through the Sacramento Pass. The Agency Preferred Alternative is also the subroute using Links 464, 466, 468, 471, and 473. The remainder of the Agency Preferred Alternative for the Ely to Delta segment is same as the Environmentally Preferred Route described in the SWIP DEIS/DPA.

Consistency With Other Plans

There are no known inconsistencies or conflicts between the Proposed Plan and officially approved and adopted resource-related policies and programs of the BLM, the FS, the NPS, the BIA, the Bureau of Reclamation, other federal agencies, state and local governments, and Indian tribes. However, the NPS has stated its preference for the No-Action, the Cutoff Route, or the Direct Route on the Ely to Delta segment instead of the Agency Preferred Alternative (230kV Corridor Route) selected by the BLM and the other cooperating agencies. The NPS favors an action that would minimize or eliminate visual impacts to the Great Basin National Park.

Comparative Analysis

The No-Action alternative and approximately 2,000 miles of alternative corridors were studied in detail. To select environmental preferences, the environmental consequences of each alternative were summarized and compared, and agency and public comments were considered. The network

of routes was organized into the north-south alternatives from Midpoint to Dry Lake segment and the east-west alternatives from Ely to Delta segment. Nine routing options were compared for the Midpoint to Dry Lake segment, and four alternatives were evaluated on the Ely to Delta segment. The final alternatives are illustrated in the Map Volume accompanying the SWIP DEIS/DPA, in Figure 1-1 of this document, and are described as follows:

Midpoint to Dry Lake Segment

- **Route A** - 345kV*-Thousand Springs-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative
- **Route B** - 345kV*-Trout Creek-Wendover-Steptoe-Antone Pass-Dry Lake Alternative
- **Route C** - 345kV*-Trout Creek-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative
- **Route D** - 345kV*-Wells-Steptoe-Egan Range-Dry Lake Alternative
- **Route E** - 345kV*-Thousand Springs-Wendover-Steptoe-Egan Range-Dry Lake Alternative
- **Route F** - Hagerman-Trout Creek-Goshute Valley-Egan Range-Dry Lake Alternative
- **Route G** - 345kV*-Cottonwood Creek-Thousand Springs-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative
- **Utility Preferred Route**
- **Agency Preferred Alternative**

(* - 345kV refers to the SWIP alternative being parallel to the Midpoint to Valmy 345kV transmission line)

In addition, sixteen alternative substation sites in seven substation siting areas were evaluated and compared for the four proposed substations and series compensation stations the Midpoint to Dry Lake segment (including five sites in the Ely area that were also evaluated for the Ely to Delta segment), and two microwave communication paths (17 sites) were evaluated and compared.

Ely to Delta Segment

- **Delta Direct Route**
- **Cutoff Route**
- **230kV Corridor Route**
- **Southern Route**

In addition, nine alternative substation sites in six substation siting areas were evaluated and compared for the two proposed substations for the Ely to Delta segment (including five sites in the Ely area that were also evaluated for the Midpoint to Dry Lake segment).

Public Issues and Management Concerns

To aid the federal agencies' decision-making process, and to help evaluate the significance of changes in the various RMPs and MFPs for the BLM Districts and Resource Areas and the Forest Land and Resource Management Plan for the Humboldt National Forest, the following public issues and management concerns identified during the public scoping process and in the public meetings and workshops have been analyzed in the following section.

Issue 1 - Need for Project

The IPCo has proposed to construct, operate, and maintain a 500kV transmission facility from the existing Midpoint Substation near Shoshone, Idaho to a proposed substation near Dry Lake (northeast of Las Vegas, Nevada) and from Ely, Nevada to Delta, Utah to:

- provide seasonal exchanges between the Northwest and the Southwest
- increase the reliability and capacity of the transmission system in the western U.S.
- increase competition and economic efficiency by increasing transmission access
- allow for mutually beneficial transactions to northwest and southwest utilities at an open marketplace
- increase wheeling capacity for other utilities
- furnish access to the economy energy market
- provide access to long-term purchases and sales
- diversify fuel resources used to generate electrical power
- contribute to the reliability of the UNTP Phase I (the Delta to Marketplace line)
- allow for the bidirectional transfer of bulk power bought, sold, and/or exchanged in the marketplace between utilities in Utah, southern Nevada, and Idaho
- create a bidirectional transfer path between the Pacific Northwest and the intermountain regions of the West
- create a bidirectional transfer path between the intermountain region and southern Nevada

The public has expressed concern about the need for the SWIP. The public questioned the rationale for new construction, the demand for additional generating facilities, and the long-term demand and need. There was significant concern for utilities to consider utilizing alternative generating resources such as geothermal and solar. An expanded purpose and need for the SWIP is found in Chapter 3 of this document.

Issue 2 - Maximize Use of Public Lands

One of the major public comments was utilizing public lands for routing the transmission line since the line would offer no direct benefit to private landowners and would also interfere with agricultural operations. Within the project study area (i.e., study corridors) the land ownership is split between federal (BLM 79 percent and FS 11 percent), state (2 percent), and private (8 percent), approximately. In response to this issue the route selection process attempted to locate the line on public lands to the degree possible within environmental and engineering constraints. Where there was a choice of crossing public or private land, the private land was avoided.

Issue 3 - Minimize Visual Impacts

The scenic resources of the southern Idaho, eastern Nevada, and west central Utah are unique in many respects, largely because of the predominance of the north-south trending mountain ridges and large undeveloped valley expanses. The study area is characterized by relatively open, uninterrupted views with minimal overstory vegetation cover. Land ownership is predominantly BLM with the remaining lands divided between private, state, and national forest. The federal agencies have management policies to protect their lands from unnecessary degradation of scenic resources. State and private lands have no specific policies regarding visual resources protection. Significant concern has been expressed by the agencies and the public over the views from the parks, recreation areas, residences, preservation areas, highways, scenic routes, and sensitive cultural sites, and impacts affecting the scenic value of the landscape.

The NPS is concerned about potential visual impacts from the Great Basin National Park's (GBNP) key viewpoints (e.g., scenic overlook points, the visitor center, etc.), visual impacts to highway travelers approaching the park's entrance, and to the interpretive facilities proposed in GBNP's Final General Management Plan/Development Concept Plans/EIS to be located in the basins outside of the park's boundaries. Also the NPS is concerned about the visual integrity of the basins surrounding the park.

Issue 4 - Minimize Impacts to Biological Resources

A total of eleven vegetation communities were identified within the SWIP study corridors with 73 plant species identified as sensitive on the state and/or federal level. Also within the project area, there are 560 species of vertebrates, 111 species of mammals, 15 species of amphibians, and 70 species of fish.

The region contains excellent habitat for big game, including mule deer, elk, and pronghorn. A number of sensitive raptors occur near or within the study area, including ferruginous hawk, bald eagle, and peregrine falcon. Numerous other raptors also nest in the region.

Throughout northeastern Nevada sage grouse are an important upland game species. There is concern that raptors perching in transmission towers would prey on the sage grouse during their spring breeding period.

The desert tortoise in southern Nevada was recently listed as a threatened species by the United States Department of Interior-Fish & Wildlife Service (FWS). The concern for constructing a transmission line through sensitive habitats is that ground disturbing activities (e.g., road building) during construction could destroy habitat. Also, there is a concern that any roads kept open through these areas could lead to tortoise being destroyed by off-highway vehicles.

Some riparian habitats occur within the region and are highly sensitive because of their very limited occurrence and very high value as wildlife and rare plant habitat.

Wetlands and aquatic habitats, like riparian habitats, are generally associated with the springs and mountain drainages in the region. These aquatic and wetland habitats are important because of their position in a notably arid portion of the United States, and because of the habitat they provide to numerous animal and plant species, some of which are listed among the threatened, endangered, or otherwise sensitive biota of the United States and the states of Idaho, Nevada, and Utah.

The planning process, described in the SWIP DEIS/DPA, responded to the issue by avoiding the most sensitive areas to the degree possible on all routing alternatives. Surveys would be conducted during preparation of the Construction, Operation, and Maintenance Plan to help minimize adverse impacts.

Issue 5 - Minimize Impacts to Cultural Resources

The project area has been occupied for thousands of years, and contains a long history of human use. Thousands of cultural sites have been recorded, but only a few have been formally inventoried. Many of these sites are low to moderate sensitivity resources. With the exception of the agricultural areas along the Snake River plain, the project area remains largely rural. All major known cultural resources were avoided, where possible, during alternative route selection as described in the SWIP DEIS/DPA. Compliance with Section 106 of the National Historic Preservation Act would be done to mitigate adverse effects to cultural resources.

Issue 6 - Health and Safety

Concerns have been expressed about the potential health impacts that electromagnetic fields (EMFs), as well as shock hazards.

In recent years there has been growing public concern over the possible effects that EMFs could have on human health. Because EMF research is inconclusive and sometimes contradictory,

definitive answers are still years away. The IPCo attempts to site facilities in areas that avoid or minimize human exposure to EMF. This policy tends to minimize visual impacts as well.

The IPCo would also provide grounding to reduce the potential of shock hazard. The National Electric Safety Code requires grounding "...as one of the means of safeguarding employees and the public from injury that may be caused by electric potential."

Issue 7 - Wilderness Areas/Wilderness Study Areas (WSAs)

A wilderness area and many WSAs are found in or near the study corridors for the SWIP. The agencies and the public are concerned about the presence of the transmission line on lands adjacent to WSAs potentially affecting the designation of the area as wilderness.

Issue 8 - Minimize Land Use Impacts

A transmission line which directly impedes an area's current or planned use constitutes a land use impact. Land uses found throughout the study area include ranch headquarters, agricultural operations, and planned development. The study corridors for the alternatives crossing through southern Idaho pass through large areas of irrigated agricultural lands. There was also concern by both Hill Air Force Base (AFB) and Nellis AFB for their military operating areas (MOAs), low-flight areas where the Air Force does training and testing. The Direct Route on the Ely to Delta segment also crosses through the R-6405 Restricted Air Space area on the Utah Training and Testing Range (UTTR) for Hill AFB.

Many recreational areas (e.g., trails, scenic byways, special recreation management areas, parks, etc.) are also located in or adjacent to the study corridors for the various alternatives. Great Basin National Park is one of the nation's newest national parks, and is Nevada's only national park.

Issue 9 - Use Existing Transmission Line Corridors

Both the public and the agencies expressed a desire to locate the transmission line along existing transmission corridors, wherever possible, to minimize environmental impacts. One way is to maximize the miles that the transmission line would parallel existing transmission lines or other linear utilities. Several of the alternative routes paralleled existing transmission facilities to the extent possible.

The public and the agencies were also concerned about minimizing the miles of transmission line outside of designated or planning corridors wherever possible. The alternative routes were sited to the degree possible using these corridor designations from agency management plans.

