FINAL ENVIRONMENTAL IMPACT STATEMENT

Project Financing for Southwest Intertie Project – South

DOE/EIS-0443
January 2010



COVER SHEET

Responsible Federal Agency: U.S. Department of Energy, Western Area Power Administration

Title: Final Environmental Impact Statement (FEIS) – Project Financing for Southwest Intertie Project – South (DOE/EIS-0443)

Location: Clark, Lincoln, Nye, and White Pine counties, Nevada

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Background: The U.S. Department of Energy (DOE), Western Area Power Administration (Western), is considering whether to provide partial financing of the southern portion of the Southwest Intertie Project (SWIP-South) which consists of approximately 235 miles of 500-kilovolt (kV) transmission line. SWIP-South would extend from Harry Allen substation near Las Vegas, Nevada northward to the proposed Thirtymile Substation near Ely, Nevada. Partial financing of SWIP-South is being considered under the provisions of Western's Transmission Infrastructure Program (TIP) which was created to implement Section 402 of the American Recovery and Reinvestment Act of 2009 (Recovery Act). Under the Recovery Act, Western was given authority to borrow funds from the U.S. Treasury to construct, finance, facilitate, plan, operate, maintain, and/or study construction of new or upgraded electric power transmission lines and related facilities.

Great Basin Transmission (GBT), in conjunction with Western and NV Energy, proposes to construct, operate, and maintain, the Southwest Intertie Project (SWIP). The SWIP is a proposed 520 mile, single-circuit, overhead alternating current 500-kV electric transmission line from the Harry Allen Substation near Las Vegas, Nevada, to the Midpoint substation, near Twin Falls, Idaho. The SWIP is being developed as two independent transmission projects, SWIP-South and SWIP-North. In July 1993, the Bureau of Land Management (BLM) completed the *Southwest Intertie Project Environmental Impact Statement and Proposed Plan Amendment*, herein referred to as the SWIP Environmental Impact Statement (EIS), in cooperation with the Forest Service, Bureau of Reclamation, National Park Service, and Bureau of Indian Affairs, to analyze the environmental impacts that would be associated with construction and operation of the entire SWIP. The environmental mitigation measures for the SWIP are identified in the Record of Decision (ROD) issued by BLM on December 14, 1994, (59 FR 30678) herein referred to as the BLM ROD. In 2008, BLM prepared the *Environmental Assessment for the Southwest Intertie Project Southern Portion NV-040-07-048*, herein referred to as SWIP-South Environmental Assessment (EA). In the 2008 SWIP-South EA, BLM considered the impacts of amending the previously approved Right-of-Way (ROW) Grants to allow a 4-mile extension on the southern end to allow interconnection with the existing Harry Allen Substation and a shift in the location on the northern end of less than one mile to the newly proposed Thirtymile Substation to take better advantage of the since-constructed Falcon-to-Gonder 345 kV-line. The SWIP-South EA also provided an update on the key resource areas and impacts from the 1993 SWIP EIS.

Due to the size of the SWIP project (approximately 520 miles in length), and because different components of the SWIP have independent utility, GBT proposes to complete the permitting and construction of the project in phases. Consistent with this phased approach, in June 2007, GBT submitted an application to the Nevada Public Utilities Commission (PUC) for a Utility Environmental Protection Act permit for the first phase of the project, known both as the Harry Allen-to-Thirtymile Project and as the SWIP-South. The PUC approved the application in December 2008. It is anticipated that GBT will enter into a Transmission Service

Agreement with NV Energy that would provide 100 percent of the transmission capacity on SWIP-South to NV Energy and that NV Energy would acquire a 25 percent ownership interest in SWIP-South and fund its 25 percent share, approximately $139 million.

The SWIP-South would begin at the existing Harry Allen Substation, located in Dry Lake, Nevada, approximately 20 miles northeast of Las Vegas, Nevada, and run north to the proposed Thirtymile Substation approximately 18 miles northwest of Ely, Nevada, where it would interconnect with Sierra Pacific Power Company's existing Falcon-to-Gonder 345-kV transmission line. The SWIP-South would traverse approximately 235 miles through parts of White Pine, Nye, Lincoln, and Clark counties in Nevada, and would consist of self-supporting, steel-lattice and steel-pole H-frame structures, placed approximately 1,200 to 1,500 feet apart.

The second phase, referred to as the SWIP-North, would run from the proposed Thirtymile Substation to Idaho Power Company's Midpoint Substation near Shoshone, Idaho. A third possible phase, the Southern Nevada Intertie Project (SNIP), is an approximately 60-mile extension paralleling the existing NV Energy line between the Harry Allen and Mead Substations in Nevada. The SNIP could also be permitted and constructed separately from the remainder of the SWIP. Applications with the Nevada PUC are pending for both SWIP-North and SNIP. At this point, it is not certain that either SWIP-North or SNIP will be approved or constructed, and SWIP-South has independent utility of these other phases based on filings with the Nevada PUC and transmission service agreements; therefore, the different phases of SWIP are considered to have independent utility.

The BLM was the lead agency in the preparation of the SWIP EIS as well as the SWIP-South EA. Western did not participate as a cooperating agency in the preparation of the EIS or EA because Western was not considering partial financing of the project nor was the Recovery Act then law. Western's potential financing of the SWIP-South does not change the environmental impacts as analyzed in the BLM environmental documents.

Western is adopting both BLM's EIS and EA to meet its obligations under the National Environmental Policy Act (NEPA). The BLM EIS and EA address the environmental impacts of the SWIP-South. Since the BLM EIS and EA do not specifically identify Western's partial financing action under the Recovery Act, Western has prepared this Cover Sheet to accompany the BLM EIS and EA. This Cover Sheet addresses Western's need for agency action, its proposed action, and a discussion on intentional destructive acts. The BLM SWIP EIS and SWIP-South EA and this Cover Sheet serve as Western's NEPA documents for the proposed partial financing of the SWIP-South. Western has performed an independent evaluation of both BLM environmental documents and has determined that both meet the requirements of the DOE NEPA Implementing Procedures (10 CFR part 1021).

Western's Purpose and Need - Under section 402 of the Recovery Act, Western is given authority to borrow funds from the U.S. Treasury to construct, finance, facilitate, plan, operate, maintain, and/or study construction of new or upgraded electric power transmission lines and related facilities. These transmission lines and related facilities must have at least one terminus in Western's marketing area and deliver or facilitate the delivery of power from renewable resources constructed or reasonably expected to be constructed after the date of enactment of the Recovery Act.

On March 4, 2009, Western published a Notice of Proposed Program and Request for Public Comments in the *Federal Register* (74 FR 9391) describing its proposed TIP and soliciting public input on that program. After considering the comments received on its March 4 *Federal Register* notice, Western published its final TIP Notice of Program on May 14, 2009 (74 FR 22732). The TIP will guide how Western evaluates proposals for funding under the Recovery Act.

Western also published a Notice of Availability of Request for Interest on March 4, 2009, (74 FR 9391) that initiated a public process to help identify the first round of transmission projects to be

developed under the Recovery Act. The SWIP was one of the projects proposed for funding in response to this notice.

Western's Proposed Action - Western's proposed action is to partially finance SWIP-South under its TIP authority. Western's financing would amount to 85 percent of GBT's 75 percent share of the costs of developing and constructing SWIP-South, approximately $354 million. In return for its portion of Project funding, Western would have the rights, under certain provisions, to acquire a 7.5 percent ownership interest (physical assets and capacity rights) which is currently estimated to be 45 MW of bi-directional capacity.

Intentional Destructive Acts - After the recent decisions made by the U.S. Court of Appeals, DOE NEPA documents are now required to include an evaluation that considers "intentional destructive acts," (i.e., acts of sabotage or terrorism) and the potential environmental consequences of such acts.

As with any U.S. energy infrastructure, the proposed SWIP-South could potentially be the target of terrorist attacks or sabotage. If a fire, explosion, or chemical release occurred at either of the substations as the result of a terrorist attack, such events could cause injury and/or death of workers. The risk to workers or the public from damage to the substation, as a result of accidental or intentional actions by outside parties, is low because public access would be controlled by a fence, and the site would be monitored. An emergency response plan and site security plan would be prepared for each substation. Due to the sensitive nature of information contained within these plans, the documents would not be available for general public review. The proposed action would not increase the risk for environmental impacts from intentional destructive acts.

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U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment NV-040-07-048
July 2008

Southwest Intertie Project
Southern Portion

Location: **Portions of Clark, Lincoln, White Pine Counties, Nevada**
BLM Right-of-Way Grant NVN-85210

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BLM Mission Statement

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

ENVIRONMENTAL ASSESSMENT

For the:

Southwest Intertie Project
Southern Portion
NV-040-07-048

Bureau of Land Management

July 2008

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SECTION 1.0
INTRODUCTION AND PURPOSE AND NEED

1.1 INTRODUCTION

1.1.1 Background

In 1994, a Record of Decision and Approved Land Use Plan Amendment (ROD/ALUPA) were issued by the U.S. Bureau of Land Management (BLM) for the Southwest Intertie Project (SWIP) (FR Doc. 94-30678, Filed 12-13-94), following the preparation and review of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). The SWIP is a single-circuit, overhead, 500 kilovolt (kV) transmission line project. The project proponents were the Idaho Power Company (IPC) and the Los Angeles Department of Water and Power (LADWP).

In conjunction with the ROD/ALUPA, the BLM issued Right-of-Way (ROW) Grants (with serial numbers: IDI-26446, NVN-49781, UTU-73363) for the project on December 8, 1994, pursuant to the Federal Land Policy and Management Act. The ROW Grants were issued to IPC in segments, including a north-south segment of the project (Midpoint-to-Dry Lake), and an east-west segment of the project (Ely-to-Delta) which was immediately assigned to the LADWP and subsequently expired. The term of the ROW Grant for the Midpoint-to-Dry Lake segment was extended by the BLM in December 1999, and again in August 2004.

At the time of the 1994 SWIP EIS the Midpoint-to-Dry Lake segment (the north-south segment) was located in the Elko, Ely, and Las Vegas BLM Districts in Nevada. The BLM land use plans that were amended by the ROD/ALUPA to accommodate the Midpoint-to-Dry Lake segment of the project included the Wells Resource Management Plan (RMP) in the Elko District of the BLM, the Egan RMP and Schell Management Framework Plan (MFP) in the Ely District of the BLM, and the Caliente Resource Area MFP and Clark County MFP in the Las Vegas District of the BLM. In 2008 the BLM reorganized into a three-tier organization. The BLM offices associated with the SWIP are now the Elko District Office (includes the Wells Field Office), the Ely District Office (includes the Egan Field Office, the Schell Field Office, and the Caliente Field Office), and the Southern Nevada District (instead of the Las Vegas District Office, includes the Las Vegas Field Office). The RMP and MFP titles remain the same.

The final permitting and construction of the SWIP was not undertaken by IPC. In 2005, IPC entered into an exclusive arrangement with White Pine Energy Associates, LLC (WPEA), to complete the permitting, development, engineering, and construction of the SWIP, and authorized the BLM to work directly with WPEA toward this end. WPEA subsequently assigned its rights to its affiliate, Great Basin Transmission, LLC (Great Basin). In May 2008, BLM approved an assignment by IPC to Great Basin of a portion of the SWIP ROW. The assigned portion of the ROW includes the portion covered in this Environmental Assessment (EA), which has been re-designated as ROW Grant NVN-85210.

Due to the size of the SWIP project (approximately 520 miles in length), and because different components of the SWIP have independent utility, Great Basin proposes to complete the permitting and construction of the project in phases. Consistent with this phased approach, in June 2007, Great Basin submitted an application to the Public Utilities Commission of Nevada for a Utility Environmental Protection Act (UEPA) permit for the first phase of the project, known

both as the Harry Allen-to-Thirtymile Project and as the SWIP – Southern Portion. In this EA it is referred to as the SWIP – Southern Portion. The UEPA application review is pending.

The SWIP – Southern Portion begins at the existing Harry Allen Substation, located in Dry Lake, Nevada, approximately 20 miles northeast of Las Vegas, Nevada, and runs north to the proposed Thirtymile Substation approximately 18 miles northwest of Ely, Nevada, where it will interconnect with Sierra Pacific Power Company's existing Falcon-to-Gonder 345kV transmission line. The SWIP – Southern Portion traverses approximately 230 miles through parts of White Pine, Nye, Lincoln, and Clark counties in Nevada, and will consist of self-supporting, steel-lattice and steel-pole H-frame structures, placed approximately 1,200 to 1,500 feet apart.

The second phase, referred to as the SWIP – Northern Portion runs from the proposed Thirtymile Substation to IPC's Midpoint Substation near Shoshone, Idaho. A third possible phase, an approximately 34 mile subsection of the SWIP – Northern Portion, located between the Thirtymile Substation and a point just west of the proposed White Pine Energy Station (WPES), could be permitted and constructed separately from the remainder of the SWIP – Northern Portion, depending on the timing and outcome of the WPES permitting process. The WPES is a coal fired power plant proposed by WPEA, which at full build out would be approximately 1600 megawatts. The timing of these phases may occur in any order.

This EA is being prepared with respect to a proposed ROW grant amendment related solely to the SWIP – Southern Portion.

1.1.2 ROW Amendment Application and Related NEPA Analysis

In July 2007, IPC and Great Basin submitted an SF-299 seeking BLM approval of an amendment to ROW Grant NVN-49781 to accommodate two modifications for the SWIP – Southern Portion. In May 2008 IPC assigned its interest in this application to Great Basin and the BLM re-designated the applicable portion of the Grant specific to this project (NVN-85210). The two proposed modifications consist of (1) an extension of the ROW and 500kV transmission line for approximately 4 miles from the originally approved southern terminus, which was to be at the Dry Lake 500kV Substation (which was never constructed), to the now existing Harry Allen 500kV Substation in Clark County, and (2) a modification of the ROW Grant in the Robinson Summit area northwest of Ely in White Pine County, which would shift the location of the Robinson Summit Substation from its currently approved location, to a new site, referred to as Thirtymile Substation immediately to the west of the approved SWIP corridor, and approximately ¾ mile to the northwest of the currently approved site.

A Determination of NEPA Adequacy (DNA) was prepared by the BLM to evaluate the SWIP EIS with respect to these proposed modifications. The DNA also evaluated relocation of the ROW to the west side of U.S. Highway 93 in Coyote Spring Valley which had been mandated by Congress in the 2004 Lincoln County Conservation, Recreation, and Development Act (LCCRDA). The DNA determined that this EA should be prepared to assess the impacts of the proposed ROW modifications, the Coyote Springs Valley relocation, and also to address policy and resource updates associated with key environmental resources that may affect the project.

In summary, this EA includes analysis of:

- environmental impacts of Great Basin's proposed amendment to the SWIP ROW grant that would (1) extend the ROW approximately 4 miles southwest to the Harry Allen Substation, and (2) change the approved location of the substation northwest of Ely

- environmental impacts of a congressionally mandated shift of the ROW to the west side of U.S. Highway 93 in the Coyote Springs Valley area

- policy and resource updates enacted or adopted after the issuance of the ROW grant in 1994 with potential implications for the SWIP

1.2 PURPOSE AND NEED

The purpose of BLM's action is to make a decision on the use of public land for electrical transmission facilities that are necessary to construct and operate the SWIP – Southern Portion, which requires amendment of the existing ROW grant. The need for BLM action arises from the Federal Land Policy and Management Act (FLPMA), which requires BLM to respond to applications for ROW grants and amendments. FLPMA establishes a multiple use framework for management of public land which includes use for energy transmission facilities. The Energy Policy Act of 2005 and the President's Energy Policy also recognize the important role of the use of public land for electrical transmission facilities. In general, BLM's management objective is to meet public needs for use of BLM-managed land while avoiding or minimizing adverse impacts to other resource values.

The ROW modifications evaluated in this EA are necessary for the construction and operation of the SWIP 500kV transmission line. The extension of the ROW at the southern terminus of the project is needed in order to allow the SWIP to interconnect with the existing transmission grid. The modification of the grant in the Robinson Summit area will provide engineering and environmental advantages and better accommodate the interconnection with, and the crossing of, the Falcon-to-Gonder 345kV line that now passes through this area.

The Proponent's objective for the SWIP transmission line itself is to interconnect existing utility grids in northern and southern Nevada, increase regional transmission system reliability, and provide transmission service for generation facilities including renewable energy projects.

SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The Proposed Action is the amendment to the current SWIP ROW Grant. The amendment would provide for two ROW modifications: (1) the relocation of the southern terminus of the SWIP 500kV transmission line from the originally proposed Dry Lake Substation location to the existing Harry Allen Substation, and a corresponding extension of the transmission line ROW, and (2) a westward shift of the approved location for a substation in the Robinson Summit area to the new Thirtymile Substation site, and corresponding transmission interconnections with the SWIP – Southern Portion 500kV line and the now existing Falcon-to-Gonder 345kV line. The general location of these modifications is shown on Figure 1. BLM's action would be to approve the ROW amendment application (SF-299) submitted by Great Basin requesting these modifications.

2.1.1 Harry Allen Substation Area

This modification includes a 3.8-mile extension of the SWIP 500kV transmission line ROW, from the originally approved terminus at the then-contemplated Dry Lake 500kV Substation to the existing Harry Allen 500kV Substation in Clark County (Figure 2). Since the completion of the SWIP EIS, the Harry Allen 500kV Substation has been constructed by Nevada Power Company and will serve as the southern interconnection point between the SWIP and the existing grid. The originally proposed Dry Lake Substation was never constructed. The same alignment that will be followed by the proposed extension was evaluated in the SWIP EIS but was not selected because the anticipated Dry Lake Substation was thought to be the most likely location for the southern terminus (Figure 3).

The proposed ROW Grant extension is 200 feet in width and approximately 3.8 miles in length. The 500kV alternating current transmission line within the extended ROW will consist of single-circuit, self-supporting, steel-lattice structures, ranging from approximately 90 to 175 feet in height (Figure 4) with tower-to-tower spans of approximately 1,200 to 1,500 feet. Construction will be completed as part of the SWIP – Southern Portion.

2.1.2 Thirtymile Substation

The proposed Thirtymile Substation is located approximately 18 miles northwest of Ely and approximately ½ mile south of U.S. Highway 50, immediately to the west of the SWIP alignment, approximately ¾ mile to the northwest of the Robinson Summit Substation site that was approved under the initial ROW Grant (Figure 5). The Thirtymile Substation is located within the Robinson Summit Substation siting area evaluated in the SWIP EIS, and the associated interconnections also fall within the corridor area(s) analyzed in the EIS (Figure 6). This 500/345kV substation will be constructed in lieu of the Robinson Summit Substation. This modified location (referred to as the Thirtymile Substation) will serve as an interconnection between the SWIP 500kV line and the existing Falcon-to-Gonder 345kV line (located

Project Area Map

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC

THIRTYMILE SUBSTATION

McGill
Ely
Baker
Duckwater
Duckwater Indian Reservation
Preston
Currant
Pioche
Panaca
Caliente
Alamo
Nellis Air Force Bombing and Gunnery Range
Desert National Wildlife Range
Indian Springs
Moapa
Overton
Moapa River Indian Reservation
Dry Lake
Lake Mead

Humboldt-Toiyabe National Forest
Great Basin National Park

WHITE PINE COUNTY
NYE COUNTY
LINCOLN COUNTY
CLARK COUNTY

COYOTE SPRINGS AREA

HARRY ALLEN SUBSTATION

Land Jurisdiction

- Tribal Jurisdiction
- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- Department of Energy
- Fish and Wildlife Service
- Forest Service
- National Park Service
- State of Nevada
- Private

Site Specific Analysis Areas

- Site Specific Analysis Area (general location)

Electrical Transmission Facilities

- 500kV Transmission Line Right-of-Way
- Proposed Thirtymile Substation
- Harry Allen Substation

General Reference Features

- County Boundary
- Major Transportation

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
USGS, 30 meter Digital Elevation Models

0 5 10 20 Miles

epg

July 2008

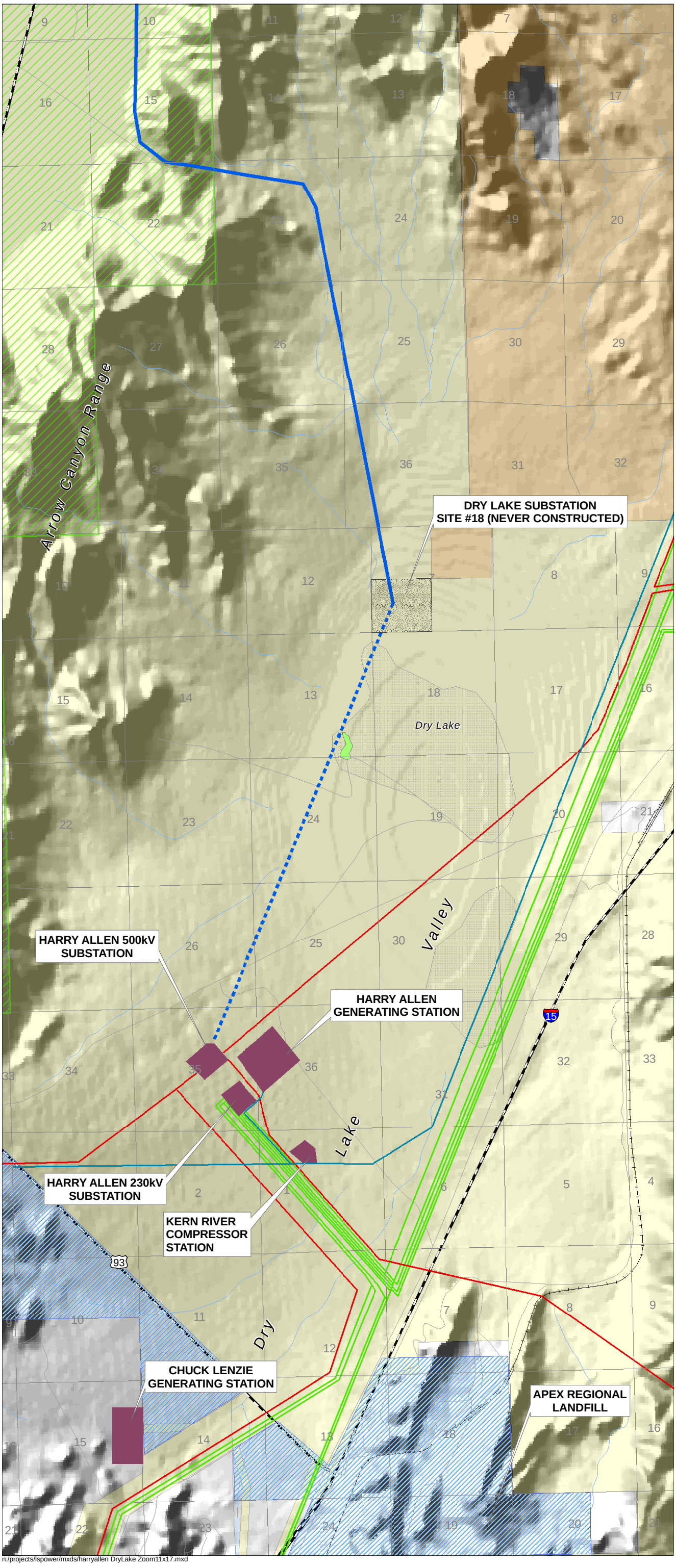
Figure 1

n:/projects/lspower/mxds/SiteSpecificAreasForEA2.mxd

Harry Allen Substation Area

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC



Land Jurisdiction

- Bureau of Land Management
- Moapa Paiute Indian Reservation
- Private
- ACEC

Existing Land Use

- Existing Utility Facility
- BLM Bird Habitat
- Apex Industrial Park - Industrial District

Transmission Facilities

- SWIP 500kV Transmission Line Right-of-Way
- Proposed SWIP 500kV Transmission Line Right-of-Way Extension
- Existing 500kV Transmission Line
- Existing 230/345kV Transmission Line
- Kern River Natural Gas Pipeline

General Reference Features

- Interstate/Highway
- Secondary Road
- Railroad
- Section Lines
- Creek/Wash

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
USGS, 30 meter Digital Elevation Models
SWIP EIS 1994
Existing transmission lines for general reference only

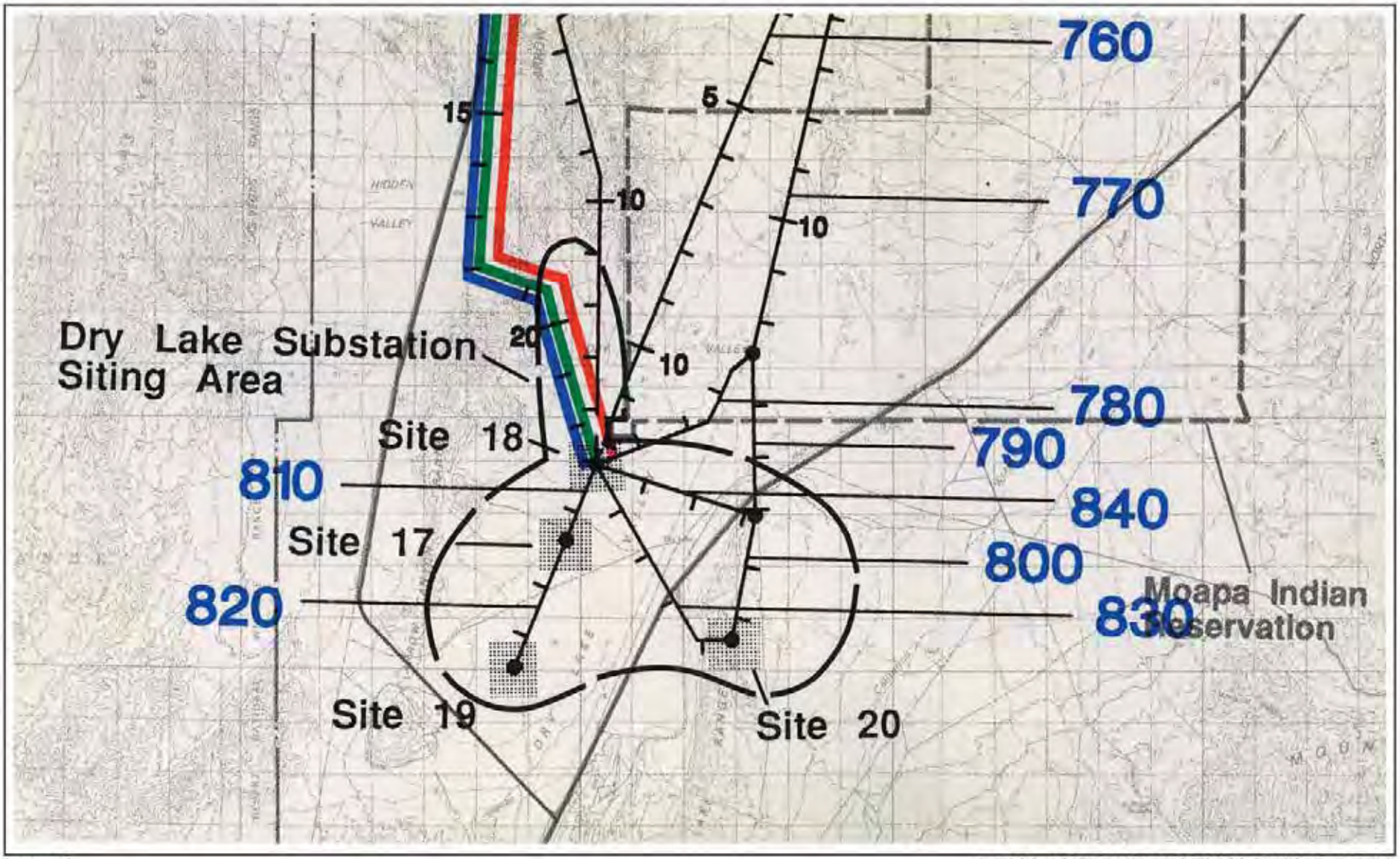
0 0.25 0.5 1 Miles

July 2008

epg

Figure 2

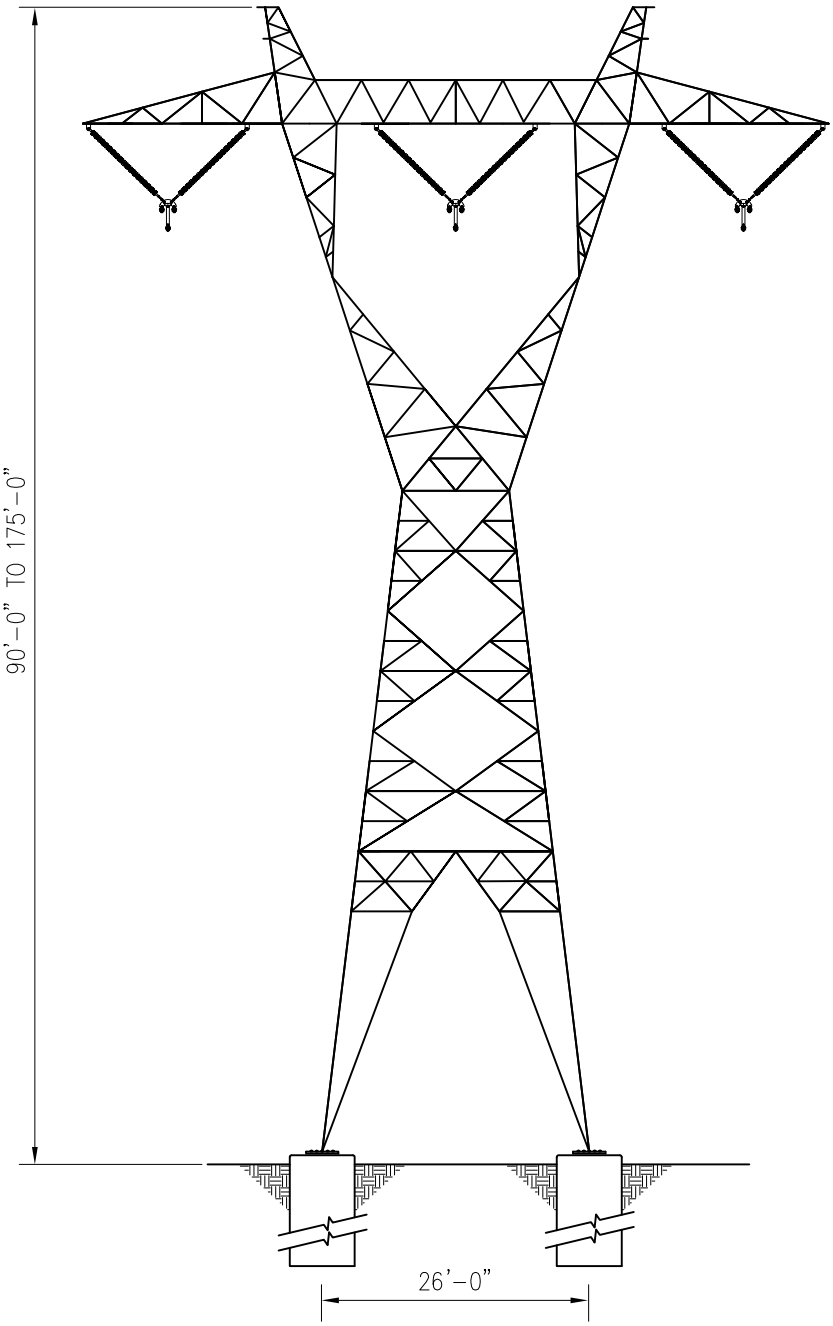
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DRY LAKE SUBSTATION SITING AREA
ALTERNATIVE SUBSTATION SITES

Source: Alternative Routes
Panel 5
SWIP EIS Map Volume
July 2008

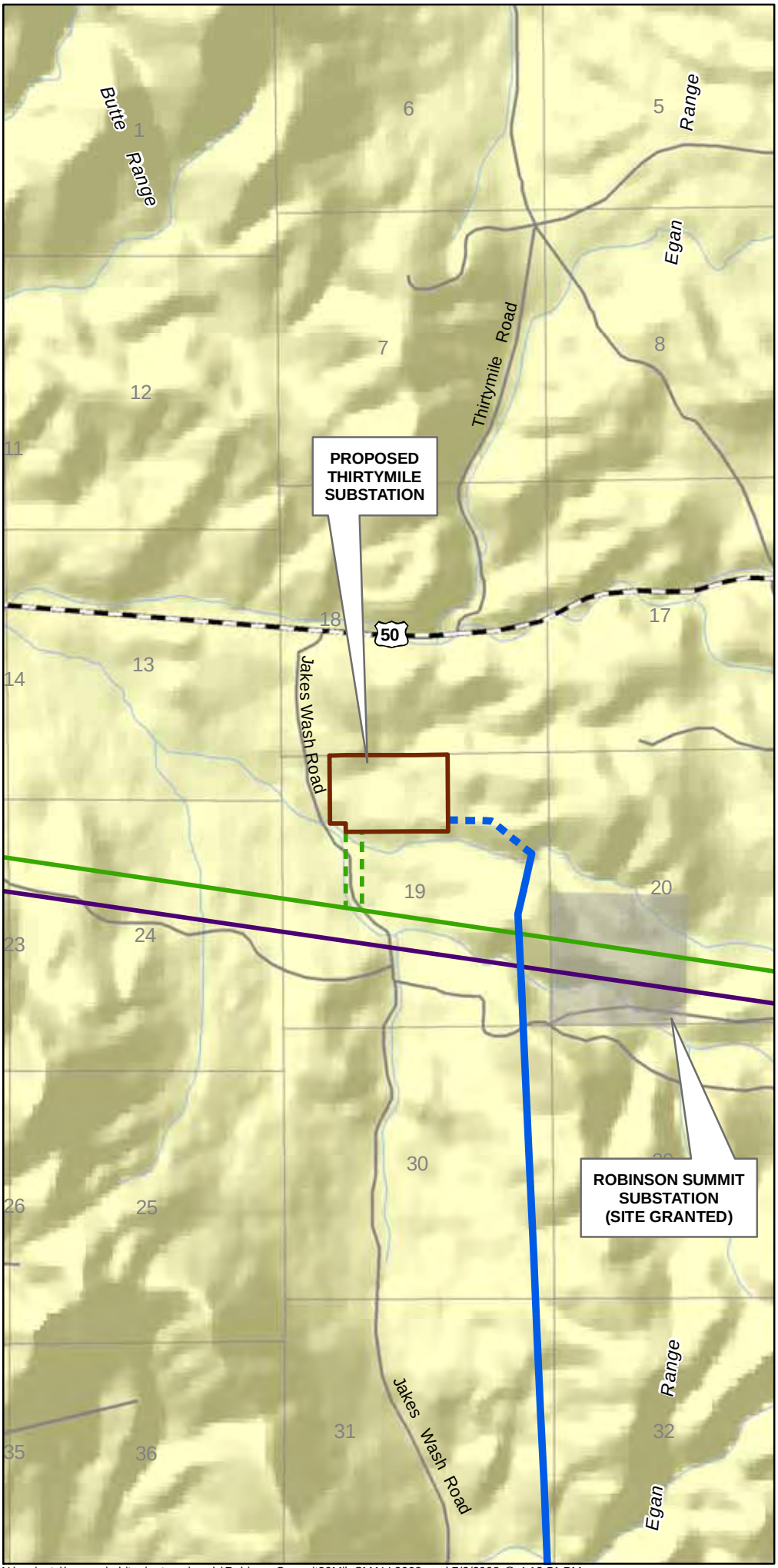
Figure 3



500kV Transmission Line Typical
Single Circuit Tangent Tower

July 2008

Figure 4



Thirtymile Substation Area

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC

Land Jurisdiction
- Bureau of Land Management

Electrical Transmission Facilities
- SWIP - Southern Portion 500kV Transmission Line Right-of-Way
- Proposed SWIP - Southern Portion 500kV Transmission Line Interconnection
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Proposed 345kV Transmission Line Interconnection

General Reference
- Interstate/Highway
- Secondary Road
- Section Lines
- Creek/Wash

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
Existing transmission lines for general reference only

0 0.25 0.5 1
Miles

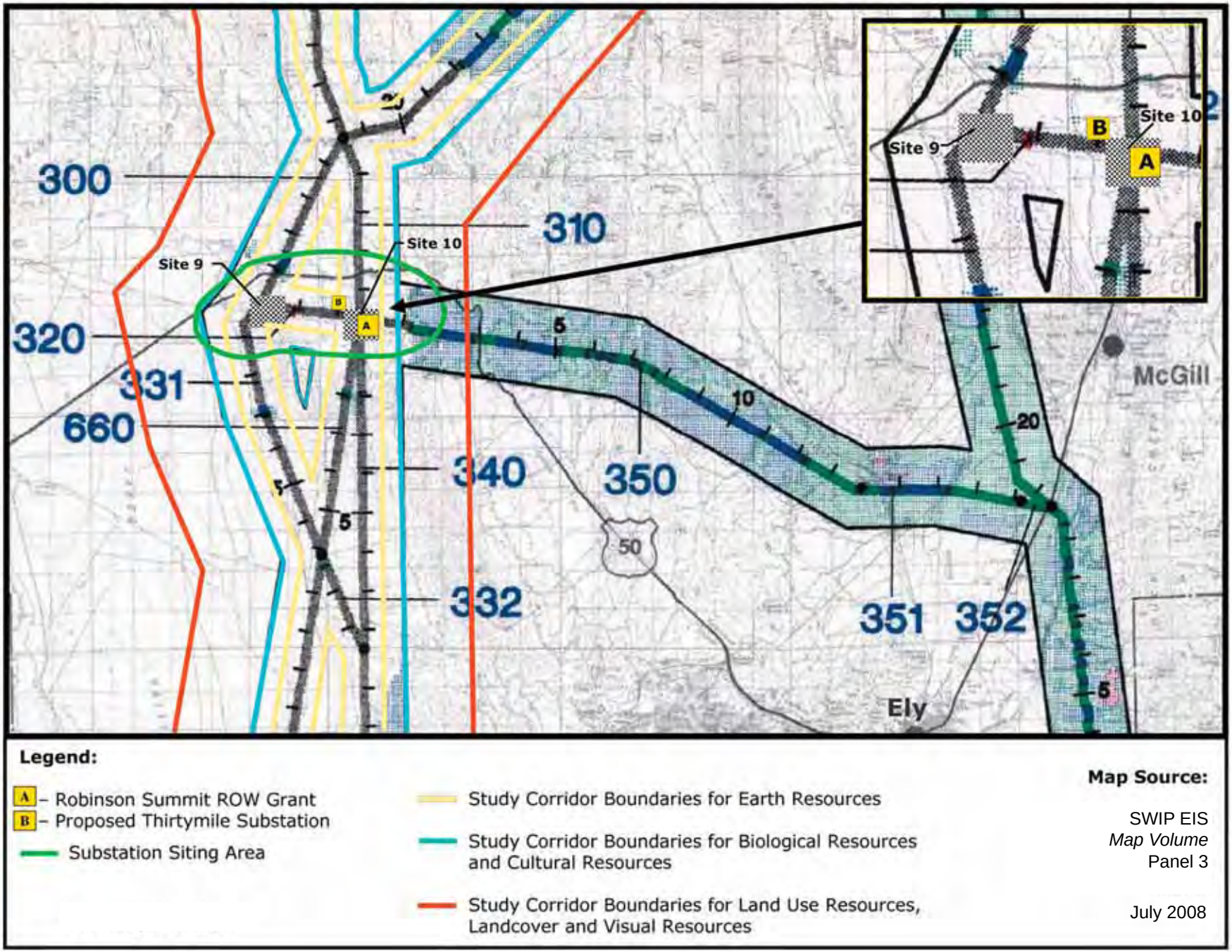
epg

July 2008

Figure 5

N:\projects\lspower\whitepinetrans\mxds\RobinsonSummit30MileSMALL2008.mxd 7/2/2008 @ 4:13:51 PM

Robinson Summit Substation Siting Area



Legend:

- A – Robinson Summit ROW Grant
- B – Proposed Thirtymile Substation
- Substation Siting Area
- Study Corridor Boundaries for Earth Resources
- Study Corridor Boundaries for Biological Resources and Cultural Resources
- Study Corridor Boundaries for Land Use Resources, Landcover and Visual Resources

Map Source:

SWIP EIS
Map Volume
Panel 3

July 2008

Figure 6

approximately ¼ mile south of the proposed substation site and just north of the Gonder-to-Machacek 230kV transmission line). When the SWIP ROW was granted in 1994, the Falcon-to-Gonder 345kV line did not exist, and the Robinson Summit Substation was intended to include an interconnection with the east-west (Ely-to-Delta) segment included as part of the original SWIP ROW Grant. Subsequent to the issuance of the ROW Grant, the Ely-to-Delta segment was dropped from consideration, and the Falcon-to-Gonder 345kV transmission line was built. An interconnection with the now-existing Falcon-to-Gonder line supersedes the originally contemplated interconnection with the Ely-to-Delta segment, which was never built.

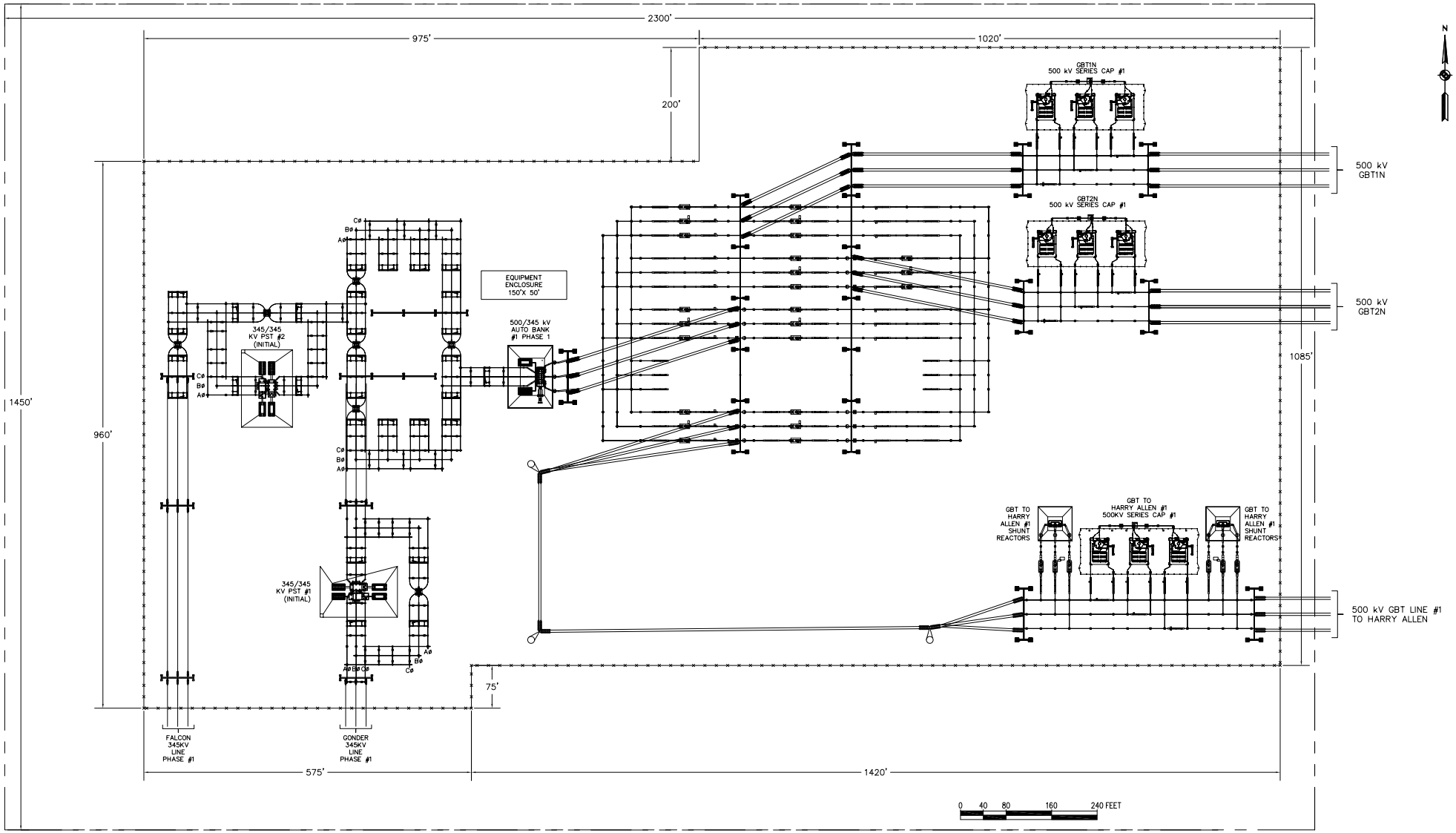
The substation will occupy a site approximately 77 acres in size (see Figure 5). Typical equipment at this substation will include transmission line take-off structures, power circuit breakers, power transformers, switches, bus work, control house, communications equipment, and associated controls and instrumentation (Figure 7). The maximum height of these structures within the substation would be approximately 125 feet. In addition to the substation, transmission interconnections to the SWIP – Southern Portion 500kV line and the Falcon-to-Gonder 345kV line also will be constructed. Construction of the substation and transmission interconnections will be completed as part of the SWIP – Southern Portion.

2.2 COYOTE SPRINGS REALIGNMENT

In addition to the Proposed Action, this EA also evaluates the relocation of the ROW within the Aerojet Corridor/Coyote Spring Valley. This relocation was mandated by Congress in Section 302(c) of the LCCRDA, enacted in 2004. The general location of this area is illustrated in Figure 1, and the adjustments to the original ROW Grant are described below.

The LCCRDA includes a provision (Section 302(c)) that directed the BLM to relocate a portion of the SWIP ROW Grant in the Coyote Spring Valley area from the east side to the west side of US Highway 93, for approximately 25 miles (Figure 8). Congress specified that the relocation "be conducted in a manner that . . . minimizes engineering design changes" and "maintains a gradual and smooth interconnection" with the SWIP designated utility corridor, which was also moved to the west side of the highway by LCCRDA. Due to the new location of the designated SWIP utility corridor (pursuant to Section 301(a) of LCCRDA) the new SWIP alignment on the west side of the Highway is approximately 1.5 miles longer than the pre-shift alignment on the east side of the Highway. The transmission line that will be constructed in this area will consist of facilities similar to those previously described for the extended transmission line in the Harry Allen Substation area (see Figure 4).

Because relocation of the SWIP ROW in the Coyote Springs area was directed by Congress under LCCRDA, BLM retains no discretionary authority for that action. However, BLM concluded that assessment of the impacts of the relocated ROW would be of value in determining the design and mitigation measures to be included in the Construction, Operation, and Maintenance Plan (COM Plan) for this part of the transmission line, and so included the realignment area in this EA.



PRELIMINARY THIRTYMILE SUBSTATION LAYOUT

July 2008

Figure 7

Coyote Springs/Aerojet Corridor Area

Lincoln County Conservation, Recreation and Development Act Realignment

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC

Delamar Mtns. Wilderness Area
Kane Springs Road
Kane Springs Wash
Desert National Wildlife Range
Sheep Range
Meadow Valley Range Wilderness Area
Pahranagat Wash
Lincoln County
Clark County
168
93
Sawmill Road

Land Jurisdiction

- Bureau of Land Management
- U.S. Fish and Wildlife Service
- Private
- ACEC

Existing Land Use

- Industrial - Western Elite Landfill and Quarry

Planned Land Use

- Coyote Springs Master Planned Community
- Coyote Springs Resource Management Area
- Coyote Springs Proposed Detention Basin Area

Electrical Transmission ROWs and Facilities

- Original SWIP ROW
- Realigned SWIP ROW
- Lincoln County Power District 69kV Transmission Line (Existing)

General Reference Features

- County Boundary
- Interstate/Highway
- Primary Roads
- Secondary Roads
- Creek/Wash

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
USGS, 30 meter Digital Elevation Models
Ely RMP July 2005

0 0.5 1 2 Miles

epg

July 2008

Figure 8

n:/projects/lspower/mxds/BLM aerojet Coyote Spr.mxd

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed SWIP ROW amendment would not be approved, and the SWIP transmission line would not be constructed, due to the inability to interconnect with the existing grid at the southern terminus and the difficulty of interconnecting with the Falcon-to-Gonder 345kV line, which bisects the currently approved substation site.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED

Transmission line alternatives in the Dry Lake-Harry Allen Substation area and alternative substation sites in the vicinity of the Thirtymile Substation were evaluated in the previous SWIP EIS, and have been eliminated from consideration in this EA. These alternatives are described below.

2.4.1 Transmission Line Alternatives

In the SWIP EIS, four potential substation sites were considered for the location of the southern terminus of the SWIP transmission line, all within the Dry Lake Substation Siting Area. These included Site 18 (located in the northern part of the substation siting area), Site 19 (about 4 miles farther south, at the current site of the Harry Allen 500kV Substation), as well as Sites 17 and 20 (see Figure 3). The EIS noted that the actual location of a substation site and transmission line route in the Dry Lake area would depend upon the "routing decision for the future Marketplace-Allen Transmission Project (MAT) proposed by Nevada Power Company to connect from this area south to the area of the McCullough Substation." All four sites in the Dry Lake Substation siting area and their associated transmission line routes were determined by the EIS to be environmentally acceptable.

The ROD approved the use of Sites 17, 18, or 20 because they were considered the most likely intersection points with the future MAT line. Site 19, which corresponds to the location of the Harry Allen Substation, was not specifically approved, although the EIS noted that Site 19 would be appropriate, if a route was chosen for the future MAT Project that extended south/southeast through the siting area, to the Sunrise Mountain and Henderson areas (which is the route of the Harry Allen-to-Mead transmission line that has recently been constructed, and which has effectively superseded the MAT Project).

Consistent with the ROD, the BLM granted the SWIP ROW with a southern termination point at Site 18. Since that time, the MAT Project has been replaced by the Harry Allen-to-Mead 500kV Transmission Line. As a result, the only practical interconnection point for the SWIP is now at Site 19, at the Harry Allen Substation, since the other alternatives would not meet the purpose and need for the SWIP.

2.4.2 Substation Alternatives

The new substation location is within the Robinson Summit Substation Siting Area, including other options that were previously evaluated in the SWIP EIS (see Figure 6). As approved in the SWIP ROD and the ROW Grant, the substation in this area would be located just to the east of

the proposed 500kV transmission line, while the modified substation site that is now being proposed would be located just to the west.

The modified location (referred to as the Thirtymile Substation) will serve as an interconnection with the existing Falcon-to-Gonder 345kV transmission line. It could also serve as a point of interconnection for the future transmission lines associated with the proposed WPES and Ely Energy Center (EEC). The modified substation location presents significant engineering advantages over the previously approved (granted) site due to existing access, reductions in grading and ground disturbance, the ability to span the now existing Falcon-to-Gonder 345kV and Gonder-to-Machacek 230kV transmission lines, and facilitating the interconnection of future transmission lines to avoid multiple high-voltage crossings. In addition, the Falcon-to-Gonder 345kV line was built through the middle of the granted ROW area for the substation, making it difficult to design an acceptable substation to accommodate the required interconnections. For these reasons, the original location of the substation in this area has been eliminated from consideration in this EA. The Thirtymile location also is superior to the previously studied Site 9 due to proximity to the granted SWIP ROW (see Figure 6).

SECTION 3.0
AFFECTED ENVIRONMENT FOR THE EXTENSION OF THE RIGHT-OF-WAY TO THE HARRY ALLEN SUBSTATION AND FOR THE THIRTYMILE SUBSTATION

3.1 INTRODUCTION

Section 3 of this EA presents information on the environment potentially affected by the construction, operation, and maintenance of the facilities associated with the two proposed modifications to the SWIP ROW Grant. The affected environment for the LLCRDA realignment is addressed in Section 5.

3.2 BIOLOGICAL RESOURCES

This portion of the EA documents the biological resources associated with the extension of the ROW to the Harry Allen Substation and relocation of the Robinson Summit Substation site to the Thirtymile Substation site. Information presented in this section has been gathered from the SWIP EIS, and updated based on current BLM RMPs, ongoing discussions with federal and state agencies, field review and surveys, and from information developed from the Biological Assessment (BA) and the Biological Opinion (BO) that have been prepared for the SWIP – Southern Portion.

3.2.1 Vegetation

3.2.1.1 Right-of-Way Extension to the Harry Allen Substation

Vegetation along the ROW extension to the Harry Allen Substation is generally low-growing, relatively sparse, and dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other shrubby species present include white ratany (*Krameria grayi*), four-wing saltbush (*Atriplex canescens*), Anderson wolfberry (*Lycium andersonii*), bladder sage (*Salazaria mexicana*), spiny hopsage (*Grayia spinosa*), and Nevada ephedra (*Ephedra nevadensis*). Common forbs and grasses include devil's spineflower (*Chorizanthe rigida*), evening primrose (*Oenothera deltoides*), buckwheat (*Eriogonum* sp.), and big galleta grass (*Pleuraphis rigida*).

In addition to shrubs and smaller plants, the area includes several species of cactus and at least one species of yucca. Cacti include beavertail prickly pear (*Opuntia basalaris*), silver cholla (*O. echinocarpa*), diamond cholla (*O. ramosissima*), Mojave barrel (*Ferocactus cylindraceus*), hedgehog (*Echinocereus engelmannii*), and cottontop barrel (*Echinocactus polycephalus*). Mojave yucca (*Yucca schidigera*) is the most common yucca species in the area. All plants of the cactus family cactaceae and all plants of the genus yucca are protected under Nevada Revised Statute (NRS) 527.060-.120, which prohibits destruction without "written permission from the legal owner…specifying locality by legal description and number of plants to be removed or possessed" (NRS 527.100).

3.2.1.2 Thirtymile Substation

The Thirtymile Substation site is strongly dominated by big sagebrush (*Artemisia tridentata*), with occurrences of bitterbrush (*Purshia tridentata*), black sage (*Artemisia nova*), and Utah juniper (*Juniperus osteosperma*), which appears to be in the early stages of invading the substation site. Many of the junipers are relatively small (<2m in height), although there are areas where the plants have been established for longer periods of time.

3.2.2 Noxious Weeds and Invasive Species

Noxious weeds are invasive, non-native species that tend to spread rapidly and often displace native plant species or bring about changes in species composition, community structure, and ecological function. Noxious weeds may compete with native species for critical resources including water, nutrients, and space. Such competition may alter the dynamics of the native plant community, potentially leading to a monoculture of the noxious species. Noxious weeds also may alter soil chemistry in such a manner as to preclude germination or seedling establishment by native species. Moreover, noxious weeds tend to thrive in disturbed areas, such as at electrical transmission tower sites, laydown areas, storage yards, and pulling and tensioning sites. Noxious weeds are formally listed and managed by the Nevada Department of Agriculture.

The noxious weed inventory for the SWIP – Southern Portion included (1) the identification of weed species that are designated noxious, as defined by the Nevada Department of Agriculture, and which have the potential to occur within the area affected by the project and (2) the gathering of information to identify specific noxious weed populations in the project area, including preconstruction surveys along the project ROW. These surveys were conducted from April through June 2006 by Tri County Weed, as recommended by BLM, Ely District Office.

A complete listing of the noxious weeds identified through these surveys is presented in Table 6-2 (Section 6.5) of this EA. In addition, information on noxious weed occurrences within the ROW area, including the location and extent of infestations, was also gathered from the BLM, Ely District Office in the form of a GIS data layer. This inventory did not indicate any additional noxious weed species located within the project corridor, however, it is likely that populations of other noxious species that were not found within the survey area may occur in the vicinity, and these species could become established at disturbed areas on the ROW following construction.

Red brome (*Bromus rubens*), cheatgrass (*Bromus testorum*), and Chilean chess (*Bromus trinii*) have been identified by the BLM as invasive species of concern. In conjunction with the noxious weed and rare plant surveys conducted for the SWIP – Southern Portion, the identification of invasive species was generally noted, where evident. Based on the arid conditions that were encountered during these surveys, many of the anticipated invasive species may not have been identified.

Below is a description of noxious weeds and invasive species found within the areas of the extension of the ROW to the Harry Allen Substation and the Thirtymile Substation site.

3.2.2.1 Right-of-Way Extension to the Harry Allen Substation

Noxious weeds along the ROW extension included five locations of salt cedar within the Dry Lake Valley, however, no invasive species were identified in the area at that time.

3.2.2.2 Thirtymile Substation

No noxious weeds or invasive species were found at the Thirtymile Substation site.

3.2.3 Wildlife

3.2.3.1 Right-of-Way Extension to the Harry Allen Substation

The mammalian fauna of the project area is dominated by small, mostly nocturnal species of rodents and bats. Owing to the low-growing shrubs and lack of trees, large mammals such as Mule Deer (*Odocoileus hemionus*) are not present or are present only as transients. Mountain Lions (*Puma concolor*) are, like Mule Deer, uncommon and only occur as rare transients. The Coyote (*Canis latrans*) is the only larger mammal that could be common in the area.

In contrast, small mammals may be locally abundant. Some of the rodents present in the project area include White-tailed Antelope Squirrel (*Ammospermophilus leucurus*), Jackrabbits (Lepus californicus), Little Pocket Mouse (*Perognathus longimembris*), Long-tailed Pocket Mouse (*Chaetodipus formosus*), Merriam's Kangaroo Rat (*Dipodomys merriami*), Cactus Mouse (*Peromyscus eremicus*), Southern Grasshopper Mouse (*Onychomys torridus*), and possibly Desert Wood Rat (*Neotoma lepida*). Bats that could be present as permanent residents, transients, or summer visitors include several species of *Myotis*, Western Pipistrelle (*Pipistrellus hesperus*), Big Brown Bat (*Eptesicus fuscus*), Townsend's Big-eared Bat (*Corynorhinus townsendi*), Pallid Bat (*Antrozous pallidus*), and Mexican Free-tailed Bat (*Tadarida brasiliensis*).

The avifauna of Mojave desertscrub tends to be sparse and composed largely of species that also occur in the Sonoran and Great Basin deserts. Perhaps the most characteristic songbird of the project area is LeConte's Thrasher (*Toxostoma lecontei*). Other common species include the Red-tailed Hawk (*Buteo jamaicensis*), Ash-throated Flycatcher (*Myiarachus cinerascens*), Loggerhead Shrike (*Lanius ludovicianus*), Horned Lark (*Eremophila alpestris*), Cactus Wren (*Campylorhynchus brunneicapillus*), Gambel's Quail (*Callipepla gambelii*), Greater Roadrunner (*Geococcyx californianus*), and the Black-throated Sparrow (*Amphispiza bilineata*).

The Mojave Desert Tortoise (*Gopherus agassizii*) is known to inhabit the area of the project. Some of the species of lizards that are expected to occur in the area are: Desert Iguana (*Dipsosaurus dorsalis*), Zebra-tailed Lizard (*Callisaurus draconoides*), Great Basin Collared Lizard (*Crotaphytus bicinctores*), Desert Horned Lizard (*Phrynosoma platyrhinos*), Desert Night Lizard (*Xantusia vigilis*), Western Whiptail (*Cnemidophorus tigris*), and possibly the Banded Gila Monster (*Heloderma suspectum cinctum*). Snakes that are likely to be present include the Western Blind Snake (*Leptotyphlops humilis*), Coachwhip (*Masticophis flagellum*), Gopher Snake (*Pituophis catenifer*), Western Shovel-nosed Snake (*Chionactis occipitalis*), Sidewinder (*Crotalus cerastes*), Speckled Rattlesnake (*Crotalus mitchellii*), and the Mojave Rattlesnake (*Crotalus scutulatus*).

3.2.3.2 Thirtymile Substation

Large mammals that may be present at or near the Thirtymile Substation include Elk, Mule Deer, Mountain Lions, Coyotes, and Bobcats (*Lynx rufus*). Small, nocturnal species of rodents and bats make up the bulk of the mammalian fauna. Small rodents that occupy sagebrush habitats include the Dark Kangaroo Mouse (*Microdipodops megacephalus*), Great Basin Kangaroo Rat or Chisel-toothed Kangaroo Rat (*Dipodomys microps*), northern Grasshopper Mouse (*Onychomys leucogaster*), Desert Woodrat (Neotoma *lepida*), and Sagebrush Vole (*Lemmiscus curtatus*). Bats present include several members of the genus *Myotis*, the Big Brown Bat, Hoary Bat (*Lasiurus cinereus*), Western Big-eared Bat, and the Mexican Free-tailed Bat.

Birds that are characteristic of sagebrush-dominated communities include Sage Grouse (*Centrocercus urophasianus*), Sage Thrasher (*Oreoscoptes montanus*), and Sage Sparrow (*Amphispiza belli*). Other species that probably occur in the vicinity of the Thirtymile Substation include the Red-tailed Hawk, Gray Flycatcher (*Empidonax wrightii*), Common Raven (*Corvus corax*), Mountain Bluebird (*Sialia currucoides*), and the Brewer's Sparrow (*Spizella breweri*).

The amphibian and reptile fauna of sagebrush dominated habitats are most likely low in diversity. The Great Basin Spadefoot (*Spea intermontana*) is probably the most common amphibian near the Thirtymile Substation. Common lizards include such species as the Western Fence Lizard (*Sceloporus occidentalis*), Sagebrush Lizard (*S. graciosus*), Side-blotched Lizard (*Uta stansburiana*), and the Western Whiptail (*Cnemidophorus tigris*). Snake species include the Striped Whipsnake (*Masticophis taeniatus*), Gopher Snake (*Pituophis catenifer*), Western Terrestrial Garter Snake (*Thamnophis elegans*), Night Snake (*Hypsiglena torquata*), and the Western Rattlesnake (*Crotalus viridis*).

3.2.4 Migratory Birds

The Migratory Bird Treaty Act of 1918 (MBTA) is the domestic law that affirms and implements the United States' commitment to the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requires harvest to be limited to levels that prevent overuse. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, of any migratory bird, its eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11).

Virtually all of the bird species found within the SWIP transmission line ROW for the Harry Allen extension and at the Thirtymile Substation site are protected by the MBTA.

A BLM designated bird habitat area is located near the ROW extension, in Dry Lake Valley. The bird habitat consists of a fenced area containing mesquite trees and berms for collecting water.

3.2.5 Wild Horses and Burros

Since 1971, the BLM has been managing free-roaming horses and burros on public lands in accordance with the Wild Free-Roaming Horse and Burro Act. This Act mandates that wild and free-roaming horses and burros be protected from unauthorized capture, branding, harassment, or death, and furthermore that these animals be considered as an integral part of the natural systems, based on their distribution.

In order to support the protection of these animals, the BLM has established Herd Management Areas (HMAs). The desired objective is to manage for sustainable population levels in areas of suitable habitat, while preserving a multiple use relationship with all other resources.

3.2.5.1 Right-of-Way Extension to the Harry Allen Substation

No HMAs have been established by the Southern Nevada District Office that are affected by the extension of the ROW in this area.

3.2.5.2 Thirtymile Substation

No HMAs have been identified in the Egan RMP or the Ely Proposed RMP (PRMP) that are affected by the Thirtymile Substation.

3.2.6 Threatened and Endangered Species/Special Status Species

3.2.6.1 Right-of-Way Extension to the Harry Allen Substation

In the area of the extension of the ROW to the Harry Allen Substation the Mojave Desert Tortoise is the only federally listed wildlife species known to be present. A female tortoise carcass and an apparently active burrow were found in the extension area during surveys conducted in the Summer of 2006. The extension area is not located within U.S. Fish and Wildlife Service (USFWS) designated Critical Habitat for the Mojave Desert Tortoise, or any other listed species.

Rare plant surveys were conducted along the transmission line route in this area during Spring 2006. These surveys resulted in no detection of federally listed or sensitive species, with the exception of cacti and yuccas, which, as previously noted, are protected under Nevada law (NRS 527.060). However, these surveys were conducted during a very dry spring, and plants like the three-corner milkvetch, an annual, did not appear.

3.2.6.2 Thirtymile Substation

No federally listed wildlife or plant species, or designated Critical Habitat, were identified in the Thirtymile Substation area. Rare plant surveys conducted during Spring 2006 did not reveal the presence of any sensitive plant species.

3.3 CULTURAL RESOURCES

Two cultural resource studies were conducted covering the areas of the extension of the ROW to the Harry Allen Substation and at the Thirtymile Substation site (Crews et al. 2007; Deis 2007). A summary of the results of each of these studies is described below.

3.3.1 Right-of-Way Extension to the Harry Allen Substation

Surveys conducted for the extension of the ROW to the Harry Allen Substation included the 200-foot-wide ROW (Crews et al., 2007) and associated new road access. For the purposes of this cultural study, the transmission line ROW and associated access is considered the area of potential effect (APE). No sites were identified within the APE of the ROW extension.

3.3.2 Thirtymile Substation

Surveys conducted for the Thirtymile Substation included the substation, and interconnections to the SWIP 500kV line and the Falcon-to-Gonder 345kV line (Crews et al., 2007; Deis 2007). The APE considered for the substation included the 77-acre footprint of the substation and the APE considered for the transmission line interconnections included the 200-foot ROW for the SWIP – Southern Portion interconnection and two, 160-foot ROWs for the Falcon-to-Gonder 345kV line interconnections. A total of 18 sites were identified within the APEs of both the substation and the interconnections (Table 3-1). Of these, four are recommended as eligible for listing on the National Register of Historic Places (NRHP).

TABLE 3-1
CULTURAL RESOURCE SITES IN THE THIRTYMILE SUBSTATION AND INTERCONNECTION AREA

	Site Number	7.5-minute Quad	Site Type	Eligibility	Location	BLM Report No.	Survey Organization
1	26WP7576	Marking Corral Summit	Artifact Scatter	NRHP eligible	Substation	(8111) 2006-1593	EPG, Inc.
2	26WP7577	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Interconnection	(8111) 2006-1593	EPG, Inc.
3	26WP7578	Marking Corral Summit	Small Artifact Scatter (1 Pottery Sherd, 2 flakes)	NRHP ineligible	Interconnection	(8111) 2006-1593	EPG, Inc.
4	26WP7579	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Interconnection	(8111) 2006-1593	EPG, Inc.
5	26WP7161	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	BLM
6	26WP7149	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	EDAW
7	26WP7148	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	EDAW
8	26WP7145	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	EDAW

TABLE 3-1 CULTURAL RESOURCE SITES IN THE THIRTYMILE SUBSTATION AND INTERCONNECTION AREA							
	Site Number	**7.5-minute Quad**	**Site Type**	**Eligibility**	**Location**	**BLM Report No.**	**Survey Organization**
9	26WP7146	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	EDAW
10	26WP7478	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	BLM
11	26WP7158	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	EDAW
12	26WP7477	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Substation	8111 (NV 040) 2004-1542	BLM
13	26WP7160	Marking Corral Summit	Lithic and Ceramic Scatter	NRHP eligible	Substation	8111 (NV 040) 2004-1542	EDAW
14	26WP5440	Marking Corral Summit	Lithic Scatter/ Historic Debris	Prehistoric: NRHP eligible/ historic: NRHP ineligible	Access	CR99-1309	Summit Envirosolutions
15	26WP5431	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Access	CR99-1309	Summit Envirosolutions
16	26WP5441	Marking Corral Summit	Lithic Scatter/ Historic Debris	NRHP ineligible	Interconnection	CR99-1309	Summit Envirosolutions
17	26WP5438	Marking Corral Summit	Large Lithic Scatter/ Historic Debris	NRHP eligible	Access	CR99-1309	Summit Envirosolutions
18	26WP5439	Marking Corral Summit	Lithic Scatter	NRHP ineligible	Access	CR99-1309	Summit Envirosolutions

3.4 PALEONTOLOGICAL RESOURCES

The San Bernardino County Museum conducted a paleontological resource study covering the areas of the extension of the ROW to the Harry Allen Substation and at the Thirtymile Substation (San Bernardino County Museum 2006). This study included a records search and field review to identify paleontological sensitivity and is included in the COM Plan for the SWIP – Southern Portion. The conclusions of the study are summarized below.

3.4.1 Right-of-Way Extension to the Harry Allen Substation

The records search and field review concluded that the extension to the Harry Allen Substation is located in an area with low paleontological sensitivity and recommended that no further investigation is warranted for this area.

3.4.2 Thirtymile Substation

Based on the records search and field review, the Thirtymile Substation site is located in an area with an undetermined paleontological sensitivity. The paleontological resource study recommended that an intensive pedestrian field inspection be conducted prior to construction.

3.5 LAND USE, RECREATION, AND ACCESS

This section of the EA documents the existing and planned land use, recreation, and access in the areas where the two ROW modifications are proposed. Existing land use data were gathered using aerial photography and field reconnaissance, and through a review of land use plans. Planned land use was gathered using existing BLM RMPs, PRMPs, other BLM documents for projects located in the project areas, and specific development plans. A description of the project setting, ownership/jurisdiction, and existing and planned land use within the areas of the two ROW modifications follows.

3.5.1 Right-of-Way Extension to the Harry Allen Substation

3.5.1.1 Project Setting

The extension of the ROW, from the previously identified terminus of the SWIP project to the existing Harry Allen Substation, is located in Dry Lake Valley, approximately 20 miles northwest of North Las Vegas. This area is part of the Basin and Range Physiographic Province, which is characterized by parallel mountain ranges running north to south, with closed desert basins or playas between the ranges, such as Dry Lake.

3.5.1.2 Jurisdiction

The extension of the ROW is on BLM land administered by the BLM Southern Nevada District Office, and managed under the Las Vegas RMP.

3.5.1.3 Existing Land Use, Recreation, and Access

Existing land use within the area of the ROW extension is primarily industrial, consisting of utility facilities such as the Harry Allen Generation Plant, the two Harry Allen Electrical Substations, 500kV, 345kV, and 230kV transmission lines and associated access roads, and the Kern River Natural Gas Pipeline and Metering Station. The Apex Industrial Park is located immediately to the south of U.S. Highway 93 and on both the east and west sides of Interstate 15.

The extension of the ROW is not located within any Recreation Management Units as identified by the Las Vegas BLM RMP; however, there are existing dispersed four-wheel-drive roads within the area. The Las Vegas RMP (Vol. II, Map # 2-10) designates Off-Highway Vehicle (OHV) use in the vicinity of the extension as “limited to existing roads, trails, and dry washes.”

3.5.1.4 Planned Land Use

The ROW extension is located entirely on BLM land, in an area identified in the RMP as having "high potential" for mineral material sale (Las Vegas RMP Vol. II, Map # 3-13). This identification is consistent with the existing and planned industrial uses within the area, although no mineral extraction sites are located along the ROW extension. Although Clark County has no jurisdiction over the management of BLM land, the Northeast Clark County Land Use Plan identifies uses within the area of the realignment, such as *Heavy Industrial* and *Open Land*. *Heavy Industrial* allows for intense industrial operations within close proximity to major transportation and public facilities. The *Open Land* designation allows for deterring development and may contain uses such as public services and facilities, grazing, and some recreational uses.

3.5.2 Thirtymile Substation

3.5.2.1 Project Setting

The proposed Thirtymile Substation site is located in White Pine County, Nevada, approximately 18 miles northwest of Ely, and ½ mile south of Highway 50. The site is immediately west of the SWIP alignment, approximately ¾ mile northwest of the approved Robinson Summit Substation site. This area is part of the Basin and Range Physiographic Province, which is characterized by parallel mountain ranges running north to south with closed desert basins between the ranges. The specific location of the substation is within the foothills of the western side of the Egan Mountain Range.

3.5.2.2 Jurisdiction

The Thirtymile Substation site is located entirely on BLM land administered by the Ely District and adjacent to the SWIP and Falcon-to-Gonder designated BLM utility corridors. This area is currently managed under BLM's 1984 Egan RMP, but will be managed under the Ely RMP. The Ely RMP, which will replace the Egan RMP, was proposed by the BLM in November 2007 (Ely Proposed Resource Management Plan/Final Environmental Impact Statement, BLM 2007) and is expected to be finalized in mid-2008. Accordingly, the analysis in this EA takes into account both plans, as appropriate.

3.5.2.3 Existing Land Use, Recreation, and Access

The primary land use within the proposed substation site area is range land, and the proposed site is included in the Thirty Mile Spring allotment. The Moorman Ranch, Badger Spring, Copper Flat, and Tom Plain/Uvanda allotments are all within relatively close proximity.

There are no active recreation areas within the vicinity of the Thirtymile Substation; however, the substation is located within the Loneliest Highway Special Recreation Management Area (SRMA). As described in the Ely PRMP, this SRMA (675,123 acres in size) includes all BLM lands extending approximately 4 miles to either side of U.S. Highway 50, and provides access to some of the most popular destinations in the planning area including Illipah Reservoir, Cold Creek Reservoir, Garnett Hills Rock Hounding Area and the Pony Express Trail. The management objectives of this area are to provide recreational opportunities to the public that

would otherwise not be available, reduce conflicts among users, minimize damage to resources, and reduce visitor health and safety issues.

Two other transmission lines are located adjacent to the proposed substation site: the Falcon-to-Gonder 345kV transmission line and the Gonder-to-Machacek 230kV transmission line. Both transmission lines are located approximately ¼ mile south of the proposed substation site, within the Falcon-to-Gonder BLM utility corridor. Within close proximity of the proposed substation site are several dirt roads, including Jakes Wash Road which provides access to U.S. Highway 50, which is located approximately ½ mile north of the proposed site. Dirt roads within the area provide access to dispersed recreational activities on BLM land.

3.5.2.4 Planned Land Use

There are no known development plans for the proposed substation site. The site is adjacent to the designated ½-mile-wide SWIP utility corridor and the Falcon-to-Gonder corridor, allowing for future utility development.

3.6 VISUAL RESOURCES

This portion of the EA focuses on the existing visual conditions as they relate to the proposed ROW modification areas, including scenic quality (scenery), sensitive viewers (residential, recreation, travel ways), agency management objectives (Visual Resource Management or VRM), and cultural modifications. The visual resource inventory is described below.

3.6.1 Right-of-Way Extension to the Harry Allen Substation

The landscape in which the ROW extension would be located is characterized by moderately flat topography, with low vegetative diversity creating little visual interest; therefore, the scenic quality is Class C (landscapes with minimal diversity or interest). “Sensitive viewers” of the extended ROW area would be travelers on U.S. Highway 93 and Interstate 15. The Las Vegas BLM RMP designated the Harry Allen Substation area as a Class IV VRM objective; however, this classification has been updated to a Class III VRM objective. Class IV VRM objective allows activities involving major modifications of the landscape’s existing character. Authorized actions may create significant landscape alterations and would be obvious to casual viewers. A Class III VRM objective prescribes partial retention of the existing character of the landscape and allows for actions which may alter the existing landscape, but not to the extent that they attract or focus the attention of the casual viewer. Cultural modifications adjacent to the project include transmission lines and substations, with other energy-related facilities (power plants) in the vicinity.

3.6.2 Thirtymile Substation

The landscape in the vicinity of the proposed Thirtymile Substation site is characterized by rolling foothills. The vegetation found in this landscape is relatively low in species diversity and irregular in form, and the terrain in this area consists of rolling foothills; therefore, the scenic quality for this landscape type is Class B (landscapes with common diversity or interest).

Sensitive viewers identified as having potential views of the substation include travelers on U.S. Highway 50 and Jakes Wash Road. Existing visual modifications near the site include a highway, dirt road, and two transmission lines. The general area of the Thirtymile Substation is a Class III VRM objective. The SWIP designated utility corridor (¾ mile wide) which overlaps with the substation site has been classified as Class IV VRM objective in the Ely PRMP. Existing modifications in the vicinity of the substation site include the Falcon-to-Gonder 345kV transmission line and the Gonder-to-Machacek 230kV transmission line located approximately ¼ mile to the south. These facilities are also located in a ½-mile-wide designated utility corridor with a Class IV VRM objective, as identified in the Ely PRMP.

3.7 WILDFIRE MANAGEMENT

3.7.1 Right-of-Way Extension to the Harry Allen Substation

The extension of the ROW to the Harry Allen Substation is located in Clark County, on BLM land administered by the Southern Nevada District Office. The Southern Nevada District Office has a fire management plan (Fire Management Action Plan) that outlines the fire management practices within the project area. This plan, along with the Las Vegas RMP, was reviewed to identify potential impacts from the transmission line. Potential impacts from the ROW extension would be influenced by additional access road construction, the type of vegetation located within the project area, and the guidelines for fire suppression.

The ROW extension is located within Mojave desertscrub vegetation that is dominated by creosote bush and white bursage and is habitat for Desert Tortoises. Dry Lake Valley includes a *Tortoise Moderate Density Fire Management Unit (FMU)* that has an annual target goal for acres burned of 15 acres or less for 90 percent of the burn time. It also has a decadal goal of less than 500 acres affected, with no prescribed burns within the FMU. The *Las Vegas Valley Apex FMU* has an annual target burn goal of 1 acre or less for 90 percent of the time. The decadal goal is less than 100 acres affected, with only salt cedar or landscape debris piles as prescribed burns (Marfill 2006). The area includes sparse vegetation along the ROW extension; therefore, fuel for potential wildfires is minimal.

3.7.2 Thirtymile Substation

The Thirtymile Substation is located in White Pine County, on BLM land administered by the Ely BLM District. The Ely BLM District Office has an Ely Fire Management Plan (BLM 2004a) that incorporates the Ely District Managed Natural and Prescribed Fire Plan, which outlines fire management practices within the project area. This plan has been reviewed to identify potential impacts from the substation. Potential impacts from the substation would be influenced by improvements of an existing road, the type of vegetation located within the project area, and the guidelines for allowable acres burned or level of fire suppression within the project area.

The Ely PRMP identifies vegetation types within the district and the typical fire behavior associated with each type. The substation is located within a sagebrush-dominated vegetation community with scattered juniper, and has fuel loads that vary substantially, depending on site conditions and history. Typical fire behavior is characterized as quickly spreading where grasses are present. In juniper areas, events are either single tree, low intensity or wind driven, high intensity events. Where fuel continuity is absent, winds are needed to spread the fire. As

presented in the Ely PRMP, the substation is located on the edge of the Northern Benches and Northern Mountains FMUs, and is identified as a full suppression fire management area. The nearest wildland-urban interface community identified in the Ely PRMP is the Town of Ruth, located approximately 12 miles southwest of the substation.

For the purposes of this analysis, communities within 50 miles of the Thirtymile Substation project area have been identified and listed in Table 3-2. In the event of a fire that could affect one of these communities, the fire management staff of the BLM Ely District Office would evaluate current fire conditions and available resources to determine the tactics for fighting the fire.

TABLE 3-2
WILDLAND-URBAN INTERFACE COMMUNITIES
OF THIRTYMILE SUBSTATION

Communities within 50 Miles of Thirtymile Substation	Approximate Distance to Substation (miles)
Cherry Creek	36
Duckwater	46
Ely	19
Lund	40
McGill	20
Preston	35
Ruth	12

3.8 WILDERNESS AND WILD AND SCENIC RIVERS

There are no Wilderness or Wild and Scenic River designations within the extension of the ROW to the Harry Allen Substation or the Thirtymile Substation site.

3.9 PRIME AND UNIQUE FARMLANDS

There is no prime and unique farmland located within the extension of the ROW to the Harry Allen Substation or the Thirtymile Substation site.

3.10 EARTH RESOURCES

This section describes the geology, soils, and water resources in the areas affected by the two proposed ROW modifications. Information presented in this section is based on studies conducted for the SWIP EIS, information obtained from various federal and state agencies, and a general in-field review.

3.10.1 Right-of-Way Extension to the Harry Allen Substation

3.10.1.1 Geology

The geology of the Dry Lake Valley is generally comprised of three major geologic units: alluvium, Tertiary valley-fill deposits, and Paleozoic carbonate rocks. Alluvium occurs over the valley floor and consists of interbedded gravels, sand, silt, and clay.

3.10.1.2 Soils

Soils in the Dry Lake are typical desert soils (entisols and aridisols), which are susceptible to erosion by wind and water. The potential for erosion is generally slight, except where the soils have been disturbed or along the banks of washes.

3.10.1.3 Water Resources

Surface water within the Dry Lake Valley occurs as ephemeral flow in streambeds that drain the upland areas or in temporary ponding of runoff in the Dry Lake playa (the dry bottom of an undrained desert basin). Frequent floods of longer duration are to be expected within the Dry Lake Valley, causing ponding that may be present for periods of several months or more.

The ROW extension is located within the Garnet Valley (Dry Lake Valley) Groundwater Basin, in the Colorado River Basin Hydrographic Region. Groundwater under Dry Lake Valley is situated in the California Wash Flow System and occurs at depths ranging from 230 to 285 feet and is derived from two sources: recharge over the basin and subsurface inflow on the west from Hidden Valley. Water from this system ultimately reaches the Colorado River.

Floodplains

The northern 2.4 miles of the ROW extension are located within the Dry Lake playa 100-year floodplain, as designated by the Federal Emergency Management Agency (FEMA).

3.10.2 Thirtymile Substation

3.10.2.1 Geology

The land surrounding the substation site is composed of alluvial deposits washed down from surrounding mountains and hills associated with the Egan Mountain Range.

3.10.2.2 Soils

The alluvial soils within the proximity of the substation site are prone to water and wind erosion. Soils in this area are of mixed type, generally composed of silty loamy soils mixed with clay and skeletal rock.

3.10.2.3 Water Resources

Several small intermittent drainages descend from the foothills into this area, and an unnamed streambed is located along the southwest corner of the substation site. No riparian areas or wetlands are associated with the substation site. The substation site is located within the Central Hydrographic Region of Nevada in the Jakes Valley Groundwater Basin. Review of the USGS SIR 2007-5089 Appendix A, land elevation altitude to groundwater elevation (i.e., depth to water table) indicates ranges from 100 feet in the southern part of the basin to 350 feet in the center of the basin.

Floodplains

FEMA has not mapped floodplains within the substation site area, and field review did not result in the identification of any active floodplains.

3.11 AIR RESOURCES

Air resources within the project area are regulated at the federal, state, and local levels as described below:

3.11.1 Federal

The U. S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards for certain pollutants. The attainment status for the proposed project area was examined in consideration of Federal designations contained in 40 CFR §81.329. The hydrographic areas and the associated pollutants for which they are designated as attainment or nonattainment are described below.

3.11.2 State

The Nevada Department of Environmental Protection's Bureau of Air Pollution Control (BAPC) administers the surface area disturbance permitting for White Pine County, Nevada. The BAPC issues a Class II Air Quality Operating Permit for Stand-Alone Surface Area Disturbance for any land disturbance that will equal or exceed five acres of total disturbance. If the total disturbance is equal to or exceeds 20 total acres then in addition to the preparation of the surface area disturbance (SAD) permit application, a dust control plan must also be prepared and submitted with the application (Air Sciences Inc. 2007).

3.11.3 Local

The Clark County Department of Air Quality and Environmental Management administers the surface area disturbance permitting for Clark County through the issuance of a Dust Control Permit. A Dust Control Permit is required for projects that are greater than or equal to 0.25 acre; require trenches equal to or greater than 100 feet in length; or include the mechanical demolishing of any structure larger than or equal to 1,000 square feet (Air Sciences Inc. 2007).

The specific air quality regulations and requirements for the ROW extension and the Thirtymile Substation are described below.

3.11.4 Right-of-Way Extension to the Harry Allen Substation

The ROW extension is located within Clark County in Hydrographic Basin 216. This basin has a federal designation of nonattainment status for the 8-hour ozone standard. The Clark County Department of Air Quality and Environmental Management manages dust control and emissions within the extension area as described above (Air Sciences Inc. 2007).

3.11.5 Thirtymile Substation

Thirtymile Substation is located within White Pine County. The county has a federal designation of attainment status of all pollutants. The BAPC manages dust control within the county through a Class II Air Quality Operating Permit as described above (Air Sciences Inc. 2007).

3.12 HAZARDOUS MATERIALS

3.12.1 Right-of-Way Extension to the Harry Allen Substation

The extension of the ROW to the Harry Allen Substation occurs on BLM land administered by the Southern Nevada District Office. The Las Vegas RMP requires that "all non-interior groups whose activities are on BLM-managed land and facilities will be held responsible for compliance with federal, state, interstate, and local waste management requirements. There are no known hazardous material sites in the ROW extension area.

3.12.2 Thirtymile Substation

The Thirtymile Substation would be located on BLM land administered by the Ely District Office. As previously stated, the BLM has an obligation to abide by the existing federal and state statutes and regulations regarding hazardous materials and to require that leasees and ROW grantees also abide by such regulations as part of the lease or grant terms and conditions. There are no known hazardous material sites in the substation area.

3.13 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

This section describes the social characteristics of the modification areas, including a discussion on socioeconomics and environmental justice. The current status and trends for population and economic factors have been considered for the extension of the ROW to the Harry Allen Substation and at the Thirtymile Substation, as described below.

3.13.1 Right-of-Way Extension to the Harry Allen Substation

3.13.1.1 Socioeconomics

Population data reviewed were produced by the Bureau of the Census, U.S. Department of Commerce. The extension of the ROW is located in unpopulated/uninhabited land, in open desert scrub range. The nearest concentrated population to the extension of the ROW occurs approximately 17 miles southeast of the siting area.

Clark County's population according to the 2000 census was 1,375,765, and the county had a population percent change of 24.3 percent calculated between April 1, 2000 and July 1, 2005. The population estimate of Clark County for 2005 is 1,710,551. Employment in 2000 totaled 637,339, with 4.2 percent of the work force unemployed. The estimated household income for Clark County in 2004 was $50,463.

3.13.1.2 Environmental Justice (Executive Order 12898 of February 11, 1997)

All federal actions must identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. The criterion for a finding of possible environmental justice issues is the occurrence of more than 50 percent of the population being minority or low-income in the project area of influence.

The extension is located in an unpopulated area with no occurrences of disproportionately high percentages of minority or low-income populations. The closest major population to the ROW extension occurs approximately 17 miles southeast of the siting area, and this extension does not cross the Moapa Indian Reservation.

3.13.2 Thirtymile Substation

3.13.2.1 Socioeconomics

Population data reviewed were produced by the Bureau of the Census, U.S. Department of Commerce. The substation site is located in unpopulated/uninhabited, open range land. The nearest concentrated populations to the Thirtymile Substation occur in Ely (approximately 18 miles southeast) and in the Town of Ruth (approximately 12 miles southwest of the siting area), both of which have low-population densities.

White Pine County's population according to the 2000 census was 9,181, and the county had a population percent change of -2.0 percent calculated between April 1, 2000 and July 1, 2005. The population estimate of White Pine County for 2005 is 8,994. Employment in 2000 totaled 3,321, with 3.8 percent of the work force unemployed. The estimated household income for White Pine County in 1999 was $44,616.

3.13.2.2 Environmental Justice (Executive Order 12898 of February 11, 1997)

The project is associated with an unpopulated area with no occurrences of disproportionately high percentages of minority or low-income populations. The nearest populations to the Thirtymile Substation occur in Ely (approximately 18 miles southeast of the siting area) and in the Town of Ruth (approximately 12 miles southwest of the siting area).

3.14 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

3.14.1 Right-of-Way Extension to the Harry Allen Substation

The extension of the ROW is not located within a designated BLM Area of Critical Environmental Concern (ACEC). The Coyote Springs ACEC is located approximately 2.5 miles to the northwest in the Arrow Canyon Range and Hidden Valley.

3.14.2 Thirtymile Substation

The substation site is not located within a designated BLM ACEC.

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES FOR THE EXTENSION OF THE RIGHT-OF-WAY TO THE HARRY ALLEN SUBSTATION AND FOR THE THIRTYMILE SUBSTATION

4.1 INTRODUCTION

This section addresses the environmental consequences (effects) associated with the No Action Alternative, and the Proposed Action (i.e., amendments to the ROW Grant for the extension to the Harry Allen Substation and locating the Thirtymile Substation site). Environmental consequences associated with the LCCRDA realignment are addressed in Section 5. Mitigation measures to reduce potential effects to the environment are also described with respect to each affected resource presented in this section, where appropriate. Many of the mitigation measures presented in this EA are included in the original SWIP EIS, ROD, and ROW Grant(s). Additional mitigation measures have been proposed by Great Basin or requested or required by the BLM, USFWS and other resource agencies, in connection with the preparation of this EA and the BA, BO, and COM Plan. All of the mitigation measures from these various sources have been incorporated in the COM Plan, and compliance with that plan would be included as an enforceable stipulation in the amended ROW grant, just as it is in the original SWIP ROW grant.

4.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the SWIP ROW would not be amended as proposed, and the SWIP transmission line would not be constructed due to the inability to interconnect with the existing grid at the southern terminus and the difficulty of interconnecting with the Falcon-to-Gonder 345kV line, which bisects the currently approved substation site. The environmental resources associated with these specific locations would not be affected.

4.3 BIOLOGICAL RESOURCES

Impacts to biological resources include consideration of the effects to vegetation, noxious weeds and invasive species, wildlife, and threatened and endangered species. Following is a discussion of impacts associated with the extension of the ROW to the Harry Allen Substation, and at the Thirtymile Substation, including proposed mitigation measures.

4.3.1 Vegetation

4.3.1.1 Right-of-Way Extension to the Harry Allen Substation

Approximately 36 acres of land will be disturbed during construction of the 3.8 mile transmission line extension in this area, including 25 acres of temporary disturbance at tower sites, spur roads, and tensioning and pulling sites, and permanent disturbance of approximately 11 acres (primarily associated with access roads). Vegetation that will be affected is primarily creosote bush and white bursage, with scattered individual Mojave yucca populations and several species of cacti. It is anticipated that salvageable cacti and yucca will be safely stored in temporary plant storage sites. Plant salvage from areas of permanent disturbance will only be

moved once, and replanted as described in the Restoration Plan contained in the COM Plan. In areas of temporary disturbance, salvaged plants will be replanted in temporary storage sites using the procedures identified in the Restoration Plan. Location of these plant storage sites shall be provided by the Construction Contractor on a site-specific basis. These areas shall provide ease of care and maintenance for the plant material as well as provide protection from construction activities. Additionally, as identified in the COM Plan, all activities pertaining to the disturbance of cacti and yucca will be coordinated with the authorized Forestry Officer at the BLM Southern Nevada District Office, including transportation permits, tags, etc. Areas of temporary disturbance will be restored in accordance with the COM Plan.

4.3.1.2 Thirtymile Substation

Construction of the Thirtymile Substation will affect approximately 77 acres. Construction of the transmission interconnections will affect an estimated 23 acres of land, including 19 acres of short-term disturbance and approximately 4 acres of permanent disturbance. The proposed site of the substation is strongly dominated by big sage, with additional occurrences of bitterbrush, black sage, and Utah juniper. Scattered Utah juniper will be selectively cleared during construction in areas of temporary disturbance and areas not permanently displaced by the substation, and long-term access will be restored in accordance with the COM Plan.

4.3.2 Noxious Weeds and Invasive Species

The introduction and spread of invasive and nonnative plant species (including noxious weeds) can contribute to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, loss of wildlife habitat, and, in some instances, may pose a threat to human health and welfare. The Carslon-Foley Act (Public Law 90-583) and the Federal Noxious Weed Act, Public Law 93-629 (7 U.S.C. 2801 et seq.: 88Stat. 2148), enacted January 3, 1975, established a federal program to control the spread of noxious weeds. Executive Order 13112 issued February 3, 1999 further defines the responsibilities of federal agencies to prevent the introduction of invasive species and provide for their control by minimizing the economic, ecological and human health impacts that invasive species cause. Executive Order 13112, Invasive Species, was authorized to prevent the introduction of invasive species, provide for their control, and to minimize the impacts caused by these species. NRS 555, Control of Insects, Pests, and Noxious Weeds, provides information regarding the designation and eradication of, and inspection for, noxious weeds within the State of Nevada (Ely PRMP/EIS).

4.3.2.1 Right-of-Way Extension to the Harry Allen Substation

Construction of the extension to the Harry Allen Substation will require the construction of new access roads, and result in disturbance at tower pad sites and pulling and tensioning areas. Berms created by access road construction can represent disturbed soils, which may provide suitable habitat for noxious weeds, including salt cedar and other invasive species in this area. Construction activity around tower pads and in pulling and tensioning areas, including movement of heavy equipment and light trucks may also disturb soil and provide weed habitat. Seeds of noxious weeds and invasive species also may be present in the seed bank and soil disturbance can have the effect of “releasing” these seeds, possibly leading to local infestations.

There also is the potential for weeds to be introduced into the project area by construction vehicles.

A comprehensive Noxious Weed Management Plan (part of the COM Plan) has been developed with the goal of keeping the ROW free of noxious weeds. Adherence to the specific weed control mitigation measures in this plan, including measures as identified in the BLM Las Vegas Noxious Weed Plan will minimize the introduction and spread of noxious weeds during and following construction. Early detection and rapid response have been important considerations in the development of this plan which includes (1) identification of problem areas, (2) preventative measures that will be implemented to prevent the spread of noxious weeds during construction, (3) treatment methods during construction and post-construction, and (4) reclamation and post-construction monitoring. Included in this plan are specific measures that address the eradication of existing noxious weed populations, measures to minimize the potential for the spread of noxious weeds through off-site power washing of equipment/vehicles and on-site cleaning of equipment/vehicles with compressed air, and the use of weed free materials during restoration (e.g., hay or straw).

In addition, as a part of the ROW Preparation, Rehabilitation, and Restoration Plan (included in the COM Plan), reseeding practices and seeding mixtures to be used in areas of temporary disturbance will be coordinated with a BLM specialist (e.g., botanist, range management specialist, or soil scientist designated by the BLM Authorized Officer) in order to determine the source type and quantity of seed mixtures and seeding locations. In this regard, mixtures that discourage the establishment of invasive and noxious weeds will be considered, as appropriate.

4.3.2.2 Thirtymile Substation

Acreages of land affected by construction of the Thirtymile Substation are discussed in Section 4.3.1.2. Most of the land will be permanently committed to substation structures and any other cleared ground within the substation fence will be covered with gravel. While no noxious weeds were found at the proposed substation site during weed surveys, exposed, disturbed soils associated with the substation and transmission interconnections may provide suitable habitat for noxious weeds. Construction activity within, and around, the substation site, including movement of heavy equipment and light trucks may disturb soil and provide weed habitat. Seeds of noxious weeds may be present in the seed bank and soil disturbance can have the effect of “releasing” these seeds possibly leading to local infestations. There also is the potential for noxious and invasive weeds to be introduced into the project area by construction vehicles.

As previously described for the extension to Harry Allen, a comprehensive Noxious Weed Management Plan and ROW Preparation, Rehabilitation, and Restoration Plan (part of the COM Plan) have been developed with the goal of keeping the area of affect weed free. Adherence to the specific weed control mitigation measures in this plan, including measures as identified in the BLM Las Vegas Noxious Weed Plan and restoration practices will minimize the introduction and spread of noxious and invasive weeds during, and following, construction of the Thirtymile Substation.

4.3.3 Wildlife

4.3.3.1 Right-of-Way Extension to the Harry Allen Substation

There will be some mortality of small vertebrate species and some degradation of general wildlife habitat quality from the construction of the transmission line. Ground-disturbing activities, such as vehicle movement along access roads, and at tower locations, laydown areas, and pulling and tensioning sites, will alter the quality of wildlife habitat in the short-term. Some individuals of small, fossorial species, such as Pocket Mice and Kangaroo Rats, will likely be crushed in their burrows by heavy equipment. Similarly, snakes, lizards, and other diurnal forms may be hit by vehicles on access roads or killed by road building equipment. Potential impacts from the operation of the transmission line may include an increase in hunting perches for avian predators. Mitigation measures, including limiting access to areas previously determined and clearly flagged, controlling speed limits on the ROW, and restoration practices, will assist in reducing impacts to wildlife.

4.3.3.2 Thirtymile Substation

The clearing of the Thirtymile Substation site during construction will result in some mortality of small vertebrate species and the removal of any wildlife habitat on the site. Wildlife occupying the site prior to construction will be displaced, since the existing habitat will be replaced with the substation facilities. Within the transmission line interconnection ROWs to the SWIP – Southern Portion and Falcon-to-Gonder transmission lines, ground-disturbing activities, such as vehicle movement along access roads, and at tower locations and laydown areas, also may result in some mortality and degradation of general wildlife habitat quality. Similar to the ROW extension at the Harry Allen Substation, individuals of small, fossorial species will likely be crushed in their burrows by heavy equipment, and snakes, lizards and other diurnal forms may be hit by vehicles on access roads or killed by construction equipment. Potential impacts from the operation of the substation and transmission line interconnections may include an increase in hunting perches for avian predators. Mitigation measures, including the use of improved existing access into the substation site, clearly flagging areas of disturbance, and restoration practices, will assist in reducing impacts to wildlife.

4.3.4 Migratory Bird Treaty Act

4.3.4.1 Right-of-Way Extension to the Harry Allen Substation

Construction of the extension to Harry Allen Substation could potentially result in the loss of bird nests, eggs, or young, and there is a small area of bird habitat located immediately east of the transmission line in the area of the Dry Lake Playa. Adult birds are normally able to avoid construction equipment, however, eggs or young in nests cannot. As stipulated in the COM Plan, mitigation measures to address compliance with the MBTA will include the presence of a biological monitor during the migratory bird-nesting season to minimize the risk that all active nests along the line will not be disturbed. During construction, active nests that could be affected will be identified, and a buffer zone around each nest will be flagged to keep personnel and equipment away from sensitive areas until nests become dormant.

4.3.4.2 Thirtymile Substation

Adult birds are normally able to avoid construction equipment, however, eggs or young in nests cannot. As stipulated in the COM Plan, mitigation measures, including the presence of a biological monitor during the migratory bird-nesting season, will reduce these impacts. During construction, active nests that could be affected will be identified, and a buffer zone around each nest will be flagged to keep personnel and equipment away from sensitive areas.

4.3.5 Threatened and Endangered Species/Special Status Species

4.3.5.1 Right-of-Way Extension to the Harry Allen Substation

The Mojave Desert Tortoise is the only federally listed species that is present along the extension of the ROW to the Harry Allen Substation. Tortoise surveys that were conducted in the area during early Summer 2006 revealed a female tortoise carcass and an apparently active burrow. The ROW extension area does not contain designated Critical Habitat for the tortoise.

During construction, tortoises could be crushed in their burrows by heavy equipment. They could also be run over on access roads, especially small juveniles and hatchlings, which are very difficult to see even from a slow-moving vehicle. Mitigation and compensation measures, including limiting access to pre-determined and clearly flagged areas, controlling the speed of vehicles on the ROW, and the presence of tortoise biologists, will help to reduce impacts. While the ROW extension is not located in designated Critical Habitat, tortoise biologists will be present for all construction activities in this area as specified in the BA, BO, and COM Plan. It will be their responsibility to move any tortoises out of the way, to remove tortoises from burrows in construction areas, and to educate all construction personnel regarding the protocol for working in Mojave Desert Tortoise habitat areas.

In addition to the federally listed Mojave Desert Tortoise, there is a limited possibility of impact to the three-corner milkvetch (*Astragalus geyeri* var. *triquetris*), which could potentially be present along the Harry Allen extension. Rare plant surveys conducted along the transmission line route in this area during Spring 2006 resulted in the detection of no sensitive species, with the exception of cacti and yuccas (see Section 4.3.1.1). However, these surveys were conducted during a very dry spring, and plants like the three-corner milkvetch, an annual, did not appear. Prior to ground-disturbing activities, any additional or updated surveys deemed necessary by the BLM, including rare plant surveys would be conducted prior to the initiation of the potentially harmful activities in the area of concern. In the event of a new discovery they will flag off the area and establish a construction restriction buffer.

4.3.5.2 Thirtymile Substation

There are no federally listed threatened or endangered species likely to be affected by construction at the Thirtymile Substation, and rare plant surveys during Spring 2006 did not reveal the presence of any sensitive plants that would be affected by the proposed substation.

4.4 CULTURAL RESOURCES

4.4.1 Right-of-Way Extension to the Harry Allen Substation

No cultural resource sites were identified within the APE of the ROW extension, therefore impacts are not anticipated.

4.4.2 Thirtymile Substation

Of the 18 cultural resources identified within the APE (see Table 3-1), four are eligible for listing on the NRHP. Once the engineering plans are finalized, a determination as to which sites will be directly affected by the proposed project will be made. To mitigate both direct and indirect impacts to these cultural resources, a Historic Properties Treatment Plan (HPTP) is being developed and will be implemented prior to construction of the substation. These measures will minimize impacts and ensure compliance with Section 106 of the National Historic Preservation Act (NHPA).

4.5 PALEONTOLOGICAL RESOURCES

4.5.1 Right-of-Way Extension to the Harry Allen Substation

Minimal impacts are expected to any paleontological resources from the construction of the proposed project due to the low paleontological sensitivity within the ROW extension area.

4.5.2 Thirtymile Substation

A paleontological resources treatment plan has been prepared for the proposed project (San Bernardino County Museum 2006) and includes mitigation measures that would address potential impacts to paleontological specimens identified in the intensive pedestrian field inspection which would be conducted prior to construction of the proposed project. These measures include monitoring for paleontological specimens during construction and implementation of appropriate measures (if resources are identified) in order to minimize impacts. The treatment plan is included in the COM Plan for the SWIP – Southern Portion.

4.6 LAND USE, RECREATION, AND ACCESS

This section evaluates the impacts of the two ROW modifications on existing and planned land use, recreational activities, and access. Following is a description of potential land use impacts that could result from the construction and operation of the proposed facilities.

4.6.1 Right-of-Way Extension to the Harry Allen Substation

The ROW extension to the Harry Allen Substation would be constructed on vacant BLM land and does not conflict with any existing or planned facilities. The extension would be compatible with the Northeast Clark County Land Use Plan, which designates this area as *Heavy Industrial*

and *Open Land*. The BLM bird habitat adjacent to the proposed transmission line would be avoided, and mitigation measures identified to address migratory birds (see Section 4.3.4.1) will reduce any proximity impacts to this small management area. There are no active recreation areas in the immediate vicinity, and additional long-term access will generally be limited to the transmission ROW.