Issue 10 - Property Values and Compensation

Private property owners expressed a concern for a decrease in the monetary value of their property as a result of the proposed transmission line and whether or not they would receive adequate compensation for property loss. Transmission lines potentially affect existing or future property values, through there is no conclusive evidence to suggest this. Landowners would be compensated, based on fair market value of the land, for an easement or purchase of their land. There are some differences, although none considered substantial, between the effects to private property owners for the various alternative routes.

Issue 11 - Effects on Agency Land Management Plans

The BLM plans and designates corridors for linear utility use. However, it does not presently recognize a corridor for much of the Agency Preferred Alternative that has been evaluated, along with the other alternatives, in the SWIP DEIS/DPA and this document. Included in the Environmental Impact Statement and plan amendment process is a determination of what public lands, if any, should be designated as a utility corridor. The end results would be amended agency plan(s) to allow for a utility corridor and the right-of-way for the SWIP. This issue developed when the IPCo filed an application for a right-of-way grant. As part of this plan amendment process, the BLM, the FS, and the other cooperating agencies involved the public, other federal agencies, and state and local governments.

Affected Environment

Three primary environmental systems were examined:

- the natural environment - air, soils, geology, mineral resources, wildlife, and botanical resources
- the human environment - land uses, visual resources, socioeconomics, electrical effects
- the cultural environment - archaeological, historic, and Native American resources

The inventory results established the baseline for the No-Action alternative. Following identification of the preliminary corridor locations, a study area (study corridors) was then defined for the various resource investigations.

The climate of eastern Nevada, southern Idaho, and western Utah is influenced largely by location, regional weather systems, and topographic orientation. The climate throughout much of this area is characterized by hot, dry summers followed by cold, dry winters. Surface winds are channeled through valleys between generally north-south trending mountain ranges. Winds flow predominately in northeasterly or southwesterly directions. Annual precipitation depends largely on elevation. Precipitation occurs primarily in the form of snow at higher elevations during the winter months. The snows maintain high water tables and provide groundwater recharge. Some additional precipitation occurs from thunderstorms produced by daytime heating of air masses in valleys.

Northern segments of the SWIP, within southern Idaho and northeastern Nevada, are in the Snake River Plain section of the Columbia Plateau physiographic province. This section is a vast, relatively flat plain and young lava plateau, which is deeply dissected by the canyons of the Snake River and Salmon Falls Creek, the dominant landscape features within this area. Irrigated agricultural lands, this area's main land use, are found clustered north and south along the Snake River.

To the south, on the Snake River Plain, agricultural areas extend to bordering foothills and mountains in a transitional landscape between the Basin and Range and Columbia Plateau provinces. This transitional landscape includes foothills, plateaus, mesas, and buttes formed of eroded lava and sedimentary rock layers.

The majority of northeastern and southern Nevada and western Utah, falls within the Basin and Range physiographic provinces. Topographically, this landscape is distinguished by isolated, roughly parallel mountain ranges separated by closed (undrained) desert basins or playas. The mountain ranges often run 50 to 75 miles in length and are generally north-south trending. Surrounding the base of the mountains and extending into the basins, there are often distinctive alluvial areas.

Portions of western Utah also include a transition zone of the Basin and Range province into what is locally referred to as the "West Desert" landscape. This landscape includes portions of the Sevier Desert and Sevier Lake. The topography within this area is extremely flat and includes large playas or mud flat areas, that exhibit little landform diversity. Again, these areas are divided by rugged, rocky mountain ranges.

Earth resource features that have a high sensitivity are landslide hazard areas, areas of high paleontological sensitivity, soils with either a high wind erosion or high water erosion hazard, areas of active mining, perennial streams and lakes, springs, and wetland areas. Significant paleontological resources are found at the Hagerman Fossil Beds National Monument near Hagerman, Idaho.

Eleven vegetative communities have been identified in the SWIP study corridors, including shadscale, greasewood, samphire-iodine bush, Great Basin sagebrush, Mojave desert scrub, grassland, wetlands, riparian areas, piñon-juniper, alpine tundra, limber/bristlecone pine, and quaking aspen. These vegetation types support a large variety of mammals, birds, amphibians, and reptiles.

Approximately 560 species of vertebrates are likely to occur, over the course of a year in habitats traversed by the alternative routes.

Seventy species of fish are known to occur within aquatic habitats within the study corridors. Native and introduced game fish are present in warm and cold water lakes, ponds, and reservoirs, and in perennial streams and rivers. Others inhabit hot and cold springs and marshes. Approximately 31 percent of the fish fauna occupying waters within the study corridors are introduced.

Fifteen species of amphibians are expected to occur in aquatic, riparian, and wetland habitats in the study corridors. Sixty-two species of reptiles potentially occur in terrestrial habitats within study corridors.

A total of 111 species of mammals are expected to occur within habitats traversed by alternative routes. Small mammals including rodents, lagomorphs (rabbits and hares), bats, and shrews are the most numerous, although not readily observed. Over one half of the mammals that may occur within the study corridors are rodents (51 species). Large mammals include 19 species of carnivores (e.g., lynx, wolverine, etc.) and five species of native ungulates (e.g., antelope, mule deer, bighorn sheep).

Free roaming horses (*Equus caballus*) and burros (*E. asinus*) occur on public lands in the study corridors. These animals are descendants of horses and burros that escaped from man or were turned out onto the open range.

In recent years, dramatic declines in desert tortoise population numbers have been observed throughout much of its range, including southern Nevada. A number of factors have contributed to the observed decline, including loss of habitat to development, degradation of habitat from livestock grazing, disease, predation on juveniles by ravens attracted to areas where human refuse accumulates, illegal collection, and off-road vehicle (ORV) use. The Mojave population of the desert tortoise was formally listed as a federally threatened species by the FWS in April 1990. Concern has been expressed for the maintenance of viable populations in Clark County, Nevada, and especially the Las Vegas Valley where rapid commercial and residential development is occurring.

Declines in sage grouse numbers are largely associated with destruction of sagebrush habitat. Conversion of sagebrush to agricultural lands, and attempts to convert sagebrush areas to grassland for livestock grazing are a few of the human developments contributing to the decrease in grouse numbers.

The majority of the lands crossed by the alternative routes are used for cattle grazing and are classified as rangeland. Other significant uses within the study corridors include agriculture, mining, airports and airstrips, utilities, commercial, governmental and other industrial facilities. Residences near urban areas and in remote locations, both occupied and unoccupied are located within the study corridors. Principal urban areas or residential concentrations in or near the study corridors include:

- Hagerman, Eden, and Hansen in Idaho
- Wells, Ely, Curry, Jackpot, Oasis, Baker, and McGill in Nevada
- Delta, Eskdale, and Hinckley in Utah

Several of the alternative routes in Utah and Nevada could potentially affect military aircraft operations at Hill Air Force Base in Utah and Nellis Air Force Base in southern Nevada.

Approximately half of the lands crossed by the study corridors in Idaho fall into the category of agriculture. The high-desert lands of the Snake River Valley are fertile and productive when irrigated. Many of the lands crossed in Idaho are classified as prime or important farmland by the Soil Conservation Service (SCS).

Dispersed recreation occurs throughout these areas in Nevada, Idaho, and Utah. Developed campsites and recreation areas are usually located along perennial streams or reservoirs. Great Basin National Park, near Baker, Nevada, is passed by several of the alternative Ely to Delta segment routes. Several WSAs inventoried within the study corridors include portions of Salmon Falls Creek WSA in Idaho and fourteen WSAs in Nevada including South Pequop, Bluebell, Goshute Peak, Goshute Canyon, Marble Canyon, Mount Grafton, Fortification Range, Delamar

Mountains, Evergreen, Meadow Valley Mountains, Fish and Wildlife 1, 2 & 3, and Arrow Canyon. WSAs within Utah include Howell Peak, King Top, Notch Peak, Fish Springs, Wah Wah Mountains, and Swasey Mountain. The boundary of the Mt. Moriah Wilderness area is also within the study corridors of one of the Ely to Delta segment alternative routes.

Cultural resources are historic and traditional cultural properties that reflect our nation's heritage. Federal regulations define such historic properties to include prehistoric and historic sites, buildings, structures, districts, and objects included in, or eligible for inclusion in the National Register of Historic Places (NRHP), as well as artifacts, records, and remains related to such properties. These regions of Nevada, Idaho, and Utah have been occupied for thousands of years. This section briefly summarizes what is known about this long history of human use of the region. More details are provided in the SWIP DEIS/DPA, in this document, and in the technical reports (Rogge 1991).

Prehistory - The project area overlaps portions of two culture areas, the Great Basin and the Colorado Plateau, but the vast majority of the project area is within the "cultural," if not the geographic, Great Basin. The extreme southern portion is along the western margin of the Colorado Plateau. Within the study area three prehistoric cultural stages, Paleo-Indian, Archaic, and Formative are represented and local phases or variations within each stage have been defined.

Ethnohistory - During the ethnohistoric era, these regions of Nevada, Idaho, and Utah were occupied by the Northern Shoshone, Bannock, Western Shoshone, Pahvant Ute, and Southern Paiute. Generally speaking, the Northern Shoshone and Bannock inhabited the study corridors in southern Idaho. The Western Shoshone ranged through eastern Nevada and northwestern Utah. The central portion of Utah was occupied by the Pahvant Ute while the Southern Paiute inhabited southwestern Utah and southern Nevada.

History - After the arrival of Europeans in the New World, portions of the study corridors were claimed by Spain, Great Britain, France, Mexico, and Canada, as well as the United States. The earliest European exploration was led by Escalante who skirted the eastern margin of the study area in Utah. After the famous Lewis and Clark Expedition to the Pacific Coast in 1804-1806, fur trappers and mountain men were lured to the Rocky Mountains until the decline of fur trading in about 1840.

Environmental Consequences

Environmental consequences from the Agency Preferred Alternative would be the residual impacts remaining after mitigating measures have been applied to initial (unmitigated) impacts. The process involved assessing impacts based on a comparison of the proposed project with the pre-project environment, determining mitigation that would reduce or eliminate impacts, and identifying residual impacts.

Additions and changes made to Tables 2-4 and 2-5 summarizing and comparing impacts in the SWIP DEIS/DPA was updated and reprinted in this document (refer to Tables 1-1 and 1-2). The majority of the changes to these tables occur in the Military Operating Areas, the Wildlife Section, and Visual Resources.

The consequences, or impacts, to the environment caused by implementing the proposed project were assessed by considering the existing condition of the environment and the effects of the

activities of the proposed project (construction, operation, and maintenance) on the environment. The "initial" impacts were evaluated to determine if mitigation measures would be effective in lessening the impacts. Those impacts remaining after mitigation measures were applied are referred to as "residual" impacts. Many of the identified impacts are considered to be adverse, direct, and long-term. Some impacts (e.g., visual, some cultural and biological impacts) are considered adverse, indirect, and long-term.

The principal type of impacts associated with earth resources is the potential for increased erosion hazards. Some short-term soil compaction impacts could occur in agricultural areas. Some stream sedimentation could also occur at the crossings of perennial streams.