4.6.2 Thirtymile Substation

The Thirtymile Substation and transmission line interconnections would be constructed on vacant BLM land and would permanently displace approximately 81 acres of the 178,716 acre Thirty Mile Spring BLM grazing allotment. While located within the Loneliest Mountain SRMA, there are no existing or planned recreation sites within close proximity to the Thirtymile Substation. Impacts to existing and planned land use and public recreation opportunities from the construction and operation of the Thirtymile Substation would be limited to temporary disruption to traffic and access along Jakes Wash Road and U.S. Highway 50 during construction (see Figure 4). Mitigation measures identified in the COM Plan regarding the use of signage that notifies the public of the timing for construction activities will help reduce any potential conflicts with users, and additional practices outlined during construction and restoration will help minimize damages to resources in this area and provide for public safety.

4.7 VISUAL RESOURCES

The visual assessment focuses on characterizing the impacts resulting from the amount of visual contrast or landscape change that would occur from the introduction of new facilities, as perceived by sensitive viewers, and the consistency of these changes with BLM VRM objectives. The methods used to perform this assessment are consistent with the BLM VRM Handbook-8410.

4.7.1 Right-of-Way Extension to the Harry Allen Substation

The transmission line extension to the Harry Allen Substation in Dry Lake Valley is within a visual setting that has been significantly modified due to numerous existing transmission lines and substation facilities. Views of this area from Interstate 15 and U.S. Highway 93 range from approximately 1.5 miles and beyond, and the SWIP transmission line will be seen primarily in a back-dropped condition, most often in context with these other facilities. As a result, the new transmission line will cause minimal contrast. Key mitigation measures include the use of dulled steel lattice towers, and non-specular conductors. Based on the contrast analysis, minimal change is expected from the addition of the new transmission line. This change would be consistent with the VRM Class III objective for this area, which requires that the character of the area be partially retained.

4.7.2 Thirtymile Substation

The Thirtymile Substation site and transmission line interconnections are located in proximity to the Falcon-to-Gonder 345kV transmission line and the Gonder-to-Machacek 230kV transmission line. Impacts to sensitive viewers are expected to be minimal. Views from U.S.

Route 50 will be primarily from eastbound traffic, at distances ranging from ½-mile away and farther, in a setting where the facilities should be partially to fully screened by intervening terrain, back-dropped by the Egan Mountains, and viewed in context with the existing 345kV and 230kV lines. Key mitigation measures include the use of non-specular conductors; dulled metal finishes on transmission towers, equipment, and facilities associated with the substation site; and the selective clearing of vegetation associated with temporary use areas, where possible. The substation will be located generally within a BLM Class III area and is immediately adjacent to, and overlapping with, two designated utility corridors that are considered VRM Class IV in the Ely PRMP. The substation will be in conformance with the VRM objectives requiring partial retention of the character of this area while allowing major modification associated with the corridors.

4.8 WILDFIRE MANAGEMENT

This section of the EA evaluates potential effects of the proposed project to wildfire management. Impacts were assessed based on construction activities, including additional access road construction, clearing of vegetation, the type of vegetation located within the affected areas, and the Southern Nevada and Ely BLM District Office guidelines for fire suppression.

4.8.1 Right-of-Way Extension to the Harry Allen Substation

The majority of the proposed ROW crosses vacant land with sparse vegetation; therefore, a minimal amount of vegetation removal will be required. A new access road would be constructed primarily within the transmission line ROW. While little fuel exists within the area, increases in traffic during construction activities could potentially increase the chance of a human-caused, accidental fire. Long-term or operational impacts to fire management from improved access to the existing road could include human-caused, accidental ignitions from periodic ground maintenance and inspections of the transmission line, or recreational users along the access road. The improved access road could have the potential for use as fire-break lines and help minimize the need to build new breaks in the event of a fire (Ely PRMP, pg. 3.20-8). Mitigation measures and protocols identified in the COM Plan, including fire prevention measures (e.g., restrictions on smoking, no open fires, restrictions on welding and use of spark arresting devices), will reduce the potential for fires during construction. In addition, construction personnel will be trained in fire suppression, and selective vehicles will be equipped with fire suppression tools.

4.8.2 Thirtymile Substation

An existing dirt road will be improved for major access to the area for construction of the Thirtymile Substation and transmission line interconnections. Approximately 77 acres of vegetation will be cleared for the footprint of the substation and approximately 4 acres of additional ground will be permanently disturbed during construction of the substation and transmission line interconnections to the SWIP – Southern Portion and the Falcon-to-Gonder transmission lines. Short-term construction impacts to fire management include an increase in traffic during the construction of the substation, and the use of equipment, which could potentially increase the frequency of human-caused accidental ignitions along the access road

and near the siting area. Long-term or operational impacts and mitigation measures are similar to those previously described for the extension of the ROW to the Harry Allen Substation.

4.9 EARTH RESOURCES

This section evaluates potential impacts from the construction and operation of the proposed extension of the ROW to the Harry Allen Substation and at the Thirtymile Substation to geology, soils, and water resources.

4.9.1 Right-of-Way Extension to the Harry Allen Substation

4.9.1.1 Geology

No unique or special geological features were identified and no impacts are anticipated.

4.9.1.2 Soils

Soil resources in the area of the ROW to the Harry Allen Substation that may be impacted by the construction of the transmission line are associated primarily with the Dry Lake Playa. While the proposed transmission line crosses only a small portion of the western edge of this playa, the soils in the general vicinity tend to be sandy/silty in composition. Impacts to soils will occur during construction at tower sites, pulling and tensioning sites, and in access development. Curtailing construction during periods of rain, and the use of erosion control mitigation measures, including limiting the areas of disturbance (as possible), and restoration practices described in the COM Plan, would be implemented to minimize the potential for short and long-term impacts to soils.

4.9.1.3 Water Resources

Impacts to ephemeral drainages and washes in this area are expected to be minimal due to the selective location of towers (spanning of drainages), limiting the area of disturbance, and erosion control measures presented in the COM Plan, and effects to groundwater are not anticipated.

Floodplains

Construction and operation of the transmission line in this area will not affect the floodplain. In areas along approximately 2.4 miles of the ROW extension which fall within the 100-year floodplain, transmission structures will be designed to withstand flooding events, and span drainages.

4.9.2 Thirtymile Substation

4.9.2.1 Geology

No unique or special geological features were identified and no impacts are anticipated.

4.9.2.2 Soils

No unique or special soil resources have been identified on the Thirtymile Substation site or the transmission line interconnections. During construction there could be potential erosion from soil runoff into nearby small ephemeral drainages; however, erosion control mitigation measures described in the COM Plan would be implemented as part of the construction, in order to minimize the potential for short-term impacts. The final design and grading of the substation site will be completed in a manner that insures that surface drainage from the substation site will not result in additional erosion or degradation to down-slope areas, and groundwater should remain unaffected.

4.9.2.3 Water Resources

The Thirtymile Substation will be constructed to comply with all local and federal requirements for safety and protection of groundwater. Features such as erosion control and spill prevention mechanisms (e.g., secondary containment basins) will help to prevent or minimize impacts to groundwater. The streambed located along the southwest corner of the substation site will be avoided.

Floodplains

As there are no identified floodplains within the immediate vicinity of the substation site, construction and operation of the substation in this area will not have an affect on any floodplains.

4.10 AIR RESOURCES

Impacts to air quality would primarily be short-term as a result of the construction of the proposed facilities, and operation and maintenance activities associated with the extension of the transmission line to the Harry Allen Substation, and at the Thirtymile Substation site are expected to be minimal. The construction of the facilities would produce two types of air pollution: fugitive dust from soil disturbance and exhaust emissions from construction vehicles and equipment.

4.10.1 Right-of-Way Extension to the Harry Allen Substation

A construction plan, including a schedule and the number and type of vehicles to be used during construction of the transmission line, is included in the COM Plan. Emissions from construction vehicles are not expected to exceed the air quality standards. Construction/maintenance

activities will comply with the policies identified by Clark County (e.g., Dust Control Permit). Dust and emission-control mitigation measures (including watering roads), mitigation measures limiting disturbance, and restoration and monitoring practices described in the COM Plan will further assist in reducing impacts to air quality along this portion of the alignment.

4.10.2 Thirtymile Substation

Construction/maintenance activities for the Thirtymile Substation and the transmission line interconnections will comply with the policies identified by the BLM and the BAPC. Similar to the ROW extension, dust and emission-control mitigation measures, mitigation limiting disturbance, and restoration and monitoring practices described in the COM Plan will further assist in reducing impacts to air quality during construction at the substation site.

4.11 HAZARDOUS MATERIALS

This section evaluates the potential for impacts related to hazardous materials associated with the construction of proposed facilities, including the transportation of hazardous materials, and vehicle leaks or spills during construction.

4.11.1 Right-of-Way Extension to the Harry Allen Substation

No hazardous materials would be stored along the ROW extension to the Harry Allen Substation, and therefore the potential for impacts from hazardous materials exists primarily during construction. A spill prevention plan and reference to hazardous material regulations are documented in the COM Plan. During construction of the transmission line, mitigation measures outlined in the COM Plan would be followed to ensure that vehicles will be kept in good working condition and impacts from hazardous materials are minimized.

4.11.2 Thirtymile Substation

While the transformers at the substation will contain oil, it is anticipated that no other hazardous material will be stored on the substation site, and therefore the potential for impacts from hazardous materials exists primarily during construction. The containment would be per federal or local requirements and if applicable the containment would be designed to the Institute of Electrical Electronics Engineers standards (i.e., concrete lined berms around transformer). As described for the extension to the Harry Allen Substation, a spill prevention plan and reference to hazardous material regulations are documented in the COM Plan and similar mitigation measures will be implemented during construction at the substation site.

4.12 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

This section evaluates the potential impacts to socioeconomics and environmental justice from the construction and operation of the proposed project. Both the extension of the ROW to the Harry Allen Substation and the Thirtymile Substation are located in unpopulated areas and no occurrences of disproportionately high percentages of minority or low-income populations exist.

Therefore, no environmental justice impacts would occur from the construction or operation of the transmission line or Thirtymile Substation.

4.12.1 Right-of-Way Extension to the Harry Allen Substation

During construction of the ROW extension, short-term beneficial impacts, such as increased revenue, could result from construction workers' use of local restaurants and hotels in the North Las Vegas area. The transmission line extension to the Harry Allen Substation will be an unmanned facility, located in an undeveloped area of Clark County, and as such, operation of the transmission line will have minimal effects on Clark County employment, income, or social services.

4.12.2 Thirtymile Substation

During construction of the substation, short-term beneficial impacts, such as increased revenue, could result from construction workers' use of local restaurants and hotels in Ely. The Thirtymile Substation will be an unmanned facility, located in an undeveloped rural area of White Pine County, and as such, operation of the substation will have minimal effects on White Pine County or Ely employment, income, or social services.

4.13 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

4.13.1 Right-of-Way Extension to the Harry Allen Substation

No ACECs were identified within the BLM Southern Nevada District that would be affected by the extension of the ROW.

4.13.2 Thirtymile Substation

No ACECs were identified within the BLM Ely District that would be affected by the proposed substation.

SECTION 5.0
LEGISLATIVE MODIFICATIONS FOR COYOTE SPRINGS REALIGNMENT

5.1 INTRODUCTION

This section of the EA considers impacts and mitigation associated with the SWIP ROW realignment in the Coyote Springs area that was mandated by Congress in the 2004 LCCRDA legislation.

5.2 AFFECTED ENVIRONMENT

Information on the environment potentially affected by the construction, operation, and maintenance of facilities associated with the realigned portion of the SWIP ROW through the Coyote Spring Valley is discussed in this section. This discussion is organized according to specific resource topics, and is followed by Section 5.3, Environmental Consequences.

5.2.1 Biological Resources

The biological resources along the Coyote Springs Realignment are described below. Information presented in this section was gathered from the previous SWIP EIS, and updated based on current BLM RMPs, PRMPs, ongoing discussions with federal and state agencies, field review and surveys, and from information developed from the BA and the BO that has been prepared for the SWIP – Southern Portion.

5.2.1.1 Vegetation

The vegetation along the entire length of the realignment consists of low shrubs and no trees. The dominant plant association is creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other shrubby species include bladder sage (*Salazaria mexicana*), indigo bush (*Psorothamnus fremontii*), range ratany (*Krameria parvifolia*), Nevada ephedra (*Ephedra nevadensis*), and winterfat (*Krascheninnikovia lanata*). Also present, but less common are spiny menodora (*Menodora spinescens*) and goldenhead (*Acamptopappus shockleyi*). The most common yucca along the realignment is the Mojave yucca (*Yucca schidigera*), with occasional individuals of Joshua tree (*Y. brevifolia*) and banana yucca (*Y. baccata*). Cacti include beavertail cactus (*Opuntia basilaris*), buckhorn cholla (*O. acanthocarpa*), silver cholla (*O. echinocarpa*), barrel cactus (*Ferocactus cylindraceus*), and Engelmann hedgehog (*Echinocereus engelmannii*). This area also supports a diverse annual flora that appears in the spring, following wet winters.

All plants of the cactus family cactaceae and all plants of the genus yucca are protected under NRS 527.060-.120, which prohibits destruction without “written permission from the legal owner…specifying locality by legal description and number of plants to be removed or possessed” (NRS 527.100).

5.2.1.2 Noxious Weeds and Invasive Species

Noxious weeds are invasive, non-native species that tend to spread rapidly and often displace native plant species or bring about changes in species composition, community structure, and ecological function. Noxious weeds may compete with native species for critical resources including water, nutrients, and space. Such competition may alter the dynamics of the native plant community, potentially leading to a monoculture of the noxious species. Noxious weeds also may alter soil chemistry in such a manner as to preclude germination or seedling establishment by native species. Moreover, noxious weeds tend to thrive in disturbed areas, such as at electrical transmission tower sites, laydown areas, storage yards, and pulling and tensioning sites. Noxious weeds are formerly listed and managed by the Nevada Department of Agriculture.

The noxious weed inventory for the SWIP – Southern Portion included (1) the identification of weed species that are designated noxious, as defined by the Nevada Department of Agriculture, and which have the potential to occur within the area affected by the project and (2) the gathering of information to identify specific noxious weed populations in the project area, including pre-construction surveys along the project ROW. These surveys were conducted from April through June 2006 by Tri County Weed, as recommended by BLM, Ely District Office.

A complete listing of the noxious weeds identified through these surveys is presented in Table 6-2 (Section 6.5) of this EA. One occurrence of Sahara mustard was documented in the area of the Coyote Springs realignment. In addition, information on noxious weed occurrences within the ROW area, including the location and extent of infestations, was also gathered from the BLM, Ely District in the form of a GIS data layer. This inventory did not indicate any additional noxious weed species located within the project corridor, however, it is likely that populations of other noxious species that were not found within the survey area may occur in the vicinity, and these species could become established at disturbed areas on the ROW following construction.

Red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), and Chilean chess (*Bromus trinii*) have been identified by the BLM as invasive species of concern. In conjunction with the noxious weed and rare plant surveys conducted for the SWIP – Southern Portion, the identification of invasive species was generally noted, where evident. Based on the arid conditions that were encountered during these surveys, many of the anticipated invasive species may not have been identified.

5.2.1.3 Wildlife

Wildlife within the realignment area includes mammals, birds, amphibians, and reptiles that are characteristic of warm, arid, creosote bush-dominated landscapes. Small, nocturnal rodent and bat species are most common in the project area. Large mammals such as the Mule Deer (*Odocoileus hemionus*) and Mountain Lion (*Puma concolor*) are unlikely to be regular residents of the area. Other small mammals that may be locally abundant within the Coyote Springs Realignment area include White-tailed Antelope Squirrel (*Ammospermophilus leucurus*), and Jackrabbits (Lepus californicus). Small rodent populations are probably dominated by Heteromyids, a group that is highly adapted to living in hot, dry climates. Kangaroo Rats likely to be present include Merriam's Kangaroo Rat (*Dipodomys merriami*) and Desert Kangaroo Rat (*D. deserti*). Pocket Mice likely to be present include the Desert Pocket Mouse (*Chaetodipus*

penicillatus), Little Pocket Mouse (*Perognathus longimembris*), and Longtail Pocket Mouse (*Chaetodipus formosus*).

Other small rodents likely to be present include the Cactus Mouse (*Peromyscus eremicus*), Western Harvest Mouse (*Reithrodontomys megalotis*), and Desert Woodrat (*Neotoma lepida*). Several species of bats of the genus *Myotis* probably occupy the area as permanent residents, summer visitors, winter visitors, or transients. Other bats present include the Pallid Bat (*Antrozous pallidus*), Big Brown Bat (*Eptesicus fuscus*), Western Pipistrelle (*Pipistrellus hesperus*), and Western Big-eared Bat (*Corynorhinus townsendii*).

Creosote bush-dominated landscapes are typically depauperate in bird species compared with most other vegetative communities. Birds likely to be found and/or nest within the realignment area include, the Gambel's Quail (*Callipepla gambelii*), Red-tailed Hawk (*Buteo jamaicensis*), Mourning Dove (*Zenaida macroura*), Greater Roadrunner (*Geococcyx californianus*), Lesser Nighthawk (*Chordeiles acutipennis*), Ash-throated Flycatcher (*Myiarchyus cinerascens*), and Black-throated Sparrow (*Amphispiza bilineata*).

The Great Basin Spadefoot (*Spea intermontanus*) is the only amphibian likely to be found in the realignment area and, then, only after periods of heavy summer rainfall. Approximately 17 species of lizards could potentially occur in this area, depending on substrates available. For example, in rugged, rocky areas the Common Chuckwalla (*Sauromalus ater*) could occur. Areas with relatively fine, sandy soil may be frequented by the Desert Iguana (*Dipsosaurus dorsalis*), while the Banded Gila Monster (Heloderma suspectum cinctum) shares similar habitats to those of the Mojave Desert Tortoise. Habitat generalists such as the Side-blotched Lizard (*Uta stansburiana*) and Western Whiptail (*Cnemidophorus tigris*) are likely to be found on a variety of substrates.

Snake species within the realignment area could total approximately 15, depending on available substrates. The Western Shovel-nosed Snake (*Chionactis occipitalis*), for example, is only likely to be present in areas with fine, sandy soil while the Lyre Snake (*Trimorphodon biscutatus*) and Speckled Rattlesnake (*Crotalus mitchellii*) are most likely to be found on rocky slopes. Other common species could include, but are not limited to, the Gopher Snake (*Pituophis catenifer*), Coachwhip (*Masticophis flagellum*), Glossy Snake (*Arizona elegans*), Night Snake (*Hypsiglena torquata*), and Mojave Rattlesnake (*Crotalus scutulatus*).

5.2.1.4 Migratory Birds

The MBTA is the domestic law that affirms and implements the United States' commitment to the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requires harvest to be limited to levels that prevent overuse. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, of any migratory bird, its eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11).

Virtually all of the bird species in the realignment area previously described are protected by the Act.

5.2.1.5 Wild Horses and Burros

Since 1971, the BLM has been managing free-roaming horses and burros on public lands in accordance with the Wild Free-Roaming Horse and Burro Act. This Act mandates that wild and free-roaming horses and burros be protected from unauthorized capture, branding, harassment, or death, and furthermore that these animals be considered as an integral part of the natural systems based on their distribution.

In order to support the protection of these animals, the BLM has established Herd Management Areas (HMAs). The desired objective is to manage for sustainable population levels in areas of suitable habitat, while preserving a multiple use relationship with all other resources.

No HMAs have been established by the Ely or Southern Nevada District Offices that are affected by the Coyote Springs Realignment.

5.2.1.6 Threatened and Endangered Species/Special Status Species

The Mojave Desert Tortoise is the only federally listed wildlife species known to be present in the realignment area. Tortoise surveys that were conducted in the area during early Summer 2006, revealed the presence of tortoises along the realignment. Approximately 16 miles of the realignment cross USFWS designated Critical Habitat. Rare plant surveys conducted in the project area during the spring of 2006 did not reveal the presence of any state or federally listed plant species, although the year was exceptionally dry, and some annuals, such as the three-corner milkvetch (*Astragalus geyeri* var. *triquetris*), only occur after heavy rainfall. This species has not previously been recorded along the realignment but could potentially be present after a wet season.

5.2.2 Cultural Resources

Cultural Resource surveys conducted for the Coyote Springs Realignment included the 200 foot wide ROW and proposed access roads (Crews et al., 2007). For the purposes of this cultural study, the transmission line ROW and the associated access roads are considered the APE. These studies identified a total of 58 sites that are located within the APE of the realignment. Of these, 12 are recommended as eligible for listing on the NRHP and for 4 the eligibility for NRHP listing is unknown at this time, and further investigations are necessary to determine their eligibility. These sites are summarized in Table 5-1.

TABLE 5-1
CULTURAL RESOURCE SITES IN THE COYOTE SPRINGS AREA

	Smithsonian Number	7.5-minute Quad	Site Type	NRHP Eligibility Recommendation
1	26LN5019	Wildcat Wash NW	lithic scatter with feature	not eligible
2	26LN5020	Wildcat Wash NW	lithic scatter with features	eligible
3	26LN5021	Wildcat Wash NW	artifact scatter with features	eligible
4	26LN5022	Wildcat Wash NW	lithic scatter with feature	unknown, more information needed
5	26LN5023	Wildcat Wash NW	lithic scatter with feature	eligible
6	26LN5024	Wildcat Wash NW	lithic scatter with tools	not eligible

TABLE 5-1
CULTURAL RESOURCE SITES IN THE COYOTE SPRINGS AREA

	Smithsonian Number	7.5-minute Quad	Site Type	NRHP Eligibility Recommendation
7	26LN5025	Wildcat Wash NW	lithic scatter with features	unknown, more information needed
8	26LN5026	Wildcat Wash NW	lithic scatter with tool/ historic trash scatter	not eligible
9	26LN5027	Wildcat Wash NW	artifact scatter	eligible
10	26LN5028	Wildcat Wash NW	lithic scatter	not eligible
11	26LN5029	Wildcat Wash NW	artifact scatter with features and historic trash	eligible
12	26LN5030	Wildcat Wash NW	lithic scatter with tools	not eligible
13	26LN5032	Lower Pahranagat Lake SE	lithic scatter with tools	not eligible
14	26LN5036	Lower Pahranagat Lake SE	lithic scatter	not eligible
15	26LN5037	Lower Pahranagat Lake SE	lithic scatter	not eligible
16	26LN5038	Lower Pahranagat Lake SE	lithic scatter	not eligible
17	26LN5039	Lower Pahranagat Lake SE	lithic scatter	not eligible
18	26LN5040	Lower Pahranagat Lake SE	lithic scatter	not eligible
19	26LN5041	Lower Pahranagat Lake SE	lithic scatter	not eligible
20	26LN5042	Lower Pahranagat Lake SE	small artifact scatter with rock alignments	unknown, more information needed
21	26LN5043	Lower Pahranagat Lake SE	lithic scatter with tools	not eligible
22	26LN5044	Lower Pahranagat Lake SE	lithic scatter	not eligible
23	26LN5045	Lower Pahranagat Lake SE	lithic scatter with tool	not eligible
24	26LN5046	Lower Pahranagat Lake SE	lithic scatter	not eligible
25	26LN5047	Lower Pahranagat Lake SE	lithic scatter	not eligible
26	26LN5048	Lower Pahranagat Lake SE	lithic scatter	not eligible
27	26LN5049	Lower Pahranagat Lake SE	lithic scatter	not eligible
28	26LN5050	Delamar 3 SW	lithic scatter with rock alignments	eligible
29	26LN5051	Delamar 3 SW	lithic scatter	not eligible
30	26LN5052	Delamar 3 SW	lithic scatter	not eligible
31	26LN5053	Delamar 3 SW	lithic scatter	not eligible
32	26LN5054	Delamar 3 SW	lithic scatter	not eligible
33	26LN5055	Delamar 3 SW	lithic scatter	not eligible
34	26LN5056	Delamar 3 SW	lithic scatter	not eligible
35	26LN5057	Lower Pahranagat Lake SW	lithic scatter	not eligible
36	26LN5058	Delamar 3 SW	lithic scatter	not eligible
37	26LN5075	Wildcat Wash NW	artifact scatter with features	eligible
38	26LN5076	Wildcat Wash NW	lithic scatter with features	eligible
39	26LN5077	Wildcat Wash NW	lithic scatter with features	eligible
40	26LN5078	Wildcat Wash NW	lithic scatter with tools	eligible
41	26LN5079	Wildcat Wash NW	lithic scatter with tools	not eligible
42	26LN5080	Wildcat Wash NW	artifact scatter with features	eligible
43	26LN5081	Wildcat Wash NW	artifact scatter with feature	eligible
44	26LN5082	Delamar 3 SW	lithic scatter with tools	not eligible
45	26LN5083	Delamar 3 SW	lithic scatter with tools	not eligible
46	26LN5084	Delamar 3 SW	lithic scatter with tool	not eligible
47	26LN5085	Delamar 3 SW	lithic scatter with historic/modern rock cairn of unknown function	not eligible
48	26LN5090	Wildcat Wash NW	lithic scatter	not eligible
49	26LN5091	Wildcat Wash NW	lithic scatter	not eligible
50	26LN5092	Wildcat Wash NW	lithic scatter	not eligible
51	26LN5347	Wildcat Wash NW	lithic scatter	not eligible

TABLE 5-1 CULTURAL RESOURCE SITES IN THE COYOTE SPRINGS AREA				
	Smithsonian Number	**7.5-minute Quad**	**Site Type**	**NRHP Eligibility Recommendation**
52	26LN5348	Wildcat Wash NW	lithic scatter	not eligible
53	26LN5349	Wildcat Wash NW	lithic scatter	not eligible
54	26LN5350	Wildcat Wash NW	lithic scatter	not eligible
55	26LN5351	Wildcat Wash NW	lithic scatter with tools	unknown, more information needed
56	26LN5352	Wildcat Wash NW	lithic scatter with tools	not eligible
57	26LN5353	Wildcat Wash NW	phehistoric rock alignment	not eligible
58	26LN5378	Wildcat Wash NW	historic trash scatter	not eligible

5.2.3 Paleontological Resources

The San Bernardino County Museum conducted a paleontological resource study covering the alignment in the Coyote Springs Realignment area (San Bernardino County Museum 2006). This study included a records search and field review to identify paleontological sensitivity and is included in the COM Plan for the SWIP Project. The Museum concluded that this portion of the project is located in an area with an undetermined paleontological sensitivity, and recommended that an intensive pedestrian field inspection be conducted prior to construction.

5.2.4 Land Use, Recreation, and Access

This section of the EA documents the existing and planned land use, recreation, and access for the Coyote Springs Realignment. Existing land use data was gathered using aerial photography and field reconnaissance, and through review of land use plans. Planned land use was gathered using existing BLM resource management plans, other BLM documents for projects located in the project areas, and specific development plans. A description of the project setting, ownership/jurisdiction and land use within the corridor area follows.

5.2.4.1 Project Setting

The Coyote Springs Realignment begins approximately 50 miles north of Las Vegas and continues north for approximately 25 miles. The realignment is located in Coyote Spring Valley, west of U.S. Highway 93 and east of the Desert National Wildlife Range (DNWR) in Lincoln and Clark Counties. The realigned transmission line would be located in the utility corridor that was mandated by Congress in the 2004 LCCRDA. This area of the eastern Mojave Desert is generally defined by rolling bajadas that transition into the Sheep Range to the west.

5.2.4.2 Jurisdiction

The extension of the ROW is on BLM land administered by the Southern Nevada District Office in Clark County and by the BLM Ely District in Lincoln County. In Clark County this area is managed under the Las Vegas RMP. The area of the realignment in Lincoln County, while currently managed under the Caliente MFP, will be managed in the future under the Ely RMP. Smaller privately held parcels are found east of the realignment.

5.2.4.3 Existing Land Use

The study area is located predominately on undeveloped desert land (see Figure 8). The DNWR is located to the west of the transmission line and was established for the purpose of perpetuating the Desert Bighorn Sheep and is important habitat for the Mojave Desert Tortoise and other sensitive plants and animals. The DNWR is the largest wildlife refuge within the lower 48 states and, although it is not currently designated wilderness, it is proposed for wilderness designation and is being managed as wilderness (USFWS 2006).

For the length of the Coyote Springs Realignment, U.S. Highway 93 runs parallel to and just east of the realigned ROW, at a distance of up to approximately 0.9 mile away. In the southern portion of the study area, the realignment crosses U.S. Highway 93 before continuing south in the ROW originally granted for the SWIP.

In the central portion of the Coyote Springs Realignment area, immediately east of the transmission line alignment and Highway 93, the Coyote Springs master-planned community development is under construction. This development will include single and multi-family residential areas, commercial and light industrial areas, multiple golf courses, hotels and resorts, open space, and a resource management area. As presently planned, approximately 21,454 acres would be developed over the course of 40 years, including 7,548 acres that will be dedicated as the Coyote Springs Resource Management Area.

The Western Elite Landfill is located on a private in-holding in the central portion of this area, on the west side of U.S. Highway 93, between the highway and the SWIP realignment. A quarry operation and residence also are located on the site. A dirt road on the western side of the property is used as a runway for small aircraft. This runway parallels the transmission line realignment.

An existing Lincoln County Power District 69kV transmission line parallels the west side of U.S. Highway 93 throughout the study area. This 69kV line is crossed by the SWIP realignment in the southern portion of the study area (at the U.S. Highway 93 crossing) and roughly parallels the realignment north through the study area, at distances up to approximately 0.9 mile away.

5.2.4.4 Planned Land Use

The Coyote Springs Realignment is located within the SWIP designated utility corridor. The BLM authorizes ROWs on public lands for a variety of uses, including roads, electrical transmission lines, telephone lines, sewer lines, potable water lines, natural gas pipelines, communication sites, electrical power plants and substations, and related power distribution lines (Las Vegas RMP, pg. 3-57). In addition, Coyote Springs has submitted an application to the BLM for future detention basins within the utility corridor area. Authorizations for the use of designated ROWs are processed on a case-by-case basis.

Although Clark County has no jurisdiction over the management of BLM land, the Northeast Clark County Land Use Plan identifies uses within the area of the realignment as *Open Land* and *Major Development Project*. *Open Land* allows for deterring development and may contain uses such as public services and facilities, grazing, and some recreational uses. The Coyote Springs master-planned community is designated as a *Major Development Project.* Zoning

within Coyote Springs master-planned community development will consist of Rural Open Land, Medium Density Residential and General Commercial.

5.2.4.5 Recreation

The Delamar Mountain Wilderness is located east of the Coyote Springs Realignment and east of Highway 93 and provides recreational opportunities such as hiking, rock scrambling, climbing, hunting, and horseback riding. The Wilderness (see Figure 8) is located approximately 0.75 to 2.0 miles from the realigned transmission line and is accessible by U.S. Highway 93 and Kane Springs Road (U.S. Department of the Interior 2006).

As previously noted, the primary purpose of the DNWR, which is located on the west side of U.S. Highway 93 and the Coyote Springs Realignment, is to perpetuate the Desert Bighorn Sheep, and other sensitive wildlife and plants, other recreational opportunities such as camping, hiking, backpacking, horseback riding, hunting and bird watching are available. This refuge is accessible from U.S. Highway 93 via Sawmill Road, located approximately 1 mile south of the realignment area (USFWS 2006).

5.2.5 Visual Resources

The landscape in this area is moderately flat to slightly undulating, with relatively low vegetation diversity, creating little visual interest or variation in the valley area crossed by the transmission line (Class C scenery, landscapes with minimal diversity or interest). The DNWR (located to the west) exhibits greater variety in terrain and topographic relief. Sensitive viewers in this area include residences (a single existing residence on the Western Elite Landfill property and future residents associated with the Coyote Springs Development); travelway viewers (U.S. Highway 93, Highway 168, and Kane Springs and Saw Mill roads); and recreational users (historic rest area and potentially dispersed users of the DNWR and Delamar Wilderness). In the Southern Nevada District area the transmission line is in the SWIP designated utility corridor within an area that has been classified as VRM Class III (partial retention of the existing character of the landscape). In the Ely District area (Caliente MFP), the transmission line is also in the SWIP designated utility corridor, within a VRM Class IV area (allowing for major modification). Several existing modifications also occur in this area, including U.S. Highway 93, electrical transmission (69kV) and fiber optic facilities, the Western Elite Landfill, and ongoing disturbance associated with the planned Coyote Springs development.

5.2.6 Wildfire Management

The Coyote Springs Realignment is located in Lincoln and Clark counties, Nevada. Both the Ely and Southern Nevada BLM District Offices have fire management plans (*Ely District Managed Natural and Prescribed Fire Plan* and *Las Vegas Fire Management Action Plan*, respectively). The District Office resource management plans and fire management plans were reviewed to identify potential impacts from the Coyote Springs realignment. Potential impacts from the realignment would be influenced by additional access road construction, the type of vegetation located within the project area, and the guidelines for fire suppression within the project area.

Within the Ely District area, the realignment is located within a salt desert shrub vegetation community and generally has low fuel loads. Typical fire behavior is characterized by winds needed to carry fire in sparsely vegetated areas, natural barriers tending to inhibit fire sizes, and the rapid spread of fire generally requiring wind. The realignment is located in the Mojave FMU (Ely PRMP) and currently is managed as a full fire suppression area. The nearest wildland-urban interface community identified in the Ely PRMP is Alamo, located approximately 13 miles northwest of the realignment . However, the proposed Coyote Springs development is located east of U.S. Highway 93 and the proposed transmission line realignment.

The southern portion of the realignment is associated with four separate FMUs identified in the *Fire Management Action Plan* of the BLM. These consist of the *Desert Low Elevation Shrub, Tortoise ACEC North, Tortoise Moderate Density, and Virgin-Muddy-Meadow* FMUs. The *Desert Low Elevation Shrub* is located on the DNWR, west of the realignment. The *Tortoise ACEC North* has an annual target goal of less than 10 acres burned for 90 percent of the burn time. The decadal goal is 250 acres or less, with no prescribed fires within this FMU. The *Tortoise Moderate Density* has an annual target goal of less than 15 acres burned for 90 percent of the burn time, and the decadal goal for this FMU is 500 acres or less, with no prescribed fires. The *Virgin-Muddy-Meadow* has an annual target goal of less than 25 acres for 90 percent of the burn time, and the decadal goal is 250 acres or less, with only salt cedar as prescribed burns (Marfil 2006).

5.2.7 Wilderness and Wild and Scenic Rivers

The Delamar Mountain Wilderness is located east of the realignment and U.S. Highway 93 and provides recreational opportunities such as hiking, rock scrambling, climbing, hunting, and horseback riding. The Wilderness is located approximately 0.75 to 2.0 miles from the realignment and is accessible by Highway 93 and Kane Springs Road (U.S. Department of the Interior 2006). There are no wild and scenic rivers within the project area. The DNWR, located to the west of the realignment, includes portions that are proposed for Wilderness designation and are currently being managed as Wilderness.

5.2.8 Prime and Unique Farmland

There is no Prime and Unique Farmland located within the realignment area.

5.2.9 Earth Resources

This section of the EA includes a description of the geology, soils and water resources associated with the realignment. Information presented in this section is based on previous studies conducted for the SWIP EIS, in association with information from various federal and state agencies and general field review.

5.2.9.1 Geology

The realignment is located in Coyote Spring Valley, generally located between the Sheep Range to the west and the Meadow Valley Range in the east. The general geology of Coyote

Spring Valley comprises four major geologic units: alluvium, Tertiary valley-fill deposits, Tertiary volcanics, and Paleozoic carbonate rocks. The alluvium occurs over the valley floor and comprises interbedded gravels, sand, silt and clay. The maximum thickness of alluvium is not known, but thicknesses of 600 to 850 feet have been penetrated by U.S. Geological Survey and U.S. Air Force test wells.

5.2.9.2 Soils

Soils within the Coyote Springs Realignment are typical desert soils (Entisols and Aridisols). These soils are susceptible to erosion by wind and water. The potential for erosion is generally slight, except where the soils have been disturbed or along the banks of washes. There is also a potential for localized landslides on the steep slopes of the upland areas.

5.2.9.3 Water Resources

There are no perennial surface water bodies or streams within Coyote Spring Valley. Surface water occurs as ephemeral flow in streambeds that drain the upland areas or as temporary ponding of runoff areas. The realignment is located within the Coyote Spring Valley Groundwater Basin in the Lower Colorado River Basin Hydrographic Region.

Floodplains

FEMA has not identified any 100-year floodplains within Clark County that would be crossed by the realignment, and does not have floodplain information available for Lincoln County. Flooding, however, is a recurrent problem over most of the valley floor (both sides of Highway 93), and severe flash floods do occur infrequently in both the Pahranagat Wash and Kane Springs Wash areas.

5.2.10 Air Resources

Air resources within the project area are regulated at the federal, state, and local levels as described below:

5.2.10.1 Federal

The EPA has established National Ambient Air Quality Standards for certain pollutants. The attainment status for the proposed project area was examined in consideration of federal designations contained in 40 CFR §81.329. The hydrographic areas and the associated pollutants for which they are designated attainment or nonattainment are described below.

5.2.10.2 State

The Nevada Department of Environmental Protection's BAPC administers the surface area disturbance permitting for Lincoln County, Nevada. The BAPC issues a Class II Air Quality

Operating Permit for Stand-Alone Surface Area Disturbance for any land disturbance that will equal or exceed five acres of total disturbance. If the total disturbance is equal to, or exceeds 20 total acres, then in addition to the preparation of the SAD permit application, a dust control plan must also be prepared and submitted with the application (Air Sciences Inc. 2007).

5.2.10.3 Local

The Clark County Department of Air Quality and Environmental Management administers the surface area disturbance permitting for Clark County through the issuance of a Dust Control Permit. A Dust Control Permit is required for projects that are greater than or equal to 0.25 acres; require trenches equal to or greater than 100 feet in length; or include the mechanical demolishing of any structure larger than or equal to 1,000 square feet (Air Sciences Inc. 2007).

The air quality status, regulations and requirements specific to the Coyote Springs realignment are as follows. The realignment is located within Clark and Lincoln Counties in Hydrographic Basin 210. The portion of this basin located in Clark County has a federal designation of attainment status for all pollutants. The Clark County Department of Air Quality and Environmental Management manages dust control and emissions within the Clark County portion of the realignment through issuance of a dust permit. The portion of the basin located within Lincoln County has a federal designation of attainment status for all pollutants. The BAPC manages dust control within Lincoln County through a Class II Air Quality Operating Permit.

5.2.11 Hazardous Materials

The proposed Coyote Springs Realignment would occur on BLM land administered by the Southern Nevada and Ely District Offices. Information regarding hazardous materials was obtained from each of the respective office RMPs/PRMPs in characterizing the realignment area.

As a part of the regulated community, the BLM has an obligation to abide by the existing federal and state statutes and regulations regarding hazardous materials and to require that leasees and ROW grantees also abide by such regulation as part of the lease or grant terms and conditions. The Las Vegas RMP specifically requires that “all non-interior groups whose activities are on BLM managed lands and facilities will be held responsible for compliance with federal, state, interstate, and local waste management requirements.” No hazardous material sites in the realignment area have been identified.

5.2.12 Socioeconomics and Environmental Justice

This section describes the social characteristics of the study area. The current status and trends for population and economic factors were evaluated and are the basis for socioeconomic environmental consequences for the realignment in the Coyote Springs area as described below.

5.2.12.1 Socioeconomics

The ROW realignment occurs in Clark and Lincoln counties. Clark County's population in the 2000 census was 1,375,765, and the County had a population percent change of 24.3 percent calculated between April 1, 2000 and July 1, 2005. The population estimate of Clark County for 2005 is 1,710,551. Total employment in 2000 totaled 637,339, with 4.2 percent of the work force unemployed. The estimated median household income for Clark County in 2004 was $50,463. Lincoln County's population in the 2000 census was 4,165. Total employment in 2000 was 1,538 and the median household income was $31,979.

The Coyote Springs master-planned community development is under construction and is expected to be approximately 21,454 acres (developed over 40 years). This development will include single and multi-family residential areas, commercial and light industrial areas, multiple golf courses, hotels and resorts, open space and a resource management area.

5.2.12.2 Environmental Justice

As described in Section 3.13, all Federal actions must address and identify, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. The realignment is in an area that is relatively unpopulated at this time (with the exception of the existing private residence in association with the Western Elite Landfill), and plans for the area (Coyote Springs Development) do not suggest the future presence of a high number of low-income groups.

5.2.13 Areas of Critical Environmental Concern

The ROW realignment crosses approximately 1 mile of the Coyote Springs ACEC (see Figure 8), which is designated for the protection of the Mojave Desert Tortoise. The realignment also crosses approximately 16 miles of USFWS designated Critical Desert Tortoise Habitat.

5.3 ENVIRONMENTAL CONSEQUENCES

Section 5.3 addresses the environmental consequences (effects) associated with the realignment in Coyote Spring Valley. Many of the mitigation measures presented in this EA are included in the original SWIP EIS, ROD, and ROW Grants. Additional mitigation measures have been proposed by Great Basin or requested or required by the BLM, USFWS and other resource agencies, in connection with the preparation of this EA and the BA, BO, and COM Plan. All of the mitigation measures from these various sources have been incorporated in the COM Plan, and compliance with that plan would be included as an enforceable stipulation in the amended ROW grant, just as it is in the original SWIP ROW grant.

5.3.1 Biological Resources

Impacts to biological resources included consideration of the effects to vegetation, wildlife, and threatened and endangered species. Following is a discussion of impacts associated with the realignment, including proposed mitigation measures.

5.3.1.1 Vegetation

Approximately 237 acres will be disturbed by the construction of the SWIP in the realignment area. Approximately 134 acres of the total disturbance area will be temporary, including batch plants, tower construction areas, and pulling and tensioning sites. The remaining 103 acres of permanent disturbance are primarily associated with access roads. The vegetation that will be affected is primarily creosote bush and white bursage, with scattered individual Mojave yucca populations and several species of cacti. As identified in the COM Plan, cacti and yucca will be salvaged and replanted off of impact areas (access roads, tower pad sites, etc.), for later replacement in the ROW area and near tower sites, and areas of temporary disturbance will be restored in accordance with the COM Plan.

5.3.1.2 Noxious Weeds and Invasive Species

The introduction and spread of invasive and nonnative plant species (including noxious weeds) can contribute to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, loss of wildlife habitat, and, in some instances, may pose a threat to human health and welfare. The Carlson-Foley Act (Public Law 90-583) and the Federal Noxious Weed Act (Public Law 93-629) direct weed control on public land. Executive Order 13112, Invasive Species, was authorized to prevent the introduction of invasive species, provide for their control, and to minimize the impacts caused by these species. NRS 555, Control of Insects, Pests, and Noxious Weeds, provides information regarding the designation and eradication of, and inspection for, noxious weeds within the state of Nevada (Ely PRMP).

Construction of the Coyote Springs Realignment will require the construction of new access roads, and result in disturbance at tower pad sites and pulling and tensioning areas. Berms created by access road construction can represent disturbed soils, which may provide suitable habitat for noxious weeds including Sahara mustard and salt cedar and invasive species. Construction activity around tower pads and in pulling and tensioning areas, including movement of heavy equipment and light trucks may also disturb soil and provide habitat for noxious weeds and invasive species. Seeds of noxious weeds and invasive species also may be present in the seed bank and soil disturbance can have the effect of “releasing” these seeds possibly leading to local infestations. There also is the potential for weeds to be introduced into the project area by construction vehicles.

A comprehensive Noxious Weed Management Plan (part of the COM Plan) has been developed with the goal of keeping the ROW noxious weed free. Adherence to the specific weed control mitigation measures in this plan, including measures as identified in the BLM Las Vegas Noxious Weed Plan will minimize the introduction and spread of noxious weeds during and following construction. Early detection and rapid response have been important considerations in the development of this plan which includes (1) identification of problem areas, (2) preventative measures that will be implemented to prevent the spread of these and other

noxious weeds during construction, (3) treatment methods during construction and post-construction, and (4) reclamation and post-construction monitoring. Included in this plan are specific measures that address the eradication of existing noxious weed populations, measures to minimize the potential for the spread of noxious weeds and invasive species through off-site power washing of equipment/vehicles and on-site cleaning of equipment/vehicles with compressed air, and the use of weed free materials during restoration (e.g., hay or straw).

In addition, as a part of the ROW Preparation, Rehabilitation, and Restoration Plan (included in the COM Plan), reseeding practices and seeding mixtures to be used in areas of temporary disturbance will be coordinated with a BLM specialist (e.g., botanist, range management specialist, or soil scientist designated by the BLM Authorized Officer) in order to determine the source type and quantity of seed mixtures and seeding locations. In this regard, mixtures that discourage the establishment of invasive and noxious weeds will be considered, as appropriate.

5.3.1.3 Wildlife

There will be some mortality of small vertebrate species, and general wildlife habitat quality will be degraded. Ground-disturbing activities will alter the quality of wildlife habitat in the short-term. Some individuals of small, fossorial species such as Pocket Mice and Kangaroo Rats will likely be crushed in their burrows by heavy equipment. Similarly, snakes, lizards, and other diurnal forms may be hit on access roads or killed by road building equipment. Potential impacts from the operation of the transmission line may include an increase in hunting perches for avian predators. Mitigation measures, including limiting access to areas previously identified and clearly flagged, restoration practices, and speed limit restrictions on the ROW, will assist in reducing impacts to wildlife.

5.3.1.4 Migratory Bird Treaty Act

Construction along the Coyote Springs Realignment could potentially result in the loss of bird nests, eggs, or young. Adult birds are normally able to avoid construction equipment, however, eggs or young in nests cannot. As stipulated in the COM Plan, to address compliance with the MBTA mitigation measures will include the presence of a biological monitor during the migratory bird-nesting season, assuring that all active nests along the line will not be disturbed. During construction, active nests that could be affected will be identified, and a buffer zone around each nest will be flagged to keep personnel and equipment away from sensitive areas until nests become dormant.

5.3.1.5 Threatened and Endangered Species/Special Status Species

The Mojave Desert Tortoise is the only federally listed species that is present along the realignment in Coyote Spring Valley. During construction, tortoises could be crushed in their burrows by heavy equipment. They also could be run over on access roads, especially small juveniles and hatchlings, which are very difficult to see even from a slow-moving vehicle. Mitigation and compensation measures identified in the BA, BO, and the COM Plan, including limiting access to pre-determined and clearly flagged areas, controlling the speed of vehicles on the ROW, and the presence of tortoise biologists, will help to reduce impacts. Tortoise biologists will be present for all construction activities in this area. It will be their responsibility to move

tortoises out of the way, to remove tortoises from burrows in construction areas, and to educate all construction personnel regarding the protocol for working in Mojave Desert Tortoise habitat areas.

In addition to the federally listed Desert Tortoise, as previously mentioned, there is a limited possibility of impact to the three-corner milkvetch (*Astragalus geyeri* var. *triquetris*) and the Las Vegas buckwheat (*Eriogonum Corymbosum var. nilesii*), which could potentially be present along the realignment, although recent surveys did not identify any populations.

Prior to ground-disturbing activities, in areas specified by the BLM project manager, a biological monitor will survey and inspect the area for rare plants. In the event of a new discovery they will flag off the area and establish a construction restriction buffer.

5.3.2 Cultural Resources

Of the 58 cultural resources identified within the APE (see Table 5-1), 12 are eligible for NRHP listing. Once the engineering plans are finalized, a determination as to which sites will be directly affected by the proposed project will be made. To mitigate both direct and indirect impacts to these cultural resources, a HPTP is being developed and will be implemented prior to construction of the transmission line in this area.

5.3.3 Paleontological Resources

A paleontological resources treatment plan has been prepared for the proposed project (San Bernardino County Museum 2006) and includes mitigation measures that would address potential impacts to paleontological specimens prior to, and during construction of the proposed project, such as monitoring for paleontological specimens. If resources are identified in the intensive pedestrian field inspection, which would be conducted prior to construction, appropriate measures would be implemented in order to minimize impacts. The treatment plan will be included as an appendix to the COM Plan.

5.3.4 Land Use, Recreation, and Access

The shift of the SWIP alignment in the Coyote Springs area was mandated by Congress in the LCCRDA in order to avoid and minimize potential conflicts with the development of private land on the east side of U.S. Highway 93. This land had previously been transferred by the BLM into private ownership, subject to a reservation of the BLM utility corridor. Following is a description of potential impacts to existing and planned land use, recreational activities, and access that could result from the construction and operation of the transmission line in the realigned location.

The transmission line would be constructed within an approved designated corridor on BLM lands. Approximately 103 acres of land would be permanently displaced by access roads and structure locations. The transmission line has been located to avoid private land, and areas crossed by the transmission line are undeveloped, therefore no direct land use impacts are anticipated.

Planned land use impacts are expected to be minimal, because the transmission line would be located within the SWIP designated utility corridor. The planned Coyote Springs detention basins are being designed to accommodate existing and planned utilities within the designated utility corridor. The transmission line does not conflict with any recreation areas, however, there is a potential for increased off-road and dispersed access to the DNWR from the construction of new access and maintenance roads. Potential increased off-road access will be limited by closing and reclaiming construction roads not needed for maintenance in key locations, and through the use of locking gates or other barriers, to the extent practicable, as described in the COM Plan. No increase in access to the Delamar Mountain Wilderness is expected from construction of new access for the SWIP – Southern Portion in this area because the Wilderness is located east of U.S. Highway 93, on the opposite side of the highway from the transmission facilities.

5.3.5 Visual Resources

The realignment is within a congressionally designated utility corridor and generally parallels an existing 69kV transmission line located to the east of the proposed project, which is visible primarily in the foreground from U.S. Highway 93. In this area the proposed transmission line will be located to the west of, and behind, the 69kV line, and will be partially to fully back-dropped from the majority of transportation, recreation, and residential views with the exception of the crossing of US Highway 93 north of Saw Mill Road. Key mitigation measures include the use of dulled steel lattice structures and non-specular conductors. The current BLM VRM designations for this area are Class III (partially retain the existing character of the landscape) in Clark County, and Class IV (allowing for major modifications) in Lincoln County. In the future, portions of the alignment in Lincoln County will continue to be located in Class IV (allowing for major modifications) as designated in the Ely PRMP. Based on the modified setting (e.g., existing utilities, landfill), the local viewing conditions, and the implementation of the proposed mitigation measures as specified in the COM Plan, the new location of the transmission line (within a designated utility corridor) will be in conformance with these objectives.

5.3.6 Wildfire Management

This section of the EA evaluates the effects of the realignment to wildfire management. Impacts were assessed based on construction activities, the type of vegetation located within the affected areas, the potential for fires associated with future use in this area, and the Southern Nevada and Ely BLM District respective guidelines, for fire suppression.

Approximately 36 miles of access roads will be constructed as part of the realignment, including the construction of spur roads from existing access roads and U.S. Highway 93 to tower locations, and construction of access along the proposed realignment. Short-term construction impacts to fire management include an increase in traffic during the construction of the proposed transmission line, which could potentially increase the frequency of human-caused accidental ignitions along the access road and the ROW. Long-term or operational impacts from new access could occur from human-caused, accidental ignitions from periodic ground maintenance and inspections of the transmission line, or recreational users along the access roads.