Typical impacts to biological resources include effects on threatened, endangered, or protected species, rare or unique vegetation types, migration corridors for wildlife, areas of low revegetation potential, or highly productive wildlife habitat. The impacts would be generally associated with the removal of vegetation and habitat caused by construction and operation activities, and from human activity from more access into remote areas. The presence of the transmission towers would increase the potential for long-term predation of sage grouse by golden eagles on adult and immature birds. Adding towers also would provide roost/hunting sites for ravens and magpies, thus increasing the long-term potential for predation on grouse nests. No wetlands or riparian areas would be expected to be impacted.

Land use impacts include those that would displace, alter, or otherwise physically affect any existing or planned residential, commercial, or industrial use or activity, any agricultural use, or any recreational, preservation, educational, or scientific facility or use. Few land use impacts would occur from the construction of the SWIP, although the impacts that would occur would be long-term.

Potential socioeconomic effects could include construction-period impacts to area communities, social and economic impacts along the selected route, and fiscal impacts on local jurisdictions. These effects could be both adverse and beneficial.

Visual impacts are considered adverse, in-direct, and long-term. They include effects to the quality of any scenic resource, the view from any residential or other sensitive land use or travel route, or the view from any recreation, preservation, education, or scientific facility. Potential visual impacts to existing and proposed sensitive viewpoints for GBNP are a concern. Other visual impacts would be generally associated with residential concentrations or dispersed homes, scenic roads and highways, and recreation viewpoints, including wilderness areas and WSAs.

Direct, adverse physical impacts could occur to cultural resources during construction, while indirect impacts could result after construction due to increased erosion or increased public access to sites along the transmission line right-of-way. Adverse visual effects may occur to sites with high aesthetic or interpretive values.

Potential electrical, biological, and health and safety effects from the Agency Preferred Alternative were assessed. These include corona effects, electric and magnetic field effects, and effects on cardiac pacemakers, agriculture, and public safety.

The Stateline Resource Area has released its DEIS/RMP which, when finalized, would designate utility corridors. The RMP corridor studies and the SWIP EIS studies have been coordinated, and

the Agency Preferred Alternatives are similar. FLPMA of 1976 mandates to the extent practical that the BLM consolidate future utility projects within the corridor that is established.

Committed mitigation measures for the Agency Preferred Alternative are listed by milepost in Appendix D and summarized in Tables 1-3 and 1-4 in this document. Table 1-5 describes these selectively committed mitigation measures. Table 1-6 describes generically committed mitigation measures that will be applied throughout the project.

Cumulative Effects

The potential future "buildout" in the Ely area (i.e., interconnection with the 230kV system and the White Pine Power Project) are described in the Cumulative Effects section in Chapter 3 of this document.

Throughout sections of the Agency Preferred Alternative several transmission lines would be paralleled. From Midpoint Substation to south of Contact, Nevada the Agency Preferred Alternative route would parallel the Midpoint to Valmy 345kV transmission line a point about ten miles south of Contact. From a point just north of the Idaho-Nevada state line, the Upper Salmon to Wells 138kV line would be paralleled by the Agency Preferred Alternative to the same point south of Contact. The Agency Preferred Alternative would also parallel the Lincoln County 69kV line and the UNTP for 88.5 miles from the Delamar Valley northwest of Caliente, Nevada to the Hidden Valley northeast of Las Vegas, although it would be separated from the UNTP by a mile or more along U.S. Highway 93 south of Pahranaagat Wash. The UNTP would terminate at the proposed marketplace substation south of Boulder City, Nevada.

The SWIP's southern connection to the proposed Dry Lake Substation would require an interconnection with the proposed marketplace substation. The Notice to Proceed for the construction of the SWIP, from Ely to Dry Lake, would be contingent on the approval of a transmission facility between the Dry Lake Substation and the proposed marketplace substation. The Marketplace-Allen Transmission Project (MAT) has been proposed by Nevada Power Company to meet this and other interconnection needs.

The SWIP may be built in phases if market or financial conditions warrant. The portion of the SWIP from Midpoint Substation to Ely (Midpoint to Dry Lake segment) may be the first phase developed.

Also refer to the Cumulative Effects section in Chapter 3 of this document and Chapter 4 of the SWIP DEIS/DPA.

Issue Comparison by Alternative

Issue 1 - Need for Project

If successful, the IPCo, along with other participants, intends to construct the SWIP from Midpoint to Dry Lake to satisfy its need to meet regional utility responsibilities to provide adequate supplies

of reliable and economical electricity to the western system electrical customers. The proposed project would allow for power exchanges from the Southwest to the Northwest, increase the reliability and capacity of the transmission system in the western U.S., increase competition and economic efficiency by increasing transmission access, create open marketplace substations, and other benefits. All routing alternatives would serve the project's purpose and need. The No-Action alternative would not satisfy the purpose and need.

If successful, the IPCo is proposing that BLM transfer the Ely to Delta segment of the SWIP right-of-way grant to the LADWP on behalf of the UNTP participants for construction, operation, and maintenance. The Ely to Delta segment would allow the LADWP and their participants to satisfy their need to meet regional utility responsibilities to provide adequate supplies of reliable and economical electricity to their electrical customers. The proposed project would create a bi-directional transfer path between the Northwest and the intermountain regions of the West, create a bi-directional transfer path between the intermountain region and southern Nevada, contribute to reliability of the UNTP and the SWIP Midpoint to Dry Lake line, and allow for the bi-directional transfer of bulk power bought, sold, and/or exchanged in the marketplace between utilities in Utah, Nevada, and Idaho.

The SWIP would conform to the utilities' efforts to perform least cost planning:

- consider conservation equally with other resource options to achieve lowest cost to electrical consumers
- contribute to adding competition in the generation marketplace
- contribute to efforts to establish values for air emissions from power plants

The SWIP would allow diversity of supplies and markets to merge together to maximize cost economies:

- diversity of area and use - reducing the amount of generation required
- market diversity - access to the transmission grid to all suppliers of generation and conservation should drive down the cost of future resource options
- fuel and supply diversity - enhance environmental mitigation between regions

Electrical utilities are responsible for providing adequate supplies of reliable, economic electricity to their customers. The present load growth in the western U.S., coupled with the expense and difficulties of building new generating facilities, reinforces the need to provide for inter-regional transfer of energy.

Issue 2 - Maximize Use of Public Lands

The following table shows the land ownership/jurisdiction in miles crossed for each routing alternative. Alternatives were also ranked from the least miles of private land crossed to the most miles of private land crossed:

**LAND JURISDICTION - MIDPOINT TO DRY LAKE
(miles)**

<u>Route</u>	<u>Federal</u>	<u>State</u>	<u>Private</u>
A	413.0	5.2	95.2
B	414.1	5.2	97.3
C	397.6	5.2	104.6
D	410.1	5.2	98.7
E	430.5	5.2	88.5
F	406.1	2.3	115.6
G	415.0	5.2	85.3
Agency Preferred Alternative	406.5	5.2	83.1

**LAND JURISDICTION - ELY TO DELTA SEGMENT
(miles)**

<u>Route</u>	<u>Federal</u>	<u>State</u>	<u>Private</u>
Direct	125.7	7.2	0.0
Cutoff	143.4	10.5	0.0
230kV*	133.5	10.4	10.2
Southern	197.4	12.0	1.6

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

The Midpoint to Dry Lake alternative routes rank as follows: (1) Agency Preferred Alternative (2) Route G, (3) Route E, (4) Route A, (5) Route B, (6) Route C, (7) Route D, (8) Route F. The Ely to Delta segment alternative routes rank as follows: (1) Direct Route and Cutoff Route, (2) Southern Route, (3) 230kV Corridor Route (Agency Preferred Alternative).

Issue 3 - Visual Impacts

The following table summarizes the Visual Resource Management Class II landscapes crossed, scenic quality class A landscapes crossed, and miles of routes visible within one mile of a residence.

VISUAL RESOURCE SUMMARY - MIDPOINT TO DRY LAKE (miles crossed)

<u>Route</u>	<u>VRM Class II</u>	<u>Scenic Quality A</u>	<u>Miles of Route Visible From Residences within 1 Mile</u>	<u>Residences within 1 Mile</u>
A	7.3	0.9	65.7	83
B	17.8	0.9	52.3	78
C	5.6	0.9	57.1	80
D	10.0	0.9	61.9	83
E	19.5	0.9	64.1	83
F	7.5	5.0	56.9	94
G	8.1	0.5	59.9	93
Agency Preferred Alternative	6.7	0.5	63.1	96

VISUAL RESOURCE SUMMARY - ELY TO DELTA SEGMENT (miles crossed)

<u>Route</u>	<u>VRM Class II</u>	<u>Scenic Quality A</u>	<u>Miles of Route Visible From Residences within 1 Mile</u>	<u>Residences within 1 Mile</u>
Direct	0.0	0.0	3.3	2
Cutoff	0.0	4.2	5.1	3
230kV*	0.0	4.2	23.9	26
Southern	2.0	0.0	4.8	7

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

Review by the BLM and the FS has found changes to visual management objectives to be acceptable as a result of the project. Detailed definitions of the visual management classes, locations and extent of management class changes, and location and extent of visual impacts to viewers and to scenic resources are found in the Technical Report (refer to Appendix H of the SWIP DEIS/DPA for locations where this document can be reviewed).

The ranking of alternatives is relative. All alternatives would have some adverse effect on the scenic resource. The Midpoint to Dry Lake segment alternative routes rank as follows: (1) Routes A, D, and E, (2) Routes B, C, G, and Agency Preferred Alternative, (3) Route F. The Ely to Delta

segment alternatives routes rank as follows: Direct Route, Cutoff Route, Southern Route, 230kV Corridor Route (Agency Preferred Alternative).

Issue 4 - Minimize Impacts to Biological Resources

The following table describes the extent of occurrence of special-status species and riparian crossing for each alternative:

SENSITIVE BIOLOGICAL SPECIES - MIDPOINT TO DRY LAKE (miles)

<u>Route</u>	<u>Desert Tortoise</u>	<u>Bald Eagle</u>	<u>Peregrine Falcon</u>	<u>Ferruginous Hawk</u>	<u>Sage Grouse</u>	<u>Riparian</u>
A	52.1	15.3	0.0	1.3	35.2	3.2
B	52.1	32.8	23.1	1.4	36.8	3.2
C	52.1	16.3	0.0	1.3	30.7	3.7
D	52.1	5.8	0.0	1.3	34.1	5.3
E	52.1	18.2	23.0	1.3	36.3	3.3
F	52.1	16.3	0.0	1.3	32.8	3.8
G	52.1	19.6	0.0	1.4	40.6	4.8
Agency Preferred Alternative	52.1	6.0	0.0	1.3	37.2	5.1

SENSITIVE BIOLOGICAL SPECIES - ELY TO DELTA SEGMENT (miles)

<u>Route</u>	<u>Desert Tortoise</u>	<u>Bald Eagle</u>	<u>Peregrine Falcon</u>	<u>Ferruginous Hawk</u>	<u>Sage Grouse</u>	<u>Riparian</u>
Direct	0.0	7.0	0.0	0.0	7.9	1.6
Cutoff	0.0	8.4	0.0	0.0	6.8	1.2
230kV*	0.0	17.8	0.0	4.5	7.1	0.9
Southern	0.0	0.0	0.0	10.1	11.8	0.1

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

Alternatives when ranked from the least miles of impact to the most miles of impact are as follows: The Midpoint to Dry Lake alternative routes rank as follows: (1) Routes A and D, (2) Routes E and F, (3) Route C, (4) Agency Preferred Alternative, (5) Route C, (6) Routes B and G. The Ely to Delta segment alternatives routes rank as follows: (1) 230kV Corridor Route (Agency Preferred Alternative), (2) Cutoff Route and Direct Route, (3) Southern Route. The No-Action would result in no impacts to biological resources.