Mitigation measures and protocols identified in the COM Plan, including fire prevention measures as outlined in Section 4.8 of this EA, will reduce the potential for fires during construction. In addition, public access to new roads along the realignment will be controlled by closing and reclaiming construction roads not needed for operation and maintenance as approved by BLM in consultation with the Project Proponent, and through the use of locking gates or other barriers, to the extent practicable, as also prescribed in the COM Plan. Low fuel loads along the realignment also decrease the potential for accidental ignitions in this area. Although the realignment is located to the west of the proposed Coyote Springs development, these low fuel loads and separation of the development and transmission line by U.S. Highway 93 minimize the potential for the spread of wildfire to this area, unless wind is present.

5.3.7 Earth Resources

This section evaluates potential impacts from the construction and operation of the transmission line in the realigned location based on geology, soils, and water resources.

5.3.7.1 Geology

There are no unique or special geological features in the area of the realignment and no impacts were anticipated.

5.3.7.2 Soils

There are no unique or special soil resources in the area of the realignment. Impacts to soils may occur as erosion into drainages during construction at tower sites, pulling and tensioning sites, and in access development. Curtailing construction during periods of rain, and the use of erosion control mitigation measures including limiting the areas of disturbance, and restoration practices as described in the COM Plan would be implemented to minimize the potential for short- and long-term impacts to soils.

5.3.7.3 Water Resources

Impacts to ephemeral drainages and washes in this area are expected to be reduced based on the selective location of towers (spanning of drainages), limiting the area of disturbance, and erosion control and reclamation measures presented in the COM Plan. Impacts to groundwater are not anticipated.

Floodplains

Although there are no designated floodplains along the realignment, tower structures will be placed to span ephemeral washes/drainages to avoid damage to towers from potential flooding events that may occur in this area.

5.3.8 Air Resources

Impacts to air quality would primarily be short-term as a result of the construction of the proposed facilities and operation and maintenance activities associated with the realignment are expected to be minimal. The construction of the facilities would produce two types of air pollution: fugitive dust from soil disturbance and exhaust emissions from construction vehicles and equipment.

A construction plan, including a schedule and the number and type of vehicles to be used during construction of the transmission line, is included in the COM Plan. Emissions from construction vehicles are not expected to exceed the air quality standards. Construction/maintenance activities will comply with the policies identified by Clark County (e.g., Dust Control Permit), the BLM and the BAPC. Dust and emission-control mitigation measures (including watering roads), mitigation measures limiting disturbance, and restoration and monitoring practices described in the COM Plan will further assist in reducing impacts to air quality along this portion of the alignment.

5.3.9 Hazardous Materials

No hazardous materials would be stored along the ROW in this area, and therefore the potential for impacts from hazardous materials exists primarily during construction. A spill prevention plan and reference to hazardous material regulations are documented in the COM Plan for the SWIP – Southern Portion. During construction of the transmission line, mitigation measures outlined in the COM Plan would be followed to ensure that vehicles will be kept in good working condition, and impacts from hazardous materials are minimized.

5.3.10 Socioeconomics and Environmental Justice

During construction of the transmission line, short-term beneficial impacts, such as increased revenue, could result from the use of local restaurants and hotels in the North Las Vegas area and the Town of Alamo by construction workers. The transmission line will be an unmanned facility located in Clark and Lincoln counties, and operation of the facilities will have minimal effects to Clark and Lincoln County employment, income, or social services. The area of the realignment is relatively unpopulated at this time and plans for the area (Coyote Springs Development) do not suggest the future presence of a high number of low-income groups, therefore, no environmental justice impacts would occur from the construction or operation of the transmission line in this location.

5.3.11 Areas of Environmental Concern

The Coyote Springs Realignment is located within a BLM and congressionally designated utility corridor that crosses a small portion of the Coyote Springs ACEC (designated to protect Mojave Desert Tortoises). However, the mitigation and compensation measures identified under the discussion of Threatened and Endangered Species in Section 5.3.1.5 of this EA and as presented in the BO will help to avoid and reduce potential impacts to the Mojave Desert Tortoise.

SECTION 6.0
POLICY AND RESOURCE UPDATES

6.1 INTRODUCTION

This section of the EA contains updates on the environmental setting of the SWIP – Southern Portion. These updates are based on key policy and/or resource changes that have occurred following the approval of the SWIP Final EIS, the ROD, and ROW Grant(s), including information associated with the following topics:

- Designated Critical Habitat for the Mojave Desert Tortoise
- Sage Grouse
- Migratory Birds
- Noxious and Invasive Weeds
- Environmental Justice
- VRM Classifications
- Cultural Resources
- Tribal Consultation
- Threatened and Endangered Species, Sensitive Species
- Clark County Ozone Non-Attainment

Following is an overview of the affected environment and environmental consequences regarding each of these topics (as appropriate). Additional information in support of this discussion may also be found in the SWIP – Southern Portion BA, BO and COM Plan.

6.2 DESIGNATED CRITICAL HABITAT FOR THE MOJAVE DESERT TORTOISE

6.2.1 Affected Environment

The USFWS designated Critical Habitat for the Mojave Desert Tortoise on February 8, 1994, including specific areas in California, Arizona, and Nevada, which are crucial to the recovery of the species. The final rule for the designation identified four units totaling 1.2 million acres in Nevada, where the majority of the Mojave Desert Tortoise habitat is managed by the BLM, under the Clark County MFP. The designation of Critical Habitat occurred shortly before approval of the SWIP ROD and ROW Grant, and biological opinions were prepared that evaluated the project's effect both on tortoises and their Critical Habitat. An updated BA was submitted to the USFWS in July 2007 and a BO, including an Incidental Take Statement, was issued by USFWS on December 20, 2007. The BO concluded that the SWIP is not likely to jeopardize the continued existence of the threatened desert tortoise (Mojave population). Within areas crossed by the transmission line, Critical Habitat is present in Clark County along both sides of U.S. Highway 93, extending from just north of Dry Lake to the Pahranagat Wash, in Lincoln County.

The BLM in the Southern Nevada District has prepared an RMP designating ACECs for Desert Tortoises, and, under the protection of the ACEC, certain activities are restricted in those areas. Along the transmission line ROW, the BLM has designated the Coyote Springs ACEC.

In July 2006, updated surveys were completed along the ROW, from the Harry Allen Substation, to a point just south of Delamar Lake, a distance of approximately 65 miles. Using a triangular transect method a total of 43.5 miles of transects were walked. Tortoises or sign thereof were found on nine of the transects. Two live tortoises were encountered, both on the same transect and both were in burrows. Otherwise, a total of 32 other observations of sign were tallied in this area.

6.2.2 Environmental Consequences

Direct impacts to designated Mojave Desert Tortoise habitat would result primarily from ground-disturbing construction activities. Impacts will be either temporary (short-term) or permanent (long-term) and they will occur within approximately 37.5 miles of USFWS Critical Habitat, and approximately 19.4 miles of the Coyote Springs ACEC that are crossed by the transmission line. The permanent and short-term disturbances would result in loss of vegetation, and therefore reduce the amount of forage available to tortoises. Table 6-1 includes disturbance areas for USFWS Critical Habitat and BLM ACECs. The disturbance is associated with access roads, tower sites, lay down sites, and pulling and tensioning stations. Permanent disturbances are largely associated with access roads.

TABLE 6-1
TOTAL SURFACE AREA DISTURBANCE IN DESERT TORTOISE HABITAT, ACRES

Disturbance Type	USFWS Designated Critical Habitat	BLM ACECs Coyote Springs
Temporary	238	126
Permanent	122	57
Total Disturbance	360	220

Activities associated with project construction could potentially injure or kill tortoises, and vehicles that stray from construction areas and roads may crush Mojave Desert Tortoises above ground or in their burrows. Tortoises also may be affected by removal from construction areas. In addition, they may be killed or injured by vehicles resulting from increased accessibility of the area during and after construction of the transmission line. Other potential impacts from the operation of the transmission line include the increase in accessibility from new access road construction, resulting in increased illegal collection of tortoises found along or near the roadways. The presence of transmission structures may allow for increased avian predation of Mojave Desert Tortoises by providing perches and nesting sites.

Mitigation measures designed specifically to avoid and reduce impacts to the Mojave Desert Tortoise have been developed as a part of the formal Endangered Species Act consultation and are reflected in the BO. Many of the measures duplicate those developed in the 1992 Draft EIS and previous BA/BO; however, other measures have been designed specifically to reduce or eliminate incidental take of tortoises. Examples include the use of steel, H-frame structures with perch deterrents at selective locations south of State Route 168 in the Coyote Springs ACEC, per agreement with BLM, habitat conservation, educational programs, guidelines for handling, holding, or relocating tortoises, assigning speed limits to construction sites, and monitoring towers for active nest sites, as well as numerous other measures identified in the SWIP – Southern Portion BA, BO and COM Plan. Compensation for the loss of Desert Tortoise habitat is required by applicable endangered species laws, regulations, and agency policies, including the BLM Desert Tortoise protection policies, and will be applied to the SWIP – Southern Portion. The decision regarding the distribution and appropriate use of mitigation remuneration for the

disturbance of Desert Tortoise habitat has been determined through consultations between the USFWS and BLM and is reflected in the stipulations and the terms and conditions contained in the BO. The BO is presented in Appendix B of the EA.

6.3 SAGE GROUSE

6.3.1 Affected Environment

Greater Sage Grouse leks are known to be present at several locations along the route of the SWIP – Southern Portion. Updated Sage Grouse surveys were conducted for the SWIP – Southern Portion and for the proposed ROW modifications during the spring of 2006. During the surveys, 69 males were observed in the Butte/Buck/White Pine Population Management Unit, including 16 males in the White River Valley Complex, and 53 males in the West Schell Complex. Two known active leks were located within 2 miles of the SWIP – Southern Portion.

6.3.2 Environmental Consequences

Impacts to the Greater Sage Grouse from the construction of the transmission line could include the potential loss of nests with eggs or young, loss of nesting habitat, loss of forage and insect prey, and increased potential for colonization by invasive plant species, resulting from ground-disturbing activities associated with clearing of vegetation for construction of access and spur roads, and tower sites. Potential impacts from the operation of the transmission line include new access roads, which could increase public access to areas that support Sage Grouse. Access roads, spurs and towers would be placed in wintering grounds, and towers could provide additional hunting perches for Sage Grouse predators, particularly Golden Eagles.

Mitigation measures that have been identified to reduce the potential effects to Sage Grouse include the modification of the location of the transmission line and the use of steel H-frame structures (including perch deterrents) in selective locations as agreed upon with the BLM and Nevada Department of Wildlife. Additional measures to mitigate impacts during construction include limiting long and short-term access, seasonal timing of construction, and the presence of Biological Monitors during construction activities. These measures are described in greater detail in the SWIP – Southern Portion COM Plan.

6.4 MIGRATORY BIRDS

6.4.1 Affected Environment

The MBTA is the domestic law that affirms or implements, the United States' commitment to the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over-utilization. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, any migratory bird, its eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11).

Virtually all of the bird species found within the SWIP transmission line ROW are protected by the MBTA.

6.4.2 Environmental Consequences

Potential impacts to migratory birds from the construction and operation of the transmission line are primarily associated with the potential for clearing and ground disturbance during critical breeding and nesting periods, which could result in the loss of bird nests, eggs, or young. Adult birds are normally able to avoid construction equipment, however, eggs or young in nests cannot. Other impacts to migratory birds include the potential for collision with transmission conductors or, more likely, the fiber optic shield wire (particularly along waterways, while limited, that may serve as migration corridors).

As stipulated in the COM Plan, mitigation measures, including the presence of a biological monitor during the migratory bird nesting season, will reduce these impacts. During construction, active nests that could potentially be affected will be identified, and a buffer zone around each nest will be flagged to keep personnel and equipment away from sensitive areas. In order to reduce the potential for collisions with migratory birds and, in particular with waterfowl and raptors, flight deterrent devices will be employed in key areas, as specified in the COM Plan.

6.5 NOXIOUS WEEDS AND INVASIVE SPECIES

6.5.1 Affected Environment

Noxious weeds are invasive, non-native species that tend to spread rapidly and often displace native plant species or bring about changes in species composition, community structure, and ecological function. Noxious weeds may compete with native species for critical resources including water, nutrients, and space. Such competition may alter the dynamics of the native plant community, potentially leading to a monoculture of the noxious species. Noxious weeds also may alter soil chemistry in such a manner as to preclude germination or seedling establishment by native species. Moreover, noxious weeds tend to thrive in disturbed areas, such as at electrical transmission tower sites, laydown areas, storage yards, and pulling and tensioning sites. Noxious weeds are formerly listed and managed by the Nevada Department of Agriculture.

The noxious weed inventory for the SWIP – Southern Portion included (1) the identification of weed species that are designated noxious, as defined by the Nevada Department of Agriculture, and which have the potential to occur within the area affected by the project; and (2) the gathering of information to identify specific noxious weed populations in the project area, including preconstruction surveys along the project ROW. These surveys were conducted from April through June 2006 by Tri County Weed, as recommended by the BLM, Ely District Office.

A complete listing of the noxious weeds identified through these surveys is presented in Table 6-2. In addition, information on noxious weed occurrences within the ROW area, including the location and extent of infestations, was also gathered from the BLM, Ely District Office in the form of a GIS data layer. This inventory did not indicate any additional noxious weed species located within the project corridor, however, it is likely that populations of other noxious species

that were not found within the survey area may occur in the vicinity, and these species could become established in disturbed areas on the ROW following construction.

TABLE 6-2
NOXIOUS WEED SPECIES FOUND WITHIN PROJECT CORRIDOR

Species	Common Name	Number of Locations
Acroptilon repens	Russian knapweed	1
Brassica tournefortii	Sahara mustard	1
Cirsium vulgare	Bull thistle	4
Tamarix ssp.	Salt cedar	5

Red brome (*Bromus rubens*), cheatgrass (*Bromus testorum*), and Chilean chess (*Bromus trinii*) have been identified by the BLM as invasive species of concern. In conjunction with the noxious weed and rare plant surveys conducted for the SWIP – Southern Portion, the identification of invasive species in addition to the noxious weeds identified in Table 6-2 was generally noted. These were often located in association with existing access roads and other previously disturbed areas in the vicinity of the transmission line where evident. Based on the arid conditions that were encountered during these surveys, many of the anticipated invasive species may not have been identified.

6.5.2 Environmental Consequences

The introduction and spread of invasive and nonnative plant species (including noxious weeds) contributes to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, loss of wildlife habitat, and, in some instances, may pose a threat to human health and welfare. The Carlson-Foley Act (Public Law 90-583) and the Federal Noxious Weed Act (Public Law 93-629) direct weed control on public land. Executive Order 13112, Invasive Species, was authorized to prevent the introduction of invasive species, provide for their control, and to minimize the impacts caused by these species. NRS 555, Control of Insects, Pests, and Noxious Weeds, provides information regarding the designation and eradication of, and inspection for, noxious weeds within the state of Nevada (Ely PRMP/EIS).

Construction of the transmission line and substation will require new access roads resulting in disturbance at the substation site, tower pad sites and pulling and tensioning areas. Berms created by access road construction can represent disturbed soils, which may provide suitable habitat for noxious weeds including those listed in Table 6-2 and other invasive species previously described. Construction activity, including movement of heavy equipment and light trucks, also may disturb soil and provide weed habitat. Seeds of noxious weeds and invasive species also may be present in the seed bank and soil disturbance can have the effect of "releasing" these seeds possibly leading to local infestations. There also is the potential for weeds to be introduced into the project area by construction vehicles.

Based on the results of the noxious weed survey, and from information provided by the BLM, a noxious weed risk assessment was completed for the project indicating that the construction of the SWIP – Southern Portion represents a low to moderate level of risk (BLM Noxious Weed Risk Assessment, 2-8-07). Under a "moderate" designation control measures are important to prevent the spread of noxious weeds on disturbed sites, preventative management measures are required to reduce the risk of introduction or spread of noxious weeds into the area, and monitoring is required for up to three consecutive years to provide for control of newly

established populations of noxious weeds and follow-up treatments for previously treated infestations.

A comprehensive Noxious Weed Management Plan (part of the COM Plan) has been developed with the goal of keeping the ROW free from noxious weeds. Adherence to the specific weed control mitigation measures in this plan, including measures identified in the Las Vegas BLM Noxious Weed Plan, will minimize the introduction and spread of noxious and invasive weeds during and following construction of the SWIP – Southern Portion. Early detection and rapid response have been important considerations in the development of this plan which includes (1) identification of problem areas, (2) preventative measures that will be implemented to prevent the spread of these and other noxious weeds during construction, (3) treatment methods during construction and post-construction, and (4) reclamation and post-construction monitoring. Included in this plan are specific measures that address the eradication of existing noxious weed populations, measures to minimize the potential for the spread of noxious weeds through off-site power washing of equipment/vehicles and on-site cleaning of equipment/ vehicles with compressed air, and the use of weed free materials during restoration (e.g., hay or straw). The application and use of pesticides for the control of noxious weeds is also addressed in this plan, including daily reporting requirements. Pesticide use reports shall include details such as treatment rate, approximate acreage treated, target species, and weather conditions on the day of the treatment.

In addition, as a part of the ROW Preparation, Rehabilitation, and Restoration Plan (included in the COM Plan), reseeding practices and seeding mixtures to be used in areas of temporary disturbance will be coordinated with a BLM Botanist in order to determine the source type and quantity of seed mixtures and seeding locations. In this regard, mixtures that discourage the establishment of invasive and noxious weeds will be considered, as appropriate.

Follow-up long-term monitoring is an important measure to prevent the further spread of any populations of noxious weeds in the project ROW. Weed monitoring will be conducted per the monitoring schedule, and as prescribed in the Noxious Weed Management Plan as approved by BLM.

The construction contractor and/or owner will implement noxious weed controls measures in accordance with existing regulations, BLM requirements, and as specified in the Noxious Weed Management Plan.

6.6 ENVIRONMENTAL JUSTICE

6.6.1 Affected Environment and Environmental Consequences

As designated by Executive Order 12898 of February 11, 1997, all federal actions must address and identify as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. The criterion for a finding of possible environmental justice issues is the occurrence of more than 50 percent of the population being minority or low-income in the proposed project area of influence.

The SWIP – Southern Portion is located within a sparsely to unpopulated area, and the Coyote Springs development is expected to be a master-planned community; therefore there are no

current or expected occurrences of disproportionately high percentages of low-income populations who might be impacted from the proposed project.

6.7 VISUAL RESOURCE MANAGEMENT CLASSIFICATIONS

6.7.1 Affected Environment

Revisions to the VRM designations within the Southern Nevada District Office have occurred since the approval of the SWIP Final EIS and ROD (1994), including portions of the Coyote Spring Valley and Harry Allen Substation areas that have been modified from a VRM Class IV (allowing for major modification) to a Class III (partial retention).

6.7.2 Environmental Consequences

The effects of the revisions to the VRM designations within the Southern Nevada District are described in Section 3.6.1 and consistency with the revised designation is assessed in Section 4.7.1 for the ROW Extension to the Harry Allen Substation, and in Sections 5.2.5 and 5.3.5 for the Coyote Springs Realignment. In these and other areas in the Southern Nevada District, mitigation measures, including the use of dulled metal steel structures and non-specular conductors, will reduce visual impacts and allow for conformance with these VRM objectives.

6.8 CULTURAL RESOURCES

Cultural resource surveys have been conducted for the length of the SWIP – Southern Portion and are being documented in a cultural inventory survey report. An HPTP is also being prepared for the project. These documents will be submitted to the SHPO and BLM, and appropriate mitigation measures will be included in the COM Plan.

6.9 TRIBAL CONSULTATION

While the transmission line does not cross any Native American Reservations, the BLM has, and will continue to address NHPA Section 106 Consultation, including consultation with potentially affected Native American Tribes, per the Executive Order on Tribal Consultation. This consultation will include consideration for the extension to Harry Allen, Coyote Springs Realignment, and the Thirtymile Substation Realignment.

6.10 THREATENED AND ENDANGERED SPECIES/SENSITIVE SPECIES

6.10.1 Affected Environment

As described in the SWIP BA and BO, federally designated threatened and endangered species that could be affected by the project include the Bald Eagle, the Southwest Willow Flycatcher, and the Mojave Desert Tortoise (as previously described). In addition, there are several special status species that possess a level of protection or concern in the State of Nevada that could potentially be found in the project area. Both the threatened and endangered species and

sensitive species are discussed in detail in the SWIP BA (T&E Species), and the appendix to the BA (Non-Listed Sensitive Species).

6.10.2 Environmental Consequences

Direct and indirect effects identified for the threatened and endangered species, exclusive of the Desert Tortoise, are anticipated to range from minimal to non-existent. Concerns associated with effects to other sensitive species would primarily be related to vegetation clearing and ground disturbance during the construction of project facilities. The locations of sensitive species (e.g., Las Vegas Valley buckwheat and three-cornered milkvetch) are presented in the COM Plan. Mitigation measures including selective tower placement, the use of alternative tower types, seasonal timing of construction, limiting ground disturbance and permanent access, and compliance with the Flagging, Fencing, and Signage Plan (incorporated as part of the COM Plan), will help reduce potential impacts to sensitive species, as described in the SWIP – Southern Portion BA, BO and COM Plan.

6.11 CLARK COUNTY OZONE NON-ATTAINMENT

6.11.1 Affected Environment

The EPA has established National Ambient Air Quality Standards for certain pollutants. The attainment status for the proposed project area was examined in consideration of federal designations contained in 40 CFR §81.329. The SWIP – Southern Portion crosses two hydrologic basins in Clark County which the EPA has classified as non-attainment for the eight-hour ozone standard. These include basin number 216 (Garnet Valley [Dry Lake]) and basin number 217 (Hidden Valley [North]).

The Clark County Department of Air Quality and Environmental Management administers the surface area disturbance permitting for Clark County through the issuance of a Dust Control Permit. A Dust Control Permit is required for projects that are greater than or equal to 0.25 acres; require trenches equal to or greater than 100 feet in length; or include the mechanical demolition of any structure larger than or equal to 1,000 square feet (Air Sciences Inc., 2007).

6.11.2 Environmental Consequences

Impacts to air quality would primarily be short-term as a result of the construction and operation and maintenance activities of the transmission line. The construction of the facilities would produce two types of air pollution: fugitive dust from soil disturbance and exhaust emissions from construction vehicles and equipment. No impacts to ozone levels in the non-attainment areas are expected as there will be insignificant quantities of volatile organic compounds and oxides of nitrogen (the precursors to ozone) emitted from construction vehicles and equipment.

A construction plan, including a schedule and the number and type of vehicles to be used during construction of the transmission line, is included in the COM Plan. Emissions from construction vehicles are not expected to exceed air quality standards. Construction/maintenance activities will comply with the policies identified by Clark County (e.g., Dust Control Permit), the BAPC, and the BLM. Dust and emission control mitigation measures (including watering roads),

mitigation measures limiting disturbance, and restoration and monitoring practices described in the COM Plan will further assist in reducing impacts to air quality.

SECTION 7.0
CUMULATIVE IMPACTS ASSESSMENT

7.1 CUMULATIVE IMPACTS ASSESSMENT

This section addresses the cumulative impacts associated with the ROW modifications considered in this EA. Cumulative impacts result, "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

The ROW modifications addressed in this section include the Proposed Action (extension of the ROW to the Harry Allen Substation in Dry Lake Valley and the shifting of the granted Robinson Summit Substation northwest to the Thirtymile Substation site), and the realignment of the transmission line ROW in Coyote Spring Valley under LCCRDA from the east to the west side of U.S. Highway 93.

The methodology used to analyze the potential cumulative impacts included identification of the affected environment and environmental consequences associated with each modification individually (presented in Sections 3.0, 4.0, and 5.0 of this EA), and the cumulative effects associated with past, present and future conditions relevant to these modifications when considered collectively.

The following sections provide (1) a summary description of the general existing and planned conditions associated with each of the modified areas, (2) a description of the specific past, present, and future actions most relevant to each modification, and (3) the cumulative effects anticipated for these modifications.

The area of cumulative impact directly reflects each modification, the resources affected (e.g., visual resources, biological resources) and the setting. For the purposes of this cumulative assessment a general area of affect has been identified for each modification to assist in the discussion of impacts. These areas have been defined by topography and the presence of other existing and planned facilities that most directly effect and/or contribute to the cumulative effects associated with each modification. Each area is described below and illustrated on Figures 9 through 11.

7.1.1 Right-of-Way Extension to the Harry Allen Substation

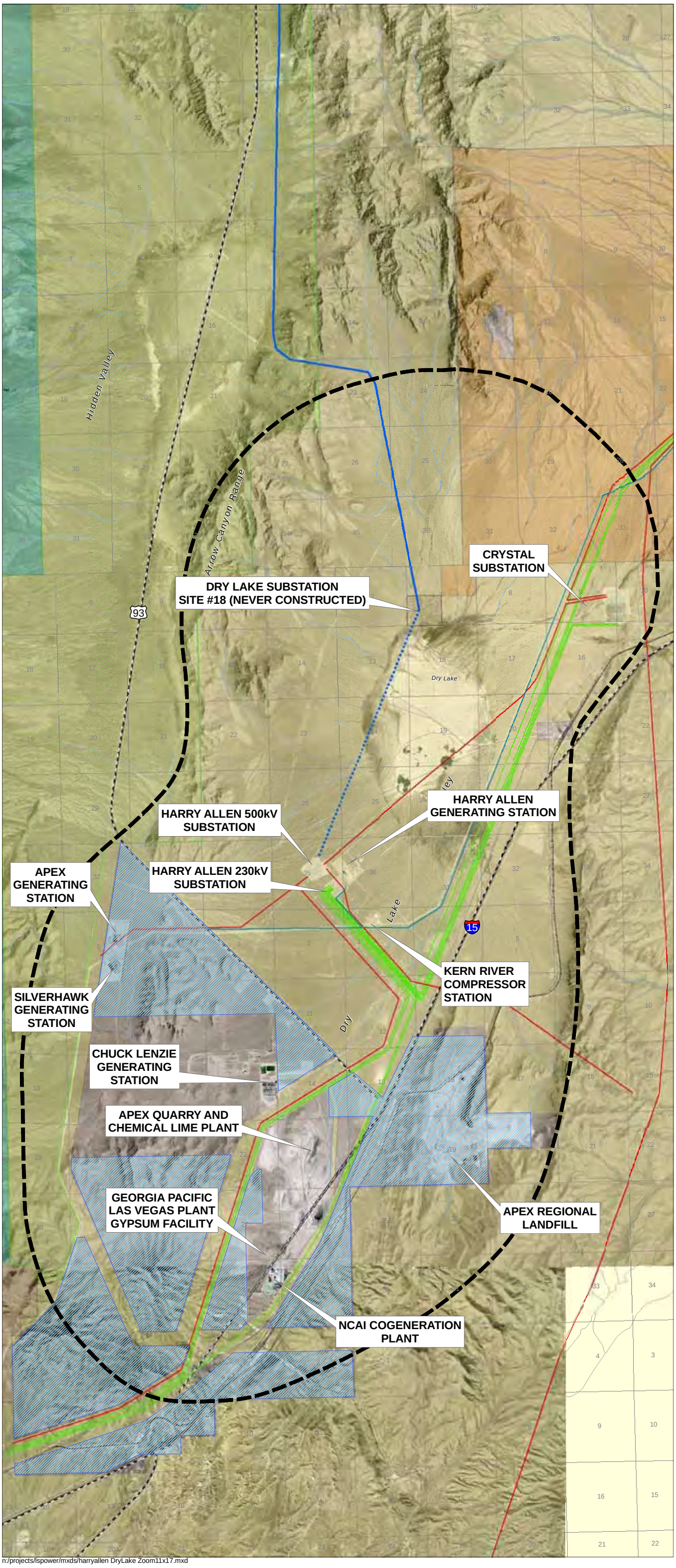
The general area of cumulative effect identified for the extension of the ROW to the Harry Allen Substation is defined on the west by the Arrow Canyon Range, on the east by the Union Pacific Railroad (UPRR) and Dry Lake Range, on the north by the Moapa Indian Reservation and the Crystal Substation, and to the south by the Apex Industrial Park.

Harry Allen Substation Area

Area of Potential Cumulative Effects

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC



General Area of Effect

Land Jurisdiction

- Bureau of Land Management
- Moapa Paiute Indian Reservation
- Private
- Apex Industrial Park - Industrial District
- ACEC

Transmission Facilities

- SWIP 500kV Transmission Line Right-of-Way
- Proposed SWIP 500kV Transmission Line Right-of-Way Extension
- Existing 500kV Transmission Line
- Existing 345/230kV Transmission Line
- Kern River Natural Gas Pipeline

General Reference Features

- Interstate/Highway
- Secondary Road
- Railroad
- Section Lines
- Creek/Wash

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
USGS, 30 meter Digital Elevation Models
SWIP EIS 1994
Existing transmission lines for general reference only

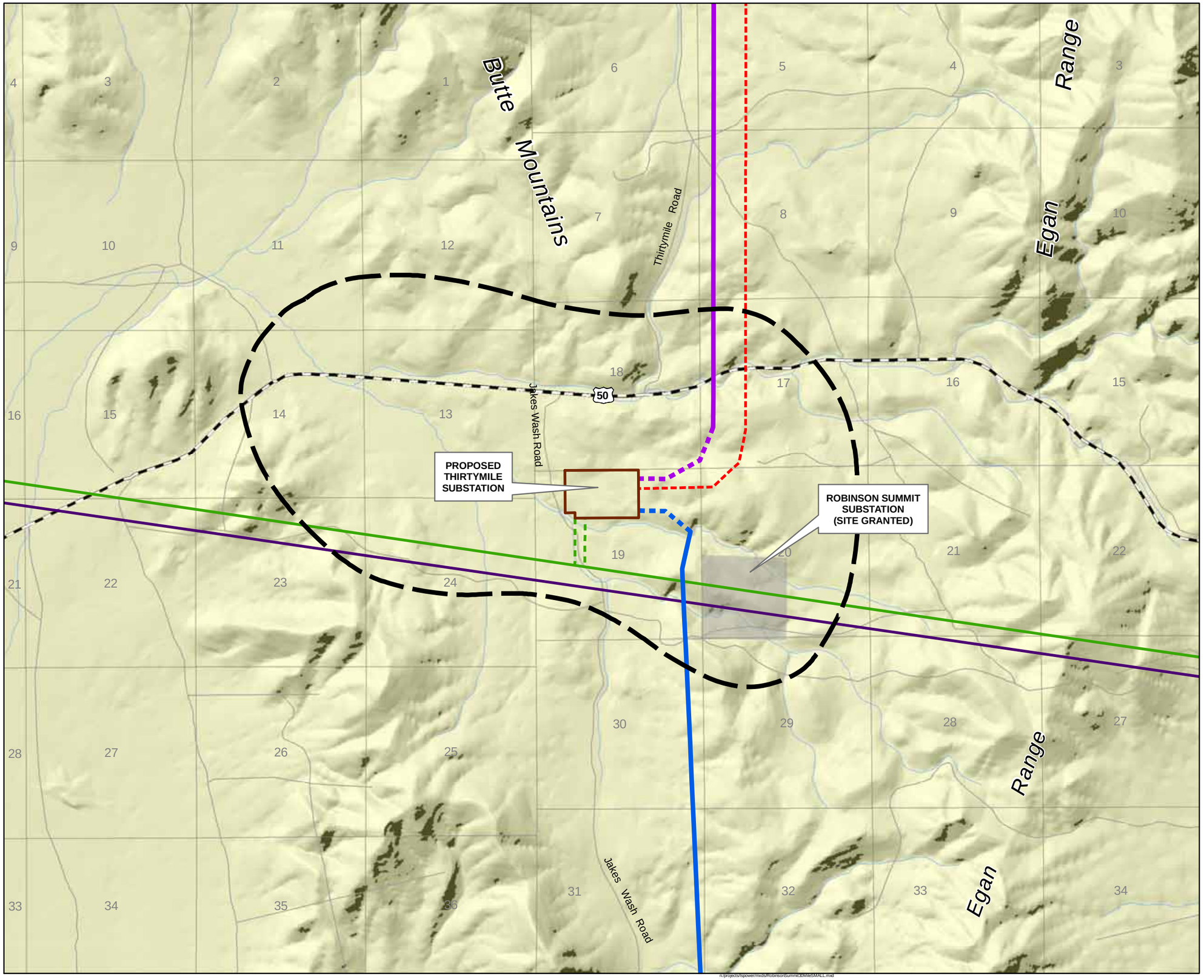
0 0.5 1 2 Miles

epg

July 2008

Figure 9

n:/projects/lspower/mxds/harryallen DryLake Zoom11x17.mxd



Thirtymile Substation Area

Area of Potential Cumulative Effects

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC

General Area of Effect

Land Jurisdiction
- Bureau of Land Management

Electrical Transmission Facilities
- SWIP - Southern Portion 500kV Transmission Line Right-of-Way
- Proposed SWIP - Southern Portion 500kV Transmission Line Interconnection
- SWIP - Northern Portion 500kV Transmission Line Right-of-Way
- Proposed SWIP - Northern Portion 500kV Transmission Line Interconnection
- Proposed WPES 500kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Proposed 345kV Transmission Line Interconnection

General Reference
- Interstate/Highway
- Secondary Road
- Section Lines
- Creek/Wash

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
Existing transmission lines for general reference only

0 0.25 0.5 1
Miles

epg

July 2008

Figure 10

Coyote Springs/Aerojet Corridor Area

Area of Potential Cumulative Effects

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC

Area of Potential Cumulative Effect

Land Jurisdiction
- Bureau of Land Management
- U.S. Fish and Wildlife Service
- Private
- ACEC

Existing Land Use
- Industrial - Western Elite Landfill and Quarry

Planned Land Use
- Coyote Springs Master Planned Community
- Coyote Springs Resource Management Area
- Coyote Springs Proposed Detention Basin Area

Electrical Transmission ROWs and Facilities
- Original SWIP ROW
- Realigned SWIP ROW
- Lincoln County Power District 69kV Transmission Line (Existing)

General Reference Features
- County Boundary
- Interstate/Highway
- Primary Roads
- Secondary Roads
- Creek/Wash

REGIONAL LOCATION



Sources
BLM - Nevada State Office, Land Ownership
USGS, 30 meter Digital Elevation Models
Ely RMP July 2005

0 0.5 1 2 Miles

epg

July 2008

Figure 11

n:/projects/lspower/mxds/BLM aerojet Coyote Spr.mxd

7.1.2 Thirtymile Substation

The general area of cumulative effect identified for the Thirtymile Substation has been defined by the foothills of the Egan Range and Butte Mountains that enclose the substation site, including the previously approved Robinson Summit Substation site and portions of U.S. Highway 50, Jakes Wash Road, and Thirtymile Road.

7.1.3 Coyote Springs Realignment

The general area of cumulative effect identified for the Coyote Springs Realignment includes Coyote Spring Valley and is defined on the west by the Sheep Range and Desert National Wildlife Range and on the east by the Delamar Mountains, Meadow Valley Mountains, and the Arrow Canyon Range. To the north, the area is defined by the upper reaches of the Pahranagat Wash, and to the south in the general vicinity of Sawmill Road.

7.2 EXISTING AND PLANNED CONDITIONS

7.2.1 Right-of-Way Extension to the Harry Allen Substation

This proposed modification consists of a 3.8 mile extension of the previously approved ROW, which is necessary to interconnect at the Harry Allen Substation. Approximately 36 acres of land will be disturbed during the construction of the 15 additional transmission structures required for the extension. Of this amount, approximately 11 acres will be permanently displaced for access roads and tower locations in comparison to the approximate 80 acres that would have been required if the Dry Lake Substation would have been constructed. The remaining 25 acres will be restored as specified in the COM Plan. Improved access associated with the construction will not cross over the Arrow Canyon Range and into Hidden Valley. The extension is located in an area north of Las Vegas in the Dry Lake Valley that has been, and continues to be, highly modified by the presence of energy-related facilities, including numerous transmission lines into existing substations, several generation facilities, and gas transmission pipelines as listed in Table 7-1. In particular, in-and-around the Apex Industrial Park, a total of 21 energy, transportation, and/or industrial facilities have altered the setting of the local area of cumulative effect. These modifications, virtually all of which underwent NEPA review, are generally illustrated in Figure 9.

7.2.2 Thirtymile Substation

Construction of the Thirtymile Substation and the related transmission interconnections will result in approximately 19 acres of temporary and 81 acres of permanent disturbance which is approximately the same amount of disturbance that would be associated with the currently approved substation site. With approval of this substation site the previously approved substation would not be built. This disturbance will be within, and immediately adjacent to the SWIP and Falcon-to-Gonder designated utility corridors in a rural area in the western foothills of the Egan Range characterized by Great Basin sage scrub. Short and long-term access to the substation will be via an existing road resulting in negligible change to the environment. The Gonder-to-Machacek 230kV and the Falcon-to-Gonder 345kV transmission lines pass approximately ¼ mile south of the Thirtymile Substation site and U.S. Highway 50 passes

approximately ½ mile to the north, as illustrated in Figure 10. Other planned, major projects in this area are presented in Table 7-1. As illustrated in this table, and addressed in other NEPA documents up to an additional four 500kV transmission lines may be developed within the SWIP designated utility corridor in this area including future lines associated with the WPES and other transmission lines currently proposed by Nevada Power Company/Sierra Pacific and TransCanada.

TABLE 7-1
EXISTING CONDITIONS AND
REASONABLY FORESEEABLE FUTURE ACTIONS

Project	Location	Description	Status*
ROW Extension to the Harry Allen Substation			
Southwest Intertie Project 500kV Transmission Line and Substations	Midpoint, Idaho to Dry Lake Valley, Nevada	500kV transmission line with interconnections into Midpoint, Robinson Summit and Dry Lake Substations	P
Harry Allen 230kV and 500kV Substations/Switchyards	Apex Industrial Park	Two substations are located in this area in the vicinity of the Harry Allen Generation Station	P
Crystal Substation	Dry Lake Valley, north of Harry Allen Substations	500kV – 230kV substation	P
Kern River Natural Gas Pipeline	West of Interstate 15	Natural gas pipeline and compressor station	P
Harry Allen-to-Mead 500kV Transmission Line – First Circuit	Between Mead Substation, located south of Lake Mead and the Harry Allen Substation, northeast of Las Vegas	500kV transmission line	P
Harry Allen-to-Mead 500kV Transmission Line – Second Circuit	Parallel to First Circuit, and in some areas sharing towers with First Circuit	500kV transmission line	F
Harry Allen-to-Northwest and Harry Allen-to-Crystal 500kV Transmission Lines	Between Harry Allen, Chuck Lenzie Power Plant and the existing Northwest and Crystal Substations	Two 500kV transmission lines	P
Harry Allen-to-Apex and Silverhawk 500kV Transmission Lines	Between Harry Allen and the Apex and Silverhawk Generating Stations	500kV transmission line	P
Harry Allen-to-Pecos, Harry Allen-to-Northwest, and Harry Allen-to-Reid Gardner Transmission Lines	Between Harry Allen Substation, Pecos, and Reid Gardner Substations	230kV transmission lines	P
Harry Allen-to-Red Butte Transmission Line	Between Harry Allen Substation and Red Butte Substations	345kV transmission line	P
Georgia Pacific Las Vegas Plant, Gypsum Division	Apex Industrial Park	Gypsum wallboard manufacturing facility, approximately 100 acres	P
Nevada Cogen #1 Chevron and Northern Star Generating	Apex Industrial Park	An 85 MW natural gas plant that provides electrical power to Nevada Power and thermal heat to Georgia Pacific, for gypsum board production	P
Apex Generating Station, LS Power	Apex Industrial Park	A 550 MW natural gas, combined cycle power plant; approximately 200 acres	P
Harry Allen Generation Station, NPC	Highway 93 and Interstate 15	A 150 MW natural gas, simple cycle peaking power plant; planned expansion includes a 500 MW natural gas, combined cycle unit	P, F

TABLE 7-1 EXISTING CONDITIONS AND REASONABLY FORESEEABLE FUTURE ACTIONS			
Project	**Location**	**Description**	**Status***
Chuck Lenzie Generating Station, NPC	Apex Industrial Park	A 1,200 MW natural gas, combined cycle power plant	P
Silverhawk Power Station, NPC/Southern Nevada Water Authority (SNWA)	Apex Industrial Park	A 570 MW natural gas, combined cycle power plant	P
Reid Gardner Power Plant Nevada Power	Near the Town of Moapa, off of the Moapa Paiute Reservation	A 605 MW coal-fired power plant	P
Apex Regional Landfill, Republic Services	Apex Industrial Park	Municipal landfill permitted for 1,100 acres, currently using about 250 acres	P
Apex Landfill Pit Las Vegas Paving	Apex Industrial Park	Sand and gravel operations covering about 300 acres	P
Apex Quarry and Plant, Chemical Lime Company and Granite Construction	Apex Industrial Park	Limestone mining, milling, and processing operations by Chemical Lime, granite crushes overburden; approximately 1,500 acres	P
Interstate 15	Diagonally through the southeast portion of Nevada	Four-lane interstate highway and easement	P
UPRR	Generally parallels Interstate 15 through Dry Lake Valley	Mainline railroad track, access road, and future addition of a second track	P, F
U.S. Highway 93	Approximately 1 mile south	US Highway	P
Coyote Springs Realignment			
Southwest Intertie Project 500kV Transmission Line and Substations	Midpoint, Idaho to Dry Lake Valley, Nevada	500kV transmission line with interconnections into Midpoint, Robinson Summit and Dry Lake Substations	P
MCI Fiber Optic Line	Lincoln and Clark counties (located within BLM utility corridor)	Fiber optic line	P
Lincoln County Power District 69kV transmission line	Lincoln and Clark counties (located within BLM utility corridor)	69kV transmission line	P
SNWA Water Pipeline	White Pine, Lincoln, and Clark counties (located within BLM utility corridor)	Water pipeline system	F
SNWA 230kV Transmission Line	White Pine, Lincoln, and Clark counties (located within BLM utility corridor)	230kV transmission line	F
Lincoln County Power District 2x138kV Transmission Line	Lincoln and Clark counties (Located within BLM utility corridor)	2x138kV transmission line, single - circuit, or 1x138 transmission line double-circuit	F
SPPC/NPC 500kV Transmission Line (1 of 2)	White Pine, Lincoln, and Clark counties (located within BLM utility corridor)	500kV transmission line	F
SPPC/NPC 500kV Transmission Line (2 of 2)	White Pine, Lincoln, and Clark counties (located within BLM utility corridor)	500kV transmission line	F
TransCanada (Northern Lights) 500kV Transmission Line	Eastern Montana to Las Vegas, Nevada (located within BLM utility corridor)	500kV DC transmission line	F
TransCanada (Northern Lights) 500kV Transmission Line	Wyoming to Las Vegas, Nevada (located within BLM utility corridor)	500kV DC transmission line	F

TABLE 7-1 EXISTING CONDITIONS AND REASONABLY FORESEEABLE FUTURE ACTIONS			
Project	**Location**	**Description**	**Status***
Coyote Springs/ Pardee Homes Development	State Road 168 and Highway 93	Housing and golf development	F
BLM Utility Corridor	Coyote Spring Valley	Corridor established through LCCRDA for linear/utility facilities	P
Coyote Spring Valley Well and Moapa Transmission Project	Coyote Spring Valley	Groundwater test well and pipeline	P
U.S. Highway 93	North-South corridor through eastern side of Nevada	Two-lane U.S. highway	P
Western Elite Landfill and Quarry	West of Highway 93 in Lincoln County	Landfill and quarry operation	P
Thirtymile Substation			
Southwest Intertie Project 500kV Transmission Line and Substations	Midpoint, Idaho to Dry Lake Valley, Nevada	500kV transmission line with interconnections into Midpoint, Robinson Summit and Dry Lake Substations	P
WPEA/GBT 500kV Transmission Line	White Pine County (located within BLM utility corridor)	500kV transmission line	F
SPPC/NPC 500kV Transmission Line (1 of 2)	White Pine, Lincoln, and Clark counties (located within BLM utility corridor)	500kV transmission line	F
SPPC/NPC 500kV Transmission Line (2 of 2)	White Pine, Lincoln, and Clark counties (located within BLM utility corridor)	500kV transmission line	F
TransCanada (Northern Lights) 500kV Transmission Line	Eastern Montana to Las Vegas, Nevada (located within BLM utility corridor)	500kV DC transmission line	F
TransCanada (Northern Lights) 500kV Transmission Line	Dillon, Montana to Las Vegas, Nevada (located within BLM utility corridor)	500kV DC transmission line	F
BLM Utility Corridor	Follows the SWIP ROW Grant	Multiple interstate high voltage electric transmission lines, substations, and gas pipelines; future addition of new lines	P, F
Gonder-to-Machacek 230kV Transmission line	Approximately ¼ mile south of the proposed Thirtymile Substation site	230kV transmission line	P
Falcon-to-Gonder 345kV Transmission line	Approximately ¼ mile south of the proposed Thirtymile Substation site	345kV transmission line	P
U.S. Highway 50	Approximately ½ mile north of the proposed Thirtymile Substation site	Two-lane U.S. highway	P
***P = Past or Present, F = Future**			

7.2.3 Coyote Springs Realignment

In addition to the Proposed Action, this EA also evaluated the realignment of approximately 25 miles of the transmission line ROW in Coyote Spring Valley. The LCCRDA of 2004 mandated relocation of the existing SWIP designated utility corridor from the east to the west side of U.S. Highway 93 in the Coyote Springs area, and realignment of the SWIP ROW to be within the relocated utility corridor. LCRRDA also specified that a proposed SNWA/Lincoln County Water

District water pipeline be sited in the relocated utility corridor. A primary purpose of designated utility corridors is to reduce the level of cumulative impacts through the consolidation of ROWs. Approximately 237 acres of land will be disturbed during construction of the realigned portion of the SWIP transmission line. Of this amount, approximately 103 acres may be permanently displaced for access roads and at tower sites. The remaining 134 acres would be restored as specified in the COM Plan. As presently proposed by other utilities, up to a total of six additional transmission lines (or circuits) are to be located within the SWIP designated utility corridor in this area, as well as a proposed water pipeline as presented in Table 7-1.

As illustrated in Figure 11, in addition to the existing and planned utilities in this area, the Western Elite Landfill and Quarry (industrial area) is located to the west of U.S. Highway 93, and to the east side of the highway in this area is the Coyote Springs Planned Development. Components of this proposed development include single and multi-family residential areas (up to 111,000 residential dwelling units), commercial and light industrial areas, multiple golf courses, hotels and resorts, open space and a resource management area. A DEIS was completed for this project in November 2007. Under the preferred alternative, approximately 21,454 acres would be developed over the course of 40 years, including 7,548 acres that will be dedicated as the Coyote Springs Resource Management Area. This planned development also includes the construction of flood detention basins totaling approximately 3,331 acres. Of these, eight detention basins with trash racks and sediment storage for off-site storm flows could be built west of U.S. Highway 93 within the BLM utility corridor (up to 244 acres).

7.3 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Table 7-1 contains a list of past, present and reasonably foreseeable future actions in the region which, due to general proximity, could potentially have cumulative impacts with each of the SWIP ROW modifications considered in this EA. Following this table is a description of other projects or planning actions that are known to have included the SWIP Project in the documentation of cumulative effects in their respective NEPA documents.

In addition to the analysis completed in the SWIP EIS, several other NEPA documents have been completed which include the SWIP in their cumulative analyses, including the following:

- Harry Allen-to-Crystal 500kV Transmission Line - EA
- Harry Allen 500kV Substation - EA
- Harry Allen-to-Northwest 500kV Transmission Line - EA
- Chuck Lenzie (formally Duke) Natural Gas Generating Station - EA
- Silverhawk Generating Station - EA
- Harry Allen-to-Lenzie 500kV Transmission Line - EA
- Harry Allen-to-Mead 500kV Transmission Line - EA
- Harry Allen-to-Harvey Well Water Pipeline - EA
- Kern River II Natural Gas Pipeline - EIS
- Falcon-to-Gonder 345kV Transmission Line - EIS
- Ely BLM PRMP - EIS
- White Pine Energy Station - DEIS

With respect to the WPES, the power plant proposed by Great Basin's affiliate WPEA, the WPES DEIS evaluates the SWIP as both a cumulative action and a connected action. This is because full build-out of the proposed WPES (i.e., to approximately 1600 MW) is unlikely to

occur without construction of all or a portion the SWIP or a similar transmission project (see WPES DEIS at pg. 2-39). On the other hand, the SWIP is not dependent on the WPES because, as previously noted, the SWIP would serve other independent functions (e.g., interconnect existing utility grids in northern and southern Nevada, increase regional transmission system reliability, provide transmission service for other generation including proposed or potential renewable energy projects) and may be constructed by Great Basin, in whole or in part, in the absence of the WPES.

7.4 ANALYSIS OF THE CUMULATIVE EFFECTS

The following sections provide a description of the potential cumulative effects when considering the modifications collectively with respect to specific environmental resources, followed by a summary of overall cumulative environmental effects. In particular, the potential effects associated with multiple transmission lines and other linear facilities currently planned within the designated BLM utility corridor are addressed.

7.4.1 Biological Resources

Cumulative effects to biological resources are generally additive and would be proportional to the amount of ground disturbance within specific project areas. In particular, the cumulative effect of several projects constructed in the same area such as the BLM utility corridor (i.e., SWIP, NPPC/SPPC and TransCanada 500kV transmission lines) at the local level is likely to produce impacts that will vary to some extent depending upon proximity of additional lines. Increasing numbers of transmission lines, roads and development (e.g., Coyote Springs) in areas of wildlife habitat are an important consideration. Such impacts can be minimized through the concentration of linear projects (transmission lines, pipelines, etc.) into designated corridors with the goal of reducing habitat fragmentation. Following is a description of these effects associated with each of the modifications.

While it is assumed that the effects of multiple transmission lines would “multiply” to some extent the native habitat acreage disturbed or lost, access roads developed in association with the extension of the transmission line to Harry Allen Substation and the Coyote Springs Realignment may serve more than one transmission line project and would therefore minimize the requirements for new access in certain areas resulting in reduced ground disturbance. Construction of the facilities associated with the ROW extension to Harry Allen Substation will result in a total of approximately 25 acres of temporary disturbance and 11 acres of permanent disturbance and the Coyote Springs Realignment will result in a total of approximately 134 acres of temporary disturbance, and approximately 103 acres of permanent disturbance. In these modified locations, areas not permanently displaced by project facilities and long-term access will be restored and/or closed in accordance with direction from the BLM as presented in the COM Plan, and in the specific areas of the extension of the ROW to Harry Allen, and the realignment in Coyote Springs, cacti and yucca will be salvaged and replanted off of impact areas for later replacement. It is expected that the development of future facilities in the area will include similar restoration requirements to help minimize the cumulative effects associated with the loss of vegetation and habitat in these two areas of modification. This most recently includes plans such as those proposed for the Coyote Springs Planned Development which include the dedication of 7,548 acres as a resource management area.

Ground disturbance associated with the ROW extension to Harry Allen Substation and the Coyote Springs Realignment could also increase the potential for the spread of noxious and invasive weeds, as could other projects in the immediate area including future transmission lines (see Table 7-1) and the Coyote Springs Development. Adherence to the specific weed control measures identified in the Noxious Weed Management Plan and the ROW Preparation, Rehabilitation and Restoration Plan (part of the COM Plan, and discussed in Section 6.5 of this EA), including measures identified by the BLM will minimize the introduction and spread of noxious and invasive weeds during, and following, construction. The adherence of future projects in the area to similar standards will help minimize cumulative effects with respect to the introduction and spread of noxious weeds.

The Mojave Desert Tortoise is known to be present along the ROW extension to the Harry Allen Substation, and in the area of the Coyote Springs Realignment where the transmission line would be located in some areas designated as Critical Habitat. The Clark County Department of Comprehensive Planning and USFWS have addressed cumulative effects to biological resources from development and construction activities on a county-wide basis, and the Final Multi-Species Habitat Conservation Plan (prepared by Clark County; the Cities of Las Vegas, North Las Vegas, Boulder City, Mesquite, and Henderson; and the Nevada Department of Transportation) address sensitive and protected biological resources and require mitigation for the effects to Desert Tortoise (as described in Section 6.2 of this EA). Section 7 Consultation with USFWS has been completed for the SWIP – Southern Portion, and the BA and BO address direct and indirect impacts to the Desert Tortoise in these locations, and also prescribe mitigation measures including compensation and other measures (use of H-frames in the Coyote Springs ACEC) that are included in the COM Plan. Because plans and mitigation requirements have been, and will continue to be, developed to address potential impacts to the Desert Tortoise, and because consultation and detailed mitigation planning will occur on other future projects including the Coyote Springs Planned Development, cumulative effects associated with other future development should be minimized.

Impacts to other sensitive species including the Las Vegas Valley buckwheat that could be affected by the physical loss of habitat associated with successive projects in the areas of modification associated with the extension to the Harry Allen Substation and the realignment in Coyote Springs will also be minimized through careful siting, construction sequencing, and monitoring. Effects to migratory birds will be mitigated by the use of biological monitors during construction in the migratory bird season and by the avoidance of sensitive nesting areas until nests become dormant. It is expected that development of future facilities in the area will employ similar mitigation measures and practices to minimize cumulative impacts.

No threatened or endangered species, or designated Critical Habitat, were identified in the Thirtymile Substation area. Rare plant surveys conducted during Spring 2006 also did not reveal the presence of any sensitive plant species at this location. The substation will not affect populations of Sage Grouse in locations well to the north (Butte Valley) and south (Jakes Valley). Similar to the other modifications, mitigation measures, construction sequencing and monitoring as prescribed in the COM Plan for the SWIP – Southern Portion, as well as mitigation measures associated with other future projects within the designated corridor in this area will minimize cumulative effects to biological resources including potential effects to habitat and migratory birds.

7.4.2 Cultural Resources

No cultural resource sites were identified in association with the ROW extension to the Harry Allen Substation, therefore, this modification should not contribute cumulatively to effects to cultural resources in this area.

The potential exists for cumulative impacts to archaeological and historic sites and TCPs as a result of the Thirtymile Substation and Coyote Springs Realignment, as a total of 76 cultural sites were identified within the APEs associated with the Thirtymile Substation and the Coyote Springs Realignment. Of this total, 16 are recommended as eligible for listing on the NRHP. However, because of mitigation measures, it is anticipated that any potential direct impacts from project construction of these modifications would be fully mitigated through commonly employed practices such as data recovery and construction monitoring, as would be the case with other potential future transmission lines and facilities planned for the SWIP corridor. Important resources that would be affected by construction activities would be avoided, or if this is not possible, recovered for their scientific value. The impact on cultural resources from future utility projects cannot currently be determined but the cumulative effects of all of the transmission lines planned within the corridor being in-place is not expected to be measurably different than the additive impacts of each single project, but again, the impacts of direct disturbance to sites would be mitigated.

The construction of new access associated with the utility corridor could also result in additional indirect cumulative impacts to cultural resources through incidental destruction, or vandalism by the public. However, as presented in the COM Plan, mitigation measures, including the closure of new access roads not required for maintenance, as deemed practicable and identified by the BLM and the Project Proponent, would limit new or improved accessibility.

Projects in the vicinity of the SWIP such as the Coyote Springs Planned Development may also contribute cumulatively to cultural resource impacts. At the time of the completion of the DEIS for the Coyote Springs Planned Development, a total of 31 archaeological sites had been identified. Of these a total of 26 are considered to be potentially eligible for listing on the NHRP, however, consultation with the Nevada SHPO would require the development of mitigation actions that would reduce or compensate for damages to, or the loss of, any NHRP eligible resource.

7.4.3 Paleontological Resources

The potential exists for cumulative impacts to paleontological resources as a result of future development including additional planned transmission lines in the immediate vicinity of the proposed modification areas and in association with the SWIP corridor. The level of potential cumulative impacts is dependent on the sensitivity and potential of disturbed areas to contain fossils. A paleontological resources treatment plan has been prepared for the SWIP – Southern Portion (San Bernardino County Museum, 2006) and includes mitigation measures that would address potential impacts to paleontological specimens prior to construction and during construction of the proposed project, such as monitoring for paleontological specimens during construction. If resources are identified during the intensive pedestrian field inspection which would be conducted prior to construction, appropriate measures would be implemented in order to minimize impacts. The treatment plan will be included as an appendix to the COM Plan.

In the area of the ROW extension to the Harry Allen Substation, investigations concluded that this area was of low sensitivity would not add to cumulative impacts to paleontological resources and no further investigations would be required. The Thirtymile Substation and the Coyote Springs Realignment are both located in areas of an undetermined paleontological sensitivity that will undergo intensive pedestrian field inspection prior to construction. It is anticipated that future projects located in or near the SWIP corridor in these areas would require the same level of study as that conducted in the areas of modification. Similar to cultural resources, it is anticipated that significant resources that would be affected by construction activities would be avoided, or if this is not possible, recovered for their scientific value. In addition, mitigation measures established in the respective COM Plans associated with these projects would also be implemented thereby avoiding or reducing the cumulative effects to paleontological resources.

7.4.4 Land Use, Recreation, and Access

Existing and planned land use within the area of the ROW extension, and Harry Allen Substation (see Table 7-1 and Figure 9) is primarily industrial in a heavily modified setting, consisting of numerous utility facilities such as the Harry Allen Generation Plant, the two Harry Allen Substations, 500kV, 345kV and 230kV transmission lines and associated access roads, and the Kern River Natural Gas Pipeline and Metering Station. The ROW extension would be constructed on vacant, non-grazing BLM land and is consistent with the Northeast Clark County Land Use Plan, which designates this area as *Heavy Industrial* and *Open Land*. There are no active recreation areas in the immediate vicinity, and the Las Vegas RMP designates OHV use in the vicinity of the extension as “limited to existing roads, trails, and dry washes.” In this regard additional long-term access associated with the extension to Harry Allen will generally be limited to the transmission ROW and, while resulting in additional access, the cumulative effects will be reduced through mitigation measures including the closure of new access roads not required for maintenance as deemed practicable and identified by the BLM in coordination with the Project Proponent that would limit new or improved accessibility.

The ROW relocation in the area of the Coyote Springs Realignment occurs within a vacant area designated as a BLM utility corridor (non-grazing lands) in which numerous electric transmission lines and one pipeline currently exist or are proposed for the future (See Table 7-1). In addition, the Coyote Springs Development (approximately 21,454 acres) includes proposed detention basins within the utility corridor in Coyote Spring Valley north of State Route 168. The location of the SWIP alignment in the designated utility corridor and near these basins has been specifically designed to optimize the location for the addition of future ROWs and linear facilities, while minimizing potential cumulative impacts to multiple resources. The addition of new access into this area west of U.S. 93 may increase the potential for OHV use associated with residents of the Coyote Springs Development near the Desert National Wildlife Range. However, again, mitigation measures including the closure of new access roads not required for maintenance, as deemed practicable and identified by the BLM in strategic locations, would limit new or improved accessibility, and access established by the SWIP may reduce the amount of overall new access associated with additional transmission lines and other linear facilities in this area

At the Thirtymile Substation cumulative impacts to existing and planned land use and recreation are anticipated to be minimal. While the Thirtymile Substation and interconnections will displace a small amount of potential grazing land (81 acres of the 178,716-acre Thirty Mile Spring BLM grazing allotment), the substation is located on vacant land in association with the designated

Falcon-to-Gonder and SWIP utility corridors, and as such will accommodate and consolidate existing and future interconnections in an area that is readily accessible from U.S. Highway 50. No new additional roads will be required to access the site and there are no existing or planned active recreational areas in the immediate vicinity of the substation site.

7.4.5 Visual Resources

Increased modifications to the landscape due to the addition of transmission towers (resulting in more contrast of form, line color, and texture) within a multi-line corridor, typically cause an increase in the visibility at longer distances because of the cumulative physical contrast with the natural landscape. Usually, the first transmission line or substation located within a corridor will cause the greatest incremental change, and then each additional line will add cumulatively, but often increasingly less, to the visual impact.

The transmission line extension to the Harry Allen Substation would add cumulatively to the visual impacts in the Dry Lake Valley area because it would be located there in addition to the multiple lines associated with the Harry Allen 230kV and 500kV substation (see Figure 9), and the Crystal Substation and associated lines to the north, east and south. Visual impacts in this area are primarily associated with viewers on I-15 and U.S. Highway 93. The local and regional setting within this area has been significantly modified by the presence of these and other facilities, and the introduction of the extended transmission line into the Harry Allen Substation should not add substantially to the cumulative effects given the viewing distance (1.5 miles and beyond), and the back-dropped condition, most often in context with these other facilities. Mitigation measures including the use of dulled finishes on structures, and the use of non-specular conductors will further reduce cumulative effects in this area

Existing transmission lines and the resulting visual impacts are present within Coyote Spring Valley (69kV line) and in the immediate vicinity of Thirtymile Substation site (230kV and 345kV lines). In addition, the Western Elite Landfill and Quarry, and the planned Coyote Springs Development have, and will substantially alter the appearance of the natural landscape in Coyote Spring Valley, especially with the introduction of the newly planned residential/resort community. The SWIP will add increasingly to these visual impacts. Casual observers from U.S. Highway 93, and U.S. Highway 50 (substation) as well as other local roads would be affected, with the greatest incremental impact taking place on Highway 93 in association with the Coyote Springs Realignment and Coyote Springs Development and on eastbound U.S. Highway 50 near the Thirtymile Substation. Additional lines, if constructed, will add further to the visual cumulative impacts in these areas, although the Ely PRMP has designated the SWIP corridor as VRM Class IV, allowing for these major modifications in the corridor. In general, the grouping of facilities within the SWIP utility corridor would minimize overall cumulative effects on a regional basis through consolidation. However, in the immediate viewshed of the corridor area, the cumulative visual contrast could be slightly increased as each new project is added, and the multiple lines become more noticeable to the casual observer. Measures to minimize these impacts, such as the selective location of towers within the corridor, the use of similar structures and the similar placement of structures (matching spans), dulled finishes on structures, and the use of non-specular conductors will reduce these cumulative effects.

7.4.6 Wilderness and Wild and Scenic Rivers

No cumulative impacts to wild and scenic rivers are anticipated for the three modifications. No wild or scenic rivers are present in the areas of modification, and the nearest Wilderness area, the Delamar Wilderness area, is located approximately 0.75 to 2 miles east of the Coyote Springs Realignment and separated from the realignment by U.S. 93 and areas of private land in select locations. The realignment of future power lines and portions of the Coyote Springs development would be visible from the wilderness area to the west within this modified setting; however, impacts to viewers from the Delamar Wilderness and Meadow Valley Range Wilderness would be minimized based on distance to and the backdropped conditions of the SWIP, and implementation of the mitigation measures previously described.

7.4.7 Wildfire Management

Cumulative effects with respect to wildfire management are primarily associated with potential impacts that are influenced by construction activities and additional access and the types of vegetation located in the areas of modification, as well as fire suppression. There will be incremental cumulative effects from the addition of new access associated with the SWIP, as well as other planned future utilities that could allow for human-caused, accidental ignitions from maintenance activities or recreational users along access roads associated with the ROW extension to the Harry Allen Substation and the Realignment at Coyote Springs. However, mitigation measures including the closure of new access roads not required for operation and maintenance as approved by BLM in coordination with the Project Proponent would limit new or improved accessibility, and the potential for future lines to utilize long-term access associated with the SWIP could reduce these effects. In addition, improved access associated with the modifications and future transmission lines could have the potential for use as fire-break lines and help minimize the need to create new breaks in the event of a fire.

Fire suppression, including mitigation measures and protocols identified in the COM Plan for the SWIP will be applied during construction of the ROW extension to Harry Allen Substation, Thirtymile Substation, and the Realignment at Coyote Springs, and similar measures will also be required for future projects that will assist in reducing potential cumulative effects from fire related incidents that could affect other facilities and developments. These measures, including fire prevention measures (restrictions on smoking, no open fires, restrictions on welding and use of spark arresting devices, etc.) will reduce the potential for fires during construction, and it is assumed that for the SWIP and all future projects, construction personnel would be trained in fire suppression and appropriately equipped to deal with fires, should the need arise.

7.4.8 Earth Resources

There are no unique or special geological features in the areas of modification. Cumulative impacts to earth resources associated with the areas of modification primarily include effects to soils, including the potential for increased wind and water erosion during construction. Impacts to surface water associated with each modification are limited, and none of the modifications are expected to directly affect groundwater resources. With respect to soil erosion, the cumulative impacts would not be measurably different than the additive impacts of each of the incremental transmission line effects. Each additional transmission line or facility introduced into the utility corridor or in the area of cumulative effect associated with the utility corridor would add to

potential wind and water soil erosion dependent on the mitigation measures implemented for each project. Curtailing construction during periods of rain, limiting the areas of disturbance, and the use of erosion control mitigation measures and restoration practices as described in the COM Plan would be implemented to minimize the potential for short and long-term impacts to soils. Impacts to ephemeral drainages and washes in this area are expected to be reduced based on the selective location of towers (spanning of drainages), limiting the area of disturbance, and erosion control and reclamation measures presented in the COM Plan.

Generally, ground disturbance and new access would be incrementally less for each successive project within the corridor in proximity to the areas of modification, which would typically add less impact from each project. However, the cumulative effects of all transmission lines in the corridor would likely be greater than any single project. Indirect and off ROW impacts could result from increased OHV travel on-and-off access roads associated with the construction and maintenance of the ROW extension to Harry Allen and the Coyote Springs Realignment could result in greater ground disturbance over time, but mitigation measures including the closure of new access roads not required for maintenance as deemed practicable and identified by the BLM would limit new or improved accessibility. Access developed for construction of the modifications may also be potentially used by future projects, thereby reducing the amount of overall ground disturbance and cumulative effects to soils.

7.4.9 Air Resources

Cumulative impacts to air quality associated with the ROW extension to Harry Allen Substation, the Thirtymile Substation, and the Coyote Springs Realignment are anticipated to be minimal as air-related impacts are primarily short-term in duration resulting from the construction of the proposed facilities and limited operation and maintenance activities. Cumulative impacts to air quality could occur if other projects within the corridor were constructed at the same time as the SWIP (e.g., detention basins for the Coyote Springs Development), however, at this time the sequence for the construction of these facilities is unknown. If multiple projects were constructed during the same time period, adherence to air permit requirements, and mitigation measures including dust suppression as outlined in respective COM Plans would effectively reduce these cumulative effects (see also Section 6.11 of this EA). Exceedance of regulatory standards is not anticipated.

7.4.10 Hazardous Materials

No hazardous material sites in the areas of modification have been identified. No hazardous materials would be stored along the ROW extension to the Harry Allen Substation, along the Coyote Springs Realignment, or at the Thirtymile Substation. Therefore the potential for cumulative impacts from hazardous materials exists primarily during construction. A spill prevention plan and reference to hazardous material regulations are included in the COM Plan. During construction of the transmission line, mitigation measures outlined in the COM Plan would be followed to ensure that vehicles will be kept in good working condition and impacts from hazardous materials are minimized.

At this time the sequence for the construction of these facilities is unknown. If multiple projects were constructed during the same time period, adherence to spill prevention measures, regulations regarding the use of hazardous materials, and measures regarding the handling of

hazardous materials as outlined in respective COM Plans would effectively reduce cumulative impacts.

7.4.11 Socioeconomic and Environmental Justice

Cumulative socioeconomic impacts are generally only a concern if they would overextend public services and accommodations in the project area. Because of the small size of the work force associated with transmission line construction, and its transitory nature, cumulative impacts are not expected with regard to the construction of the ROW extension, the Coyote Springs Realignment, or the Thirtymile Substation.

Environmental justice addresses environmental concerns within the context of federal actions in the areas of minority and low-income populations. The ROW extension, construction and operation of the Thirtymile Substation, and Coyote Springs Realignment would not add cumulatively to impacts to minority or low-income populations because such populations were not identified in association with the three modification areas addressed in this EA (see also Section 6.6 of this EA).

7.4.12 Areas of Critical Environmental Concern

No ACECs would be affected by the extension of the ROW to the Harry Allen Substation, or at the Thirtymile Substation. The Coyote Springs Realignment slightly alters the original alignment at the northern end of the Coyote Springs ACEC (approximately 1.0 mile), which is designated for the protection of the Mojave Desert Tortoise. In this area, Section 7 Consultation with USFWS has been completed, and the BA and BO address direct and indirect impacts to the Desert Tortoise in these locations, and also prescribe mitigation measures including the use of H-frame structures, seasonal restrictions, tortoise monitoring, compensation and other measures included in the COM Plan as described in Section 7.4.1, above (see also Section 6.2 of this EA). It is expected that future projects may benefit from the access developed for the SWIP in this area, and that similar consultation with USFWS to minimize direct and cumulative impacts will occur.

7.5 SUMMARY

Construction and maintenance of the modifications in the SWIP ROW will add cumulatively to other existing and future projects (identified in Table 7-1) within the region as previously described, however the extension of the ROW to the Harry Allen Substation and a small portion of the Coyote Springs Realignment are the only areas that were not accounted for in the original project analysis in the SWIP EIS in areas that have been, or are presently being substantially altered by other development. The 3.8-mile ROW extension to the Harry Allen Substation includes disturbance areas not included in the original cumulative analysis, however the Thirtymile Substation and the Coyote Springs Realignment (with the exception of an additional 1.5 miles) are relocations of facilities accounted for in the original project analysis. As part of the Proposed Action, the approved Robinson Summit Substation will not be constructed, but rather, replaced by the Thirtymile Substation. The Coyote Springs Realignment is a relocation of the previously approved and planned SWIP ROW from the eastern to the western side of U.S.

Highway 93 based on LCCRDA, therefore overall impacts from these modifications are not expected to add substantially to those previously documented in the SWIP EIS.

To a large degree, the cumulative effects to all environmental resources should be minimized in the long-term based on extensive planning and the location of the SWIP and other planned linear facilities within a common utility corridor (to the extent possible). The location of the SWIP, as well as other existing and planned linear facilities within this corridor, allows for the consolidation and therefore reduction of the incremental impacts associated with past, present, and future actions within a defined and relatively confined area. In particular, by consolidating these facilities within an established utility corridor, future lines and linear facilities are located in a previously planned for and modified setting, and may potentially benefit from long-term access established for the SWIP thereby reducing cumulative effects related to impacts resulting from the construction of new access and the land disturbance required for new access.

The BLM has worked, and will continue to work with the Project Proponent to position the transmission line in a manner that (1) accommodates existing and potential future utilities to the greatest degree possible, (2) minimizes environmental impacts, and (3) maintains consistency with the original ROW grant. This includes consideration for multiple transmission lines, including those proposed by other entities. The BLM also has taken additional steps to further accommodate future lines by requiring the SWIP to use double-circuit structures in the Pahranagat Wash area, south of the Delamar Valley and Dry Lake.

SECTION 8.0
LIST OF PREPARERS AND CONTRIBUTORS

This EA was prepared at the direction of the BLM Ely and Southern Nevada District Offices, Nevada, by EPG, under a contract with Great Basin. The following is a list of individuals responsible for the preparation, or contribution of information for the EA:

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REFERENCES

Air Sciences Inc. January 10, 2007. *Air Quality Attainment Status Designations and Surface Area Disturbance Permitting Report for EPG.*

Crews, Rachel, Rebecca Halbmaier, Sandy McDaniel II, Kris Dobschuetz and Glenn Darrington. 2007. *A Cultural Resource Survey for the Proposed Southwest Intertie Project – Southern Portion, White Pine, Nye, Lincoln, and Clark Counties, Nevada*. EPG Cultural Resource Services Technical paper 2006-7, EPG Phoenix (*draft*).

Deis, Richard. 2007. *Cultural Resource Investigations for the White Pine Energy Station Project: Class I and Class III Inventory for the White Pine Energy Station Project, White Pine County, Nevada*. BLM Report #:CRR 8111 (NV 040) 2005-1542. EDAW, Sacramento.

Marfil, Greg, Las Vegas BLM Fire Mitigation and Education Specialist. August 2006. *Email correspondence regarding Fire Management Units located within project vicinity.*

Huffman-Broadway Group, Inc. 2005. *Mitigation Plan: The Coyote Springs Development Project, Clark County, Nevada.*

San Bernardino County Museum. 2006. *Paleontologic Resources Literature Review and Treatment Plan.*

U.S. Department of the Interior, Bureau of Land Management. December 1983. Egan Draft Resource Management Plan and Environmental Impact Statement .

_____. September 1984. Egan Proposed Resource Management Plan and Final Environmental Impact Statement.

_____. 1994. Southwest Intertie Project, Record of Decision and Approval Land Use Plan Amendment.

_____. 1994. Southwest Intertie Project, Right-of-Way Grant, Serial Numbers: 1D1-26446, NVN-49781, UTU-73363.

_____. 1999. Southwest Intertie Project, Right-of-Way Grant Extension, Serial Numbers: 1D1-26446, NVNj0-49781.

_____. 2004. Southwest Intertie Project, Right-of-Way Grant Extension, Serial Numbers: 1D1-26446, NVN-49781.

_____. 1981-1995. Caliente Management Framework Plan

_____. 1980-1993. Schell Management Framework Plan

_____. May 1998. Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement, Volumes I and II.

U.S. Department of the Interior, Bureau of Land Management, Ely District Office. Accessed on August 15, 2006. *Wilderness Fact Sheet, Delamar Mountain Wilderness.* http://www.nv.blm.gov/ely/wilderness/fact_sheet_delamar_mountains.htm

_____. July 2007. Biological Assessment for the Southwest Intertie Project Southern Portion.

_____. November 2007. Proposed Ely Resource Management Plan and Final Environmental Impact Statement, Volumes I, II and Map Volume

_____. January 2008. Southwest Intertie Project Southern Portion, 500kV Transmission Line, Construction, Operation and Maintenance Plan, Volumes I and II.

U.S. Fish and Wildlife Service. Accessed August 23, 2006. *Desert National Wildlife Refuge.* http://www.fws.gov/desertcomplex/desertrange/wilderness.htm.

_____. Accessed August 17, 2006. *Desert National Wildlife Refuge.* http://www.fws.gov/desertcomplex/desertrange/index.htm.

_____. November 2007. Coyote Springs Investment Planned Development Project, Draft Environmental Impact Statement.

_____. December 2007. Memorandum and Biological Opinion for the Southwest Intertie Project (SWIP) Within the Range of the Desert Tortoise in Clark County and Lincoln Counties, Nevada.

APPENDIX A
MITIGATION

APPENDIX A
MITIGATION

INTRODUCTION

Two types of mitigation measures were developed during the SWIP EIS process and included as conditions in the ROD that approved the SWIP. These included generic mitigation and selectively committed mitigation measures.

Generic mitigation measures are those that apply to the project as a whole and are typically part of the project description. Selectively committed measures are applied on a case-by-case basis, in specific impact locations. Since the SWIP was approved in 1994, both generic and selectively committed measures have been revisited and revised as a result of several meetings with agency personnel. The following two tables provide a list of the most recent mitigation measures identified to reduce impacts to environmental resources resulting from the construction, operation, and maintenance of the proposed transmission line. During construction, these measures will be monitored by the Construction Inspection Contractor who will review the applicability of these measures and make final determinations regarding their implementation.

Additional mitigation measures have been proposed by Great Basin or requested or required by the BLM, USFWS and other resource agencies, in connection with the preparation of this EA and the BA, BO, and COM Plan. All of the mitigation measures from these various sources have been incorporated in the COM Plan, and compliance with that plan would be included as an enforceable stipulation in the amended ROW grant, just as it is in the original SWIP ROW grant.

Southwest Intertie Project
GENERIC MITIGATION MEASURES
TABLE A-1

1.	All construction vehicle movement outside the ROW 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 predisturbed 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, ROW would be aligned, in so far as practical, to reduce the impact to farm operations and agricultural production.

Southwest Intertie Project GENERIC MITIGATION MEASURES TABLE A-1	
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 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 ROW, 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 dust control plans will be developed, and 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) 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.
17.	During operation of the transmission line, the ROW would be maintained free of non-biodegradable debris. Slash will be left in place or disposed of in accordance with requirements of the land management agency.
18.	The primary focus of paleontological mitigation efforts should be areas of greatest disturbance and areas likely to have significant fossils. Preconstruction surveys of such areas may be conducted as agreed upon by the land-managing and lead federal agency.

Southwest Intertie Project GENERIC MITIGATION MEASURES TABLE A-1
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, including noxious weed surveys 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.
22. Prior to construction, a Noxious Weed Management Plan will be developed in accordance with BLM standards. Included in the noxious weed plan will be stipulations regarding construction, restoration and operation (e.g., use of weed free materials, washing of equipment, etc.).

Southwest Intertie Project SELECTIVELY COMMITTED MITIGATION MEASURES TABLE A-2
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 as approved by BLM in coordination with the Project Proponent (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
9. Nonspecular conductors would be used, where specified by the authorized officer, to reduce visual impacts.

Southwest Intertie Project SELECTIVELY COMMITTED MITIGATION MEASURES TABLE A-2
10. "Dulled" metal finish towers would be used to reduce visual impacts.
11. With the exception of emergency repair situations, ROW 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).
13. Construction and/or post-construction monitoring, and treatment in selective areas will occur in accordance with Section 106 Compliance (see Generic Mitigation Measure 9), Paleontological Resources (see Generic Mitigation Measure 18), Section 7 of the Endangered Species Act (See Generic Measure 19), or as specified by the land management agency and state or county authority. Mitigation measures identified will be included in the Construction, Operation, and Maintenance Plan.
14. To minimize disturbance to timber resources and reduce visual contrast, clearing of trees in and adjacent to the ROW will be minimized to the extent practicable to satisfy conductor-clearance requirements (National Electric Safety Code and 10 years of timber growth). Trees and other vegetation will be removed selectively (e.g., edge feathering) to blend the edge of the ROW into adjacent vegetation patterns, as practicable and appropriate.

APPENDIX B
BIOLOGICAL OPINION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
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December 20, 2007
File Nos. 84320-2008-F-0066,
84320-2008-I-0075 & 1-5-94-F-28R

Memorandum

To: Field Manager, Ely Field Office, Bureau of Land Management, Ely, Nevada

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Biological Opinion for the Southwest Intertie Project (SWIP) Within the Range of the Desert Tortoise in Clark and Lincoln Counties, Nevada

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the Bureau of Land Management's (BLM) proposal with supporting documents to issue a Notice to Proceed for the subject project and its possible effects on the desert tortoise (*Gopherus agassizii*) (Mojave population). The Mojave desert tortoise population is listed as threatened under the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). The right-of-way grant would allow construction, operation, and maintenance of an overhead 500-kilovolt (kV) transmission line from the existing Harry Allen substation north to the northern extent of desert tortoise habitat in Lincoln County, Nevada. The project will continue north to the proposed White Pine Energy Station. In addition, BLM requested our concurrence that the subject project *may affect but is not likely to adversely affect* the endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and the bald eagle (*Haliaeetus leucocephalus*).

This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

The bald eagle was delisted from the Act, effective August 8, 2007 (72 FR 37345). The effect of this rule removes the bald eagle in the lower 48 States from the Federal List of Endangered and Threatened Wildlife, and also removes the special rule for the bald eagle at 50 CFR 17.41(a). The prohibitions and conservation measures provided by the Act, particularly sections 7, 9, and 10 no longer apply to this species. Federal agencies will no longer be required to consult with the Service under section 7 of the Act in the event that activities they authorize, fund, or carry out may affect the bald eagle. Critical habitat was not designated for the bald eagle, so the delisting will not affect critical habitat provisions of the Act. The provisions of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (including prohibitions on the

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taking of bald eagles) will remain in place. The rule will not affect the bald eagle's status as a threatened or endangered species under State laws or suspend any other legal protections provided by State law. Thus, Service concurrence or non-concurrence that the proposed action *may affect but is not likely to adversely affect* the bald eagle no longer applies under section 7 consultation procedures.

The informal consultation for the southwestern willow flycatcher and biological opinion for the desert tortoise are issued in accordance with section 7 of the Act and based on information provided in BLM's memorandum to the Service with attached final biological assessment (EPG 2007) received on October 12, 2007; additional information received on October 31, 2007, by conference call; correspondence dated November 1 and 28, 2007, and December 4, 2007; E-mail correspondence between the Service and BLM and its contractors; and our files. A complete administrative record of this consultation is on file in the Service's Nevada Fish and Wildlife Office in Las Vegas, Nevada.

Informal Consultation (File No. 84320-2008-I-0075)

This informal consultation addresses proposed project activities and their possible impacts to the southwestern willow flycatcher. Currently, there are no known potential nesting locations within the project area. The closest known breeding location for southwestern willow flycatchers is approximately 3 miles north and west of the project centerline at Lower Pahranagat Lake in Lincoln County. The project will cross the Pahranagat Wash approximately 1 mile downstream of Maynard Lake in an area that does not contain suitable habitat for the flycatcher. Other suitable habitat exists along the Virgin River, Meadow Valley Wash, Muddy River, Las Vegas Wash, and the Colorado River. The Virgin River is located approximately 25 miles southeast of the project; the Muddy River is located on the east side of Arrow Canyon Range approximately 12 miles from the project area; Meadow Valley Wash is approximately 6 miles east of the project area; and Las Vegas Wash flows southeasterly through Las Vegas Valley, approximately 18 miles south/southwest of the project area. BLM concludes that construction, operation, and maintenance of the proposed transmission line would have little to no effect on southwestern willow flycatcher breeding habitat.

In consideration of the proposed action and anticipated potential effects, BLM determined that the proposed project *may affect, but is not likely to adversely affect* the southwestern willow flycatcher. The Service concurs with this determination.

Consultation History

The Service previously issued two biological opinions for the proposed project. On May 12, 1993, the first biological opinion was issued for the project (File No. 1-5-93-F-91). The project proposed in 1993 consisted of a 500-kV transmission line from a new, to be constructed substation at the southern terminus of the project in Dry Lake Valley in Clark County, north to the northern extent of tortoise habitat in Lincoln County. Modifications from the 1993 project in

tortoise habitat include: a 3.8-mile extension of the transmission line to connect to the existing Harry Allen Substation; elimination of the Dry Lake 500kV Substation; and relocation of a portion of the right-of-way in Coyote Spring Valley from the east to west side of US Highway 93 (US 93). Construction methods remain relatively unchanged from the 1993 proposal except the modification to use H-frames with perching deterrents within desert tortoise critical habitat to minimize the potential impacts of ravens on the tortoise.

On November 5, 1993, BLM requested reinitiation of consultation for the SWIP project in response to designation of desert tortoise critical habitat which became effective February 8, 1994. A portion of the proposed project (approximately 53 miles) would occur within the newly designated Mormon Mesa Critical Habitat Unit. On March 23, 1994, the Service issued a biological opinion (File No. 1-5-94-F-28R) to BLM for the SWIP project which included an analysis of potential effects to both the desert tortoise and its designated critical habitat. This biological opinion was amended as requested by BLM on December 8, 1994, to allow fees to be paid prior to issuance of the Notice to Proceed rather than the right-of-way grant.

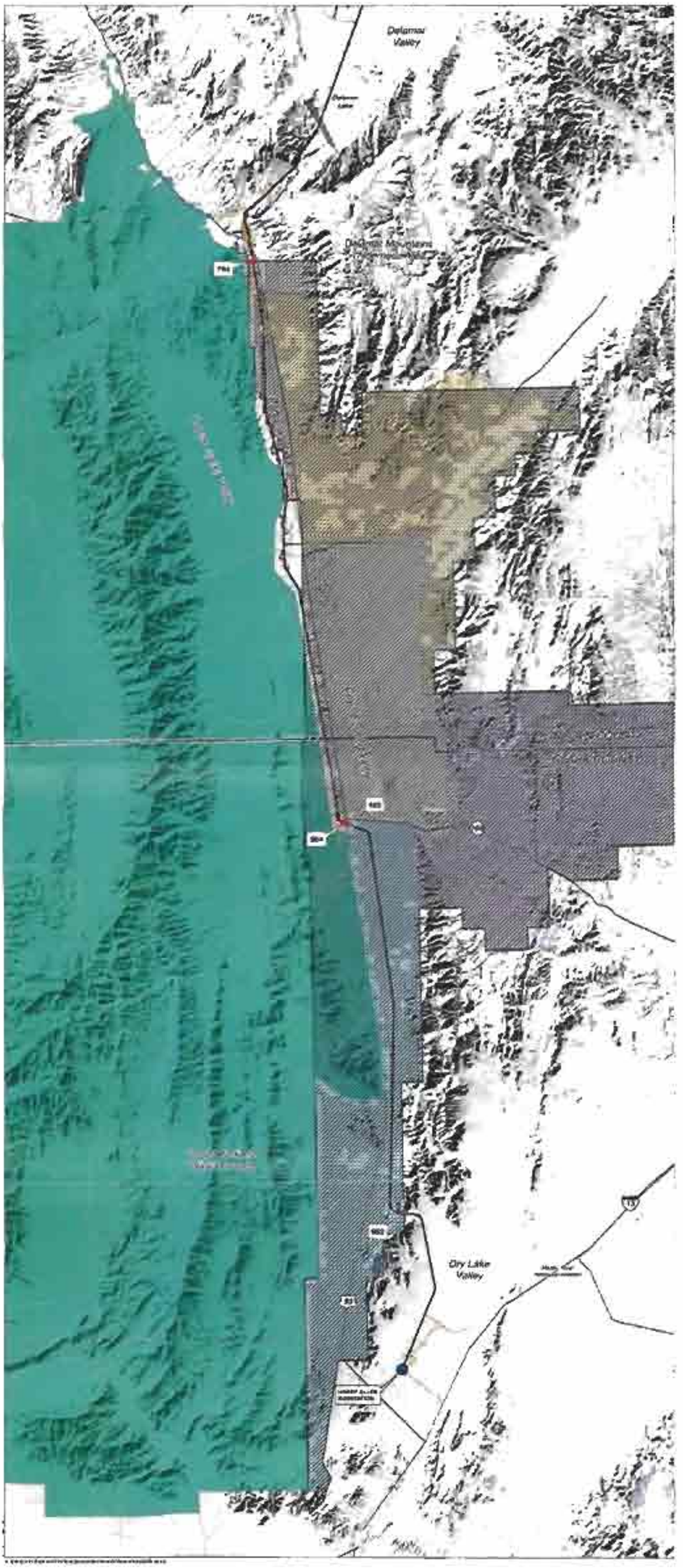
On July 24, 2007, BLM requested consultation for the proposed project. The Service did not receive the request until October 12, 2007. The Service requested additional information by email on October 22, 2007. Additional information was provided during a conference call on October 31, 2007; on November 1, 2007, and November 28, 2007. Formal consultation was initiated for the project on October 31, 2007.

BIOLOGICAL OPINION

I. Description of the Proposed Action

A. Proposed Action and Action Area

BLM proposes to amend an existing right-of-way (BLM File No. N-49781) and issue a Notice to Proceed to Great Basin Transmission, LLC (Great Basin) for construction, operation, and maintenance of a single-circuit, overhead 500 kV transmission line. The southern portion of the project begins at the Harry Allen Substation in Dry Lake, Clark County, Nevada and ends at a point approximately 3 miles west of the proposed White Pine Energy Station located approximately 34 miles north of Ely, White Pine County, Nevada (Figure 1). The transmission line and associated facilities comprise the southern portion of the Midpoint to Dry Lake segment of the SWIP, which was approved by BLM in 1994. The SWIP right-of-way was granted by BLM to Idaho Power Company (IPC), when the project was approved in 1994. Great Basin has an option to purchase the SWIP (including the BLM right-of-way) from IPC, and has been authorized by IPC to complete the project permitting process, including obtaining a notice to proceed from BLM. The scope of this biological opinion is limited to the range of the desert tortoise within southern Nevada.



REGIONAL LOCATION



Desert Tortoise Surveys

- Desert Tortoise Critical Habitat
- Coyote Springs ACEC
- Kane Springs ACEC
- Mormon Mesa ACEC
- Desert National Wildlife Refuge

Access Roads

- Existing Access Road
- Existing Access Road with Improvements
- Proposed New Access Road
  - Overland
  - Bladed

Electrical Transmission Facilities

- Structure Location
- Harry Allen Substation
- 500kV Transmission Line

General Reference Features

- County Boundary
- Major Transportation
- Minor Transportation

Sources:
USGS 30-meter Digital Elevation Models
BLM - Nevada State Office, ACEC 2005
Ely RMP July 2008

SOUTHWEST INTERTIE PROJECT
500kV Transmission Line
Southern Portion

Great Basin Transmission, LLC

Desert Tortoise Critical Habitat

July 2009

Figure 2

The transmission project will consist of self-supporting, steel-lattice, and steel-pole H-frame structures placed approximately 1,200 to 1,500 feet apart. The transmission line will create a connection between existing electrical grids and service areas in southern Nevada (Nevada Power Company) and northern Nevada (Sierra Pacific Power Company), and will contribute to increased transmission reliability and sharing of the electrical supplies between the regions of the West. The project will provide a means to transmit power from power generation projects (*e.g.*, proposed wind energy projects north of Ely) to market.

BLM and IPC estimate that construction of the entire project would require approximately 28 months. Following construction, the transmission line would be inspected annually or as required, by fixed-wing aircraft, helicopters, ground vehicles, all-terrain vehicles, or on foot. Maintenance will be performed as needed. Non-emergency repairs will be completed within the range of the desert tortoise following the same measures as for ground disturbance in the original construction phase of the project. For emergency repairs, reasonable efforts will be made to protect tortoises and their habitat. Restoration and reclamation procedures following completion of repair work will be similar to those proposed during construction.

B. Proposed Minimization Measures

BLM and the project proponent propose to minimize the effects of the proposed action on the desert tortoise by implementing the following measures:

1. All construction vehicle movement outside the right-of-way will normally be restricted to pre-designated access, contractor acquired access, or public roads.

2. The areal limits of construction activities will normally be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate survey or construction activity limits.

3. In construction areas where recontouring is not required, vegetation will be left in place wherever possible and original contour will 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 will occur as required by the landowner or land management agency. The method of restoration will 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. Prior to construction, all supervisory construction personnel will be instructed on the protection of ecological resources. To assist in this effort, the construction contract will address: (a) Federal and State laws regarding antiquities and plants and wildlife,

including collection and removal; and (b) the importance of these resources and the purpose and necessity of protecting them.

6. Roads will be built as near as possible at right angles to the streams and washes. Culverts will be installed where necessary. All construction and maintenance activities shall be conducted in a manner that will minimize disturbance to vegetation, drainage channels, and intermittent or perennial streambanks. In addition, road construction will include dust-control measures during construction in sensitive areas. Only water or an alternative substance approved by BLM will be used as a dust suppressant. All existing roads will 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 and washes.

7. Fences and gates will be repaired or replaced to their original pre-disturbed condition as required by the landowner or the land management agency if they are damaged or destroyed by construction activities. Temporary gates will be installed only with the permission of the landowner or the land management agency; and will be restored to their original pre-disturbed condition following construction.

8. 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.

9. Pre-construction surveys for plants and wildlife species, designated as sensitive or of concern will be conducted in areas of known occurrence or habitat, including noxious weed surveys as stipulated by the land-administering agency once the transmission line centerline, access roads, and tower sites have been located and staked in the field.

10. No widening or upgrading of existing access roads will 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.

11. The alignment of any new access roads or overland routes will follow the designated area's landform contours where possible, providing that such alignment does not additionally impact resource values.

12. All new access roads not required for maintenance will 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, seeding, or rock replacement). Public access will be controlled through the installation of

fences and gates in key locations or sections. This will limit new or improved accessibility into the area.

13. In designated areas, structures will 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 will minimize the amount of sensitive features disturbed and/or reduce visual contrast.

14. With the exception of emergency repair situations, right-of-way construction, restoration, maintenance, and termination activities in designated areas will 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 will be approved in advance of construction or maintenance by the authorized officer.

15. If blasting is necessary, all tortoises located within 100 feet of the blast site will be removed prior to blasting and temporarily relocated in accordance with desert tortoise handling protocol. Prior to any blasting, all tortoise burrows or coversites within a 200-foot radius of the blast site will be located and the entrances carefully stuffed with crumpled newspaper or other material approved by BLM and the Service. After blasting is completed, all burrows and coversites will be inspected for damage, and stuffing material will be removed. If a burrow or coversite has collapsed and there is a possibility that it could be occupied, it will be excavated to ensure that no tortoises have been buried and are in danger of suffocation.

16. With the exception of emergency repair situations, maintenance and termination activities in areas of critical habitat will be modified or discontinued during sensitive periods (March 1 through October 31), or as identified by BLM.

17. During tortoise high activity (*e.g.*, March through October), tortoise biologists shall be present during all construction, and maintenance (e.g., emergency repairs) activities where one or more pieces of heavy construction equipment are being used.

18. All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor-acquired access, or public roads.

19. The limits of construction will be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate survey or construction activity limits.

20. Construction and maintenance vehicles will not exceed a speed of 20 miles per hour in tortoise habitat, except where posted otherwise.

21. All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas.

22. Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100-percent coverage of the construction area. All desert tortoise burrows located will be conspicuously flagged or marked. All desert tortoise burrows, and other species' burrows that may be used by desert tortoises, will be examined to determine the occupancy of each burrow by tortoises, using a fiber-optic scope, if necessary.

23. When desert tortoises are not highly active (*e.g.*, winter), environmental monitors or desert tortoise biologists will be onsite during all phases of transmission line construction to ensure that all construction vehicles and heavy equipment remain within the boundaries of the marked construction zone. If necessary, a qualified desert tortoise biologist will be brought on site to excavate any tortoise burrow in harm's way.

24. Desert tortoises and eggs found within construction sites will be removed by qualified desert tortoise biologists, in accordance with the most current protocols identified by BLM and the Service. Desert tortoises removed from the project sites will be released into undisturbed habitat within 1,000 feet of the collection site.

    Any desert tortoise removed from construction sites shall be placed in the shade of a shrub or in a natural, unoccupied burrow similar to the one in which it was found or in an artificial burrow, following the most current protocol approved by BLM and the Service. Desert tortoises shall not be placed on lands outside the administration of the Federal government without the written permission of the landowner. Desert tortoises shall be purposely moved only by qualified tortoise biologists, solely for the purpose of moving them out of harm's way.

25. Any excavated holes related to transmission line construction (*i.e.*, foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into the open holes.

26. Anyone on the right-of-way within desert tortoise habitat will be required to check under their vehicle before driving away. This includes all construction equipment and the area under vehicles should be checked any time a vehicle is left unattended, as well as in the morning before any construction activity begins.

27. H-frame structures with perch deterrents will be utilized in critical habitat south of State Route 168 in the Coyote Spring Area of Critical Environmental Concern (ACEC) and post-construction monitoring for ravens and removal of raven nests will be undertaken in

this area as part of the inspection and maintenance activities. If evidence of raven nesting is observed in the right-of-way, the Service will be notified within 3 days.

28. To prevent mortality, injury, and harassment of desert tortoises and damage to their burrows and coversites, no pets shall be permitted in any project construction area, unless confined or leashed.

29. Trash and food items will be removed daily by construction workers and placed in raven-proof containers

30. Within desert tortoise habitat, a biologist will be assigned to the pre-construction survey team(s). The biologist will be responsible for ensuring that the placement of new access routes, spur roads, and tower sites will affect as few tortoise burrows as possible. The alignment of access and spur roads will be as direct as possible, to minimize habitat disturbance and minimize the destruction of tortoise burrows. Other work areas (*e.g.*, splicing, tensioning, pulling, and batch sites) will be surveyed by a biologist as construction proceeds. Potential work areas will be flagged several days prior to construction for review by a biologist. To the extent possible, these sites will be located in previously disturbed areas.

31. Overnight parking and storage of equipment will be in previously disturbed areas (*i.e.*, lacking vegetation). These areas will also be designated by the pre-construction survey team. If previously disturbed areas are not available, these activities will be restricted to the right-of-way and will be cleared of tortoises by the on-site biologist prior to use.

32. Within desert tortoise habitat, construction and maintenance workers will strictly limit their activities and vehicles to construction areas and routes of travel that have been identified and/or flagged to eliminate adverse impacts to desert tortoises and their habitat. Aside from these areas, workers may not drive cross-country, even within the right-of-way. All workers will be instructed that their activities are restricted to previously identified, flagged or cleared areas.

33. The project proponent will designate a Compliance Inspector Contractor (CIC), who will be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordinating compliance. The CIC will have the authority to halt activities of construction equipment that may be in violation of the stipulations.

34. In areas where restoration is required, reseeding will occur through the use of native plant species. Reclamation and monitoring requirements and practices will be approved by BLM.

35. Herbicides will not be used as a part of this project within desert tortoise habitat.

36. To the extent possible, access to tower sites, and at splicing and tensioning sites will occur by overland travel and crushing of vegetation, *i.e.*, no blading of such sites, will occur. The CIC will ensure that blading is conducted only where necessary. Due to construction constraints resulting from equipment size and personnel safety, blading will be needed at most spur roads and tower sites.

37. All construction and maintenance workers will participate in a tortoise-education program. The program will be developed by the project proponent prior to the beginning of construction. The program will be submitted to the Service for review and approval prior to implementation. The program will include, at a minimum, the following topics: (a) the occurrence of desert tortoises in the project area; (b) the sensitivity of the species to human activities; (c) legal protection for desert tortoises; (d) penalties for violations of Federal and State laws; (e) general tortoise activity patterns; (f) reporting requirements; (g) measures to protect tortoises; and (h) personal measures employees can take to promote the conservation of desert tortoises.

38. Injured tortoises will be transported to a qualified veterinarian. The Service will furnish direction on the final disposition of tortoises taken to a veterinarian.

39. The CIC and on-site biologist will prepare a report for BLM and the Service no later than 90 days after completion of construction within desert tortoise habitat. The report will make recommendations for modifying or refining the stipulations. The report will include the actual acreage of habitat disturbance caused by crushing and blading versus the estimates prior to construction.

40. Fees collected for Lincoln and Clark counties shall be deposited in interest-bearing escrow accounts.

II. Status of the Species/Critical Habitat Rangewide

A. *Desert Tortoise*

Listing History

On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 FR 42270). On April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 FR 12178) on the basis of: significant population declines; loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture; habitat degradation by grazing and off-highway vehicle (OHV) activities; illegal collection of desert tortoises by humans for pets or consumption; upper respiratory tract disease (URTD); predation on juvenile desert tortoises by common ravens and kit foxes; fire; and collisions with vehicles on paved and

unpaved roads. Critical habitat in Arizona, California, Nevada, and Utah was designated on February 8, 1994, with an effective date of March 10, 1994.

Overview of General Biology

The desert tortoise is a large, herbivorous reptile located in portions of California, Arizona, Nevada, and Utah. It also occurs in Sonora and Sinaloa, Mexico. The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran Desert in California.

Desert tortoises reach 8 to 15 inches in carapace length and 4 to 6 inches in shell height. Hatchlings emerge from the eggs at about 2 inches in length. Adults have a domed carapace and relatively flat, unhinged plastron. Their shells are high-domed, and greenish-tan to dark brown in color with tan scute centers. Desert tortoises weigh 8 to 15 pounds when fully grown. The forelimbs have heavy, claw-like scales and are flattened for digging. Hind limbs are more stumpy and elephantine.

Optimal habitat for the desert tortoise has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, where a diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner 1982, Turner and Brown 1982). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. Desert tortoises occur from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982).

Desert tortoises are most commonly located within the desert scrub vegetation type, primarily in creosote bush scrub. In addition, they occur in succulent scrub, cheesebush scrub, blackbrush scrub, hopsage scrub, shadscale scrub, microphyll woodland, Mojave saltbush-allscale scrub, and scrub-steppe vegetation types of the desert and semidesert grassland complex (Service 1994). Within these vegetation types, desert tortoises potentially can survive and reproduce where their basic habitat requirements are met. These requirements include: a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow. Throughout most of the Mojave Region, tortoises occur most commonly on gently sloping terrain with sandy-gravel soils and with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Throughout their range, however, tortoises can be located in steeper, rockier areas.

Desert tortoises are most active during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rainstorms. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert. In Nevada and Arizona, tortoises are considered to be most active from approximately March 1 through October 31.

The size of desert tortoise home ranges varies with respect to location and year. Females have long-term home ranges that are approximately half that of the average male, which range from 25 to 200 acres (Berry 1986). Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and make forays of more than 7 miles at a time (Berry 1986). In drought years, the ability of tortoises to drink while surface water is available following rains may be crucial for tortoise survival. During droughts, tortoises forage over larger areas, increasing the likelihood of encounters with sources of injury or mortality including humans and other predators.

Further information on the range, biology, and ecology of the desert tortoise is available in Berry and Burge (1984), Burge (1978), Burge and Bradley (1976), Bury *et al.* (1994), Germano *et al.* (1994), Hovik and Hardenbrook (1989), Karl (1981, 1983a, 1983b), Luckenbach (1982), Service (1994), and Weinstein *et al.* (1987).

Survival and Recovery Needs

On June 28, 1994, the Service approved the *Desert Tortoise Recovery Plan* (Service 1994) (Recovery Plan). The Recovery Plan divides the range of the desert tortoise into 6 recovery units and recommends establishment of 14 desert wildlife management areas (DWMAs) throughout the recovery units. Within each DWMA, the Recovery Plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions.

As part of the actions needed to accomplish recovery, the Recovery Plan recommends that land management within all DWMAs should restrict human activities that negatively impact desert tortoises (Service 1994). The DWMAs are being designated by BLM through development or modification of their land-use plans in Arizona, Nevada, Utah, and parts of California.

Although recovery of the tortoise will focus on DWMAs, section II.A.6. of the Recovery Plan and section 2(b) of the Act provide for protection and conservation of ecosystems on which federally-listed threatened and endangered species depend, which includes both recovery and non-recovery areas. The Mojave Desert ecosystem, of which the desert tortoise and its habitat are an integral part, consists of a dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit (Noss and Cooperrider 1994). Actions that adversely affect components of the Mojave Desert ecosystem may directly or indirectly affect the desert tortoise. The Recovery Plan further states that desert tortoises and habitat outside recovery areas may be important to the recovery of the tortoise. Healthy, isolated tortoise populations outside recovery areas may have a better chance of surviving catastrophic effects such as disease, than large, contiguous populations (Service 1994). A description of each Recovery Unit follows.

The **Northeastern Mojave Recovery Unit** occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern

Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this Recovery Unit, the northern portion of which represents the northernmost distribution of the species, are typically observed in low densities (about 10 to 20 adults per square mile).