Issue 5 - Minimize Impacts to Cultural Resources

The following table summarizes archaeological, historical, and Native American resources sensitivity for each routing alternative.

CULTURAL RESOURCES - MIDPOINT TO DRY LAKE (occurrences and miles)

<u>Route</u>	<u>Historic Sites w/in 1 mile</u>	<u>Ethnohistoric Sites w/in 1 mile</u>	<u>Prehistoric Sites w/in 1 mile</u>	<u>Predicted High Sensitivity Zone</u>
A	53	13	388	18.4
B	46	16	413	19.3
C	50	14	408	17.2
D	68	12	430	20.5
E	46	15	386	18.4
F	54	16	510	11.0
G	61	14	399	20.6
Agency Preferred Alternative	53	14	388	18.4

CULTURAL RESOURCES - ELY TO DELTA SEGMENT (occurrences and miles)

<u>Route</u>	<u>Historic Sites w/in 1 mile</u>	<u>Ethnohistoric Sites w/in 1 mile</u>	<u>Prehistoric Sites w/in 1 mile</u>	<u>Predicted High Sensitivity Zone</u>
Direct	4	8	21	0.8
Cutoff	5	8	26	0.8
230kV*	12	8	80	8.0
Southern	8	10	66	6.0

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

Alternatives when ranked from the least miles of potential high and moderate impact to the most potential miles of high and moderate impacts are as follows for the Midpoint to Dry Lake segment: (1) Route C, (2) Agency Preferred Alternative, (3) Routes D and A, (4) Routes B, E, and G, (5) Route F. The Ely to Delta segment alternatives routes rank as follows: (1) Direct Route, (2) Cutoff Route, (3) 230kV Corridor Route (Agency Preferred Alternative), (4) Southern Route. The No-Action would result in no impacts to cultural resources.

Issue 6 - Health and Safety

Electromagnetic field (EMF) is an especially difficult issue and conclusive results may not be known for years. The many studies that have been conducted on EMF demonstrate that we are all affected by everyday life. Electromagnetic fields exist from microwaves, lights, waterbed heaters,

hair dryers, etc. The right-of-way width of 200 feet is intended to minimize these effects. Outside of the right-of-way the field levels would be expected to be no higher than normally occur in household appliances. There is no substantial difference between any of the routing alternatives. The No-Action alternative would have no EMF effects.

Safety would be a primary concern in the design of the SWIP. An alternating current (AC) transmission line would be protected with power circuit breakers and related line relay protection equipment. If conductor failure occurs, power would be automatically removed from the line. Lightning protection would be provided by overhead ground wires along the line. Electrical equipment and fencing at the substation would be grounded. All fences, metal gates, pipelines, etc. that cross or would be within the transmission line right-of-way would be grounded to prevent electrical shock. If applicable, grounding outside of the right-of-way may also occur. There is no substantial difference between any of the routing alternatives. The No-Action alternative would have no safety concerns.

Issue 7 - Wilderness Areas/Wilderness Study Areas (WSAs)

No significant and direct adverse effects were identified to any recreational resource, although indirect visual impacts were documented. No wilderness areas or WSAs would be crossed by the Agency Preferred Alternative, although there would be visual impacts from dispersed locations along the boundaries of several areas.

WILDERNESS AREAS/WILDERNESS STUDY AREAS - MIDPOINT TO DRY LAKE (areas passed and miles)

<u>Route</u>	<u>Wildernesses passed</u>	<u>WSAs passed</u>	<u><1/4 mi.</u>	<u>1/4 to 1 mi.</u>	<u>1 to 3 mi.</u>
A	0	5	41.3	26.5	21.1
B	0	6	44.3	28.5	31.2
C	0	5	41.3	26.5	21.1
D	0	5	41.3	26.5	21.1
E	0	6	44.3	28.5	31.2
F	0	6	45.6	32.3	29.2
G	0	6	41.3	28.0	26.9
Agency Preferred Alternative	0	6	41.3	28.0	32.2

**WILDERNESS AREAS/WILDERNESS STUDY AREAS - ELY TO DELTA SEGMENT
(areas passed and miles)**

<u>Route</u>	<u>Wildernesses passed</u>	<u>WSAs passed</u>	<u><1/4 mi.</u>	<u>1/4 to 1 mi.</u>	<u>1 to 3 mi.</u>
Direct	0	3	0.0	0.0	0.0
Cutoff	1	4	9.4	4.3	12.0
230kV*	0	3	9.4	3.9	3.0
Southern	0	5	7.8	6.5	16.0

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

Alternatives when ranked from the least miles of crossing near wilderness areas or WSAs to the most potential miles of crossing near wilderness areas or WSAs are as follows for the Midpoint to Dry Lake segment: (1) Route A, C, and D (2) Route G and Agency Preferred Alternative, (3) Routes B and E, (4) Routes F. The Ely to Delta segment alternatives routes rank as follows: (1) Direct Route, (2) 230kV Corridor Route (Agency Preferred Alternative), (3) Cutoff Route, (4) Southern Route. The No-Action would result in no impacts to adjacent wilderness areas or WSAs.

Issue 8 - Minimize Land Use Impacts

The following table shows various land uses by alternative route.

**LAND USE - MIDPOINT TO DRY LAKE
(miles)**

<u>Route</u>	<u>Hill AFB MOA</u>	<u>Hill AFB Restricted</u>	<u>Nellis AFB MOA</u>	<u>Agricultural Lands</u>	<u>Range Allotments</u>	<u>Mining Claims</u>
A	1.6	0.0	129.0	16.8	491.9	38.0
B	42.4	11.0	129.0	16.8	493.0	65.2
C	1.6	0.0	129.0	16.8	485.8	39.5
D	0.0	0.0	129.0	16.8	492.4	48.3
E	42.4	11.0	129.0	16.8	502.6	61.0
F	1.6	0.0	129.0	22.0	507.3	32.5
G	0.0	0.0	129.0	16.8	473.2	36.8
Agency Preferred Alternative	16.3	0.0	129.0	16.8	470.4	37.3

LAND USE - ELY TO DELTA SEGMENT
(miles)

<u>Route</u>	<u>Hill AFB MOA</u>	<u>Hill AFB Restricted</u>	<u>Agriculture Lands</u>	<u>Prime/Unique Farmlands</u>	<u>Range Allotments</u>	<u>Mining Claims</u>
Direct	44.1	55.1	0.0	0.0	135.1	7.8
Cutoff	123.0	0.0	0.0	0.0	153.9	6.9
230kV*	79.0	0.0	2.1	1.2	151.9	28.7
Southern	102.5	0.0	0.1	0.0	211.0	1.9

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

Alternatives when ranked from the least land use impacts to the most land use impacts are as follows for the Midpoint to Dry Lake segment: (1) Route A, C, and G, (2) Agency Preferred Alternative, (3) Route D, (4) Routes B, E, and F. The Ely to Delta segment alternatives routes rank as follows: (1) Cutoff Route, (2) Southern Route, (3) 230kV Corridor Route (Agency Preferred Alternative), (4) Direct Route. The No-Action would result in no impacts to land uses.

Issue 9 - Use Existing Transmission Line Corridors

Existing transmission lines and designated utility corridors would be paralleled by each of the alternatives routes as follows:

EXISTING CORRIDORS - MIDPOINT TO DRY LAKE
(miles)

<u>Route</u>	<u>Parallel to existing transmission lines</u>	<u>Miles in Designated or Planning Utility Corridor</u>	<u>Miles Outside Designated or Planning Utility Corridor</u>
A	204.0	370.4	142.6
B	162.5	362.2	153.9
C	162.5	337.0	169.9
D	214.8	377.1	136.4
E	204.0	364.7	159.0
F	172.7	329.1	194.9
G	172.1	379.4	125.3
Agency Preferred Alternative	172.1	350.4	162.4

EXISTING CORRIDORS - ELY TO DELTA SEGMENT
(miles)

<u>Route</u>	<u>Parallel to existing transmission lines</u>	<u>Miles in Designated or Planning Utility Corridor</u>	<u>Miles Outside Designated or Planning Utility Corridor</u>
Direct	13.2	14.3	115.8
Cutoff	74.2	75.5	78.4
230kV*	153.9	160.8	0.0
Southern	31.8	49.5	161.5

* The 230kV Corridor Route is the Agency Preferred Alternative for the Ely to Delta segment.

Alternatives were ranked from the most miles parallel to the least miles parallel to an existing transmission line as follows for the Midpoint to Dry Lake segment: (1) Route D, (2) Routes A and E, (3) Routes F and G and Agency Preferred Alternative, (4) Routes B and C. The routes rank as follows for the Ely to Delta segment: (1) 230kV Corridor Route (Agency Preferred Alternative), (2) Cutoff Route, (3) Southern Route, (4) Direct Route.

Alternatives were ranked from the least miles inside a designated or planning corridor to the most miles outside a designated or planning corridor for the Midpoint to Dry Lake Routes as follows: (1) Route G, (2) Route D, (3) Route A, (4) Route B, (5) Route E, (6) Agency Preferred Alternative, (7) Route C, (8) Route F. The Ely to Delta segment ranks as follows: (1) 230kV Corridor Route (Agency Preferred Alternative), (2) Cutoff Route, (3) Direct Route (4) Southern Route.

Issue 10 - Property Values and Compensation

While various studies have been conducted, there is no conclusive evidence to suggest that transmission lines would reduce property values. Some studies have found no substantial decrease in value attributable to transmission lines, while others have shown the market value of property to be reduced. Potential visual impacts could possibly attribute to alterations of property values.

Landowners would be compensated for an easement on or purchase of their land. Compensation is based on the fair market value of the land, as in the case where an easement is acquired based on the extent to which the use of the land is limited by the right-of-way.

Issue 11 - Effects on Agency Land Management Plans

The BLM - Under FLPMA of 1976, the BLM must manage public lands under the principle of multiple use, managing the various resources to best meet the needs of the public and our society. The conflict in the BLM's mission is to protect the quality of the land resources, environment, and public values while permitting development and use in a cost effective manner, such as a transmission line, which would help meet society's needs. The effects of the Management Framework Plans/Resource Management Plans (MFP/RMP) are addressed in accordance with the

BLM's planning regulations (43 CFR 1600 Subpart 1610.5). The MFP/RMPs that would be affected are listed in the Plan Amendment section below.