The **Eastern Mojave Recovery Unit** is situated primarily in California, but also extends into Nevada in the Amargosa, Pahrump, and Piute valleys. In the Eastern Mojave Recovery Unit, desert tortoises are often active in late summer and early autumn in addition to spring because this region receives both winter and summer rains and supports two distinct annual floras on which they can feed. Desert tortoises in the Eastern Mojave Recovery Unit occupy a variety of vegetation types and feed on summer and winter annuals, cacti, perennial grasses, and herbaceous perennials. They den singly in caliche caves, bajadas, and washes. This Recovery Unit is isolated from the Western Mojave Recovery Unit by the Baker Sink, a low-elevation, extremely hot and arid strip that extends from Death Valley to Bristol Dry Lake. The Baker Sink area is generally not considered suitable for desert tortoises. Desert tortoise densities in the Eastern Mojave Recovery Unit can vary dramatically, ranging from 5 to as much as 350 adults per square mile (Service 1994).

Ivanpah and Piute-Eldorado valleys contained study plots that were analyzed in the Eastern Mojave Recovery Unit analysis. While there was no overall statistical trend in adult density over time, the 2000 survey at Goffs and the 2002 survey at Shadow Valley indicate low densities of adult tortoises relative to earlier years. Unfortunately, there are no data in the latter years for all five study plots within this Recovery Unit; and therefore, while there is no statistical trend in adult densities, we cannot conclude that tortoises have not experienced recent declines in this area. The probability of finding a carcass on a distance sampling transect was considerably higher for Ivanpah, Chemehuevi, Fenner, and Piute-Eldorado, which make up the Eastern Mojave Recovery Unit.

The **Northern Colorado Recovery Unit** is located completely in California. Here desert tortoises are located in the valleys, on bajadas and desert pavements, and to a lesser extent in the broad, well-developed washes. They feed on both summer and winter annuals and den singly in burrows under shrubs, in intershrub spaces, and rarely in washes. The climate is somewhat warmer than in other recovery units, with only 2 to 12 freezing days per year. Tortoises that occupy this unit have the California mitochondrial DNA (mtDNA) haplotype and phenotype. Allozyme frequencies differ significantly between this Recovery Unit and the Western Mojave, indicating some degree of reproductive isolation between the two.

Desert tortoises in the **Eastern Colorado Recovery Unit**, also located completely in California, occupy well-developed washes, desert pavements, piedmonts, and rocky slopes characterized by

relatively species-rich succulent scrub, creosote bush scrub, and blue palo verde-ironwood-smoke tree communities. Winter burrows are generally shorter in length, and activity periods are longer than elsewhere due to mild winters and substantial summer precipitation. Tortoises within this unit feed on summer and winter annuals and some cacti; they den singly. They also have the California mtDNA haplotype and shell type.

The **Upper Virgin River Recovery Unit** encompasses all desert tortoise habitat in Washington County, Utah, except the Beaver Dam Slope, Utah population. The desert tortoise population in the area of St. George, Utah is at the extreme northeastern edge of the species' range and experiences long, cold winters (about 100 freezing days) and mild summers, during which the tortoises are continually active. In this area the animals live in a complex topography consisting of canyons, mesas, sand dunes, and sandstone outcrops where the vegetation is a transitional mixture of sagebrush scrub, creosote bush scrub, blackbush scrub, and a psammophytic (plants that grow in sandy soils) community. Desert tortoises use sandstone and lava caves instead of burrows, travel to sand dunes for egg-laying, and use still other habitats for foraging. Two or more desert tortoises often use the same burrow. Shell morphology and mtDNA have not been studied in this Recovery Unit, but allozyme variation is similar to that found in the Northeastern Mojave Recovery Unit.

The **Western Mojave Recovery Unit** occurs completely in California and is exceptionally heterogeneous and large. It is composed of the Western Mojave, Southern Mojave, and Central Mojave regions, each of which has distinct climatic and vegetational characteristics. The most pronounced difference between the Western Mojave and other recovery units is in timing of rainfall and the resulting vegetation. Most rainfall occurs in fall and winter and produces winter annuals, which are the primary food source of tortoises. Above-ground activity occurs primarily in the spring, associated with winter annual production. Thus, tortoises are adapted to a regime of winter rains and rare summer storms. In this area desert tortoises occur primarily in valleys, on alluvial fans, bajadas, and rolling hills in saltbush, creosote bush, and scrub steppe communities. Tortoises dig deep burrows (usually located under shrubs on bajadas) for winter hibernation and summer aestivation. Desert tortoises within this unit generally den singly. They have a California mtDNA haplotype and a California shell type.

Desert Tortoise Recovery Plan Assessment and Recommendations

The U.S. General Accounting Office (GAO) Report, *Endangered Species: Research Strategy and Long-Term Monitoring Needed for the Mojave Desert Tortoise Recovery Program* (GAO 2002), directed the Service to periodically reassess the Recovery Plan to determine whether scientific information developed since its publication could alter implementation actions or allay some of the uncertainties about its recommendations. In response to the GAO report, the Service initiated a review of the existing Recovery Plan in 2003.

In March 2003, the Service impaneled the Desert Tortoise Recovery Plan Assessment Committee to assess the Recovery Plan. The Committee was selected to represent several

important characteristics with particular emphasis on commitment to solid science. The charge to the Committee was to review the entire Recovery Plan in relation to contemporary knowledge to determine which parts of the recovery plan will need updating. The recommendations of the Committee were presented to the Service and Desert Tortoise Management Oversight Group approximately a year later, on March 24, 2004. The recommendations will be used as a guide by a recovery team of scientists and stakeholders to modify the 1994 Recovery Plan. A revised recovery plan is anticipated in 2008.

Desert Tortoise Distribution

The 1994 Recovery Plan conceived desert tortoises to be distributed in large populations that required large areas and large densities to recover. However, existing data are consistent with the possibility that tortoises have evolved to exist in *metapopulations*. Metapopulation theory conceives that tortoises are distributed in metapopulation patches connected with corridors that allow inefficient and asynchronous movements of individuals among the patches (Hanski 1999, Levins and Culver 1971, Levin *et al.* 1984). This paradigm conceives that some habitat patches within the range of the desert tortoise will have low population numbers or no tortoises at all, and others will have higher population numbers. Movement among the patches is necessary for persistence of the "system." If desert tortoises evolved to exist in metapopulations, then long-term persistence requires addressing habitat fragmentation caused by highways and "satellite" urbanization. Satellite urbanization occurs when blocks of habitat become developed which are substantially disjunct from existing developments (leap-frog development) resulting in a greater edge effect and creating an area of habitat between the developments which becomes degraded over time. Ensuring the integrity and function of natural corridors among habitat patches might require active management of tortoise densities in habitat patches and associated corridors.

The prescriptions for recovery in the Recovery Plan were for individual populations and recovery planning was based on managing threats in that habitat. However, that original paradigm, and the prescriptions made within that paradigm, may be wrong. Existing data have revealed population crashes that have occurred asynchronously across the range. There are reports that some populations, which have crashed previously, have subsequently increased in population density. Additionally, all known dense populations of desert tortoises have crashed. This suggests that density-dependent mortality occurs in desert tortoise populations, and that population dynamics may be asynchronous. To date, the status and trends of desert tortoise populations are difficult to determine based only upon an assessment of tortoise density due largely to the tortoise's overall low abundance and its subterranean sheltering behavior, and the cryptic nature of this species.

If desert tortoises have historically existed in metapopulations, then connections among habitat patches are a necessary part of conservation prescriptions. Additionally, habitat suitable for tortoises, but without tortoises, should be regarded as equally necessary for recovery. Long-term persistence cannot be determined from tortoise density or tortoise numbers alone, but assessment must include the complexities of metapopulation dynamics and the habitat characteristics that

promote metapopulation dynamics including habitat connectivity through inefficient corridors (*i.e.*, partial connectivity), asynchrony of subpopulation dynamics, and several separate habitat patches.

The Desert Tortoise Recovery Plan Assessment Committee proposed a revision to the previous delineation of recovery units based on new scientific information. The recommended delineations reflect the prevailing concepts of subpopulation "discreteness," and "significance," and incorporate morphological, behavioral, genetic, and environmental information. The Committee's recommendation reduces the number of recovery units from six to five by leaving the original Upper Virgin River and Western Mojave units intact and recombining the four central units into three reconfigured units: (1) Lower Virgin River Desert; (2) Northeastern Mojave Desert (including Amargosa Valley, Ivanpah Valley, and Shadow Valley); and (3) Eastern Mojave and Colorado Desert. These recommended recovery units are based largely on the best biochemical/genetic data presented in Rainboth *et al.* (1989), Lamb *et al.* (1989), Lamb and Lydehard (1994), and Britten *et al.* (1997). Because these delineations are general and not definitive at this time, more data and analyses are needed that may result in additional modification of Recovery Unit delineations.

Threats

The Service identified key threats when the Mojave population of the desert tortoise was emergency listed as endangered and subsequently listed as a threatened species, which remain valid today. Since becoming listed under the Act, more information is available on threats to the desert tortoise with some threats such as wildfires and alien plants affecting large areas occupied by tortoises.

Alien plants continue to contribute towards overall degradation or habitat quality for the desert tortoise. Land managers and field scientists identified 116 species of alien plants in the Mojave and Colorado deserts (Brooks and Esque 2002). The proliferation of non-native plant species has also contributed to an increase in fire frequency in tortoise habitat by providing sufficient fuel to carry fires, especially in the intershrub spaces that are mostly devoid of native vegetation (Service 1994; Brooks 1998; Brown and Minnich 1986). Changes in plant communities caused by alien plants and recurrent fire may negatively affect the desert tortoise by altering habitat structure and species composition of their food plants (Brooks and Esque 2002).

Changing ecological conditions as a result of natural events or human-caused activities may stress individual tortoises and result in a more severe clinical expression of URTD (Brown *et al.* 2002). For example, the proliferation of non-native plants within the range of the tortoise has had far-reaching impacts on tortoise populations. Tortoises have been documented to prefer native vegetation over non-natives (Tracy *et al.* 2004). Non-native annual plants in desert tortoise critical habitat in the western Mojave Desert were identified to compose over 60 percent of the annual biomass (Brooks 1998). The reduction in quantity and quality of forage may stress tortoises and make them more susceptible to drought- and disease-related mortality (Brown *et al.*

1994). Malnutrition has been associated with several disease outbreaks in both humans and turtles (Borysenko and Lewis 1979). What is currently known with certainty about disease in the desert tortoise relates entirely to individual tortoises and not populations; virtually nothing is known about the demographic consequences of disease (Tracy *et al.* 2004).

Disease was identified in the 1994 Recovery Plan as an important threat to the desert tortoise. Disease is a natural phenomenon in wild populations of animals and can contribute to population declines by increasing mortality and reducing reproduction. However, URTD appears to be a complex, multi-factorial disease interacting with other stressors to affect desert tortoises (Brown *et al.* 1994; Tracy *et al.* 2004). The disease occurs mostly in relatively dense desert tortoise populations, as mycoplasmal infections are dependent upon higher densities of the host (Tracy *et al.* 2004).

Numerous wildfires occurred in desert tortoise habitat across the range of the desert tortoise in 2005 due to abundant fuel from the proliferation of non-native plant species after a very wet winter. These wildfires heavily impacted two of the six desert tortoise recovery units, burning less than 19 percent of desert tortoise habitat in the Upper Virgin River and 10 percent in the Northeastern Mojave Recovery Unit (Table 1). In the Upper Virgin River Recovery Unit, 19 percent of the Upper Virgin River critical habitat unit (CHU) burned. In the Northeastern Mojave Recovery Unit, three CHUs were impacted: about 23 percent of the Beaver Dam Slope CHU burned, 13 percent of the Gold Butte-Pakoon CHU, and 4 percent of the Mormon Mesa CHU. Although it is known that tortoises were burned and killed by the wildfires, tortoise mortality estimates are not available.

In 2006, less than 50,000 acres of desert tortoise habitat burned which includes less than 20,000 acres of desert tortoise critical habitat.

Table 1. Approximate Acres of Desert Tortoise Habitat Burned in Each Recovery Unit during 2005.

Recovery Unit	Habitat Burned (acres)	Percent Habitat Burned	CH* Burned (acres)	Percent CH Burned
Upper Virgin River**	10,446	< 19	10,446	19
Northeastern Mojave***	500,000	10	124,782	11
Eastern Mojave	6,000	< 1	1,219	<1
Western Mojave	0	0	0	0
Northern Colorado	0	0	0	0
Eastern Colorado	0	0	0	0
Total	**516,446**	-	**136,447**	-

* CH – critical habitat
** Estimates only for Upper Virgin River; GIS analysis needed
*** Potential habitat was mapped and calculated as Mojave Desert less than 4,200 feet in elevation minus playas, open water, and developed and agricultural lands.

Desert Tortoise Reproduction

Desert tortoises possess a combination of life history and reproductive characteristics that affect the ability of populations to survive external threats. Tortoises grow slowly, require 15 to 20 years to reach sexual maturity, and have low reproductive rates during a long period of reproductive potential (Turner *et al.* 1984, Bury 1987, Tracy *et al.* 2004). At Yucca Mountain, Nye County Nevada (Northeastern Mojave Recovery Unit), Mueller *et al.* (1998) estimated that the mean age of first reproduction was 19 to 20 years; and reported that clutch size (1 to 10 eggs) and annual fecundity (0 to 16 eggs) were related to female size but annual clutch frequency (0 to 2) was not. Further, Mueller *et al.* (1998) suggested that body condition during July to October may determine the number of eggs a tortoise can produce the following spring.

McLuckie and Fridell (2002) determined that the Beaver Dam Slope desert tortoise population, within the Northeastern Mojave Recovery Unit, had a lower clutch frequency (1.33 ± 0.14) per reproductive female and fewer reproductive females (14 out of 21) when compared with other Mojave desert tortoise populations. In the 1990s, dramatic tortoise population declines occurred at Beaver Dam Slope due primarily to disease and habitat degradation and alteration (Service 1994). The number of eggs that a female desert tortoise can produce in a season is dependent on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological condition (Henen 1997, McLuckie and Fridell 2002).

Desert Tortoise Numbers

Data collected on 1 square-mile permanent study plots in California indicate that tortoise populations have declined both in numbers of tortoises located during surveys and in densities of live tortoises at most sites since the plots were first established 20-30 years ago (Berry *et al.* 2002). Declines of 50 to 96 percent have occurred regardless of initial tortoise densities.

Increases in the occurrence of shell-skeletal remains have been found to correspond with declines in numbers and densities of live tortoises with the exception of certain plots where poaching has been documented (Berry 2003). Results of desert tortoise surveys at three survey plots (Beaver Dam Slope, Littlefield, and Virgin Slope) in Arizona indicate that all three sites have experienced significant die-offs.

Six live tortoises were located in a 2001 survey of the Beaver Dam Slope Exclosure Plot (Walker and Woodman 2002). Three had definitive signs of URTD, and two of those also had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 31 live tortoises in 1996, 20 live tortoises in 1989, and 19 live tortoises in 1980. The 2001 survey report indicated that it is likely that there is no longer a reproductively viable population of tortoises on this study plot.

Thirty-seven live tortoises were located in a 2002 survey of the Littlefield Plot (Young *et al.* 2002). None had definitive signs of URTD. Twenty-three tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 80 live tortoises in 1998 and 46 live tortoises in 1993. The survey report indicated that the site might be in the middle of a die-off due to the high number of carcasses observed since the site was last surveyed in 1998.

Nine live tortoises were located during the marking phase of a 2003 survey of the Virgin Slope Plot (Goodlett and Woodman 2003). The surveyors determined that the confidence intervals of the population estimate would be excessively wide and not lead to an accurate population estimate, so the recapture phase was not conducted. One tortoise had definitive signs of URTD. Seven tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 41 live tortoises in 1997 and 15 live tortoises in 1992. The survey report indicated that the site may be at the end of a die-off that began around 1996-1997.

The Western Mojave has experienced marked population declines as indicated in the Recovery Plan and this decline continues today. Spatial analyses of the West Mojave show areas with increased probabilities of encountering dead rather than live animals, areas where kernel estimates for carcasses exist in the absence of live animals, and extensive regions where there are clusters of carcasses where there are no clusters of live animals. Collectively, these analyses point generally toward the same areas within the West Mojave, namely the northern portion of the Fremont-Kramer DWMA and the northwestern part of the Superior-Cronese DWMA. Together, these independent analyses, based on different combinations of data, all suggest the same conclusion for the Western Mojave. Data are not currently available with sufficient detail for most of the range of the desert tortoise with the exception of the Western Mojave (Tracy *et al.* 2004).

Declines in tortoise abundance appear to correspond with increased incidence of disease in tortoise populations. The Goffs permanent study plot in Ivanpah Valley, California, suffered 92 to 96 percent decreases in tortoise density between 1994 and 2000 (Berry 2003). The high prevalence of disease in Goffs tortoises likely contributed to this decline (Christopher *et al.* 2003). Upper respiratory tract disease has not yet been detected at permanent study plots in the Sonoran Desert of California, but is prevalent at study plots across the rest of the species' range (Berry 2003) and has been shown to be a contributing factor in population declines in the western Mojave Desert (Brown *et al.* 1999, Christopher *et al.* 2003).

High mortality rates at permanent study plots in the northeastern and eastern Mojave and Sonoran Deserts appear to be associated with incidence of shell diseases in tortoises (Jacobson *et al.* 1994). Low levels of shell diseases were detected in many populations when the plots were first established, but increased during the 1980s and 1990s (Jacobson *et al.* 1994, Christopher *et al.* 2003). A herpes virus has been discovered in desert tortoises, but little is known about its effects on tortoise populations at this time (Berry *et al.* 2002, Origgi *et al.* 2002).

A kernel analysis was conducted in 2003-2004 for the desert tortoise (Tracy *et al.* 2004) as part of the reassessment of the 1994 Recovery Plan. Kernel analyses identify the distributions of live

tortoises and carcasses and qualitatively search for areas where distributions of live tortoises and carcasses do not overlap. These non-overlapping areas may indicate areas that have experienced recent die offs or expansions of populations. The kernel analysis revealed several areas in which the kernel estimations for live tortoises and carcasses did not overlap. These regions lacking overlap of live tortoises and carcasses (*i.e.,* carcasses are located but no live tortoises) represent areas where there were likely recent die-offs or declines in tortoise populations. The pattern of non-overlapping kernels of greatest concern is that in which there were large areas where the kernels encompassed carcasses but not live animals. The kernel analysis indicated large areas in the Piute-Eldorado Valley where there were carcasses but no live tortoises. For this entire area in 2001, there were 103 miles of transects walked, and a total of 6 live and 15 dead tortoises were located, resulting in a live encounter rate of 0.06 tortoises per mile of transect for this area. This encounter rate was among the lowest that year for any of the areas sampled in the range of the desert tortoise (Mojave population) (Tracy *et al.* 2004).

Kernel analysis for the Coyote Springs DWMA showed areas where the distributions of carcasses and living tortoises do not overlap; however, densities of adult tortoises for the region do not show a statistical trend over time. Thus, while there may be a local die-off occurring in the northern portion of this DWMA, this does not appear to influence the overall trend in the region as interpreted by study plot data. Because permanent study plots for this region were discontinued after 1996, if there have been recent declines in numbers they are not reflected in the kernel analysis. Nevertheless, large regions of non-overlapping carcass and live tortoise kernels in the regions were not identified adjacent to the Coyote Springs DWMA. The probability of finding either a live tortoise or a carcass was relatively very low for Beaver Dam Slope and Gold-Butte Pakoon and moderately low for Mormon Mesa/Coyote Springs.

The kernel analysis of the Eastern Colorado Recovery Unit shows that the distributions of the living tortoises and carcasses overlap for most of the region. The Chuckwalla Bench study plot occurs outside the study area, which creates a problem in evaluating what may be occurring in that area of the Recovery Unit. However, the few transects walked in that portion of the DWMA yielded no observations of live or dead tortoises. This illustrates a concern for drawing conclusions at a regional scale based on data from areas represented by too few study plots. The percentage of transects with live animals was relatively high for most DWMAs within the Eastern Colorado Recovery Unit. In addition, the ratio of carcasses to live animals was low within this Recovery Unit relative to others.

Long-term monitoring of desert tortoise populations is a high priority recovery task as identified in the Recovery Plan. From 1995 to 1998, pilot field studies and workshops were conducted to develop a monitoring program for the desert tortoise. In 1998, the Desert Tortoise Management Oversight Group identified line distance sampling as the appropriate method to determine rangewide desert tortoise population densities and trends. Monitoring of populations using this method is underway across the range of the desert tortoise. Successful rangewide monitoring will enable managers to evaluate the overall effectiveness of recovery actions and population responses to these actions, thus guiding recovery of the desert tortoise (Mojave population).

Rangewide Population Monitoring Results: 2001-2005

Rangewide tortoise population monitoring began in 2001 and is conducted annually (Table 2). Rangewide sampling of desert tortoises consisted of 4,986 transects totaling 15,957 miles which is the most comprehensive attempt undertaken to date to establish the density of this species (Service 2006). The rangewide monitoring program is designed to detect long-term population trends. However, density estimates from any brief window of time (*e.g.*, 2001-2005) would be expected to detect only catastrophic declines or remarkable population increases. Therefore, following the first five years of the long-term monitoring project, the goal is not to document trends within this time period, but to gather information on baseline densities, and year-to-year and recovery unit-to-recovery unit variability. This information will also reflect transect-to-transect variability in observations as well as regional variability in detection functions.

Rangewide sampling was initiated during a severe drought that intensified in 2002 and 2003, particularly in the western Mojave Desert in California. At the time the Recovery Plan was written, there was less consideration of the potentially important role of drought in the desert ecosystem, particularly regarding desert tortoises. In the meantime, studies have documented vulnerability of juvenile (Wilson *et al.* 2001) and adult tortoises (Peterson 1994, Peterson 1996, Henen 1997, Longshore *et al.* 2003) to drought.

Considerable decreases in density were reported in 2003 in the Eastern Colorado and Western Mojave recovery units, with no correspondingly large rebound in subsequent estimates. Desert tortoise densities reported in these recovery units were approximately 8 to 9 tortoises per square mile.

Table 2. Summary of Desert Tortoise Densities by Recovery Unit

	Year	# of Transects	Length (mi)	# of Adult Tortoises Located	Density (mi^2)	95 percent Confidence Interval Low	95 percent Confidence Interval High
Recovery Units (5)	2001	1,631	1,653	279	9.40	8.02	11.0
	2002	1,010	2,490	289	8.95	7.35	10.9
	2003	990	2,407	354	8.19	6.77	9.90
	2004	610	4,086	445	8.05	6.97	9.29
	2005	745	5,321	489	8.76	7.66	10.0
Upper Virgin River[1]	2001	159	195	168	48.6	37.0	63.7
	2002	–	–	–	–	–	–
	2003	157	192	96	27.2	21.1	35.0
	2004	–	–	–	–	–	–
	2005	155	189	136	35.1	26.4	46.7

[1]Data from McLuckie *et al.* (2006)

B. *Desert Tortoise Critical Habitat*

On February 8, 1994, the Service designated approximately 6.45 million acres of critical habitat for the Mojave population of the desert tortoise in portions of California (4.75 million acres), Nevada (1.22 million acres), Arizona (339 thousand acres), and Utah (129 thousand acres) (59 FR 5820-5846, also see corrections in 59 FR 9032-9036), which became effective March 10, 1994. Desert tortoise critical habitat was designated by the Service to identify the key biological and physical needs of the desert tortoise and key areas for recovery, and focuses conservation actions on those areas. Desert tortoise critical habitat is composed of specific geographic areas that contain the primary constituent elements of critical habitat, consisting of the biological and physical attributes essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. The specific primary constituent elements of desert tortoise critical habitat are:

1. Sufficient space to support viable populations within each of the six recovery units, and to provide for movement, dispersal, and gene flow;
2. sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species;
3. suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites;
4. sufficient vegetation for shelter from temperature extremes and predators; and
5. habitat protected from disturbance and human-caused mortality.

CHUs were based on recommendations for DWMAs outlined in the *Draft Recovery Plan for the Desert Tortoise (Mojave Population)* (Service 1993). These DWMAs are also identified as "desert tortoise ACECs" by BLM. Because the critical habitat boundaries were drawn to optimize reserve design, the critical habitat unit may contain both "suitable" and "unsuitable" habitat. Suitable habitat can be generally defined as areas that provide the primary constituent elements.

Although recovery of the tortoise will focus on DWMAs/ACECs, section II.A.6. of the Recovery Plan and section 2(b) of the Act provide for protection and conservation of ecosystems on which federally-listed threatened and endangered species depend, which includes both recovery and non-recovery areas. The Mojave Desert ecosystem, of which the desert tortoise and its habitat are an integral part, consists of a dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit (Noss and Cooperrider 1994). Actions that adversely affect components of the Mojave Desert ecosystem may directly or indirectly affect the desert tortoise. The Recovery Plan further states that desert tortoises and habitat outside recovery areas may be important in recovery of the tortoise. Healthy, isolated tortoise populations outside recovery areas may have a better chance of surviving catastrophic effects such as disease, than large, contiguous populations (Service 1994).

The Recovery Plan recommended DWMAs and subsequently the Service designated CHUs based on these proposed DWMAs (Service 1993). When designated, desert tortoise critical habitat contained all the primary constituent elements. The following seven principles of conservation biology serve as the standards by which the Service determines whether or not the CHUs are functioning properly:

(1) *Reserves should be well-distributed across the species' range.* The entire range of the Mojave desert tortoise occurs within one of the six recovery units identified in the Recovery Plan and at least one DWMA and CHU occurs within each recovery unit. The reserves remain well-distributed across the range of the desert tortoise.

(2) *Reserves should contain large blocks of habitat with large populations of target species.* The desert tortoise requires large, contiguous areas of habitat to meet its life requisites. Each DWMA and its associated CHUs were designated to conserve contiguous blocks of habitat that exceed 500,000 acres, with the exception of the Upper Virgin River Recovery Unit (Table 3). The Upper Virgin River Recovery Unit does not meet the minimum size requirement identified in the Recovery Plan; however, the Service anticipates that reserve-level management will adequately conserve the desert tortoise within this recovery unit. Designation of CHUs were based largely on transect data and included areas with the largest populations of desert tortoises.

(3) *Blocks of habitat should be close together.* This principle was met when CHUs were designated and remains valid.

(4) *Reserves should contain contiguous rather than fragmented habitat.* This principle was met when CHUs were designated and generally continues to be met. Desert tortoise-proof fencing has been constructed along major roads and highways that traverse critical habitat including Interstate 15 in Nevada and California (Ivanpah Valley DWMA/CHU), U.S. Highway 95 in Nevada (Piute-Eldorado DWMA/CHU), and Highway 58 in California (Fremont-Kramer DWMA/CHU). Major roads and highways alone constitute a barrier to tortoise movements without fencing; however, the fencing minimizes take of tortoises and culverts or underpasses allow for limited tortoise movement across the road or highway.

(5) *Habitat patches should contain minimal edge-to-area ratios.* This principle was met when CHUs were designated and generally continues to be valid. Notable exceptions include the northern Gold Butte-Pakoon CHU, and the southern termini of the Mormon Mesa, Ivanpah Valley, and Chuckwalla CHUs which have large edge-to-area rations and are further compromised by highways that traverse these relatively narrow areas within the CHUs. Pending development of private lands in Coyote Spring Valley would substantially increase the edge-to-area ratio in the southwestern section of the Mormon Mesa CHU.

(6) *Blocks should be interconnected by corridors or linkages connecting protected, preferred habitat for the target species.* Most CHUs are contiguous with another CHU with the exception of Ord-Rodman, Ivanpah Valley, Gold Butte Pakoon, and Upper Virgin River CHUs. Interstate

15 and the Virgin River separate the Gold Butte-Pakoon CHU from other CHUs in the Northeastern Mojave Recovery Unit. Similarly, Interstate 40 separates the Piute-Eldorado and Chemehuevi CHUs, and Ord Rodman and Superior-Cronese CHUs. Ongoing and proposed development in Coyote Spring Valley may fragment the Mormon Mesa DWMA by restricting tortoise movements between the Kane Springs ACEC to the north and Coyote Springs ACEC to the south, depending on the extent of development.

(7) *Blocks of habitat should be roadless or otherwise inaccessible to humans.* Achieving this principle is the most problematic. A 2001 inventory of roads in the Western Mojave suggests that road density increased from the mid-1980s. Further evaluation should be conducted as some of the recently mapped roads were actually historical roads especially with the advent of effective mapping capabilities (Tracy *et al.* 2004). Roads proliferate desert tortoise habitat rangewide and may be increasing in density (Tracy *et al.* 2004).

The recommendations for desert tortoise critical habitat in the Recovery Plan include elimination of specified activities that are incompatible with desert tortoise conservation including habitat destruction that diminishes the capacity of the land to support desert tortoises, and grazing by livestock, feral burros and horses. Since approval of the Recovery Plan, all livestock grazing in desert tortoise critical habitat has either been eliminated (Nevada) or substantially reduced and managed to minimize potential impacts to desert tortoise critical habitat (California, Arizona, and Utah). BLM and National Park Service (NPS) manage for zero burros in Nevada and the California Desert Managers Group developed a burro management plan in 2004.

Table 3. Desert Tortoise CHUs, DWMAs, and Recovery Units- Size and Location

CHU	SIZE (ac.)	STATE	DWMA	RECOVERY UNIT
Chemehuevi	937,400	CA	Chemehuevi	Northern Colorado
Chuckwalla	1,020,600	CA	Chuckwalla	Eastern Colorado
Fremont-Kramer	518,000	CA	Fremont-Kramer	Western Mojave
Ivanpah Valley	632,400	CA	Ivanpah Valley	Eastern Mojave
Pinto Mountain	171,700	CA	Joshua Tree	Western Mojave/Eastern Colorado
Ord-Rodman	253,200	CA	Ord-Rodman	Western Mojave
Piute-Eldorado- CA Piute-Eldorado- NV	453,800 516,800	CA NV	Fenner Piute-Eldorado	Eastern Mojave Northeastern & Eastern Mojave
Superior-Cronese	766,900	CA	Superior-Cronese Lakes	Western Mojave
Beaver Dam	87,400 74,500 42,700	NV UT AZ	Beaver Dam Beaver Dam Beaver Dam	Northeastern Mojave (all)
Gold Butte-Pakoon	192,300 296,000	NV AZ	Gold Butte-Pakoon Gold Butte-Pakoon	Northeastern Mojave (all)
Mormon Mesa	427,900	NV	Mormon Mesa Coyote Spring	Northeastern Mojave
Upper Virgin River	54,600	UT	Upper Virgin River	Upper Virgin River

Further information on the status of desert tortoise critical habitat can be found in the following documents:

- Desert Tortoise Recovery Plan Assessment Report (Tracy *et al.* 2004) - all CHUs.
- Final Environmental Impact Report and Statement for the West Mojave Plan (BLM 2005) - Fremont-Kramer CHU, Superior-Cronese CHU, Ord-Rodman CHU, and Pinto Mountains CHU.
- Mojave National Preserve General Management Plan (NPS 2002) - Ivanpah Valley CHU and Piute-Eldorado CHU.
- Northern and Eastern Colorado Coordinated Management Plan (BLM 2002a) - Chemehuevi CHU, Pinto Mountains CHU, and Chuckwalla CHU.
- Northern and Eastern Mojave Desert Management Plan (BLM 2002b) - Ivanpah Valley CHU, Piute-Eldorado CHU, and Chemehuevi CHU.
- Clark County Multiple Species Habitat Conservation Plan (HCP) (RECON 2000) - Beaver Dam Slope CHU, Mormon Mesa CHU, Gold Butte-Pakoon CHU, and Piute-Eldorado CHU.
- Washington County HCP (Washington County Commission 1995).
- Biological Assessment for the Proposed Addition of Maneuver Training Land at Fort Irwin, CA (U.S. Army National Training Center 2003) - Superior-Cronese CHU.

III. Environmental Baseline

A. Status of the Species/Critical Habitat Within the Action Area

The vegetation type that occurs within the range of the desert tortoise and the project area is Mojave Desert scrub. The southeastern portion of Nevada is characterized as an intermediate zone between the Great Basin Desert Scrub located generally to the north of Delamar, Clover, and the Pahranagat Mountains, and the Mojave Desert Scrub to their south. Plants and animals occupying Mojave Desert Scrub are similar to those observed in the Lower Colorado River Subdivision of Sonoran Desert Scrub, within the creosote bush series, *Larrea tridentata-Ambrosia dumosa* association. These open-plant communities occupy areas characterized by gravelly bajadas and inconspicuous low plains. Common plant species observed during surveys include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), Mojave yucca (*Yucca schidigera*), Mormon tea (*Ephedra* spp.), ratany (*Krameria* spp.), and fourwing saltbush (*Atriplex canescens*).

Desert tortoise surveys were conducted and other forms of data were collected in support of preparation of the environmental impact statement for SWIP. Survey data were collected within 2-mile-wide study corridors centered on the proposed alignment. In July 2006, two biologists conducted field surveys for the desert tortoise along the right-of-way. The survey consisted of a total of 29 triangular strip transects providing 43.5 miles of total transect length. Each side of the triangular strip transect is 0.5 mile and is walked by desert tortoise biologists while recording tortoises and sign observed within a 9-meter-wide (10-yard-wide) area. The total number of

tortoise sign per transect was then adjusted such that multiple sign obviously associated with a single individual was reduced to one sign (referred to as the Corrected Sign or CS). The total CS per transect was used to estimate the number of tortoises inhabiting the survey area based on methods described by Berry and Nicholson (1984). Tortoises or sign thereof were found in 10 of the 29 transects. Most of the CS (88 percent) was found along the right-of-way at the southernmost portion of the Mormon Mesa CHU and north of Kane Springs Road in the same CHU. Two live tortoises were encountered with a total of 32 observations of tortoise sign. Total corrected sign for all transects was 25.

Desert tortoise population data was collected in 2001, 2002, 2003, using line transects and distance sampling (TDS). The ratio of carcasses versus live tortoises was calculated from transect observations (Tracy *et al.* 2004). Ratios much larger than "1" suggest excessive tortoise mortality and therefore, a decline in tortoise populations. Ratios around "1" indicate a stable population. The Mormon Mesa CHU ratio was 1.58 suggesting that desert tortoise populations in this CHU have only experienced a small decline.

Specific data on the distribution and abundance of desert tortoise in the project area was obtained from BLM's Las Vegas Field Office including maps showing the results of the 1.5-mile triangular strip-transect surveys. Updated biological information was collected including literature reviews and field surveys for the desert tortoise along the transmission line from the southern end of Delamar Lake to the Harry Allen Substation.

The proposed project would occur within the Mormon Mesa CHU. The right-of-way that occurs within critical habitat approximates U.S Highway 93. The right-of-way enters critical habitat approximately 10 miles north of Interstate 15. Approximately 43 miles of the right-of-way occurs within or immediately adjacent to desert tortoise critical habitat.

The Mormon Mesa CHU includes expansive bajadas which provide prime tortoise habitat. The CHU is unique in that it is the only east-west oriented CHU in Nevada and may serve as an east-west corridor for movement of tortoises within and between Nevada, Utah, and Arizona. Desert tortoise populations are patchy in distribution in the Mormon Mesa CHU, as they typically are throughout their range, but estimates identify 41 to 87 subadults and adults per square mile (Service 1994).

B. Factors Affecting the Desert Tortoise and Its Critical Habitat Within the Action Area

Most impacts to the Mormon Mesa CHU occur along the western section of the CHU which includes the proposed action area. In 2005, wildfires burned across the northernmost portion of the right-of-way at the northern range limit for the desert tortoise. A commercial recycling facility occurs on private land east of the proposed project near the intersection of US 93 and Kane Springs Road. A large residential and commercial development (Coyote Springs Investment; CSI) is under development mostly just east of US 93, north of State Route 168, and south of Kane Springs Road. The development will result in habitat loss, fragmentation, and

alteration. Although tortoises are being removed from the development, some inadvertent mortality may occur. Development in Coyote Spring Valley would also increase human activities within the CHU such as recreational activities, increasing the likelihood of collection, handling, vandalism of tortoises, and dumping. Human interaction can also alter the predator regime by introducing domestic dogs and attracting raven populations. Release of captive tortoises may introduce diseased tortoises into the wild population, increasing the risk of disease.

On June 6, 2007, the Service issued a reinitiated, tiered biological opinion to the U. S. Army Corps of Engineers (Corps) for construction of a flood detention basin along and west of US 93 (File No. 1-5-05-FW-536-Tier 01R) to support development in Coyote Spring Valley. The Corps will amend their Section 404 (of the Clean Water Act) permit for the CSI development to include the new location of potable water reservoir facilities and detention basins on BLM-administered land. In coordination with the Corps, BLM will approve the right-of-way application for the construction and operation of potable water reservoir facilities and detention basins in BLM utility corridor located west of US 93. The proposed SWIP project would cross through this area.

Numerous paved and unpaved roads occur within the action area, some of which have been identified and proposed for access for the project. Signs of human activities were observed during the July 2007 survey including a campsite, garbage dumping/littering, shooting areas (firearms), utility lines, and cattle scat. The Harry Allen Substation occurs at the southern terminus of the proposed project.

Habitat Conservation Plans Completed in the Action Area

1. On July 11, 1995, the Service issued a section 10(a)(1)(B) incidental take permit under the Act (No. PRT-801045) to Clark County, Nevada, including cities within the county and the Nevada Department of Transportation (NDOT). The permit became effective August 1, 1995, and allowed the "incidental take" of desert tortoises for a period of 30 years on 111,000 acres of non-Federal land in Clark County, and approximately 2,900 acres associated with NDOT activities in Clark, Lincoln, Esmeralda, Mineral, and Nye counties, Nevada. The Clark County Desert Conservation Plan (DCP) served as the permittees' habitat conservation plan and detailed their proposed measures to minimize, monitor, and mitigate the effects of the proposed take on the desert tortoise (Regional Environmental Consultants 1995). The permittees imposed, and NDOT paid, a fee of $550 per acre of habitat disturbance to fund these measures. The permittees expended approximately $1.65 million per year to minimize and mitigate the potential loss of desert tortoise habitat. The majority of these funds were used to implement minimization and mitigation measures, such as increased law enforcement; construction of highway barriers; road designation, signing, closure, and rehabilitation; and tortoise inventory and monitoring within the lands initially conserved during the short-term HCP, and other areas being managed for desert tortoise recovery (e.g., ACECs or DWMAs). The benefit to the species, as provided by the DCP,

substantially minimized and mitigated those effects which occurred through development within the permit area and aided in recovery of the desert tortoise.

2. On November 22, 2000, the Service issued an incidental take permit (TE-034927) to Clark County, Nevada, including cities within the county and the Nevada Department of Transportation. The Clark County Multiple Species Habitat Conservation Plan (MSHCP) and Environmental Impact Statement (RECON 2000), serves as the permittees' HCP and details their proposed measures to minimize, mitigate, and monitor the effects of covered activities on the 78 species. In the biological/conference opinion (File No. 1-5-00-FW-575), the Service determined that issuance of the incidental take permit would not jeopardize the listed desert tortoise or southwestern willow flycatcher, or any of the 76 species that are not listed nor proposed for listing under the Act that are covered under the incidental take permit. The incidental take permit allows incidental take of covered species for a period of 30 years on 145,000 acres of non-Federal land in Clark County south of the 38th parallel in Nevada. The MSHCP covers the CSI development in the Clark County portion of Coyote Spring Valley.

   On November 2, 2007, the Service published a Notice of Availability (72 FR 62254) of the Coyote Spring MSHCP and supporting documents addressing the potential effect of development in Coyote Spring Valley in Lincoln County, Nevada. If issued, the incidental take permit for the Coyote Spring MSHCP would exempt incidental take for the desert tortoise and four other listed species on 21,454 acres.

Programmatic Consultations Affecting the Action Area

1. BLM Las Vegas Field Office. On November 25, 1997, the Service issued a programmatic biological opinion (File No. 1-5-97-F-251) to BLM for implementation of various land management programs within non-critical desert tortoise habitat and the Las Vegas planning area. Activities that were proposed that may affect the desert tortoise in the action area include issuance of rights-of-way, R&PP leases, mineral material sales and leases, and mining plans of operation.

   On June 18, 1998, the Service issued a programmatic biological opinion (File No. 1-5-98-F-053) to BLM for implementation of various land management programs within desert tortoise habitat and the Las Vegas planning area, including desert tortoise critical habitat and ACECs. Activities that were proposed that may affect the desert tortoise in the action area include recreation; designation of utility corridors and mineral material extraction areas along US 93; and designation of the Coyote Spring, Mormon Mesa (Clark County portion), and Gold Butte desert tortoise ACECs.

2. BLM Caliente Field Station. On March 3, 2000, the Service issued a programmatic biological opinion (File No. 1-5-99-F-450) to BLM for implementation of various land management programs within desert tortoise habitat and the Caliente planning area.

Activities that were addressed were similar to BLM's Las Vegas Field Office including designation of the Kane Springs, Mormon Mesa (Lincoln County portion), and Beaver Dam Slope ACECs.

IV. Effects of the Proposed Action on the Listed Species/Critical Habitat

Linear construction projects can negatively affect desert populations. Studies suggest that differences in the extent of the threat are related to the scale of the project, the ability of crews to avoid disturbing burrows, and timing of construction to avoid peak activity periods of tortoises (Boarman 2002). In addition to the discrete disturbance points formed by towers and lines, maintenance roads and repeated operations can (1) introduce continuous sources of disturbance and (2) provide potential sites for invasion of exotic species. Rights-of-way can cause habitat destruction and alteration where vegetation is minimal, possibly increasing mortality, directly or indirectly (Boarman 2002).

The greatest potential threat to desert tortoises resulting from the proposed action is from vehicles and heavy equipment activity on new and existing access roads. Roads provide direct invasion routes and habitat generation for invasive weedy plants. Tortoises could also be killed or injured as a result of being crushed by worker vehicles commuting to and from the project area. Tortoises in harm's way and not located before project activities commence, or not avoided by vehicles, could also be killed or injured. Any tortoise on an access road during project hours would be highly vulnerable. If vehicles travel at excessive speeds on access roads they may inadvertently run over desert tortoises. Project vehicles or equipment that stray from designated areas or widen existing access roads may crush desert tortoises aboveground or in their burrows or damage habitat outside the project area. Tortoises could wander into the construction work area or take refuge underneath project vehicles and equipment, and be killed or injured when the vehicle/equipment is moved.

Following construction, the public may use project access roads which may result in adverse effects to tortoise populations. Humans use the desert for off-road exploration, casual shooting and target practice, personal or commercial collection of animals and plants, searches and digging for minerals and gems, geocaching (GPS guided stash hunts), and even the production of illegal drugs. Desert tortoise shells found in the Mojave Desert with bullet holes were examined forensically with the finding that the tortoises were alive when they were shot (Berry 1986), suggesting that illegal shooting of tortoises could occur. Project personnel could illegally collect tortoises for pets or bring dogs to the project area. Measures proposed by BLM to (1) clear project areas of tortoises, (2) implement a desert tortoise awareness program, (3) provide an onsite biologist, (4) prohibit pets from the project area, (5) impose a speed limit, (6) avoid "sensitive periods" for the desert tortoise, and (7) close unnecessary roads following construction and control public access, should minimize the potential effects to the tortoise described above. Although a maximum speed limit of 20 miles per hour will be established and biological monitors will be present, the potential remains (though minimized) for vehicle-wildlife related accidents.

Project activities may provide food in the form of trash and litter which attracts important tortoise predators such as the common raven, kit fox, and coyote (BLM 1990, Boarman and Berry 1995). The majority of raven predation occurs during the spring and is most likely accomplished by breeding birds (Boarman 2002). Ravens use transmission towers as well as other anthropogenic structures as nest sites which threaten small tortoises in the area surrounding the nest site (Boarman 2002). During the raven breeding season, most foraging is probably done near the nest (Sherman 1993) and most food is likely brought back to or near the nest. Natural predation in undisturbed, healthy ecosystems is generally not an issue of concern. However, predation rates may be altered when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1500 percent from 1968 to 1988 in response to expanding human use of the desert (Boarman 1992). Since ravens were scarce in this area prior to 1940, the current level of raven predation on juvenile desert tortoises is considered to be an unnatural occurrence (BLM 1990). Some forms of trash may be ingested by tortoises or they may become entangled resulting in their injury or death. If fuel or other hazardous materials are spilled in desert tortoise habitat, desert tortoises and their habitat may be adversely affected as a result. Measures proposed by BLM to (1) implement a litter-control program and require trash and food to be disposed of properly in predator-proof containers, (2) inspect structures for raven nesting, (3) prohibit hazardous material drainage, and (4) provide desert tortoise awareness training and an onsite biologist, should minimize these effects.

Tortoises that are physically moved out of project areas to prevent mortality or injury could be inadvertently harmed if not handled properly. Urine and large amounts of urates may be voided during handling and may represent a severe water loss, particularly to juveniles (Luckenbach 1982). Overheating can occur if tortoises are not placed in the shade when ambient temperatures equal or exceed temperature maximums for the species (Desert Tortoise Council 1994, revised 1999). The timing of the proposed project to avoid sensitive periods for the tortoise and measures proposed by BLM to conduct clearance surveys and provide qualified biologists should minimize these effects.

The proposed project would result in disturbance of 231 acres of non-critical desert tortoise habitat and 365 acres of critical desert tortoise habitat. Disturbance consists of access routes for project vehicles and equipment, tower work sites, a concrete batch plant, wire pulling and tensioning sites, and guard structures. Approximately 200 acres will be lost for an indefinite period and the remaining approximately 400 acres will not return to pre-construction function for more than 10 years (long-term disturbance). Measures proposed by BLM to (1) assess remuneration fees, (2) initiate restoration activities, (3) limit extent of disturbance and travel by project vehicle and equipment, (4) minimize disturbance of vegetation, (5) implement a tortoise awareness training, and (6) flag or mark construction limits, should minimize most of these effects.

The use of blasting may result in take of desert tortoises through noise and ground vibration. Open excavations may result in tortoise falls and entrapment. The right-of-way would become a linear disturbed area that provides open, barren areas that increase the visibility of tortoises to

avian and other predators and reduce the thermal cover for tortoises, contributing towards fragmentation of tortoise habitat and populations. The disturbance and use of earth moving equipment may increase the spread of weeds and alien grasses which facilitate wildfires. Measures proposed by BLM to (1) relocate tortoises from blasting zones, (2) cover or fence open excavations, and (3) restore habitat, should minimize most of these effects.

The Service believes that implementation of the proposed action including the minimization measures may result in no more than two desert tortoises being killed or injured. All desert tortoises that appear on the right-of-way in harm's way may be captured and relocated or temporarily penned (when inactive).

V. Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, tribal, local government, or private) activities that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service determined that future actions in the action area would likely require section 7 consultation or fall under purview of an HCP (section 10 of the Act). Thus, no future non-Federal activities are reasonably certain to occur in the action area; thus, there are no cumulative effects as a result of the proposed action.

VI. Conclusion

After reviewing the current status of the desert tortoise and its critical habitat, the environmental baseline for the action area, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the project, as proposed and analyzed, is not likely to jeopardize the continued existence of the threatened desert tortoise (Mojave population).

Critical habitat for the desert tortoise has been designated in portions of the Piute and Eldorado valleys, Mormon Mesa, Gold Butte, and Beaver Dam Slope areas of Nevada. The proposed project would result in new disturbance of critical habitat in the Mormon Mesa CHU. However, it is the Service's biological opinion that the proposed project is not likely to result in adverse modification of designated critical habitat for the desert tortoise (Mojave population) or diminish the capability of the area to serve its role for recovery by continuing to provide the primary constituent elements of critical habitat. This conclusion is based on the following:

1. The proposed project will not result in a level of take of desert tortoise that would significantly affect the rangewide number, distribution, or reproduction of the species; tortoises that are taken as a result of the project are anticipated to remain in the wild with

no long-term effects except for two desert tortoises estimated to be killed or injured by project activities.

2. Measures have been proposed by BLM and Great Basin to minimize the effects of the proposed action on the desert tortoise.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, as amended, prohibits take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The terms and conditions may include restated or modified measures proposed by BLM or additional measures considered necessary by the Service. Where these terms and conditions vary from or contradict the minimization measures proposed under the Description of the Proposed Action, specifications in these terms and conditions shall apply. The measures described below are nondiscretionary and must be implemented by BLM so that they become binding conditions of any project, contract, grant, or permit issued by BLM or other jurisdictional Federal agencies as appropriate, in order for the exemption in section 7(o)(2) to apply. The Service's evaluation of the effects of the proposed actions includes consideration of the measures developed by BLM, and repeated in the *Description of the Proposed Action* portion of this biological opinion, to minimize the adverse effects of the proposed action on the desert tortoise. Any subsequent changes in the minimization measures proposed by BLM may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR § 402.16. These reasonable and prudent measures are intended to clarify or supplement the protective measures that were proposed by BLM as part of the proposed action.

BLM has a continuing duty to regulate the activity that is covered by this incidental take statement. If BLM fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to permits or grant documents, and/or fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

I. Amount or Extent of Take Anticipated

Based on the analysis of effects provided above, measures proposed by BLM, and anticipated project duration, the Service anticipates that the following take could occur as a result of the proposed action:

1. The Service determined that no more than two desert tortoises would be incidentally killed or injured as a result of the proposed project. Should any desert tortoise be killed or injured in association with the proposed action, all activity in the vicinity of the incident shall cease and the project proponent shall immediately contact the Service.

2. All desert tortoises located in harm's way will be harassed by capture and removal from the project area. Based on survey data, description of proposed activities, timing of the proposed project, and description of the project area, the Service estimates that no more than 45 desert tortoises may be taken (other than killed or injured) by non-lethal means as a result of project activities.

3. An unknown number of desert tortoise nests with eggs may be excavated and relocated. The Service determined that no desert tortoise nests with eggs are anticipated to be destroyed as a result of project activities.

4. An unknown number of desert tortoises may be taken as a result of increased raven predation in association with the proposed action; however, the Service estimates that the potential increase in ravens will be minimized by measures proposed by BLM to control litter and identify raven nest sites on the right-of-way.

II. Effect of Take

In the accompanying biological opinion, the Service has determined that this level of anticipated take will not jeopardize the continued existence of the desert tortoise.

III. Reasonable and Prudent Measures

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of desert tortoise:

1. BLM shall ensure implementation of measures to minimize injury and mortality of desert tortoise as a direct or indirect result of project activities including capture and handling of desert tortoises.

2. BLM shall ensure implementation of measures to minimize predation on tortoises by ravens or other desert tortoise predators attracted to the project area.

3. BLM shall ensure implementation of measures to minimize loss and long-term degradation and fragmentation of desert tortoise habitat, such as soil compaction, erosion, crushed vegetation, or introduction of non-native invasive plants or weeds as a result of project activities.