The Record of Decision would result in amending the plans (listed in the Proposed Plan Amendments section below) to allow for the granting of a 200-foot right-of-way for the SWIP. It would also allow for granting the substation sites and microwave communication facilities.

Road management planning would dictate access for construction and maintenance. Detailed road design would be completed following surveying and staking of the line in the field. Road designs would conform with planning standards of the BLM, FS, or other land managing agencies, as well as individual private landowners, prior to issuance of the Notice to Proceed to construct the line. The federal agencies would define the limits of construction and rehabilitation based upon transportation and road management objectives. In some cases, roads would have locked gates, be blocked, or be completely obliterated, depending upon the management policy for an increase of road access into a specific area. Access roads are part of the project description and, as such, were considered in the impact assessment for each environmental resource.

Proposed Plan Amendments

Both the BLM and FS have an inherent stated mission to protect the quality of the lands under their jurisdiction, while balancing the need for development when a need is shown. The impacts to goals and objectives of the Humboldt National Forest Land and Resource Management Plan, Burley District and Shoshone District MFPs, the RMPs of the BLM Resource Areas in the Boise and Shoshone District in Idaho, the RMPs of the Elko and Ely Districts in Nevada, and the RMPs for the Richfield District in Utah, and the Las Vegas District MFP are not considered significant for the following resources: range, recreation, timber, wildlife, wild horses and burrows, riparian/wetlands, minerals, and cultural resources.

Some of the alternative routes would deviate from the BLM designated or planning corridors established during the land use planning process. Some of the corridor deviations would be due to environmental issues along the established corridors and other deviations would be the result of project requirements. The SWIP DEIS/DPA is a Draft Environmental Impact Statement/Draft Plan Amendment. This document is termed a FEIS/PPA or Final Environmental Impact Statement/Proposed Plan Amendment. The SWIP decision document would serve as a plan amendment to RMPs and MFPs where the Agency Preferred Alternative would be outside a designated corridor in the three BLM Districts crossed. The plans now in effect that may be amended are:

Utah

- House Range Management Plan (Richfield District) - no plan amendment proposed
- Warm Springs Management Plan (Fillmore District) - no plan amendment proposed

Idaho

- Twin Falls Management Framework Plan (Burley District) - no plan amendment proposed
- Monument Resource Management Plan (Shoshone District) - no plan amendment proposed

Nevada

- Wells Resource Management Plan (Elko District) - plan amendment proposed
- Schell Management Framework Plan (Ely District) - plan amendment proposed
- Egan Resource Management Plan (Ely District) - plan amendment proposed
- Caliente Management Framework Plan (Las Vegas District) - plan amendment proposed
- Stateline Management Framework Plan (Las Vegas District) - plan amendment proposed

Plan Amendment Determinations

Figure 1-2 illustrates the location of the Agency Preferred Alternative which would also amend planning documents (listed above) to designate a utility corridor. The right-of-way for the Agency Preferred Alternative would be 200 feet in width. Future utility rights-of-way proposed for these same linear locations would be placed as near as practical immediately adjacent to the SWIP right-of-way. The corridor established through this plan amendment would be no wider than corridors previously established through the planning document of the affected land management agency. Establishing this corridor in this FEIS/PPA complies with designation criteria set forth in Section 503 of the FLPMA, 43 CRF 2806.2, and the BLM Manual Section 2801.11.

Critical resources, termed avoidance areas, would be crossed by various portions of the Agency Preferred Alternative. These avoidance areas are identified as high impacts and are identified in the Map Volume of the SWIP DEIS/DPA, described in Chapters 3 and 4 of the SWIP DEIS/DPA, and in revised maps and narrative sections in Chapter 3 of this document. There are no exclusion areas, or those areas set aside and designated for sole protection of a resource (e.g., wilderness area or WSA), crossed by the Agency Preferred Alternative.

All other designated or planning corridors established through a public land planning and EIS process would remain intact. All areas not included as a designated or planning corridor, an avoidance area, or an exclusion area would remain open to right-of-way use, but not as preferred locations. Site-specific clearances for cultural resources, threatened or endangered plants or animals, along with other required site-specific examinations which precede the right-of-way grant or notice to proceed with construction would be done prior to construction.

The BLM in Nevada designates utility corridors through their Resource Management Plan (RMP) process. The BLM in Idaho and Utah recognize existing utility lines as corridors. The Stateline Resource Area is currently preparing a RMP which would designate utility corridors. The Stateline Resource Area has released its Draft EIS/RMP. The RMP corridor studies and the SWIP EIS studies have been coordinated, and the preferred alternatives are similar. FLPMA of 1976 mandates to the extent practical, that the BLM consolidate future utility projects within the corridors that are established.

Factors of Analysis

Existing Facilities - Existing transportation and utility facilities are illustrated in the Map Volume and described on pages 3-33 through 3-50 of the SWIP DEIS/DPA.

Need - The Agency Preferred Alternative and proposed designation of this route as a corridor is not known to conflict with any current right-of-way applications, mineral explorations activities, or long range corridor studies.

Compatibility - Although many significant and insignificant impacts would result from construction of the SWIP along the Agency Preferred Alternative route, the corridor to be designated is compatible with intent to designate utility corridors.

Feasibility - The SWIP could be reasonably constructed within the proposed corridor.

Potential Impacts - The potential impacts of establishing a corridor along the Agency Preferred Alternative have been documented in Chapter 4 of the SWIP DEIS/DPA, in the SWIP DEIS/DPA Map Volume, in the Technical Report, and in Chapter 3 of this document.

Results of Coordination - Coordination with agencies and the public is documented in Chapter 5 of the SWIP DEIS/DPA, in the planning record, and in Chapter 2 of this document.

Construction, Operation, and Maintenance Plan

The Construction, Operation, and Maintenance (COM) Plan would include developing engineering plans and specifications (including centerline survey and tower locations), construction access plans, detailed rehabilitation plans, construction materials, environmental monitoring and control measures, preconstruction surveys for sensitive plants and/or wildlife species, cultural surveys and clearance procedures, and procedures for handling hazardous materials. The COM plan would be developed as a condition of the right-of-way grant and prior to any Notice to Proceed with construction. This plan would specify stipulations for construction, operation, and maintenance and responsibilities of the BLM, utility companies, and contractors.

The COM Plan would also address specifically how the project would be constructed within the 200 foot right-of-way. Additional NEPA documentation may be tiered to this EIS to evaluate alternative methods of construction that would be based on the specific methods proposed in the COM Plan (e.g., helicopter construction vs. conventional ground erection vs. a combination, etc).

In surveying the centerline of the selected route, the BLM would work closely with the utility to assure that the location relative to existing facilities is appropriate to meet electrical codes and to minimize impact to sensitive features. The precise centerline can only be determined once the engineering design and specific environmental survey activities are developed and coordinated. During the EIS process the centerline was a corridor approximately 1/4 mile either side of the "assumed centerline" drawn on the project maps for each of the alternative routes. This assumed centerline was not an engineered design. This centerline corridor width was agreed upon to allow the consideration of construction and design factors (e.g., topography) and the specific environmental resources that would be located during preconstruction surveys (e.g., cultural surveys, rare plant locations, tortoise burrows, etc.)

The BLM would monitor the construction, operation and maintenance of the SWIP. The BLM would perform periodic compliance checks after the lines would be put in operation to assure continued compliance to the terms and conditions of the right-of-way grant and to monitor environmental impacts associated with the project. If the selected route crosses lands administered

by other agencies (e.g., Forest Service, Bureau of Reclamation), these agencies would assign their personnel to the project

TABLES

TABLE 1-1
Route Comparison Table - Midpoint to Dry Lake Routes

(Formerly Table 2-4 in the SWIP DEIS/DPA)

	Route A*	Route B	Route C	Route D	Route E	Route F	Route G	Utility Preferred	Agency Preferred
Construction Access Levels (miles crossed)									
Agricultural lands	16.8	16.8	16.8	16.8	16.8	22.0	16.8	16.8	16.8
Existing access with spur roads	211	215.1	208.1	212.6	213.1	210.7	207.0	206.8	206.9
New access roads in flat (0-8%) terrain	152.5	130.1	151.0	155.6	134.2	157.0	163.2	162.7	163.8
New access roads in rolling (8-35%) terrain	92.4	109.1	91.4	89.6	111.4	89.4	85.1	84.8	82.4
New access roads in steep (35-65%) terrain	40.3	45.0	39.6	38.9	48.2	36.9	32.6	30.5	33.1
NATURAL ENVIRONMENT									
WILDLIFE (miles crossed)									
Desert tortoise habitat	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	52.1
Bald eagle habitat	15.3	32.8	16.3	5.8	18.2	16.3	19.6	19.6	6.0
Peregrine falcon	0	23.1	0	0	23	0	0	0	0
Ferruginous hawk nest	1.3	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.3
Sage grouse leks or winter range	35.2	36.8	30.7	34.1	36.3	32.8	40.6	42.2	37.2
Crucial Elk habitat	0	0	0	0	0	0	0	0	0
Bighorn sheep habitat and movement corridor	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Crucial pronghorn habitat	24.1	7.2	16.2	34.9	18.6	16.5	39.7	39.7	43.2
Critical Mule deer habitat	22.8	27.4	24.4	25.1	25.8	24.4	22.7	22.7	22.7
Wildlife Habitat Disturbed in acres - permanent (temporary)									
Desert tortoise habitat	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)	78.5 (54.5)
Bald eagle nesting	14.0 (50.1)	37.1 (80.6)	15.8 (15.1)	6.3 (16.6)	17.6 (56.2)	15.8 (51.1)	25.2 (38.8)	25.2 (38.8)	7.4 (15.4)
Peregrine falcon	0 (0)	13.2(91.3)	0 (0)	0 (0)	13.2 (91.3)	0 (0)	0 (0)	0 (0)	0 (0)
Ferruginous hawk nest	3.5 (1.3)	2.1 (1.4)	3.5 (1.3)	3.5 (1.3)	3.5 (1.3)	3.5 (1.3)	2.1 (1.4)	2.1 (1.4)	3.5 (1.3)
Sage grouse leks or winter range	50.0 (78.9)	56.7 (69.7)	51.6 (59.6)	50.8 (74.0)	51.0 (86.6)	54.3 (64.1)	52.9 (92.6)	58.1 (94.2)	51.3 (95.5)
Crucial Elk habitat	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Bighorn sheep habitat and movement corridor	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)	9.0 (8.5)
Crucial pronghorn habitat	31.9 (50.5)	7.7 (19.2)	20.7 (34.6)	57.0 (53.7)	23.0 (42.6)	20.7 (35.5)	66.8 (62.2)	66.8 (62.2)	70.9 (69.7)
Critical Mule deer habitat	32.2 (70.0)	33.6 (90.8)	30.6 (83.0)	35.7 (72.3)	35.3 (77.8)	30.6 (83.0)	33.4 (64.3)	33.4 (64.3)	33.4 (64.3)
VEGETATION (miles crossed)									
Rare plants	1.3	1.3	1.3	1.3	1.3	4.2	1.3	1.3	1.3
Grasslands	109.1	97.3	96.3	97.3	116.3	110.2	97.8	98.6	103.5
Sage scrub	314.3	331.2	320.6	319.8	320.0	317.4	312.4	308.8	304.6
Mojave desert scrub	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
Woodland/mountain shrub/grasses	3.6	4.1	3.7	3.6	3.6	1.9	4.1	4.1	3.7
Riparian	3.2	3.2	3.7	5.3	3.3	3.8	4.8	4.5	5.1