4. BLM shall ensure implementation of measures to ensure compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this biological opinion.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, BLM must ensure full compliance with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. To implement Reasonable and Prudent Measure Number 1, BLM shall ensure implementation of the following measures to minimize mortality and injury of desert tortoises as a result of project activities, including capture and handling of desert tortoises:

    a. An authorized desert tortoise biologist will be onsite during project activities within desert tortoise habitat. Biologists, monitors, or anyone responsible for conducting monitoring or desert tortoise field activities associated with the project shall complete the Qualifications Form (Attachment A) and submit it to the Service for review and approval as appropriate. Allow 30 days for Service review and response.

    b. Prior to initiation of construction, an authorized biologist or authorized monitor shall present a desert tortoise awareness program to all personnel who will be onsite, including but not limited to contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain information concerning the biology and distribution of the desert tortoise and other sensitive species, their legal status and occurrence in the project area; the definition of "take" and associated penalties; the terms and conditions of this biological opinion; the means by which employees can help facilitate this process; responsibilities of workers, monitors, biologists, and the CIC; and reporting procedures to be implemented in case of desert tortoise encounters or non-compliance with this biological opinion. The name of every individual trained will be recorded on a sign-in sheet. Each trained individual will be given evidence indicating they have received this training and will keep that evidence with them at all times when they are in the project area.

    c. Immediately prior to vehicle and equipment travel on the right-of-way, Service-authorized individuals shall survey for desert tortoises and their burrows using

techniques providing 100-percent coverage of the right-of-way and an additional area approximately 90 feet from both sides of the right-of-way. Transects will be no greater than 30 feet apart. All potential desert tortoise burrows will be examined to determine occupancy of each burrow by desert tortoises and handled in accordance with Term and Condition 1.d. below.

d. All potential desert tortoise burrows located within the project area that are at risk for damage shall be excavated by hand by authorized personnel, tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises. All desert tortoise handling and removal, and burrow excavations, including nests, shall be conducted in accordance with the Service-approved protocol (Desert Tortoise Council 1994, revised 1999). If the Service or Desert Tortoise Council releases a revised protocol for handling of desert tortoises before initiation of project activities, the revised protocol shall be implemented for the project area. Alternatively, tortoises may be temporarily penned to ensure their safety in accordance with Term and Condition 1.e. below.

e. Desert tortoises found in the project area sheltering in a burrow during a period of reduced activity (*e.g.,* winter), may be temporarily penned. Tortoises should not be penned in areas of moderate or heavy public use. Penning shall be accomplished by installing a circular fence, approximately 20 feet in diameter to enclose the tortoise/burrow. The pen should be constructed with durable materials (*i.e.,* 16 gauge or heavier) suitable to resist desert environments. Fence material should consist of ½-inch hardware cloth or 1-inch horizontal by 2-inch vertical, galvanized welded wire. Pen material should be 24 inches in width. Steel T-posts or rebar (3 to 4 feet) should be placed every 5 to 6 feet to support the pen material. The pen material should extend 18 to 24 inches aboveground. The bottom of the enclosure will be buried several inches; soil mounded along the base; and other measures should be taken to ensure zero ground clearance. Care shall be taken to minimize visibility of the pen by the public. A biologist, monitor, or designated worker shall check the pen daily.

f. Desert tortoises and eggs found within construction sites will be removed by an authorized desert tortoise biologist or authorized monitor in accordance with the most current protocols identified by BLM and the Service. Desert tortoises will be moved solely for the purpose of moving them out of harm's way. Desert tortoises will be relocated up to 1,500 feet into adjacent undisturbed habitat on protected public land in accordance with Service-approved handling protocol (Desert Tortoise Council 1994, revised 1999). The disposition of all tortoises handled shall be documented.

g. Desert tortoises shall be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (*e.g.*, gaping, foaming at the mouth, *etc.*), or are

placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. No desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95°F. Ambient air temperature shall be measured in the shade, protected from wind, at a height of 2 inches above the ground surface. No desert tortoise shall be captured if the ambient air temperature is anticipated to exceed 95°F before handling and relocation can be completed. If the ambient air temperature exceeds 95°F during handling or processing, desert tortoises shall be kept shaded in an environment that does not exceed 95°F and the animals shall not be released until ambient air temperature declines to below 95°F.

h. All fuel, transmission or brake fluid leaks, or other hazardous materials shall not be drained onto the ground or into streams or drainage areas. All petroleum products and other potentially hazardous materials shall be removed to a disposal facility authorized to accept such materials. Waste leaks, spills or releases shall be reported immediately to BLM. BLM or the project proponent shall be responsible for spill material removal and disposal to an approved off-site landfill. Servicing of construction equipment will take place only at a designated area. All fuel or hazardous waste leaks, spills, or releases will be stopped or repaired immediately and cleaned up at the time of occurrence. Service and maintenance vehicles will carry a bucket and pads to absorb leaks or spills.

i. Vehicles shall not exceed 20 miles per hour on access roads except where otherwise posted. Authorized desert tortoise biologists and/or monitors will ensure compliance with speed limits during construction.

j. Project personnel shall exercise caution when commuting to the project area and obey speed limits to minimize any chance for the inadvertent injury or mortality of species encountered on roads leading to and from the project site. All desert tortoise observations, including mortalities, shall be reported directly to an authorized desert tortoise biologist and the Service. Pets will be prohibited on the project.

k. Any vehicle or equipment on the right-of-way within desert tortoise habitat will be checked underneath before moving. This includes all construction equipment and the area under vehicles should be checked any time a vehicle is left unattended, as well as in the morning before any construction activity begins. If a desert tortoise is observed, an authorized biologist will be contacted.

l. The biologist shall ensure that no habitat is disturbed outside designated areas as a result of the project, including ensuring that all vehicles and equipment remain on

the right-of-way or areas devoid of native vegetation. All cross-country travel and travel outside designated areas are prohibited.

m. All desert tortoises observed within the project area or access road shall be reported immediately to the authorized biologist. The biologists shall halt activities as necessary to avoid harm to a desert tortoise. Project activities that may endanger a desert tortoise shall cease until the desert tortoise moves out of harm's way or is moved out of harm's way by an authorized desert tortoise biologist.

n. Only water or an alternative substance approved by BLM will be used as a dust suppressant.

o. If blasting is necessary, all tortoises located within 100 feet of the blast site will be removed and temporarily relocated in accordance with desert tortoise handling protocol, prior to blasting. Prior to any blasting, all tortoise burrows or coversites within a 200-foot radius of the blast site will be located and the entrances carefully stuffed with crumpled newspaper or other material approved by BLM and the Service. After blasting is completed, all burrows and coversites will be inspected for damage, and stuffing material will be removed. If a burrow or coversite has collapsed and there is a possibility that it could be occupied, it will be excavated to ensure that no tortoises have been buried and are in danger of suffocation.

p. To prevent mortality, injury, and harassment of desert tortoises and damage to their burrows and coversites, no pets shall be permitted in any project construction area.

q. Any excavated holes related to transmission line construction (*i.e.*, foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into the open holes.

r. Any tortoise injured as a result of the proposed project shall immediately be transported to a qualified veterinarian and reported to the Service's Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230.

2. To implement Reasonable and Prudent Measure Number 2, BLM shall ensure implementation of the following measure to minimize predation on tortoises by ravens or other desert tortoise predators attracted to the project area:

a. Trash and food items shall be promptly disposed in predator-proof containers with re-sealing lids. Trash containers will be emptied daily, and waste will be removed

from the project areas and disposed in an approved off-site landfill. Construction waste also will be removed from the site each day and properly disposed.

b. H-frame structures with perch deterrents will be utilized in critical habitat south of State Route 168 in the Coyote Spring ACEC. Post-construction monitoring for ravens and removal of raven nests will be conducted along the right-of-way within desert tortoise habitat.

3. To implement Reasonable and Prudent Measure Number 3, BLM shall ensure implementation of the following measures to minimize loss and long-term degradation and fragmentation of desert tortoise habitat, such as soil compaction, erosion, crushed vegetation, or introduction of weeds as a result of construction and maintenance activities:

a. The boundaries of all areas to be disturbed shall be flagged before beginning any activities, and all disturbances shall be confined to the flagged areas. All construction vehicle movement outside the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate survey or construction activity limits. Disturbance beyond the construction zone is prohibited. Authorized desert tortoise biologists will ensure that project vehicles and equipment occur only in designated areas.

b. No widening or upgrading of existing access roads will 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. The alignment of any new access roads or overland route shall follow the designated area's landform contours where possible, providing that such alignment does not additionally impact resource values.

c. All new access roads not required for maintenance will 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.*, stockpiling and replacing topsoil, seeding, or rock replacement). This will limit new or improved accessibility into the area.

d. In construction areas where recontouring is not required, vegetation will be left in place wherever possible and original contour will be maintained to avoid excessive root damage and allow for resprouting. In construction areas where ground disturbance is significant or where recontouring is required, surface restoration will occur as required by BLM. The method of restoration will 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.

e. In areas where restoration is required, reseeding will occur through the use of native plant species. Reclamation and monitoring requirements and practices including seed mixes will be approved by BLM. Herbicides will not be used as a part of this project.

f. Overnight parking and storage of equipment will be in previously disturbed areas (*i.e.*, lacking vegetation). These areas will also be designated by the pre-construction survey team. If previously disturbed areas are not available, these activities will be restricted to the right-of-way and will be cleared of tortoises by the on-site biologist prior to use.

g. To the extent possible, access to tower sites, and at splicing and tensioning sites will occur by overland travel (*i.e.*, no blading of access will occur). The CIC will ensure that blading is conducted only where necessary. Due to construction constraints resulting from equipment size and personnel safety, blading would be needed at most spur roads and tower sites.

h. Pre-construction surveys shall be conducted for noxious weeds as stipulated by BLM once the transmission line centerline, access roads, and tower sites have been located and staked in the field. BLM shall ensure that noxious weeds are monitored and appropriate control measures are implemented to ensure that weeds do not establish on the right-of-way.

i. The proposed SWIP project would disturb a total of 595 acres of both critical and non-critical desert tortoise habitat. The project proponent shall pay compensation for disturbance of desert tortoise habitat prior to surface-disturbing activities associated with the proposed project. Fees for habitat disturbance within Clark County shall be paid to the Desert Tortoise Public Lands Conservation Fund (account number 730-9999-2315) (Section 7 Account). Fees for habitat disturbance in Lincoln County shall be paid to the Lincoln County Treasurer. Refer to attached forms (Attachment B for Clark County and Attachment C for Lincoln County). The section 7 fees will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) and becomes effective March 1 of each year. The next adjustment will occur March 1, 2008. Information on the CPI-U can be found on the internet at: http://stats.bls.gov/news.release/cpi.nws.htm.

Clark County

The proposed project would disturb a total of 296 acres of desert tortoise habitat in Clark County. Of this, 223 acres are within desert tortoise critical habitat on BLM lands, which is compensated at the current rate of $3,253 per acre (factor of 4.5 x base rate of $723). The multiplier used in this rate calculation was derived from Hastey *et al.* (1991), and consists of a multiplier of 3.0 for habitat quality (*i.e.,* critical habitat), plus 0.5 for growth-inducing effects of the project, plus 1.0 for long-term effects of the action (>10 years), for a total factor of 4.5. Total fees due for disturbance of critical habitat in Clark County are: 223 acres x $3,253/ acre = $725,419.

The remaining 73 acres would consist of disturbance of BLM land outside critical habitat in Clark County and will be compensated at $723 per acre of disturbance (73 acres x $723/acre = $52,779.)

Lincoln County

The proposed project would disturb a total of 299 acres of desert tortoise habitat in Lincoln County. Of this, 142 acres are within desert tortoise critical habitat on BLM lands, which is compensated at the current rate of $3,253 per acre as described above. Total fees due for disturbance of critical habitat in Lincoln County is: 299 acres x $3,253/acre = $972,647.

The remaining 157 acres would consist of disturbance of BLM land outside critical habitat in Lincoln County and will be compensated at $723 per acre of disturbance (157 acres x $723/acre = $113,511.)

Total Section 7 fees required for the SWIP project is $1,864,356.

j. Prior to construction, cacti and yucca to be impacted by project activities shall be excavated and transplanted as part of the restoration in accordance with BLM standards.

k. The project proponent shall prepare and implement a BLM-approved weed-control plan and habitat restoration plan for the project prior to initiation of surface-disturbing activities. Heavy equipment will be cleaned of soil with high-pressure air or water prior to arrival at the project area to minimize the potential introduction of alien plant seeds.

4. To implement Reasonable and Prudent Measure Number 4, BLM shall ensure implementation of the following measures to comply with the reasonable and prudent

measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this biological opinion:

a. BLM shall designate a CIC to oversee compliance with protective stipulations for the desert tortoise and coordinating **directly** with BLM and the Service. The CIC shall have the authority to halt activities or construction equipment that may be in violation of the stipulations. BLM shall provide a copy of the terms and conditions of this biological opinion to the CIC and biologists for the project. The CIC and biologist will prepare a report for BLM and the Service no later than 90 days after completion of construction within desert tortoise habitat. The report will make recommendations for modifying or refining the stipulations, and include the actual acreage of habitat disturbance caused by crushing and blading versus the estimates prior to construction.

b. The on-site biologist shall record each observation of desert tortoise handled. Information will include the following: Location, date and time of observation; whether tortoise was handled, general health and whether it voided its bladder; location tortoise was moved from and location moved to; and unique physical characteristics of each tortoise.

The Service believes that no more than 2 desert tortoise will be accidentally injured or killed and an unknown number of tortoises may be taken by harassment or capture and moved out of harm's way during construction and operation of the material site (however, the Service believes that no more than 45 desert tortoises will be captured and moved); and an unknown number of desert tortoises taken in the form of indirect mortality through predation by ravens or other subsidized predators drawn to the project area.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take or loss of habitat identified is exceeded, such incidental take and habitat loss represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. BLM must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

Upon locating a dead or injured desert tortoise within the action area, notification must be made to the Service's Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230. Care should be taken in handling sick or injured desert tortoises to ensure effective treatment and in handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of injured desert tortoises or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions

provided by the Service to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed. All deaths, injuries, and illnesses of desert tortoises, whether associated with project activities or not, will be summarized in an annual report.

The following actions should be taken for injured or dead tortoises if directed by the Service:

1. Injured desert tortoises shall be delivered to any qualified veterinarian for appropriate treatment or disposal.

2. Dead desert tortoises suitable for preparation as museum specimens shall be frozen immediately and provided to an institution holding appropriate Federal and State permits per their instructions.

3. Should no institutions want the desert tortoise specimens, or if it is determined that they are too damaged (crushed, spoiled, *etc.*) for preparation as a museum specimen, then they may be buried away from the project area or cremated, upon authorization by the Service.

4. BLM shall bear the cost of any required treatment of injured desert tortoises, euthanasia of sick desert tortoises, or cremation of dead desert tortoises.

5. Should sick or injured desert tortoises be treated by a veterinarian and survive, they may be transferred as directed by the Service.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

REINITIATION

This concludes formal consultation on the actions outlined in your request dated July 24, 2007. As required by 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over an action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If we can be of any further assistance, or if you have any questions concerning this biological opinion, please contact Michael Burroughs in the Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230.

for Robert D. Williams

cc:
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LITERATURE CITED

Berry, K. H. 1986. Desert tortoise *(Gopherus agassizii)* research in California, 1976-1985. Herpetologica 42:62-67.

Berry, K. H. 2003. Declining trends in desert tortoise populations at long-term study plots in California between 1979 and 2002: multiple issues. Abstract of paper presented at the Twenty-eighth Annual Meeting of the Desert Tortoise Council.

Berry, K. H. and B. L. Burge. 1984. The desert tortoise in Nevada. Chapter 8 *In*: The status of the desert tortoise *(Gopherus agassizii)* in the United States. Report to U.S. Fish and Wildlife Service from the Desert Tortoise Council. Order No. 11310-0083-81.

Berry, K. H., and L. L. Nicholson. 1984. The Distribution and density of desert tortoise populations in California in the 1970s. Pp. 26-60. *In* E.K. Berry (ed.), The status of the desert tortoise (*Gopherus agassizii*) in the United States. Desert Tortoise Council, U.S. Fish and Wildlife Service, Washington, D.C.

Berry, K. H., E. K. Spangenberg, B. L. Homer, and E. R. Jacobson. 2002. Deaths of desert tortoises following periods of drought and research manipulation. Chelonian Conservation and Biology 4:436-448.

BLM (Bureau of Land Management). 1990. Draft Raven Management Plan for the California Desert Conservation Area. Prepared by Bureau of Land Management, California Desert District, Riverside, California. April 1990.

BLM (U.S. Bureau of Land Management). 2002a. Proposed Northern and Eastern Colorado coordinated management plan. A California Desert Conservation Area Plan Amendment. Bureau of Land Management, California Desert District, Moreno Valley, California.

BLM (U.S. Bureau of Land Management). 2002b. Proposed Northern and Eastern Mojave Desert management plan amendment to the California Desert conservation area plan and final environmental impact statement.

BLM (U.S. Bureau of Land Management). 2005. Final environmental impact report and statement for the West Mojave Plan. A habitat conservation plan and California Desert Conservation Area Plan Amendment. Bureau of Land Management, California Desert District, Moreno Valley, California. January 2005. 2 volumes.

Boarman, W. I. 2002. Threats to desert tortoise populations: a critical review of the literature. unpublished report prepared for the West Mojave Planning Team, Bureau of Land Management. U.S. Geological Survey, Western Ecological Research Center, San Diego, California. August 9, 2002

Boarman, W. I. 1992. The raven management program of the Bureau of Land Management: Status as of 1992. Proceedings of the 1992 Desert Tortoise Council Symposium Las Vegas, Nevada. Pages 113-116.

Boarman, W. I. and K. H. Berry. 1995. Common ravens in the southwestern United States, 1968-92. Pages 73-75 in E. T. LaRoe, G. F. Farris, C. E. Puckett, P. D. Doran, and M. J. Mac, editors. Our living resources: A report to the nation on the distribution, abundance, and health of U.S. plants, animals, and ecosystems. National Biological Service. Washington, D.C.

Borysenko, M., and S. Lewis. 1979. The effect of malnutrition on immunocompetence and whole body resistance to infection in *Chelydra serpentina*. Developmental and Comparative Immunology 3:89-100.

Britten, H. B., B. R. Riddle, P. F. Brussard, R. W. Marlow and T. E. Lee, Jr. 1997. Genetic delineation of management units for the desert tortoise, *Gopherus agassizii*, in northeastern Mojave Desert. Copeia 1997: 523-530.

Brooks, M.L. 1998. Alien annual grass distribution, abundance, and impact on desert tortoise habitat in the western Mojave Desert. Ph.D. Dissertation. University of California at Riverside.

Brooks, M. L., and T.C. Esque. 2002. Alien plants and fire in desert tortoise (*Gopherus agassizii*) habitat of the Mojave and Colorado deserts. Chelonian Conservation and Biology 4:330-340.

Brown, D. E., and R. A. Minnich. 1986. Fire and changes in creosote bush scrub of the western Sonoran Desert, California. American Midland Naturalist 116(2):411-422.

Brown, M. B., K. H. Berry, I. M. Schumacher, K. A. Nagy, M. M. Christopher, and P. A. Klein. 1999. Seroepidemiology of upper respiratory tract disease in the desert tortoise of California. J. Wildlife Diseases 35(4):716-727.

Brown, M. B., I. M. Schumacher, P. A. Klein, K. Harris, T. Correll, and E. R. Jacobson. 1994. *Mycoplasma agassizii* causes upper respiratory tract disease in the desert tortoise. Infection and Immunity 62: 4580-4586.

Brown, D. R. , I. M. Schumacher, G. S. McLaughlin, L. D. Wendland, M. B. Brown, P. A. Klein, and E. R. Jacobson. 2002. Application of diagnostic tests for mycoplasmal infections of the desert and gopher tortoises, with management recommendations. Chelonian Conservation and Biology 4:497-507.

Burge, B. L. 1978. Physical characteristics and patterns of utilization of cover sites by *Gopherus agassizii* in southern Nevada. Proceedings of the 1978 Desert Tortoise Council Symposium. Pages. 80-111.

Burge, B. L., and W. G. Bradley. 1976. Population density, structure and feeding habits of the desert tortoise *(Gopherus agassizii)*, in a low desert study area in southern Nevada. Proceedings of the 1976 Desert Tortoise Council Symposium. Pages 51-74.

Bury, R. B. 1987. Off-road vehicles reduce tortoise numbers and well-being. U. S. Department of the Interior, Fish and Wildlife Service, National Ecology Research Center, Fort Collins, Colorado. Research Information Bulletin Number 87-6.

Bury, R. B., T. C. Esque, L. A. DeFalco, and P. A. Medica. 1994. Distribution, habitat use, and protection of the desert tortoise in the Eastern Mojave Desert. *In:* R. B. Bury and D. J. Germano, editors. Biology of the North American tortoises. National Biological Survey, Fish and Wildlife Research 13:57-72.

Christopher, M. M., K. H. Berry, B. T. Henen, and K. A. Nagy. 2003. Clinical disease and laboratory abnormalities in free-ranging desert tortoises in California (1990-1995). Journal of Wildlife Diseases 39:35-56.

EPG, Incorporated. 2007. Final biological assessment for the Southwest Intertie Project, southern portion. Unpublished report prepared for the Bureau of land Management on behalf of Great Basin Transmission, LLC. July 2, 2007. 46 pages plus appendix.

Desert Tortoise Council. 1994. Guidelines for handling desert tortoises during construction projects. Edward L. LaRue, Jr., editor. San Bernardino, California. Revised 1999.

General Accounting Office [GAO]. 2002. Endangered species: research strategy and long-term monitoring needed for the Mojave desert tortoise recovery program. GAO-03-23. Washington, DC. 53 pp.

Germano, D. J., R. B. Bury, T. C. Esque, T. H. Fritts, and P. A. Medica. 1994. Range and habitat of the desert tortoise. *In:* R. B. Bury and D. J. Germano, editors. Biology of the North American tortoises. National Biological Survey, Fish and Wildlife Research 13:57-72.

Goodlett, G., and A. P. Woodman. 2003. Desert tortoise population survey at Virgin Slope desert tortoise study plot, spring 2003. Unpublished report prepared for Arizona Game and Fish Department, Nongame, Contract G90040-K, Phoenix, Arizona.

Hanski, I. 1999. Metapopulation Ecology. Oxford University Press. Oxford.

Hastey, E., L.K. Rosenkrance, B.R. Templeton, J.M. Parker, W.H. Radtkey, D.L. Harlow, B.D. Taubert, F. Worthley, W.A. Molini, R.D. Radantris. 1991. Compensation for the desert tortoise. A report prepared for the Desert Tortoise Management Oversight Group. November 1991. 16 pp.

Henen, B. T. 1997. Seasonal and annual energy and water budgets of female desert tortoises (*Gopherus agassizii*) at Goffs, California. Ecology 78:283-296.

Hovik, D. C. and D. B. Hardenbrook. 1989. Summer and fall activity and movements of desert tortoise in Pahrump Valley, Nevada. Abstract of paper presented at the Fourteenth Annual Meeting of the Desert Tortoise Council.

Jacobson, E. R., T. J. Wronski, J. Schumacher, C. Reggiardo, and K.H. Berry. 1994. Cutaneous dyskeratosis in free-ranging desert tortoises, *Gopherus agassizii*, in the Colorado Desert of Southern California. J. Zoo and Wildlife Medicine 25(1):68-81.

Karl, A. 1981. The distribution and relative densities of the desert tortoise *(Gopherus agassizii)* in Lincoln and Nye Counties, Nevada. Proceedings of the 1981 Desert Tortoise Council Symposium. Pages 76-92.

Karl, A. E. 1983a. The distribution and relative densities of the desert tortoise *(Gopherus agassizii)* in Clark County, Nevada. Unpublished Report to Bureau of Land Management, Denver, Colorado. Contract No. YA-512-CT9-90. 46 pages.

Karl, A. E. 1983b. The distribution, relative densities, and habitat associations of the desert tortoise *(Gopherus agassizii)* in Nevada. M.S. Thesis, California State University, Northridge. 111 pages.

Lamb, T., J. C. Avise, J. W. Gibbons. 1989. Phylogeographic patterns in mitochondrial DNA of the desert tortoise (*Xerobates agassizii*), and evolutionary relationships among North American gopher tortoises. Evolution 43: 76-87.

Lamb, T., and C. Lydehard. 1994. A molecular phylogeny of the gopher tortoises, with comments on familiar relationships within the Testudinoidea. Molecular Phylogenetics and Evolution 3: 283-91.

Levins R., and D. Culver. 1971. Regional coexistence of species and competition between rare species. Proceedings of the National Academy of Sciences 68:1246-1248.

Levin S. A., D. Cohen, and A. Hastings. 1984. Dispersal strategies in patchy environments. Theoretical Population Biology 26:165-191.

Longshore, K. M., J. R. Jaeger, and J. M. Sappington. 2003. Desert tortoise (*Gopherus agassizii*) survival at two eastern Mojave Desert sites: death by short-term drought? Journal of Herpetology 37:169–177.

Luckenbach, R. A. 1982. Ecology and management of the desert tortoise *(Gopherus agassizii)* in California. *In*: R. B. Bury, editor. North American tortoise: Conservation and ecology. U.S. Fish and Wildlife Service, Wildlife Research Report 12, Washington, D.C.

McLuckie, A. M. and R. A. Fridell. 2002. Reproduction in a desert tortoise population on the Beaver Dam Slope, Washington County, Utah. Chelonian Conservation and Biology 2002, 4(2):288-294.

McLuckie, A. M., M. R. M. Bennion, and R. A. Fridell. Draft 2006. Regional desert tortoise monitoring in the Red Cliffs Desert Reserve, 2005. Salt Lake City: Utah Division of Wildlife Resources, Publication Number 06-06. 44 pages.

Mueller, J. M., K. R. Sharp, K. K. Zander, D. L. Rakestraw, K. P. Rautenstrauch, and P. E. Lederle. 1998. Size-specific fecundity of the desert tortoise (*Gopherus agassizii*). Journal of Herpetology 32:313-319.

NPS (National Park Service). 2002. General management plan for the Mojave National Preserve. San Bernardino County, California. April 2002.

Noss, R. F. and A. Y. Cooperrider. 1994. Saving nature's legacy. Protecting and restoring biodiversity. Island Press. Covelo, California.

Origgi, R., C. H. Romero, P. A. Klein, K. H. Berry, and E. R. Jacobson. 2002. Serological and molecular evidences of herpesvirus exposure in desert tortoises from the Mojave Desert of California. Abstract of paper presented at the twenty-seventh annual meeting of the Desert Tortoise Council.

Peterson, C. C. 1994. Different rates and causes of high mortality in two populations of the threatened desert tortoise *Gopherus agassizii*. Biological Conservation 70:101–108.

Peterson, C. C. 1996. Ecological energetics of the desert tortoise (*Gopherus agassizii*): effects of rainfall and drought. Ecology 77:1831–1844.

Rainboth, W. J., D. G. Booth, and F .B. Turner. 1989. Allozyme variation in Mojave populations of the desert tortoise. Copeia 1989: 115-123.

RECON (Regional Environmental Consultants). 1991. Short-term habitat conservation plan for the desert tortoise in Las Vegas Valley, Clark County, Nevada. Prepared for Clark County, 225 Bridger Avenue, Las Vegas, Nevada 89155. January 1991. 143 pages.

RECON (Regional Environmental Consultants). 1995. Clark County desert conservation plan. Prepared for Clark County, 500 Grand Central Parkway, Las Vegas, Nevada 89155. 129 pages, plus appendices.

RECON (Regional Environmental Consultants). 2000. Clark County multiple species habitat conservation plan. Prepared for Clark County, 500 Grand Central Parkway, Las Vegas, Nevada 89155.

Service (U.S. Fish and Wildlife Service). 1993. Draft recovery plan for the desert tortoise (Mojave population). Prepared for Regions 1, 2, and 6 of the Fish and Wildlife Service. Portland, Oregon. 170 pp. plus appendices.

Service (Fish and Wildlife Service). 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 73 pp. plus appendices.

Service (Fish and Wildlife Service). 2006. Range-wide monitoring of the Mojave population of the desert tortoise: 2001-2005. Summary report prepared by the Desert Tortoise Recovery Office, Reno, Nevada.

Sherman, M. W. 1993. Activity patterns and foraging ecology of nesting common ravens in the Mojave Desert, California. S.S. thesis, Colorado State University, Ft. Collins, Colorado.

Tracy, C. R., R. Averill-Murray, W. I. Boarman, D. Delahanty, J. Heaton, E. McCoy, D. Morafka, K. Nussear, B. Hagerty, and P. Medica. 2004. Recovery Plan assessment. Unpublished report. 254 pages.

Turner, R. M. 1982. Mohave desertscrub. *In*: Biotic communities of the American southwest-United States and Mexico. D. E. Brown, editor. Special issue of desert plants, volume 4. Pages 157-168.

Turner, R. M. and D. E. Brown. 1982. Sonoran desertscrub. *In*: Biotic communities of the American southwest-United States and Mexico. D. E. Brown, editor. Special issue of desert plants, volume 4. Pages 181-221.

Turner, F. B., P. A. Medica, and C. L. Lyons. 1984. Reproduction and survival of the desert tortoise *(Scaptochelys agassizii)* in Ivanpah Valley, California. Copeia 1984(4):811-820.

U.S. Army National Training Center. 2005. Biological assessment for the proposed addition of maneuver training land at Fort Irwin, California. Prepared by Charis Professional Services Corporation, Temecula, California. May 2003.

Walker, M. and P. Woodman. 2002. Desert tortoise population survey at Beaver Dam Slope exclosure desert tortoise study plot; spring, 2001. Report to Arizona Game and Fish Department, Phoenix, Arizona.

Washington County Commission. 1995. Washington County, Utah desert tortoise incidental take permit application/documents. Unpublished report submitted to the U.S. Department of Interior, Fish and Wildlife Service. December 1995.

Weinstein, M., K. H. Berry, and F. B. Turner. 1987. An analysis of habitat relationships of the desert tortoise in California. A report prepared for Southern California Edison Company. 96 pages.

Wilson, D. S., K. A. Nagy, C. R. Tracy, D. J. Morafka, and R. A. Yates. 2001. Water balance in neonate and juvenile desert tortoises, *Gopherus agassizii*. Herpetological Monographs 15:158–170.

Young, R., C. Halley, and A. P. Woodman. 2002. Desert tortoise population survey at Littlefield desert tortoise study plot, spring 2002. Unpublished report prepared for Arizona Game and Fish Dept, Nongame, Contract G40088-001, Phoenix, Arizona.

Attachment A

GENERAL DESERT TORTOISE QUALIFICATIONS STATEMENT

This form should be used to provide your qualifications to agency officials if you monitor project activities or intend to handle or survey desert tortoises during construction or other projects authorized under sections 7 (Biological Opinions) or 10 (HCPs) of the Endangered Species Act. If you seek approval to attach/remove/insert any devices or equipment to/into desert tortoises, withdraw blood, or conduct other procedures on desert tortoises, a recovery permit or similar authorization may be required.

Application for a recovery permit requires completion of Form 3-200-55, which can be downloaded at http://www.fws.gov/forms/3-200-55.pdf.

1. Contact Information:

Name	
Address	
City, State, Zip Code	
Phone Number(s)	
Email Address	
Employer & address	

2. Date of Statement:

3. Please provide information on the project that you request authorization:

USFWS Biological Opinion No.	**Date:**
Project Name & Location	
Responsible Agency Office/Location	
Proponent or Contractor	

4. Provide the following if you hold/held, any relevant State or Federal wildlife permits:

Species	Dates	Permit Number	Authorized Activities

5. Education: Provide up to three schools, listing most recent first:

Institution	Dates attended	Major/Minor	Degree received

Attachment A

6. Desert Tortoise Training.

Name/Type of Training	Dates (From/To)	Location	Instructor/Sponsor
1.			
2.			
3.			
4.			

7. Experience – Include only those positions relevant to the requested work with desert tortoises. Distinguish between Mojave desert tortoise and other experience. Include only your experience, not information for the project you worked on (e.g., if 100 tortoises were handled on a project and you handled 5 of those tortoises, include only those 5). List most recent experience first. Handling a Mojave desert tortoise must be authorized by a Biological Opinion or other permit and reported to the USFWS. Information proved in this section will be used by the USFWS to track the numbers of tortoises affected by previous projects (baseline). **Be sure to include a project contact that can verify your skills and experience.** Attach additional sheets as necessary.

Experience by project:

Project Name **Biological Opinion or Permit No.** **Job title**	**Dates (From/To)**	**Project Contact** - Provide contact information for individuals that you worked with on the project. **Name, title, phone no., & Email address**
a.		
b.		
c.		
d.		

Experience by activity:

Activity	Approval Requested?	Project that provided the experience or training received (state instructor)	Dates	Extent of Experience
Conduct clearance surveys	Y N			Hrs: Days:
Excavate tortoise burrows	Y N			No.:
Locate tortoises	Y N			No. <100 mm: No. ≥100 mm:

Relocate tortoises	**Y N**			**No. <100 mm:** **No. ≥100 mm:**
Locate, excavate, and relocate tortoise nests	**Y N**			**No.:**
Construct artificial tortoise burrows	**Y N**			**No.:**
Present desert tortoise awareness training	**Y N**			**No.:**
Monitor project equipment and activities	**Y N**	**Describe what you monitored.**		**Hrs.:** **Days:**
Oversee project compliance (terms & conditions)	**Y N**			**Hrs.:** **Days:**
Supervise field staff	**Y N**			**Hrs.:** **Days:**
Tortoise fence inspection and maintenance	**Y N**			
Other (specify)	**Y N**			

Summary of experience:

a. Total time spent for all desert tortoise-related field activities (referenced above): **Specify total number of hours:** **OR total number of 8-hour days:**
b. Total number of miles/kilometers walked conducting survey transects:
c. Total number of <u>wild, free-ranging</u> desert tortoises you personally handled: **<100 mm:** **≥100 mm:**

8. References. Provide three references that can verify your field qualifications and skills. Include project managers, training instructors, biologists, agency representatives, etc. Avoid using co-workers or employers.

Name	Employer/Position	Address/Location	Phone Number	Email
1.				
2.				
3.				

I certify that the information submitted in this form is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. Ch.47, Sec. 1001.

Signed: _____ **Date:** _____

Attachment B

SECTION 7 FEE PAYMENT FORM
Entire form is to be completed by project proponent

Biological Opinion File Number: 84320-2008-F-0066

Fish and Wildlife Service Office that issued the Opinion:

Nevada Fish and Wildlife Office, Las Vegas, Nevada

Species: Desert Tortoise (*Gopherus agassizzi*)

Project: Southwest Intertie Project (SWIP)

Number of acres anticipated to be disturbed: _____

Fee rate (per acre): _____

Total payment required: _____

Amount of payment received: _____

Date of receipt: _____

Check or money order number: _____

Project proponent: Great Basin Transmission, LLC Telephone number: _____

Authorizing agencies: Bureau of Land Management, Las Vegas and Ely, Nevada

Make checks payable to: Clark County Treasurer

Deliver check to:
Clark County Desert Conservation Program
Dept. of Air Quality and Environmental Management
Clark County Government Center
500 S. Grand Central Parkway, first floor (front counter)
Las Vegas, Nevada 89106
(702) 455-3536

If you have questions, you may call the Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230.

Attachment C

LINCOLN COUNTY SECTION 7
LAND DISTURBANCE FEE
PAYMENT FORM
Entire form is to be completed by project proponent

Biological Opinion File Number: 84320-2008-F-0066

Biological Opinion issued by: Nevada Fish and Wildlife Office, Reno, Nevada

Species: Desert tortoise (*Gopherus agassizii*)

Project: Southwest Intertie Project (SWIP)

Number of acres anticipated to be disturbed: _____

Fee rate (per acre): _____

Total payment required: _____

Amount of payment received: _____

Date of receipt: _____

Check or money order number: _____

Project proponent: Great Basin Transmission, LLC

Telephone number:

Authorizing agencies: Bureau of Land Management, Las Vegas and Ely, Nevada

Make checks payable to: Lincoln County Treasurer

Deliver check to: Lincoln County Habitat Conservation Section 7 Account
Lincoln County Treasurer
Attn: Ms. Cathy Hiatt
P.O. Box 416
Pioche, Nevada 89043
(775) 962-5805

If you have questions, you may call the Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230.

U.S. Department of the Interior
Bureau of Land Management

Finding of No Significant Impact
July 2008

Southwest Intertie Project
Southern Portion

Location: **Portions of Clark, Lincoln, White Pine Counties, Nevada**
BLM Right-of-Way Grant NVN-85210

Applicant/Address: **Great Basin Transmission, LLC**
400 Chesterfield Center, Suite 110
St. Louis, Missouri 63017

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
Phone: 775-289-1800
Fax: 775-289-1910

Finding of No Significant Impact

For

Great Basin Transmission, LLC
Amendment to Right of Way Grant NVN-85210

EA #NV-040-07-048

FONSI:

Finding of No Significant Impact: I have reviewed EA NV-040-07-048, dated August 2007, and the three sets of comments received on the Environmental Assessment (EA). After review of these comments, and consideration of the environmental impacts as described in the EA dated July 2008, I have determined that the proposed amendment of the existing Right-of-Way Grant NVN-85210 (ROW), will not significantly affect the quality of the human environment, individually or cumulatively with other actions and that a supplemental Environmental Impact Statement (EIS) is not required. In making this determination, I have taken into account the mitigation measures as described in the EA, the Construction Operation and Maintenance Plan (COM Plan), the Biological Assessment (BA) and the Biological Opinion (BO), all of which will be made conditions of approval of the ROW amendments. This finding and conclusion includes consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 Code of Federal Regulations 1508.27), both with regard to the context and the intensity of impacts described in the EA.

Rationale:

Context:

The proposed amendment consists of two relatively minor modifications of the granted Southwest Intertie Project (SWIP) ROW in areas that do not have particularly unique or sensitive attributes. The areas affected by the amendment consist of a 3.8-mile extension from the originally approved terminus of the SWIP to the existing Harry Allen 500kV Substation in Clark County and the relocation of the originally approved Robinson Summit Substation site, approximately ¾ mile to the northwest, and immediately adjacent to the approved SWIP corridor in White Pine County (the relocated site is referred to as the Thirtymile Substation).

The proposed extension and interconnection at the existing Harry Allen 500kV Substation are in an area that has been previously modified by several energy related facilities including generation and substation facilities, and numerous transmission lines. The proposed relocated substation (Thirtymile Substation) would involve an amount of disturbance to Bureau of Land Management (BLM) land (approximately 77 acres) similar to or less than the previously approved site, in an area that is partially within, or immediately adjacent to, two designated utility corridors, traversed by two existing transmission lines and accessible by an existing road.

Intensity:

The following evaluation of intensity for this proposal is organized around the 10 criteria described at 40 CFR 1508.27 and below.

1) Impacts that may be both beneficial and adverse.

   The EA has considered both beneficial and adverse impacts. The amendment to the existing ROW grant will allow the SWIP to interconnect with the existing grid at the Harry Allen 500kV Substation and will provide certain engineering and environmental advantages relative to the currently approved Robinson Summit Substation site and interconnection with the Falcon-to-Gonder 345kV line. The SWIP – Southern Portion will increase the reliability of the western transmission grid, allowing the sharing of electrical supplies between different service areas in Nevada and different regions of the west, and provide transmission capacity for new generation, including proposed or potential renewable energy resources in the region.

   Additional linear facilities have been proposed for the utility corridor to be occupied by the SWIP – Southern Portion. Consolidation of access within the corridor may result in an overall reduction of access related concerns and/or impacts to the environmental resources within and near the utility corridor. At the appropriate time the BLM, in coordination with the proponent and other potential users of the utility corridor, will determine which of the newly-constructed access roads will be closed, restored, or retained for operation and maintenance activity. New access roads not required for operation and maintenance of the SWIP – Southern Portion and/or other planned facilities may be closed using the most effective and least environmentally damaging methods appropriate to that area. Where access is to be restored, the practices identified in the COM Plan will be implemented accordingly. While detailed engineering and the potential to accommodate future lines has required changes to the access originally anticipated in select locations, the overall impacts of access will remain consistent with those presented in the SWIP EIS.

   While these beneficial impacts are noted in the EA, they were not the basis for the conclusion that the adverse impacts of the proposed amendments would not be significant. That determination was based on the nature and level of the adverse impacts, taking into account required mitigation.

2) The degree to which the Proposed Action affects public health or safety.

   Implementation of the proposed action will not result in potentially substantial or adverse impacts to public health and safety. Design and construction of facilities will be in accordance with the specifications and procedures outlined in the EA and COM Plan insuring compliance with all health and safety regulations and requirements.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

   The Proposed Action does not affect any unique characteristics of the geographic area(s), including park lands, prime farmlands, wetlands, wild and

scenic rivers, or ecologically critical areas. The Harry Allen extension could potentially impact individual Desert Tortoise, but the affected area is not within designated Critical Habitat and any potential impacts will be avoided and mitigated pursuant to measures in the BO and BA and incorporated into the COM Plan. The Proposed Action will affect cultural resources at the Thirtymile Substation, but those resources are not unique and any adverse effects will be mitigated through the implementation of the Historic Properties Treatment Plan (HPTP).

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The location of the Thirtymile Substation is in an area associated with two approved and designated BLM utility corridors, one containing two existing transmission lines (Falcon-to-Gonder 345kV and Gonder-to-Machacek 230kV transmission lines). The extension to the Harry Allen Substation is in an area highly modified by numerous existing electrical facilities and other industrial facilities associated with the APEX Industrial Park. The types of effects documented in the EA are not considered to be highly controversial, and the methods identified in the COM Plan to implement the construction of the project are accepted methods to meet resource and management objectives.

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

Transmission lines and substations are routinely studied, approved, and operated on BLM lands, and in general, the effects of these facilities is not considered to be highly uncertain or involve unique risks, especially when constructed within utility corridors. There are no effects of the Proposed Action identified in the EA which are considered uncertain or involve unknown risks, and compliance with the mitigation measures and procedures identified in the EA, BO, and COM Plan allow for the flexibility to address specific issues, should they occur during construction and operation of the planned facilities.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The proposed action does not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration. The precedent for locating the SWIP and other transmission facilities in this corridor was set when the corridor was designated by the BLM in the Land Use Plan Amendments approved in the 1994 Record of Decision (ROD) for the SWIP transmission line. The decision to locate the SWIP transmission line, and ultimately the broader corridor in this area, was based on an extensive planning process that included review of environmental resource impacts and mitigation during the preparation of the SWIP Draft EIS/Final EIS (DEIS/FEIS). The modifications presented in the EA are consistent with these earlier decisions, and neither the original nor modified grant will prohibit other utilities from maintaining consistent electrical spacing. As described under Item 1 (above), access developed for the proposed action may be utilized by future planned facilities in the utility corridor, thereby consolidating facilities and potentially reducing environmental impacts within and near the utility corridor.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

An analysis of cumulative impacts is contained in Section 7 of the EA. Based on that analysis; it is my conclusion that the EA has not identified any significant cumulative impacts of the Proposed Action with related actions that might require preparation of an EIS. The Proposed Action is related to the SWIP project, insofar as it consists of two minor modifications of the existing SWIP ROW grant. The impacts of the existing ROW grant and SWIP project were considered significant as indicated by preparation of an EIS at the time those actions were approved. Those significant impacts have already been documented and taken into account in the initial decision. The proposed action will add minor incremental impacts to those initially studied and approved for the SWIP, which are not considered significant.

The Thirtymile Substation component of the Proposed Action has some relation to the Falcon-to-Gonder 345kV line, in the sense that relocation of the substation site in the Robinson Summit area is required, partly to accommodate the Falcon-to-Gonder transmission line. The direct, indirect, and cumulative impacts of that transmission line also have been studied in an EIS (the Falcon-to-Gonder EIS), as were the impacts of the Robinson Summit Substation at its initially approved location (SWIP EIS). The relocated substation also has some relation to the potential transmission lines that would enter the substation from the proposed White Pine Energy Station (WPES), proposed renewable energy projects, and other energy related projects to the north, in the sense that the proposed relocation will better accommodate any such lines. The impacts (direct, indirect, and cumulative) of those transmission lines, and of the relocated SWIP substation and other transmission lines in the substation area, are also being studied in the WPES EIS and Ely Energy Center EIS. While the WPES is unlikely to be constructed to full build-out without the SWIP, the SWIP has independent utility and all or a portion of it may be built in the absence of the WPES. In sum, no cumulatively significant impacts that would justify the preparation of an EIS, beyond the EISs and EAs that already have been or are being prepared, have been identified in this EA.

The southern extension component of the proposed action is generally unrelated to other actions in that area. As documented in the draft and revised EAs, there have been a number of other projects developed in the area of the southern extension. Almost all of those projects had federal components and thus were already studied in other EISs or EAs, and also have been considered and/or incorporated in the Las Vegas RMP and related EIS. Again, while the southern extension will add minor cumulative impacts in this area, no cumulatively significant impacts that would justify preparation of an EIS, beyond the EISs and EAs that already have been or are being prepared, have been identified in the EA.

The collocation of the SWIP and other planned linear facilities within a common utility corridor to the extent possible should minimize the cumulative effects to all environmental resources. In particular, by consolidating these facilities within an established utility corridor, future linear facilities will be located in a well-planned and previously modified setting, and may potentially benefit from long-term

access established for the SWIP (see Item 1), thereby reducing cumulative effects related to impacts resulting from the construction of additional new roads.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources.

   As previously stated, the Proposed Action is likely to adversely affect cultural resources eligible for listing on the NRHP at the Thirtymile Substation site; however these effects will be mitigated through the implementation of the HPTP. The HPTP will be submitted to the Nevada State Historic Preservation Office for review and approval and would have to be implemented prior to the issuance of a notice-to-proceed with construction for those locations where cultural resource mitigation is prescribed.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has not been determined to be critical under the Endangered Species Act of 1973.

   The Mojave Desert Tortoise is the only federally listed species that is present along the extension of the ROW to the Harry Allen Substation. This area is not designated by the U.S. Fish and Wildlife Service (USFWS) as Critical Habitat. Mitigation and compensation measures outlined in the BA (July 2007), BO (December 2007), and COM Plan (January 2008), including, but not limited to controlling the speed of vehicles on the ROW, limiting access to pre-determined and clearly flagged areas, and the presence of tortoise biologists, will help to avoid and minimize impacts to the Mojave Desert Tortoise. Tortoise biologists will be responsible for moving any found tortoises out of harm's way, to remove tortoises from burrows in construction areas, and to educate all construction personnel regarding the protocol for working in Mojave Desert Tortoise habitat areas. In addition, the decision regarding the distribution and appropriate use of mitigation remuneration for the disturbance of Desert Tortoise habitat has been determined through consultations with the USFWS and is included in the BO, located in Appendix B of the EA. The compensation for habitat is designed to ensure that there is no net loss of quality habitat for the tortoise. The ultimate objective of such compensation is to ensure that the number and viability of regional populations are not diminished.

   No federally listed threatened or endangered species are likely to be affected by construction of the Thirtymile Substation.

10) Whether the action threatens a violation of federal, state, or local law or requirement imposed for the protection of the environment.

   The Proposed Action will not violate, or threaten to violate, any federal, state, or local law or requirement imposed for the protection of the environment. The proposed action will be covered by the environmental permits and requirements that are required for and applicable to the SWIP – Southern Portion generally. These include the Nevada Utility Environmental Protection Act Permit that Great Basin must obtain from the Nevada Public Utility Commission, as well as permits from the Nevada Department of Environmental Protection (construction storm water and dust control), Clark County (including a dust control permit and a

special use permit), and Lincoln and White Pine counties (special use permits). The Proposed Action has also been covered by the BO prepared by the USFWS and is authorized by the U.S. Army Corps of Engineers under Nationwide Permit No. 12. There is no indication that the applicant will be unable to obtain any outstanding environmental permits or that the Proposed Action threatens to violate environmental laws.

Policy and Resource Updates

Prior to undertaking this EA, the BLM prepared a Determination of NEPA Adequacy (DNA) which included assessment of whether there had been resource or policy changes since preparation of the original SWIP EIS/ROD that justified further consideration. The DNA concluded that this EA should address 10 specified resource and policy updates. These updates are taken into account in the appropriate sections of the EA and summarized in EA Section 6.

Based on review of the EA, it is my determination that the SWIP – Southern Portion will be consistent with currently applicable policies and resource protection measures, and that there is not significant new information that requires additional NEPA analysis beyond that contained in the EA, and no supplemental EIS is required. The basis of this determination is summarized as follows:

Designated Critical Habitat for Mojave Desert Tortoise

The SWIP EIS included analysis of impacts to Desert Tortoise and Desert Tortoise habitat. The formal designation of critical habitat for the Desert Tortoise occurred just after release of the SWIP FEIS, but prior to the SWIP ROD and ROW grant. A BA and BO which included consideration of the newly designated Critical Habitat were available and taken into account when the SWIP ROD and ROW grant were issued in 1994. As summarized in Section 6.2 of the EA, and also as addressed in Sections 4.3.5.1, 5.2.1.6, 5.2.13, 5.3.1.5, 5.3.11, and 7.4.3, an updated BA and BO considering impacts to Desert Tortoise, including designated Critical Habitat and BLM Areas of Critical Environmental Concern (ACECs), were prepared for the entire SWIP – Southern Portion (i.e., not limited to the ROW modification areas). The terms and conditions of the BO issued by the USFWS are presented in the BO which has been included in Appendix B of the EA and the COM Plan Based on review of the EA, BA, and BO, and taking into account the Desert Tortoise avoidance, mitigation, and compensation measures specified in those documents, which are included as enforceable conditions of the COM Plan, it is my determination that Desert Tortoise impacts have been adequately analyzed and mitigated and that no supplemental EIS is required.

Greater Sage Grouse

The SWIP EIS included analysis of impacts to Sage Grouse and Sage Grouse habitat. The Sage Grouse was a BLM sensitive species at the time, as it is now. The USFWS recently determined that listing of the Sage Grouse under the Endangered Species Act (ESA) was not justified, but is currently reviewing that determination. As documented in Section 6.3 of the EA, updated Sage Grouse surveys were conducted during the spring of 2006 and two known, active leks were located within 2 miles of the SWIP – Southern Portion. Mitigation to reduce the potential Sage Grouse impacts includes the modification of the transmission line location and

the use of steel H-frame structures (including perch deterrents) at locations specified by the BLM and Nevada Department of Wildlife, limitations on long- and short-term access, seasonal timing of construction, and the presence of Biological Monitors during construction activities. Based on review of the EA and taking into account the avoidance and mitigation measures that will be included as enforceable conditions of the COM Plan, it is my determination that Sage Grouse impacts have been adequately analyzed and mitigated and that no supplemental EIS is required.

Migratory Birds

While enactment of the Migratory Bird Treaty Act (MBTA) predated the SWIP EIS, increased emphasis is now being placed on potential impacts, and avoidance of impacts, to migratory birds, which include virtually all bird species found in the United States. The SWIP EIS included analysis of wildlife impacts, but did not specifically single out migratory birds. Potential impacts to migratory birds from the SWIP – Southern Portion are summarized in Section 6.4 of the EA, and also are addressed in Sections 3.2.4, 4.3.4, 5.2.1.4, and 5.3.1.4. Mitigation measures to avoid and minimize impacts to migratory birds include the presence of a biological monitor during the migratory bird nesting season, preconstruction surveys to identify potentially affected nests, flagged buffer zones around active nests, and selective use of flight deterrent devices to minimize avian collisions with transmission facilities. Based on review of the EA and taking into account the avoidance and mitigation measures that will be included as enforceable conditions of the COM Plan, it is my determination that the project will be consistent with the MBTA, that migratory bird impacts have been adequately analyzed and mitigated, and that no supplemental EIS is required.