* Environmentally Preferred Route

Table 1-1, Route Comparison Table - Midpoint to Dry Lake Routes (Continued)

(Formerly Table 2-4 in the SWIP DEIS/DPA)

	Route A*	Route B	Route C	Route D	Route E	Route F	Route G	Utility Preferred	Agency Preferred
EARTH RESOURCES (miles crossed, except as noted)									
Prime/Unique farmland	21.4	21.2	21.2	21.4	21.4	32	21.1	21.1	21.1
High water erosion potential soils	39.0	53.1	44.4	35.5	48.6	47.8	36.4	36.4	37.3
High wind erosion potential soils	58.8	58.9	58.8	52.1	64.3	73.3	46.7	44.1	49.5
Flood hazard areas	6.2	1.2	2.1	3.1	4.1	1.8	3.1	3.1	3.1
Landslide hazard areas	0	0	0	0	0	1.8	0	0	0
High paleontological sensitivity areas	23.8	38.6	35.3	21.9	25.5	37.4	30.6	19.4	20.5
Number of springs within 1/2 mile of route	42	20	20	45	17	17	45	45	45.0
Number of perennial streams crossed	26	27	23	22	22	8	27	20	20.0
HUMAN ENVIRONMENT									
LAND JURISDICTION (miles crossed)									
Bureau of Land Management	412.5	413.6	397.1	409.6	430.0	406.1	414.5	409.4	406.0
Forest Service	0	0	0	0	0	0	0	0	0
State	5.2	5.2	5.2	5.2	5.2	2.3	5.2	5.2	5.2
Private	95.2	97.3	104.6	98.7	88.5	115.6	85.3	87.0	83.1
Bureau of Reclamation	0.5	0.5	0.5	0.5	0.5	0	0.5	0.5	0.5
LAND USE (miles crossed, except as noted)									
Miles within 1 mile of wilderness study areas	32.8	50.6	32.6	47.3	50.6	42.3	32.8	32.8	32.8
Approximate number of residences within 1 mile	83	78	80	83	83	94	93	92	96
Miles parallel to H-frame 69kV transmission line	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
Miles parallel to H-frame 138kV transmission line	52.0	10.5	10.5	62.8	52.0	10.5	26.0	26.0	26.0
Miles parallel to H-frame 230kV transmission line	13.7	13.7	13.7	13.7	13.7	28.2	13.7	13.7	13.7
Miles parallel to 345kV transmission line	97.2	74.0	74.0	97.2	97.2	10.5	78.9	78.9	78.9
Miles parallel to 500kV transmission line (incl. UNTP)	88.5	88.5	88.5	88.5	88.5	116.0	88.5	88.5	88.5
Total miles parallel to transmission lines	204.0	162.5	162.5	214.8	204.0	172.7	172.1	172.1	172.1
Miles in designated or planning utility corridor	370.4	362.2	337.0	377.1	364.7	329.1	379.4	377.6	350.4
Miles outside designated or planning utility corridor	142.6	153.9	169.9	136.4	159.0	194.9	125.3	132.1	162.4
Miles in Military Operating Areas of Hill AFB	1.6	42.4	1.6	0	42.4	1.6	0	0	16.3
Miles in R-6405 Restricted Area of Hill AFB	0	11.0	0	0	11.0	0	0	0	0
Miles in Military Operating Areas of Nellis AFB	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0
Agricultural lands	16.8	16.8	16.8	16.8	16.8	22.0	16.8	16.8	16.8
Range allotments	515.9	527.4	505.5	506.1	520.8	519.6	501.7	491.6	485.0
Mining claims	38.0	65.2	39.5	48.3	61.0	32.5	36.8	36.6	37.3
Number of tanks and wells along centerline	11	10	11	12	11	10	10	10	10
Number of corrals along centerline	0	1	0	0	1	0	1	1	1
VISUAL RESOURCES (miles crossed, except as noted)									
Crossings of scenic highways and byways	2	3	3	2	2	3	3	3	3
Miles of route visible from residences within 1 mile	65.7	52.3	57.1	61.9	64.1	56.9	59.9	59.9	63.1
Scenic quality Class A landscapes	0.9	0.9	0.9	0.9	0.9	5.0	0.5	0.5	0.5
VRM Class II landscapes	7.3	17.8	5.6	10.0	19.5	7.5	8.1	8.1	6.7

* Environmentally Preferred Route

Table 1-1, Route Comparison Table - Midpoint to Dry Lake Routes (Continued)

(Formerly Table 2-4 in the SWIP DEIS/DPA)

	Route A*	Route B	Route C	Route D	Route E	Route F	Route G	Utility Preferred	Agency Preferred																					
CULTURAL ENVIRONMENT																														
<i>CULTURAL RESOURCES</i>																														
Number of historic sites within 1 mile of route	53	46	50	68	46	54	61	61	53																					
Number of ethnohistoric sites within 1 mile of route	13	16	14	12	15	16	14	14	14																					
Number of prehistoric sites within 1 mile of route	388	413	408	430	386	510	399	388	388																					
Number of other sites within 1 mile of route	9	8	7	12	11	6	9	10	9																					
Miles through predicted high sensitivity zones	18.4	19.3	17.2	20.5	18.4	11	20.6	20.5	18.4																					
Oregon Trail crossings	1	1	1	1	1	1	1	1	1																					
California Immigrant Trail crossings	3	1	2	3	2	3	2	3	3																					
Pony Express Trail crossings	1	2	1	1	1	1	1	1	2																					
SUMMARY OF ENVIRONMENTAL CONSEQUENCES								Utility Preferred	Agency Preferred																					
	Route A*			Route B			Route C			Route D			Route E			Route F			Route G			Utility Preferred			Agency Preferred					
Impact Value	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low
VISUAL RESOURCES	13.5	72.7	427.0	14.5	62.6	439.2	14.5	66.8	425.8	13.5	68.5	431.4	13.5	71.7	438.7	19.5	71.0	433.7	14.7	65.4	424.9	14.9	67.5	419.5	14.9	69.1	419.4			
BIOLOGICAL RESOURCES	15.0	36.5	200.3	26.2	24.2	204.2	20.4	25.6	181.7	13.5	48.4	214.6	17.8	34.8	221.2	17.8	27.2	177.7	24.8	41.0	191.7	25.6	45.0	206.4	22.5	42.5	207.0			
CULTURAL RESOURCES	6.8	104.0	131.6	7.4	117.4	142.2	5.9	106.1	138.5	6.6	124.8	140.2	7.8	122.2	134.5	8.2	103.9	143.2	7.3	105.0	132.5	7.5	102.1	261.9	6.9	109.1	135.9			
LAND USE RESOURCES	0	73.3	88.8	0	75.2	129.6	0	64.1	88.9	0	73.3	87.6	0	75.5	129.5	0	73.3	101.2	0	73.3	88.4	0	63.8	71.0	0	63.8	86.4			
EARTH RESOURCES	0	46.7	454.3	0	50.6	453.5	0	45.0	449.9	0	46.9	452.4	0	54.6	455.3	0	45.4	465.4	0	40.9	456.4	0	23.3	473.7	0	25.6	471.3			
COMMENTS																														
Route A*			Route D			Route G																								
- low impacts to ferruginous hawks			- crosses most miles of riparian habitat			- reduces visual impacts to U.S. Highway 93																								
- crosses least miles of riparian habitat			- crosses least miles of bald eagle nesting areas			- crosses least miles of private land																								
- crosses most miles of sage grouse habitat			- crosses high mileage of sage grouse habitat			- crosses high mileage of crucial pronghorn habitat																								
Route B			Route E			Utility Preferred Route																								
- crosses least miles of riparian habitat			- crosses most BLM-administered lands			- crosses least steep terrain																								
- crosses most miles of bald eagle nesting areas			- crosses high mileage of sage grouse habitat			- reduces visual impacts to U.S. Highway 93																								
- most miles of high water erosion potential soils			- high impacts to peregrine falcon			- crosses most miles of sage grouse leks																								
- least mileage visible from residences																														
Route C			Route F			Proposed Action																								
- crosses least miles of sage grouse habitat			- visual impacts to Hagerman Fossil Beds National Monument			- reduces visual impacts to U.S. Highway 93																								
- crosses least miles of BLM-administered lands			- crosses most agricultural land			- crosses most miles of crucial pronghorn habitat																								
- crosses least miles of VRM Class II landscapes			- crosses most private lands			- crosses high mileage of sage grouse habitat																								
			- most cultural sites within one mile			- most number of residents in 1 mile																								
			- most miles of high wind erosion potential soils																											
	Route A*			Route B			Route C			Route D			Route E			Route F			Route G			Utility Preferred			Agency Preferred					
Estimated cost (x millions)	248			251			245			248			254			253			244			242			243					
Total Route Mileage	513.0			516.1			506.9			513.5			523.7			524.0			504.7			503.1			501.6					
ENVIRONMENTALLY PREFERRED ROUTE																														
Ranking	1			4			2			2			2			5			3			3			3					

* Environmentally Preferred Route

TABLE 1-2
Route Comparison Table - Ely to Delta Routes

(Formerly Table 2-5 in the SWIP DEIS/DPA)

	Direct Route**	Cutoff Route**	230kV Corridor Route*	Southern Route
Construction Access Levels (miles crossed)				
Agricultural lands	0	0	0.9	0
Existing access with spur roads	35.0	39.9	59.1	55.7
New access roads in flat (0-8%) terrain	38.5	50.2	49.1	73.3
New access roads in rolling (8-35%) terrain	44.8	46.4	34.9	60.8
New access roads in steep (35-65%) terrain	17.5	17.4	15.6	21.2
NATURAL ENVIRONMENT				
WILDLIFE (miles crossed)				
Desert tortoise habitat	0	0	0	0
Bald eagle nesting	7.0	8.4	17.8	0
Peregrine falcon	0	0	0	0
Ferruginous hawk nest	0	0	4.5	10.1
Sage grouse leks or winter range	7.9	6.8	7.1	11.8
Crucial Elk habitat	0	0	5.5	0
Bighorn sheep habitat and movement corridor	0	0	0	0
Crucial pronghorn habitat	56.5	70.1	71.5	85.7
Critical Mule deer habitat	12.3	11.0	14.1	12.5
Wildlife Habitat Disturbed in acres - permanent (temporary)				
Desert tortoise habitat	0 (0)	0 (0)	0 (0)	0 (0)
Bald eagle nesting	2.6 (36.8)	2.6 (43.8)	16.6 (43.1)	0 (0)
Peregrine falcon	0 (0)	0 (0)	0 (0)	0 (0)
Ferruginous hawk nest	0 (0)	1.1 (1.2)	10.4 (16.7)	25.4 (25.1)
Sage grouse leks or winter range	8.5 (21.1)	7.6 (17.6)	15.7 (16.7)	32.9 (11.8)
Crucial Elk habitat	0 (0)	0 (0)	1.7 (29.7)	0 (0)
Bighorn sheep habitat and movement corridor	0 (0)	0 (0)	0 (0)	0 (0)
Crucial pronghorn habitat	62.2 (129.9)	85.6 (162.7)	83.9 (160.0)	106.0 (188.7)
Critical Mule deer habitat	9.5 (50.1)	10.3 (40.2)	14.8 (43.1)	11.7 (35.9)
VEGETATION (miles crossed)				
Rare plants	0	0	0	3.0
Grasslands	27.3	33.2	34.0	27.0
Sage scrub	83.3	100.9	109.6	155.0
Woodland/mountain shrub/grasses	0.6	0.5	3.6	7.0
Riparian	1.6	1.2	0.8	0.1

* Proposed Action, Environmentally and Agency/Utility Preferred Routes

** Preferred by the National Park Service

Table 1-2, Route Comparison Table - Ely to Delta Routes (Continued)

(Formerly Table 2-5 in the SWIP DEIS/DPA)

	<i>Direct Route**</i>	<i>Cutoff Route**</i>	<i>230kV Corridor Route*</i>	<i>Southern Route</i>
<i>EARTH RESOURCES (miles crossed, except as noted)</i>				
Miles of high water erosion hazard soils crossed	14.4	22.1	31.3	17.1
Miles of high wind erosion hazard soils crossed	8.6	12.6	19.2	40.1
Number of springs within 1/2 mile of route	2	2	6	12
Number of perennial streams crossed	0	0	4	3
Miles of flood hazard areas crossed	0	0	0	0
Miles of landslide hazard areas crossed	0	0	0.6	0
Areas of high paleontological sensitivity	55.5	55.6	64.9	84.7
<i>HUMAN ENVIRONMENT</i>				
<i>LAND JURISDICTION (miles crossed)</i>				
Bureau of Land Management	125.7	143.4	133.5	197.4
Forest Service	0	0	9.0	0
State	7.2	10.5	10.4	12.0
Private	0	0	10.2	1.6
<i>LAND USE (miles crossed, except as noted)</i>				
Miles of route wilderness/WSA within 1 mile	0	13.8	12.3	14.1
Number of residences within 1 mile	2	3	26	7
Miles parallel to H-frame 69kV transmission line	0	0	70.0	0
Miles parallel to H-frame 230kV transmission line	13.2	74.2	139.0	20.6
Miles parallel to 500kV transmission line	13.2	20.6	20.8	31.8
Total miles parallel to transmission lines	13.2	74.2	139.0	31.8
Miles in designated or planning utility corridor	14.3	75.5	145.9	49.5
Miles outside designated or planning utility corridor	115.8	78.4	14.9	161.5
Miles in Military Operating Area of Hill AFB	44.1	123.0	79.0	102.5
Miles in R-6405 Restricted Area of Hill AFB	55.1	0	0	0
Agricultural lands	0	0	0.9	0.1
Prime/Unique farmlands	0	0	0	0
Range allotments	135.1	153.9	152.8	211.0
Mining claims	7.8	6.9	25.8	1.9
Number of tanks and wells along route	1	0	1	0
Number of corrals along route	0	0	0	0
<i>VISUAL RESOURCES (miles crossed, except as noted)</i>				
Crossings of scenic highway or byways	0	0	1	3
Miles of route visible from residences within 1 mile	3.3	5.1	23.6	4.8
Scenic quality Class A landscapes crossed	0	4.2	4.2	0
VRM Class II landscapes crossed	0	0	0	2.0

* *Proposed Action, Environmentally and Agency/Utility Preferred Routes*

** *Preferred by the National Park Service*

Table 1-2, Route Comparison Table - Ely to Delta Routes (Continued)

(Formerly Table 2-5 in the SWIP DEIS/DPA)

	Direct Route**	Cutoff Route**	230kV Corridor Route*	Southern Route
CULTURAL ENVIRONMENT				
<i>CULTURAL RESOURCES (miles crossed, except as noted)</i>				
Number of historic sites within 1 mile of route	4	5	12	8
Number of ethnohistoric sites within 1 mile of route	8	8	8	10
Number of prehistoric sites within 1 mile of route	21	26	91	66
Number of other cultural sites within 1 mile of route	1	1	1	1
Miles through predicted high cultural sensitivity zones	0.8	0.8	8.0	6.0
Pony Express Trail crossings	1	1	0	0

	Direct Route**			Cutoff Route**			230kV Corridor Route*			Southern Route		
<i>Impact Value</i>	High	Mod	Low	High	Mod	Low	High	Mod	Low	High	Mod	Low
VISUAL RESOURCES	0.6	6.4	128.1	1.2	13.7	139.0	7.3	31.6	121.8	4.1	22.5	183.1
BIOLOGICAL RESOURCES	4.7	5.1	82.2	5.8	7.7	94.1	0.4	12.4	117.3	10.3	17.7	120.8
CULTURAL RESOURCES	4.6	19.1	16.3	4.6	32.7	21.4	5.5	39.7	44.5	11.6	41.7	48.0
LAND USE RESOURCES	0.0	65.3	38.9	0.0	0.0	123.0	0.0	0.0	80.9	0.0	0.0	103.2
EARTH RESOURCES	0.0	8.4	125.9	0.0	7.8	144.0	0.0	6.9	152.7	0.0	2.4	200.2

COMMENTS

*Direct Route***

- shortest route
- avoids visual impacts to Great Basin National Park
- crosses Leland-Harris spring complex
- crosses through R-6405 Restricted Area of UTTR
- crosses least agricultural lands
- crosses least miles of crucial pronghorn habitat

*Cutoff Route***

- crosses least agricultural lands
- avoids visual impacts to Great Basin National Park
- crosses least mileage of sage grouse habitat

*230kV Corridor Route**

- best utilizes the existing utility corridor
- crosses most miles of bald eagle nesting areas
- crosses high mileage of crucial pronghorn habitat
- most residences within 1 mile
- crosses most national forest lands and private lands

Southern Route

- longest route and most miles in steep terrain
- highest overall environmental impacts
- crosses most BLM-administered lands
- least miles in military operating areas of UTTR

	Direct Route**	Cutoff Route**	230kV Corridor Route*	Southern Route
Estimated cost (x million)	66	72	77	100
Total Route Mileage	132.9	153.9	160.8	211.0

ENVIRONMENTALLY PREFERRED ROUTE

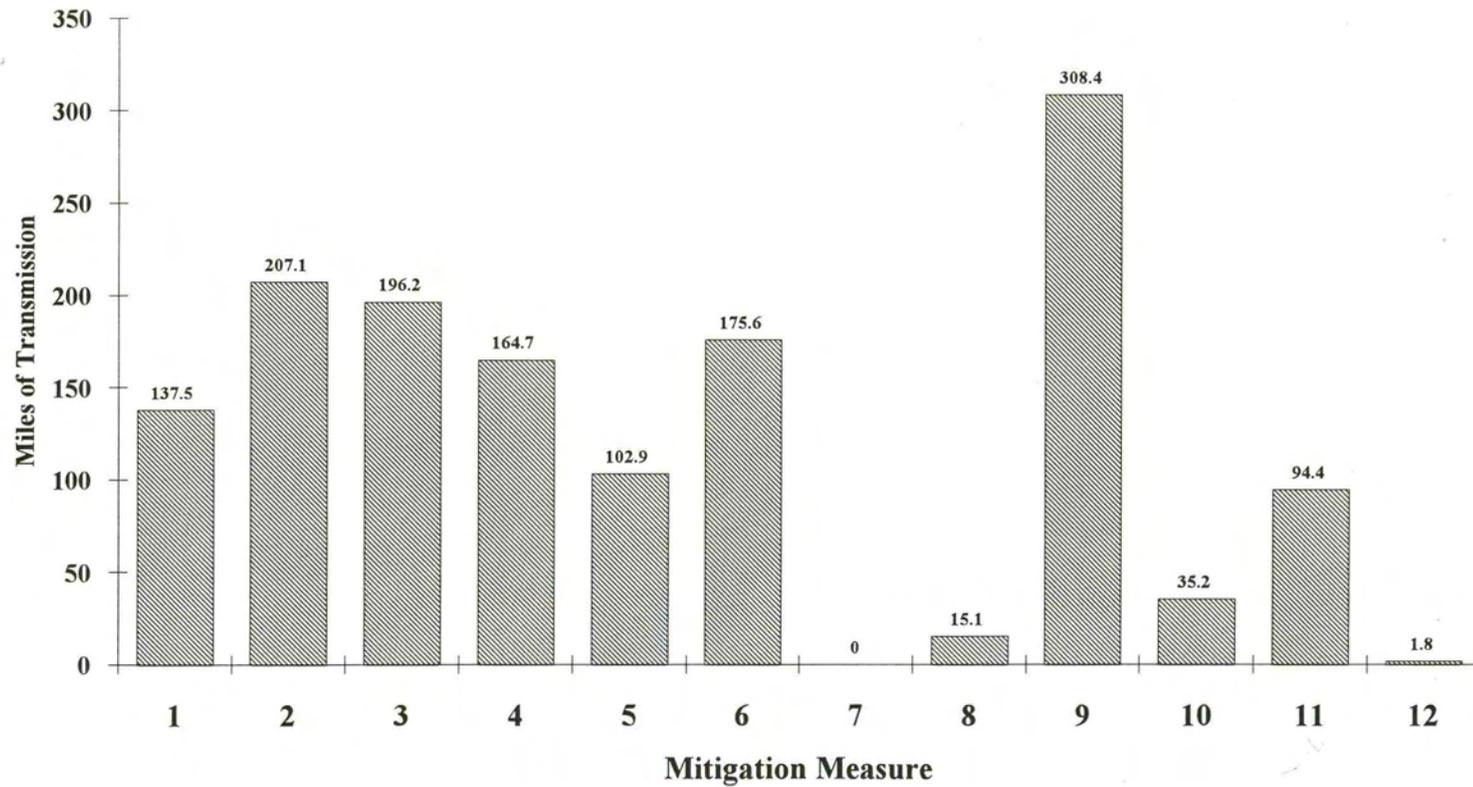
Ranking	3	1	2	3
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* Proposed Action, Environmentally and Agency/Utility Preferred Routes

** Preferred by the National Park Service

TABLE 1-3

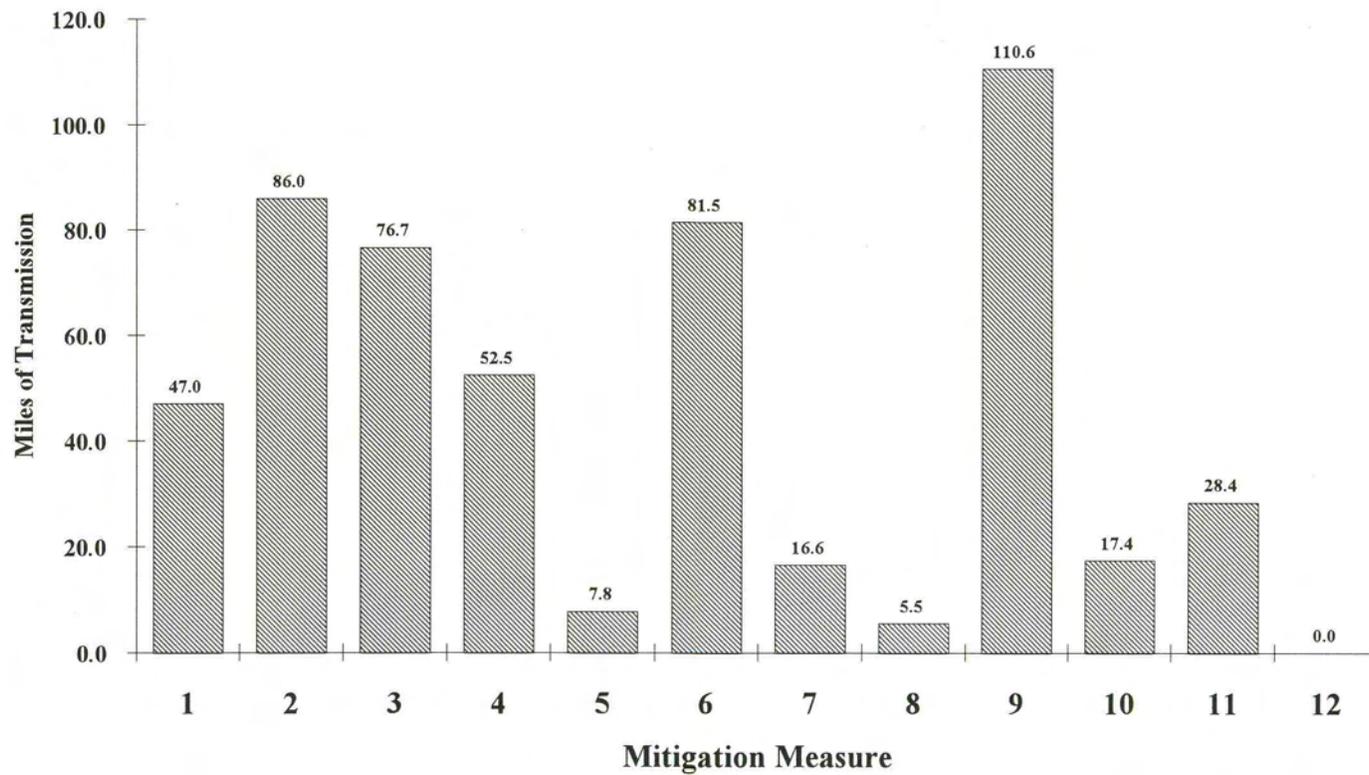
SUMMARY OF SELECTIVELY COMMITTED MITIGATION FOR THE PROPOSED ACTION
Midpoint to Dry Lake Segment



Note: Selectively Committed Mitigation Measures are described in Table 1-5

TABLE 1-4

SUMMARY OF SELECTIVELY COMMITTED MITIGATION FOR THE PROPOSED ACTION
Ely to Delta Segment



Note: Selectively Committed Mitigation Measures are described in Table 1-5

TABLE 1-5

Selectively Committed Mitigation Measures

Note: These selective mitigation measures apply only to specific impact locations that were identified in the EIS or during field investigations.

1. No widening or upgrading of existing access roads would be undertaken in the area of construction and operation, except for repairs necessary to make roads passable, where soils and vegetation are very sensitive to disturbance.
2. There would be no blading of new access roads in the area of construction and operation. Existing crossings would be utilized at perennial streams, National Recreational Trails, and irrigation channels. Off-road or cross-country access routes would be used for construction and maintenance. This would minimize ground disturbance impacts. These access routes must be flagged with an easily seen marker and the route must be approved in advance of use by the authorized officer.
3. The alignment of any new access roads or overland route would follow the designated area's landform contours where possible, providing that such alignment does not additionally impact resource values. This would minimize ground disturbance and/or reduce scarring (visual contrast).
4. All new access roads not required for maintenance would be permanently closed using the most effective and least environmentally damaging methods appropriate to that area with concurrence of the landowner or land manager (e.g., stock piling and replacing topsoil, or rock replacement). This would limit new or improved accessibility into the area.
5. Modified tower design or alternate tower type would be utilized to minimize ground disturbance, operational conflicts, visual contrast and/or avian conflicts.
6. In designated areas, structures would be placed so as to avoid sensitive features such as, but not limited to, riparian areas, water courses, and cultural sites, and/or to allow conductors to clearly span the features, within limits of standard tower design. This would minimize amount of sensitive feature disturbed and/or reduce visual contrast.
7. Standard tower design would be modified to correspond with spacing of existing transmission line structures where feasible and within limits of standard tower design. The normal span would be modified to correspond with existing towers, but not necessarily at every location. This would reduce visual contrast and/or potential operational conflicts.
8. At highway, canyon, and trail crossings, towers are to be placed at the maximum feasible distance from the crossing, to reduce visual impacts.

Table 1-5, Selectively Committed Mitigation Measures (Continued)

9. Nonspecular conductors would be used, where specified by the authorized officer, to reduce visual impacts.
10. "Dulled" metal finish towers would be used to reduce visual impacts.
11. With the exception of emergency repair situations, right-of-way construction, restoration, maintenance, and termination activities in designated areas would be modified or discontinued during sensitive periods (e.g., nesting and breeding periods) for candidate, proposed threatened and endangered, or other sensitive animal species. Sensitive periods, species affected, and areas of concern would be approved in advance of construction or maintenance by the authorized officer.
12. Helicopter placement of towers would be used to reduce ground disturbance impacts (e.g., soil erosion).

TABLE 1-6

Generic Mitigation Measures Included In The Project Description

1. All construction vehicle movement outside the right-of-way would normally be restricted to predesignated access, contractor acquired access or public roads.
2. The areal limits of construction activities would normally be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction activity limits.
3. In construction areas where recontouring is not required, vegetation would be left in place wherever possible and original contour would be maintained to avoid excessive root damage and allow for resprouting.
4. In construction areas (e.g., marshalling yards, tower sites, spur roads from existing access roads) where ground disturbance is significant or where recontouring is required, surface restoration would occur as required by the landowner or land management agency. The method of restoration would normally consist of returning disturbed areas back to their natural contour, reseeding (if required), cross drains installed for erosion control, placing water bars in the road, and filling ditches.
5. Watering facilities (e.g. - tanks, natural springs and/or developed springs, water lines, wells, etc.) would be repaired or replaced if they are damaged or destroyed by construction activities to their pre-disturbed condition as required by the landowner or land management agency.
6. Towers and/or ground wire would be marked with high-visibility devices where required by governmental agencies (Federal Aviation Administration).
7. On agricultural land, right-of-way would be aligned, in so far as practical, to reduce the impact to farm operations and agricultural production.
8. Prior to construction, all supervisory construction personnel would be instructed on the protection of cultural and ecological resources. To assist in this effort, the construction contract would address: (a) Federal and state laws regarding antiquities and plants and wildlife, including collection and removal; (b) the importance of these resources and the purpose and necessity of protecting them.
9. Cultural resources would continue to be considered during post-EIS phases of project implementation in accordance with the programmatic agreement that would be developed in conjunction with preparation of the EIS. This would involve intensive surveys to inventory and evaluate cultural resources within the selected corridor and any appurtenant impact zones beyond

Table 1-6, Generic Mitigation Measures Included In the Project Description (Continued)

the corridor, such as access roads and construction equipment yards. In consultation with appropriate land managing agencies and state historic preservation officers, specific mitigation measures would be developed and implemented to mitigate any identified adverse impacts. These may include project modifications to avoid adverse impacts, monitoring of construction activities, and data recovery studies.

10. The Project Sponsors would respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures. The transmission line would be patrolled on a regular basis so that damaged insulators or other line materials that could cause interference are repaired or replaced.
11. The Project Sponsors would apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a right-of-way, to the mutual satisfaction of the parties involved.
12. The Project Sponsors would continue to monitor studies performed to determine the effects of audible noise and electrostatic and electromagnetic fields in order to ascertain whether these effects are significant.
13. Roads would be built as near as possible at right angles to the streams and washes. Culverts would be installed where necessary. All construction and maintenance activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial streambanks. In addition, road construction would include dust-control measures during construction in sensitive areas. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the transmission line. Towers will be sited with a minimum distance of 200 feet from streams.
14. All requirements of those entities having jurisdiction over air quality matters would be adhered to and any necessary permits for construction activities would be obtained. Open burning of construction trash would not be allowed unless permitted by appropriate authorities.
15. Fences and gates would be repaired or replaced to their original predisturbed condition as required by the landowner or the land management agency if they are damaged or destroyed by construction activities. Temporary gates would be installed only with the permission of the landowner or the land management agency; and would be restored to its original predisturbed condition following construction.
16. Transmission line materials would be designed and tested to minimize corona. A bundle configuration (three conductors per phase except for the Ely to Delta segment would be two conductors per phase) and larger diameter conductors would be used to limit the audible noise, radio interference (RI), and television interference (TVI) due to corona. Tension would be maintained on all insulator assemblies to assure positive contact between insulators, thereby avoiding sparking. Caution would be exercised during construction to avoid scratching or nicking the conductor surface which may provide points for corona to occur.

Table 1-6, Generic Mitigation Measures Included In the Project Description (Continued)

17. During operation of the transmission line, the right-of-way would be maintained free of non-biodegradable debris.
18. The primary focus of paleontological mitigation efforts should be areas of greatest disturbance and areas likely to have significant fossils.
19. Mitigation measures that will be developed during the consultation period under Section 7 of the Endangered Species Act (1974) will be adhered to as specified in the Biological Opinion of the USDI Fish and Wildlife Service.
20. Hazardous materials shall not be drained onto the ground or into streams or drainage areas. Totally enclosed containment shall be provided for all trash. All construction waste including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials shall be removed to a disposal facility authorized to accept such materials.
21. Pre-construction surveys for plants and wildlife species designated as sensitive or of concern will be conducted in areas of known occurrence or habitat as stipulated by the land-administering agency during the development of the Construction, Operation, and Maintenance Plan once the transmission line centerline, access roads, and tower sites have been located and staked in the field.