Noxious and Invasive Weeds

BLM and Nevada resource agencies have placed an increasing emphasis on avoiding and minimizing the introduction and/or spread of noxious weeds and invasive species. The SWIP EIS did not include a specific analysis of noxious or invasive species. Section 6.5 of the EA summarizes noxious and invasive species issues for the SWIP – Southern Portion, which are also addressed in Sections 3.2.2, 4.3.2, 5.2.1.2, and 7.4.1. Based on the results of noxious weed surveys and a noxious weed risk assessment, the EA concludes that construction of the SWIP – Southern Portion would present a low to moderate risk of the spread of noxious weeds. A moderate risk indicates that preventative management measures should be implemented. To address this risk, the BLM is requiring Great Basin to prepare and comply with a Noxious Weed Management Plan, as well as a ROW Preparation, Rehabilitation, and Restoration Plan, both of which are incorporated in the COM Plan. These Plans are summarized in Section 6.5.2 of the EA. Based on review of the EA and taking into account the weed control and ROW rehabilitation measures that have been included as enforceable conditions of the COM Plan, it is my determination that the project will be consistent with the BLM noxious and invasive weed policies, that noxious and invasive species have been adequately analyzed and mitigated, and that no supplemental EIS is required.

Environmental Justice

Executive Order 12898, which requires consideration of a project's potential for disproportionately high or adverse impacts on minority or low-income populations, was issued in 1997. As summarized in Section 6.6 of the EA, there are no minority or low-income populations

in the area that would be affected by the SWIP – Southern Portion. (See also Sections 3.13.1.2, 4.12, 5.2.12.2, and 7.4.11).

VRM Classifications

The SWIP EIS included analysis of BLM Visual Resource Management (VRM) objectives. Since 1994, VRM designations within the Southern Nevada District in areas including portions of Coyote Spring Valley and the Harry Allen Substation area in Clark County have been modified from a VRM Class IV (allowing for major modification) to a Class III (partial retention). The Proposed Ely RMP designates the SWIP corridor as VRM Class IV for lands in Lincoln and White Pine Counties. Analysis of the updated VRM information is summarized in the EA in Section 6.7, and also in Sections 3.6, 4.7, 5.25, and 7.4.5. The SWIP ROD, by approving the SWIP and designating the SWIP corridor, and amending the applicable BLM land use plans to be consistent with those approvals, essentially allows for conformance with the VRM classification for the transmission line and corridor, so long as they incorporate BLM-recommended mitigation measures such as dulled towers and non-reflective conductors.

It is my determination that the SWIP remains consistent with VRM objectives, and that no supplemental EIS is required, because the SWIP has been located in a previously approved utility corridor, and modified VRM objectives will be met with the application of visual mitigation measures that are required as conditions of the COM Plan for the SWIP – Southern Portion.

Cultural Resources

The SWIP EIS included analysis of impacts to cultural resources, and as documented in the SWIP ROD, a National Historic Preservation Act (NHPA) Section 106 programmatic agreement (PA) was finalized, which required that prior to construction, a preconstruction field survey and a mitigation plan be completed and approved. Updated information regarding cultural resources is addressed in Section 6.8 of the EA, and also in Sections 3.3, 4.4, 5.2.2, 5.3.2, and 7.4.2. As summarized in the EA, in connection with preparation of the EA and COM Plan and pursuant to the PA, a detailed (Class III) cultural resource field survey has been conducted for the length of the SWIP – Southern Portion and has been documented in a cultural inventory survey report. Based on that report, a HPTP has been prepared for the project. These documents will be submitted to the State Historic Preservation Office and BLM, and the final HPTP, including approved mitigation measures, will be included in the COM Plan.

Based on review of the survey report, HPTP and EA, and taking into account the mitigation measures which will be required in the COM Plan, it is my determination that cultural resources have been adequately analyzed and will be adequately mitigated and that no supplemental EIS is required.

Tribal Consultation

Tribal consultation was conducted during preparation of the SWIP EIS. In connection with the cultural resources/NHPA compliance measures discussed above for the SWIP – Southern Portion, the BLM has been and will continue to consult with potentially affected Tribes, consistent with Executive Order 13007 (Indian Sacred Sites), the NHPA and applicable BLM policy. This is summarized in Section 6.9 of the EA. To date, no tribal concerns have been identified.

Threatened and Endangered and Sensitive Species

The SWIP EIS includes analysis of threatened, endangered and sensitive species. Since the SWIP ROD and ROW were issued in 1994, there have been changes and additions to the various species lists. An updated BA was prepared to assess potential impacts of the SWIP – Southern Portion on all pertinent species on the current lists of threatened, endangered, and sensitive species, which led to preparation of an updated BO addressing the Mojave Desert Tortoise. The results of the BA and BO are summarized in Section 6.10, and are also addressed in Sections 3.2.6, 4.3.5, 5.2.1, 5.3.1, 6.2, and 6.3 and 7.4.1. Avoidance and mitigation measures contained in the BO are incorporated as enforceable conditions in the COM Plan. The BO is found in Appendix B of the EA.

Based on review of the BA, BO, and EA, and taking into account the avoidance and mitigation measures which will be required in the COM Plan, it is my determination that threatened, endangered, and sensitive species have been adequately analyzed and will be adequately mitigated and that no supplemental EIS is required.

Clark County Non-Attainment

Since the SWIP ROD and ROW were issued in 1994, portions of Clark County have been designated as Clean Air Act non-attainment areas for the 8-hour ozone standard. The EA summarizes analysis of this issue in Section 6.11, and also Section 3.11.4, and concludes that there would be no impacts to ozone levels in the non-attainment areas from the SWIP – Southern Portion due to the insignificant quantities of volatile organic compounds and oxides of nitrogen (the precursors to ozone) emitted from construction vehicles and equipment. SWIP construction/maintenance activities will be required to comply with Clark County air quality requirements (e.g., Dust Control Permit), and dust and emission control mitigation measures, including watering roads, limiting disturbance, and restoration and monitoring practices described in the COM Plan will further assist in reducing impacts to air quality.
Based on review of the EA, and taking into account the mitigation measures required in the COM Plan, it is my determination that issues related to Clark County non-attainment status have been adequately analyzed, that air quality impacts will be adequately mitigated, and that no supplemental EIS is required.

In sum, taking into account the context and intensity of the environmental impacts that would result from the ROW modifications, and taking into account the mitigation measures that will be required as conditions of approval, it is my determination that there will not be significant direct, indirect, or cumulative impacts and that no EIS is required.

John Ruhs, Manager
Ely District Office

7/30/08
Date

U.S. Department of the Interior
Bureau of Land Management

Decision Record
July 2008

Southwest Intertie Project
Southern Portion

Location: **Portions of Clark, Lincoln, White Pine Counties, Nevada**
BLM Right-of-Way Grant NVN-85210

Applicant/Address: **Great Basin Transmission, LLC**
400 Chesterfield Center, Suite 110
St. Louis, Missouri 63017

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
Phone: 775-289-1800
Fax: 775-289-1910

Decision Record

For

Great Basin Transmission, LLC
Amendment to Right of Way Grant NVN-85210

EA #NV-040-07-048

DECISION : It is my decision to authorize the proposed amendments to Right-of-Way Grant NVN-85210 as described in the Proposed Action of the Environmental Assessment (EA) for the Southwest Intertie Project, Southern Portion (SWIP – Southern Portion). I have reviewed the ROW amendment application, the EA and comments received on the EA. Response to those comments are provided as Attachment 1 to this Decision Record. Based on that review and the record as a whole, I concur with my staff's assessment that the environmental impacts will not be significant and that no Environmental Impact Statement (EIS) is required (see attached Finding of No Significant Impact [FONSI]), and I authorize the Proposed Action.

The Proposed Action consists of two minor modifications of the granted right-of-way (ROW) for the Southwest Intertie Project (SWIP). One modification is relocation of the approved substation site in the Robinson Summit area northwest of Ely. Construction of the substation at the new site, which is within the substation siting area examined in the 1994 SWIP EIS, will entail approximately the same amount of disturbance as the prior site and does not entail impacts that are unique or out-of-scale with respect to the prior site or the SWIP generally. The new site also has certain environmental and engineering advantages over the prior site (e.g., better accommodates interconnection with, and the crossing of the existing Falcon-to-Gonder 345kV transmission line and potential future lines). With the application of the mitigation measures that will be required as a condition of this approval (see below), the impacts from this modification will not be significant and will not be materially different from those disclosed in the SWIP EIS.

The second modification is an approximately 3.8-mile extension of the SWIP ROW grant at its southern terminus, to allow connection to the grid at the Harry Allen Substation. This extension is necessary because a planned substation that was considered the most likely interconnection point (Dry Lake Substation) was never built. The extended SWIP ROW and modified interconnection point are within the southern terminus siting area studied in the SWIP EIS and correspond to one of the studied sites, and are in an area of relatively heavy industrial development and activity, including other energy-related facilities and numerous transmission lines. This modification, while adding nominally to the length of the granted ROW, does not entail impacts that are unique or out-of-scale with respect to the prior terminus of the SWIP generally. With the application of the mitigation measures that will be required as a condition of this approval (see below), the impacts from this modification will not be significant and will not be materially different from those disclosed in the SWIP EIS.

My decision to authorize the Proposed Action is consistent with, and furthers the purpose of the initial Bureau of Land Management (BLM) decisions to approve the SWIP, grant the SWIP ROW, and designate a utility corridor along the approved SWIP alignment. The SWIP is expected to provide additional interconnectivity of the electrical transmission grid and to support potential new electrical generation including renewables, which are issues of significant local and regional importance. My decision is also consistent with the Energy Policy Act of 2005 and the President's Energy Policy, which encourage new transmission capacity, including on federal lands.

Based on the EA and FONSI, the ROW amendment application, input and analysis by my staff and the record as a whole, I have determined that the Proposed Action is consistent with the applicable Resource Management Plans (RMPs), the Management Framework Plans (MFPs), and the Proposed Ely RMP. The Proposed Action will not result in unnecessary or undue degradation to public lands, and is in the public interest.

Conditions of Approval

1. Mitigation and monitoring measures as outlined in the EA will apply.

Mitigation

The proponent will comply with mitigation measures, and the terms and conditions included in the following documents:

- SWIP – Southern Portion EA: Distributed for public and agency review in August, 2007
- SWIP – Southern Portion Biological Assessment (BA): Submitted to U.S. Fish and Wildlife Service (USFWS) in July, 2007
- SWIP – Southern Portion Biological Opinion (BO): Issued by USFWS on December 20, 2007
- SWIP – Southern Portion Construction, Operation, and Maintenance Plan (COM Plan): Current plan on file with BLM, January, 2008

In addition, prior to and during construction, the proponent will also implement all the steps outlined in the Historic Properties Treatment Plan (HPTP) for the SWIP – Southern Portion.

In general, two types of mitigation measures have been developed for the SWIP – Southern Portion, including generic mitigation and selectively committed mitigation measures as presented in Appendix A of the EA, and Tables 6-1 and 6-2 of the COM Plan. These and other mitigation measures included in the COM Plan, BA, BO, and HPTP address the design (engineering), construction, and operation of the proposed facilities. Key mitigation measures associated with the Proposed Action (the extension of the ROW to the Harry Allen Substation and/or the Thirtymile Substation) include, but are not limited to the following:

- Prior to construction, all supervisory and operations construction personnel (crews) 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.

- The physical limits of construction activities would normally be predetermined, with activities restricted to and confined within those limits. Standard survey flags and stakes will be installed before the start of project construction, and signs, flags, and/or fencing will be used to delineate and protect sensitive environmental resource areas to avoid or reduce impacts.

- Preventative and treatment measures addressing noxious weeds will be followed during the construction activities, as well as during restoration and reclamation efforts. Reseeding practices and seeding mixtures to be used in areas of temporary disturbance will be coordinated with a BLM specialist (e.g., botanist, range management specialist, or soil scientist designated by the BLM Authorized Officer) in order to determine the source, type, and quantity of seed mixtures and seeding locations. In this regard, mixtures that discourage the establishment of invasive and noxious weeds will be considered, as appropriate.

- Changes or deviations that may be necessary during construction to accommodate or mitigate on-site circumstances will follow the review and approval process as outlined in the COM Plan.

- Salvageable cacti and yucca will be safely stored in temporary plant storage sites, and plant salvage from areas of permanent disturbance will only be moved once, and replanted as described in the Restoration Plan.

- The BLM has worked, and will continue to work with the Project Proponent to position the transmission line in a manner that (1) accommodates existing and potential future utilities to the greatest degree possible, (2) minimizes environmental impacts, and (3) maintains consistency with the original ROW grant. As noted in the cumulative effects section of the EA, this includes consideration for multiple transmission lines, including those proposed by other entities. The BLM also has taken additional steps to further accommodate future lines by requiring the SWIP to use double-circuit structures in the Pahranagat Wash area, south of the Delamar Valley and Dry Lake.

- All new access roads not required for operation and maintenance would be permanently closed using the most effective and least environmentally damaging methods appropriate to that area as approved by BLM in coordination with the Project Proponent. This would limit new or improved accessibility into the area.

- All requirements of those entities having jurisdiction over air quality matters will be adhered to and any necessary dust control plans will be developed, and permits for construction activities would be obtained. Dust and emission control measures (including watering roads), mitigation

measures limiting disturbance, and restoration and monitoring practices will assist in reducing impacts to air quality.

- Pre-construction surveys for plants and wildlife species, designated as sensitive or of concern, have been conducted in areas of known occurrence or habitat, including noxious weed surveys as stipulated by the land–administering agency (BLM) during the development of the COM Plan. Any additional or updated surveys deemed necessary by the BLM, including rare plant surveys, would be conducted prior to the initiation of the potentially harmful activities in the area of concern.

- All the terms and conditions, and mitigation measures identified in the BO will be applied in order to avoid and minimize impacts to the Mojave Desert Tortoise.

- A paleontological resources treatment plan has been included in the COM Plan, and will be implemented for the project. Intensive pedestrian inspections will be conducted prior to construction in selected areas including the Thirtymile Substation site. The treatment plan identifies mitigation measures that address impacts to paleontological specimens identified either during these field inspections or construction.

- Additional mitigation measures have been proposed by Great Basin or requested or required by the BLM, USFWS and other resource agencies, in connection with the preparation of this EA and the BA, BO, and COM Plan. All of the mitigation measures from these various sources have been incorporated in the COM Plan, and compliance with that plan would be included as an enforceable stipulation in the amended ROW grant, just as it is in the original SWIP ROW grant.

- With the exception of emergency repair situations, ROW construction, restoration, maintenance, and termination activities in designated areas will be modified or discontinued during sensitive periods for candidate, proposed threatened and endangered, or other sensitive animal species as identified in the COM Plan. Sensitive periods, species affected, and areas of concern will be approved in advance of construction or maintenance by the BLM.

- Non-specular conductors and dulled metal finish on towers will be used to reduce visual impacts.

Monitoring

Construction and/or post-construction monitoring, and treatment in selective areas will occur in accordance with Section 106 Compliance, Paleontological Resources, Section 7 of the Endangered Species Act, or as specified by the BLM and state or county authority. The Proposed Action will include all of the monitoring that is stipulated in the COM Plan, BA, BO, and HPTP for the SWIP – Southern Portion. As appropriate, these monitoring efforts include, but are not limited to:

- A BLM appointed Compliance Inspection Contractor will provide ongoing compliance inspections and monitoring for the project.

- An authorized Desert Tortoise biologist will be onsite during project activities within Desert Tortoise habitat. Biologists, monitors, or anyone responsible for conducting monitoring or Desert Tortoise field activities will be qualified and approved by the USFWS.

- A biological monitor will be present during the migratory bird nesting season (April 1 through August 31).

- One or more archaeological monitors (funded by the Project Proponent) would be onsite during construction activities at the Thirtymile Substation site.

Restoration monitoring will be conducted prior to construction and continue through post-construction phases, including the consideration for noxious weeds. Restoration monitoring and evaluation of restoration success will be based on criteria as agreed upon by the BLM and the Project Proponent as presented in the COM Plan.

Implementation: This decision will be implemented by issuing an amended ROW grant to the grant holder and making the appropriate changes to public land records.

Appeals: This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the address below) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition (request) pursuant to regulation 43 CFR 2801.10 or 43 CFR 2881.10 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulations, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied,

(2) The likelihood of the appellant's success on the merits,

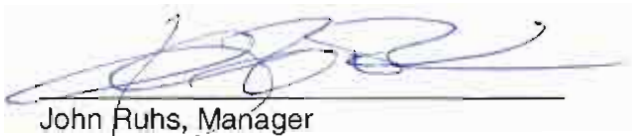
(3) The likelihood of immediate and irreparable harm if the stay is not granted, and

(4) Whether the public interest favors granting the stay.

Address:

Bureau of Land Management
Ely District Office
702 North Industrial Way
HC33 Box 33500
Ely, Nevada 89301-9408

APPROVED BY:



John Ruhs, Manager
Ely District Office

7/30/08
Date

ATTACHMENT 1
SUMMARY RESPONSE TO COMMENTS ON
SWIP – SOUTHERN PORTION ENVIRONMENTAL ASSESSMENT
EA NV-040-07-048

INTRODUCTION

Three sets of comments were received on the Southwest Intertie Project – Southern Portion (SWIP – Southern Portion), Environmental Assessment (EA). One set supported the project and EA. Comments in the other two sets can be grouped into five general areas (1) the EA's relationship to information in the 1994 Southwest Intertie Project Environmental Impact Statement (SWIP EIS), (2) the adequacy of the EA's description of the transmission line's impact on ecological and other resources, (3) the purpose and need of the SWIP – Southern Portion and relationship to the White Pine Energy Station (WPES), (4) Cumulative Effects, and (5) Mitigation Measures and the Construction, Operation and Maintenance Plan (COM Plan). Responses to comments in these areas follow.

1. RELATIONSHIP OF THE SWIP – SOUTHERN PORTION EA TO SWIP EIS

The impacts of the Southwest Intertie Project (SWIP) were presented in the 1992 Draft Environmental Impact Statement and the 1994 Final Environmental Impact Statement (SWIP DEIS/FEIS). The purpose of the EA for the SWIP – Southern Portion is to address (1) proposed project modifications that were not covered in the previous EIS or by the Right-of-Way (ROW) granted by the Bureau of Land Management (BLM), and (2) policy and resource updates associated with key environmental resources that may affect the southern project area.

The SWIP DEIS/FEIS disclosed the potentially significant impacts that could result from the construction of the SWIP. The decision to issue the Record of Decision (ROD) and grant the ROW was informed by awareness of these impacts and the ability to reduce them through specified mitigation measures. The EA addresses the current Proposed Action, which is an amendment of the SWIP ROW Grant to provide for two modifications: (1) relocation of the southern terminus of the SWIP transmission line from the previously proposed Dry Lake Substation to the now-existing Harry Allen Substation, and a corresponding, approximately 3.8-mile Right-of-Way Extension (Harry Allen Extension) and (2) a westward shift of the approved site for a substation in the Robinson Summit area to the new Thirtymile Substation site, and corresponding transmission interconnections with the Falcon-to-Gonder 345kV line (Substation Relocation). In addition to the Proposed Action, the EA evaluates relocation of the ROW within the Aerojet Corridor/Coyote Spring Valley (Coyote Springs Realignment) which was mandated by Congress in Section 302(c) of the Lincoln County Conservation, Recreation, and Development Act (LCCRDA) in 2004. The EA also addresses important policy and/or resource changes (Policy/Resource Updates) identified by the BLM.

Sections 4 and 5 of the EA address resource impacts associated with the proposed and mandated ROW modifications, including the extent of disturbance and the mitigation measures that would help ensure that impacts would be less than significant. Section 6 of the EA assesses the key policy and/or resource changes that have occurred since issuance of the SWIP DEIS/FEIS, the ROD, and ROW.

2. ECOLOGICAL AND RESOURCE IMPACTS

Biological Concerns

Listed and Sensitive Species: Section 6 of the EA identifies impacts and mitigation for the Mojave Desert Tortoise, Sage Grouse, migratory birds, and other key animal and plant species identified as sensitive by BLM and the Nevada Department of Wildlife. New species listings and policy changes since the DEIS/FEIS which could affect management of these species are also addressed in this section, which incorporates analysis from the Biological Assessment (BA) for the SWIP – Southern Portion. Raven and Golden Eagle predation of Sage Grouse and Desert Tortoise, and mitigation in the form of targeted use of H-frame transmission towers with perch deterrents, is discussed in Sections 6.2.2 and 6.3.2. A Biological Opinion (BO) prepared by the United States Fish and Wildlife Service (USFWS) in December 2007 concluded that the SWIP – Southern Portion (including the modifications addressed in the EA) is not likely to jeopardize the continued existence of the threatened Desert Tortoise (Mojave population). Impacts to predators, including the Mountain Lion, Coyote, and Bobcat are anticipated to be minimal based on the limited amount of disturbance associated with the proposed modifications and the mitigation measures presented in Sections 4.3.3 and 5.3.1.3 of the EA, the EA Appendices, and the COM Plan.

The EA notes that the Banded Gila Monster could possibly inhabit the area of the Harry Allen Extension and discusses wildlife related impacts and mitigation for this area (pages 3-3 and 4-4). Seventeen lizard species, including the Gila Monster, were addressed in context with the Coyote Springs Realignment (pages 5-3 and 5-14) and a specific reference has been added to this section of the EA. The BA also considered the Gila Monster as a potentially affected species, concluding that the project would not lead to federal listing.

Other Wildlife: The EA discloses that there will be some mortality of small vertebrate species, and general wildlife habitat quality will be degraded from the construction of the transmission line in association with the Harry Allen Extension and for the Coyote Springs Realignment (Sections 4.3.3.1 and 5.3.1.3). Construction of the Thirtymile Substation will also result in some mortality of small vertebrate species and the removal of wildlife habitat on the substation site (Section 4.3.3.2). Wildlife mortality and habitat impacts associated with the Thirtymile Substation and Coyote Springs Relocation modifications would be generally the same as under the existing ROW Grant. Mitigation measures, including limiting access and disturbance to areas previously determined and clearly flagged, controlling speed limits on the ROW, and restoration practices, will assist in reducing impacts to habitat and wildlife.

Noxious Weeds/Vegetation/Wildfire: Only limited populations of noxious weeds were found along the SWIP – Southern Portion (Section 6.5.1), and project construction was given a “low to moderate risk.” Mitigation measures in the Noxious Weed Management Plan, including identification of problem areas, preventative measures, and post-construction reclamation, treatment and monitoring will help eradicate existing populations and minimize potential spread of noxious weeds (Section 6.5.2). Under the ROW Preparation, Rehabilitation, and Restoration Plan, reseeding practices and seed mixes for temporary disturbance areas will discourage establishment of noxious and invasive weeds, including cheatgrass.

The proposed modifications will result in approximately 178 acres of temporary disturbance and 195 acres of permanent disturbance. Temporary disturbance will be restored in accordance with practices and procedures described in Sections 4.3.1.1, 4.3.1.2, and 5.3.1.1 of the EA. ROW

preparation, restoration and reclamation practices to reduce impacts to vegetative communities are also addressed in the COM Plan. Construction, restoration and monitoring practices identified in this plan, together with the Noxious Weeds Management Plan will assist in reducing the short- and long-term effects to native species and the Sagebrush Biome.

Concerns regarding potential wildfire impacts on native vegetation communities are discussed in Sections 3.7 and 5.3.6. Methods to minimize wildfire potential are in Sections 4.8 and 5.3.6.

Hydrological and Climatological Concerns

No springs, seeps, wet meadows, or perennial streams would be affected by the proposed ROW modifications. In areas traversed by the Harry Allen Extension and the Coyote Springs Realignment, impacts to ephemeral drainages are expected to be minimal due to the selective location of towers, limiting the area of disturbance, and implementing erosion control measures. See Section 4.9.1.3 and Section 5.3.7.3.

Water quality impacts to surface and groundwater are expected to be minimal for the Harry Allen Extension (Section 4.9.1.3), the Thirtymile Substation (Section 4.9.2.3), and the Coyote Springs Realignment (Sections 5.2.9.3 and 5.3.7.3). Mitigation, including erosion control and spill prevention measures as presented in the EA (including Appendix A), will also minimize potential water quality impacts.

Coordination with the U.S. Army Corps of Engineers and Nevada Division of Environmental Protection (NDEP) has occurred with regard to the SWIP transmission line and the Thirtymile Substation. No “jurisdictional waters” were identified in the vicinity of the substation site and NDEP did not identify any specific sensitive drainages in this area. The EA notes that several small intermittent drainages descend from the foothills of the area around the substation site and that an unnamed streambed is located near the southwest corner of the substation (page 3-14). As noted in the EA, it is anticipated that this streambed will be avoided and erosion control and spill prevention measures will be incorporated to address potential short- and long-term impacts to this ephemeral drainage (page 4-10).

Global Warming and Desertification

Vehicles and equipment used for construction and maintenance of the proposed facilities will emit carbon dioxide, a greenhouse gas (GHG). The amount of GHGs emissions from these mobile sources will be so small relative to global GHG emissions that a meaningful analysis could not be achieved with current methodology and therefore are not specifically addressed in the EA. The SWIP – Southern Portion has independent utility from proposed or future generation projects, and the GHG and/or climate change implications of such projects, if any, are appropriately addressed in their respective National Environmental Policy Act (NEPA) documents.

Regarding the desertification of watersheds, the Harry Allen Extension and the Coyote Springs Realignment are not anticipated to affect groundwater, and effects, if any, at the Thirtymile Substation will be minimal due to erosion control and spill prevention measures. Desalinization of topsoil or water and reduction of surface waters are not anticipated. Excessive soil erosion and effects to native plant communities will be minimized through construction and restoration

practices presented in the EA, and impacts to soils will be mitigated as described in Sections 4.9.1.2, 4.9.2.2, and 5.3.7.2. Effects to native vegetation communities and the Sagebrush Biome will also be reduced through restoration and reclamation practices, as described above.

Cultural and Paleontological Resources

Cultural surveys identified no cultural resources for the Area of Potential Effect (APE) for the Harry Allen Extension. Within the APE for the Thirtymile Substation and associated interconnections, 18 sites were identified, four of which were determined eligible for listing on the National Register of Historic Places (NRHP). Within the APE for the Coyote Springs Realignment, cultural surveys identified 58 sites, 12 of which were determined eligible for listing on the NRHP. A Historic Properties Treatment Plan will be implemented prior to construction. This plan will be reviewed and approved by the BLM and the Nevada State Historic Preservation Office, and will identify measures to minimize any potential impacts and ensure compliance with Section 106 of the National Historic Preservation Act. Mitigation measures presented in the EA Appendices will also help minimize cultural resource impacts.

Paleontological resource studies concluded that the Harry Allen Extension is within an area of low paleontological sensitivity, ultimately resulting in minimal impacts to paleontological resources. Paleontological sensitivities associated with the Thirtymile Substation and the Coyote Springs Realignment were “undetermined” and it has been recommended that intensive pedestrian field inspections be conducted prior to construction. A Paleontological Resources Treatment Plan has been prepared and includes mitigation measures that would address potential impacts to paleontological specimens identified in the intensive pedestrian field inspection, which will be conducted prior to construction of the proposed project.

Land Use, Land Owner Benefits, and Economic Considerations

Increased Access: The EA addresses access requirements and the resulting impacts for the three modification areas (pages 4-6, 4-7 and 5-15, 5-16). The SWIP EIS identified and analyzed access impacts for the entire alignment and the ROD outlines generic and selective mitigation measures to mitigate access-related adverse impacts. General categories of access type (e.g., existing, new) were identified in the SWIP EIS, subject to detailed and final engineering and design. These access types have been considered in the detailed engineering of the SWIP – Southern Portion and in preparation of the COM Plan. The COM Plan depicts the location of access and identifies mitigation measures associated with existing, improved, and new access.

The EA acknowledges the potential impacts of increased off-road and dispersed access associated with the proposed modifications. Numerous generic and selective mitigation measures have been developed to reduce access related impacts (EA Appendix A).

Additional linear facilities have been proposed for the utility corridor to be occupied by the SWIP – Southern Portion. Consolidation of access within the corridor may result in an overall reduction of access related concerns and/or impacts to the environmental resources within and near the utility corridor. At the appropriate time the BLM, in coordination with the Proponent and other potential users of the utility corridor, will determine which of the newly-constructed access roads will be closed, restored, or retained for operation and maintenance activity. New access roads not required for operation and maintenance of the SWIP – Southern Portion and/or other

planned facilities may be closed using the most effective and least environmentally damaging methods appropriate to that area. Where access is to be restored, the practices identified in the COM Plan will be implemented accordingly. While detailed engineering and the potential to accommodate future lines have required changes to the access originally anticipated in select locations, the overall impacts of access will remain consistent with those presented in the SWIP EIS.

BLM Management Plan and Designated Utility Corridor: The utility corridor for this area is based on Land Use Plan Amendments approved by BLM in the 1994 ROD, specifically for the SWIP transmission line. The decision to locate the SWIP transmission line, and ultimately the broader corridor in this area, was based on an extensive planning process that included review of environmental resource impacts and mitigation during the preparation of the SWIP DEIS/FEIS. With the exception of the modifications presented in the EA, this location remains consistent with the original ROW Grant, and neither the original nor modified grant will prohibit other utilities from maintaining consistent electrical spacing.

The BLM has worked, and will continue to work with the Project Proponent to position the transmission line in a manner that (1) accommodates existing and potential future utilities to the greatest degree possible, (2) minimizes environmental impacts, and (3) maintains consistency with the original ROW Grant. As noted in the cumulative effects section of the EA, this includes consideration for multiple transmission lines, including those proposed by Sierra Pacific Resources and Nevada Power Company. The BLM also has taken additional steps to further accommodate future lines by requiring the SWIP to use double-circuit structures in the Pahranagat Wash area, south of the Delamar Valley and Dry Lake.

At this time no potentially unused, and/or duplicate ROWs are known to exist in the corridor occupied by the SWIP. Concerns that the SWIP – Southern Portion, if constructed, might go unused are not considered realistic, given the need for additional interconnectivity of the grid and significant interest for additional regional transmission in support of new energy projects including proposed or potential renewable energy resources, as evidenced by the number of transmission line ROW applications being applied for in this area.

Effects to Special Management Areas: There are no Wilderness Areas, Wilderness Study Areas, or Wild and Scenic Rivers within the Harry Allen Extension or at the Thirtymile Substation Site, as described in Section 3.8 of the EA. No Areas of Critical Environmental Concern (ACECs) would be affected by these modifications (Section 4.13). While the Thirty Mile Substation is located within the Loneliest Mountain Special Recreation Management Area, there are no existing or planned recreation sites within close proximity to the substation. Impacts to recreation from the construction and operation of the Thirtymile Substation would be limited to temporary disruption to traffic and access along Jakes Wash Road and U.S. Highway 50 during construction. Mitigation measures identified in the COM Plan regarding the use of signage that notifies the public of the timing for construction activities will help reduce any potential conflicts with users, and additional practices outlined during construction and restoration will help minimize damages to resources in this area and provide for public safety (Section 4.6.2).

With respect to the Coyote Springs Realignment, the Delamar Mountain Wilderness is located east of the realignment and U.S. Highway 93, approximately 0.75 to 2.0 miles from the realignment. No increase in access to the Wilderness is expected from construction of the transmission line in this area (Section 5.3.4). The Desert National Wildlife Range (DNWR), including portions that are proposed for Wilderness designation and are currently being

managed as Wilderness, is located west of the realignment (Section 5.2.7). There is potential for increased off-road and dispersed access to the DNWR from the construction of new access and maintenance roads, however, potential increased off-road access will be limited by closing and reclaiming construction roads not needed for maintenance, and through the use of locking gates or other barriers, to the extent practicable (as described in Section 5.3.4 of the EA).

The Coyote Springs Realignment crosses approximately 1 mile of the Coyote Springs ACEC, which was designated for protection of the Mojave Desert Tortoise and is located in Critical Habitat (Section 5.2.13). Effects to the Coyote Springs ACEC, including mitigation measures to reduce impacts to Desert Tortoise, are addressed in the BO for the SWIP – Southern Portion, including measures presented in Sections 5.3.1.5 and 5.3.11 and Appendix A of the EA.

Landowner Benefits: Grazing lands may be affected in the short-term during construction, and may be displaced in the long-term by permanent roads and project facilities that will displace grazing. While the SWIP – Southern Portion crosses numerous range allotments, the permittees associated with these allotments will not receive any direct financial benefit from the SWIP – Southern Portion. The effects of the Coyote Springs Realignment are presented in Section 5 of the EA. The sponsors of the Coyote Springs Development Project and their plans for development of electrical and water supply infrastructure to serve this Project are separate from, and unrelated to, the SWIP Project and the Project Proponent.

Economic Considerations: Economic concerns were expressed regarding loss of public recreational opportunities, loss of healthy watersheds, and the cost of wildfire and noxious weed suppression. A loss of recreational opportunities is not anticipated in conjunction with the proposed modifications. There are no recreation areas in the immediate vicinity of the Harry Allen Extension (Section 4.6.1) and impacts to the construction and operation of the Thirtymile Substation would be limited to temporary disruption of Jakes Wash Road during construction. In this location, mitigation measures including the use of signage that notifies the public of the timing for construction will help to reduce any potential conflicts. In the location of the Coyote Springs Realignment, the transmission line does not conflict with recreation use (Section 5.3.4).

Given the location of the modifications, the minimal impacts to hydrology and the identified mitigation measures which will be employed to further minimize hydrologic concerns, the health of the watersheds in these areas is not anticipated to be jeopardized by the proposed modifications. Also, the costs associated with the control of noxious weeds and the prevention of wildfires will be the responsibility of the Project Proponent, in accordance with the COM Plan.

3. PURPOSE AND NEED & RELATIONSHIP TO THE WHITE PINE ENERGY STATION

The purpose and need for the modifications to the SWIP right-of-way, which is the proposed action considered in the EA, is presented in Section 1.2. The objective for the SWIP itself is also summarized in Section 1.2 for informational purposes.

In order to provide clarification with respect to the relationship with the WPES, BLM has done the following.

First, we have determined that it would be more appropriate for Section 1.1.1 of the EA to define the analysis area for the SWIP – Southern Portion as that part of the SWIP that runs between the Harry Allen Substation and the proposed Thirtymile Substation. This is consistent with the

independent utility of this part of the transmission line, as identified by Great Basin Transmission, LLC (Great Basin) and reflected in Great Basin's pending application to the Nevada Public Utility Commission for a Utility Environmental Permit Act (UEPA) permit for the Harry Allen to Thirtymile Project. This clarification really only affects Section 6 of the EA, Policy and Resource Updates, because the rest of the EA addresses ROW amendments which are limited to the Harry Allen to Thirtymile portion. The Policy and Resource Update Section of the EA has been revised by removal of specific discussion of resources north of the proposed Thirtymile site, which were minimal, and the maps of the project area have been revised. From a NEPA perspective, the portion of the line north of Thirtymile is more appropriately addressed in the BLM's ongoing review of the SWIP -- Northern Portion, and/or the WPES Environmental Impact Statement being developed by the Ely District Office. This approach is consistent with the initial SWIP ROD, which recognized that the SWIP might be constructed in phases. It will allow Great Basin the flexibility to phase development and construction of the SWIP in a commercially reasonable manner in light of existing system connectivity issues and in response to the evolving generation and transmission situation in the region.

Second, we have added a reference to the WPES in Section 1.1.1 and have also added a brief discussion of the relationship of the SWIP and the WPES to Section 7, Cumulative Impacts as described below.

Given the need for additional interconnectivity of the grid, and significant interest for additional regional transmission in support of proposed or potential renewable energy resources, as evidenced by the number of transmission line right-of-way applications being applied for in this area, it is unlikely that the Southern SWIP, if constructed, might go unused. BLM will make the determination on the scope and timing of notices to proceed for construction with due consideration for prevailing circumstances.

4. CUMULATIVE IMPACTS

Issues raised in the comments included (1) cumulative effects to environmental resources, including those impacted by grazing, and (2) cumulative effects of other energy projects.

Cumulative Effects of the SWIP to Environmental Resources: Cumulative impacts associated with the Harry Allen Extension and Thirtymile Relocation, and with the Coyote Springs Realignment are presented in Section 7 of the EA. That discussion addresses biological resources; cultural and paleontological resources; land use, recreation, and access; visual resources; Wilderness and Wild and Scenic Rivers; wildfire management; earth resources (geology, soils, and water); air resources; hazardous materials; socioeconomic and environmental justice; and, ACECs. Concerns regarding biological resources, including habitat loss, disturbance and fragmentation, increase of access, noxious weeds, and affects to threatened and sensitive species, are addressed in Section 7.4.1 of the EA.

The collocation of the SWIP and other planned linear facilities within a common utility corridor, to the extent possible, should minimize the cumulative effects to all environmental resources in the long-term. The location of the SWIP, as well as other existing and planned linear facilities within this corridor, allows for the consolidation and therefore reduction of the incremental impacts associated with past, present, and future actions within a relatively confined area. In particular, by consolidating these facilities within an established utility corridor, future linear facilities will be located in a well-planned and previously modified setting, and may potentially

benefit from long-term access established for the SWIP, thereby reducing cumulative effects related to impacts resulting from the construction of additional new roads.

Cumulative Effects in Association with Grazing: No grazing allotments are located in the areas of the Harry Allen Extension or the Coyote Springs Realignment. Construction of the Thirtymile Substation and interconnections would displace approximately 81 acres of the 178,716 acre Thirty Mile Spring BLM grazing allotment as described in Section 4.6.2 of the EA. It is not anticipated that construction and operation of this substation will lead to an increase in grazing activities (in fact it would reduce the amount of area potentially used by livestock). It is also not anticipated that construction, operation, and maintenance of the facilities associated with the modifications described in the EA will directly, or indirectly, contribute to grazing related impacts. The impacts associated with the construction and operation of these modifications, when added to grazing related impacts in the region, are not anticipated to be substantial based on (1) the location of these modifications, (2) their placement in an area with the potential to consolidate future facilities, and (3) the mitigation measures as presented in Section 7.4 of the EA, which will minimize impacts to watersheds and plant and animal communities and habitat, and will prevent or minimize the spread of noxious weeds.

Cumulative Effects of Other Energy Projects: Table 7-1 in Section 7 of the EA catalogues the past, present and reasonably foreseeable future actions (including energy related projects) in the region which, due to general proximity, could potentially have cumulative impacts with the SWIP ROW modifications considered in the EA. These projects have been taken into account (as appropriate) in the description of cumulative effects to environmental resources as presented in Section 7.4 of the EA. In addition, several other NEPA documents for energy related facilities have also been completed which include the SWIP in their cumulative analyses. A description of these NEPA documents is provided in Section 7.3 of the EA. In addition, and as previously described, a brief discussion has been added to Section 7 providing additional clarification with respect to the relationship of the SWIP and the WPES. That discussion clarifies that while the WPES is unlikely to be constructed to full build-out without the SWIP, the SWIP has independent utility and all or a portion of it may be built in the absence of the WPES. This discussion is consistent with the discussion in the Draft EIS for the WPES.

5. MITIGATION MEASURES AND COM PLAN

The BLM received a preliminary COM Plan from the Project Proponent in March of 2007. The plan was used by the BLM to assess potential resource impacts in the EA. The EA summarizes key mitigation measures included in this plan. A current COM Plan is on file in the Ely District Office, the Caliente Field Office, and the Southern Nevada District Office.

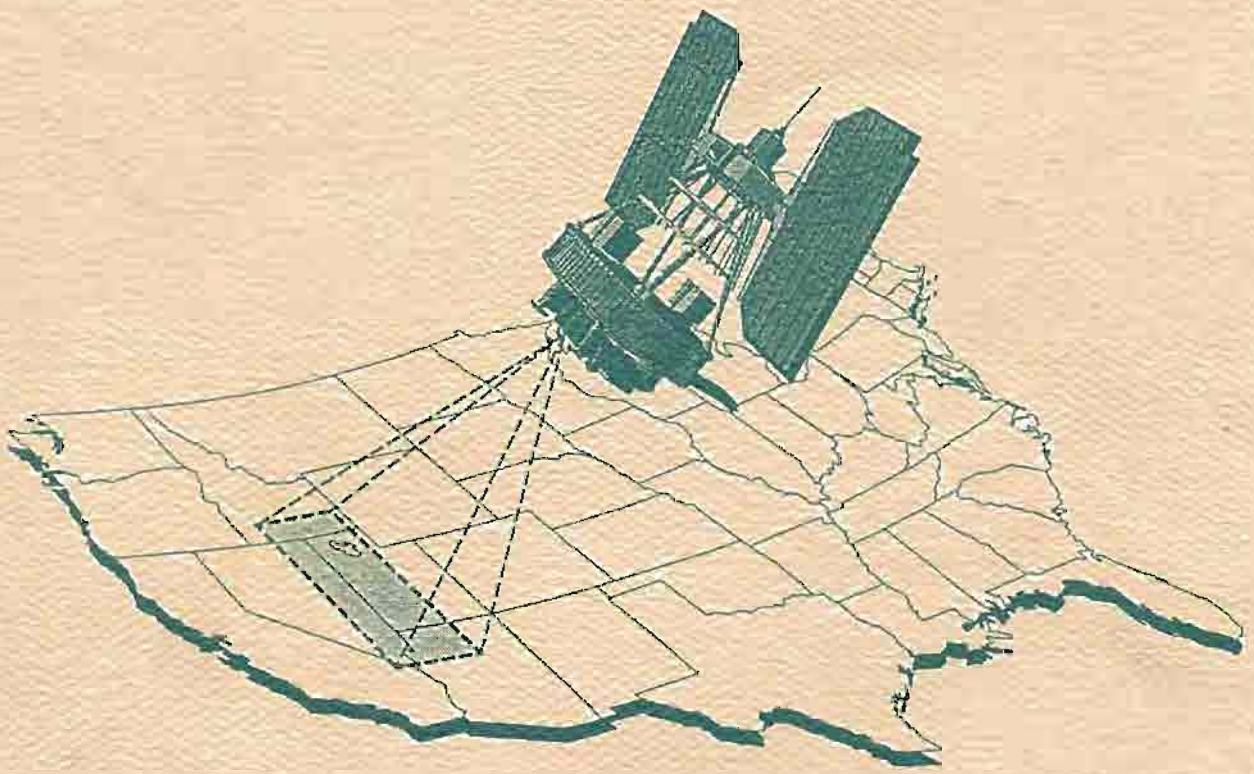
These generic and selective mitigation measures are discussed in the EA and included in Appendix A. They represent the range of measures that could be applied to address impacts associated with the three areas of modification or in context with key policy and resource changes since the Final SWIP EIS and ROD. Mitigation measures, including the terms and conditions of the BO issued by the USFWS on December 20, 2007, are presented in the BO which has also been included in Appendix B of the EA and the COM Plan.

Key mitigation measures to address specific resource impacts associated with the Harry Allen Extension and the Thirtymile Relocation are described in Section 4 of the EA. Mitigation measures to address resource impacts associated with the Coyote Springs Realignment are

presented in Section 5.3, and those that apply to key policy and/or resource changes that have occurred since the SWIP DEIS/FEIS are presented in Section 6. These measures include those identified in the original SWIP as well as additional measures determined to be applicable since the issuance of the ROD and subsequent ROW Grants. Additional mitigation measures have been proposed by Great Basin or requested or required by the BLM, USFWS and other resource agencies, in connection with the preparation of the EA and the BA, BO, and COM Plan. All of the mitigation measures from these various sources have been incorporated in the COM Plan, and compliance with that plan would be included as an enforceable stipulation in the amended ROW Grant, just as it is in the original SWIP ROW Grant as presented in the Decision Record for the EA.

SOUTHWEST INTERTIE PROJECT

FINAL ENVIRONMENTAL IMPACT STATEMENT and PROPOSED PLAN AMENDMENT



Prepared by the:

U.S. Department of the Interior
Bureau of Land Management
Burley, Shoshone, and Boise District Offices, Idaho
Elko, Ely, and Las Vegas District Offices, Nevada
Richfield District Office, Utah

In Cooperation with:

U.S. Department of Agriculture
Forest Service
Intermountain Region, R-4

U.S. Department of Interior
National Park Service
Pacific Northwest, Rocky Mountain, and Western Regions

U.S. Department of Interior
Bureau of Indian Affairs
Cedar City, Utah

U.S. Department of Interior
Bureau of Reclamation
Pacific Northwest, Upper Colorado and Lower Colorado Regions

July 1993

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

TAKE PRIDE IN AMERICA

IN REPLY REFER TO

July 16, 1993

Dear Reviewer:

Enclosed is the Southwest Intertie Project (SWIP) Final Environmental Impact Statement/Proposed Plan Amendment (FEIS/PPA) on the proposed Idaho Power Company 500kV Transmission Line, the SWIP. This document is in abbreviated format and is to be used in conjunction with the SWIP Draft Environmental Impact Statement and Draft Plan Amendment (DEIS/DPA). The SWIP DEIS/DPA was distributed to the public in June 1992. Chapter 1 of the SWIP FEIS/PPA addresses the Proposed Plan, Chapter 2 reviews Public Participation, Chapter 3 contains Modifications and Additional Studies, Chapter 4 lists errata and corrections to the SWIP DEIS/DPA, and Chapter 5 contains public comments and responses. The SWIP FEIS/PPA has been prepared considering comments received on the SWIP DEIS/DPA.

Please note that there are two minor changes to the Agency Preferred Route made in this document in response to public comments on the SWIP DEIS/DPA. The first was made to mitigate potential visual and land use impacts to future land developments in the vicinity of Oasis, Nevada (refer to page 3-36 of this document). The Agency Preferred Alternative in the Oasis area was changed to Links 221 and 223 (refer to Figure 1-1 in Chapter 1 of this document). This routing would also better utilize a BLM designated utility corridor. The second change was made in the Sacramento Pass area to mitigate potential visual impacts to travelers to Great Basin National Park and avoid crossing private lands near Baker, Nevada (refer to page 3-39 of this document). The Agency Preferred Alternative in the Baker area was changed to Links 464, 466, 468, 471, and 473 (refer to Figure 1-1 in Chapter 1 of this document).

This document addresses Idaho Power Company's proposed right-of-way application to construct an approximately 520-mile 500kV transmission line from Midpoint Substation near Shoshone, Idaho to a proposed substation northeast of Las Vegas, Nevada, referred to as the Dry Lake Substation site. This segment of the SWIP is referred to as the Midpoint to Dry Lake segment. It also addresses the proposed right-of-way to construct an approximately 160-mile 500kV transmission line from a proposed substation in the Ely, Nevada area to a substation near Delta, Utah. This segment of the SWIP is referred to as the Ely to Delta segment. The proposed right-of-way would also include a series compensation station near Wells, Nevada, a series compensation station in the Delamar Valley in southeastern Nevada, and 13 new microwave communication facilities on the Midpoint to Dry Lake segment.

This document contains the Bureau of Land Management's (BLM) proposal to select a preferred alternative for the Midpoint to Dry Lake segment and an alternative for the Ely to Delta segment. The Agency Preferred Alternative for the Midpoint to Dry Lake segment is a combination of Routes A and G which would cross approximately 406 miles of the BLM lands, 0.5 miles of lands administered by the Bureau of Reclamation, 83.1 miles of private lands, and 5.2 miles of state lands. The Agency Preferred Alternative for the Ely to Delta segment is the 230kV Corridor Route which

would cross 197.4 miles of the BLM lands and 9.0 miles of lands administered by the Humboldt National Forest.

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. None of the alternatives cross National Park Service lands, and the 230kV Corridor Route is approximately two miles from the northern boundary of the park and approximately six miles from Wheeler Peak. The 230kV Corridor Route was also moved another mile north (i.e., away from the park) in the Sacramento Pass area as referred to above.

The Agency Preferred Alternative is to allow equipment additions to the Midpoint Substation, one proposed substation near Ely, Nevada, a proposed substation in the Dry Lake Valley in southern Nevada, and a proposed substation near Delta, Utah. The specific substation site in the Dry Lake area will depend on the routing decision for the Marketplace-Allen Transmission Project (MAT) proposed by the Nevada Power Company (refer to page 2-52 of the SWIP DEIS/DPA). Series compensation stations would also be needed about halfway between the two northern substation sites northeast of Wells, Nevada and in the Delamar Valley in southern Nevada to increase the electrical performance of the transmission system. The series compensation station near Wells, Nevada may be expanded in the future to accommodate switching equipment (i.e., substation).

The Agency Preferred Alternative also proposes to construct microwave communication facilities sites at Hansen Butte, Cottonwood (in Idaho), and Ellen D, Six Mile, Rocky Point, Spruce Mountain, Long Valley, Copper, Cave Mountain, Mount Wilson, Highland Peak, Beaver Dam Mountain, and Glendale (in Nevada).

The decision to implement the selected alternative will be made on National Forest lands by the Regional Forester, by the Bureau of Reclamation on Bureau of Reclamation lands, and on the BLM land by the Idaho, Nevada, and Utah State Directors. This preferred alternative was selected by the BLM, Forest Service, and Bureau of Reclamation as a result of public comments and concerns on the SWIP DEIS/DPA released July 1992.

The SWIP decision document would serve as a plan amendment to Resource Management Plans (RMP) and Management Framework Plans (MFP) where the Agency Preferred Alternative would be outside a designated utility corridor in three of the BLM Districts crossed (refer to Figure 1-2 in Chapter 1 of this document). The Humboldt National Forest Land and Resource Management Plan and Great Basin National Park General Management Plan would not be amended. The Bureau of Reclamation does not have a land use plan to be amended. The BLM RMPs and MFPs, now in effect, that may be amended are as follows:

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

The portion of the proposed plan amendment affecting the BLM administered lands may be protested in accordance with 43 CFR 1610.5-2. Protests must be postmarked no later than August 17th, 1993. The protests must be in writing, and sent to:

Director, BLM (760)
Department of Interior
1848 C Street NW
Washington, DC 20240

Protests must contain: (1) name, mailing address, telephone number and interest of the person filing the protest, (2) a statement of the issue(s) being protested, (3) a statement of the part(s) of the plan being protested, (4) a copy of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the record, (5) a concise statement explaining why the proposed plan is believed to be wrong.

At the end of the protest period, the BLM portion of the proposed plan, excluding any portion under protest, shall become final. Approval shall be withheld on any portion of the plan until final action has been completed on such protest. The BLM approval process and the final plan for the BLM is expected to be published with the Record of Decision in the late summer or fall 1993.

The Bureau of Reclamation will issue a separate decision document. The 30 day review period ends August 17th 1993. Written comments may be submitted to:

John Keys, Regional Director
Bureau of Reclamation, Pacific Northwest Regional Office
1150 N. Curtis Road
Boise, ID 83706

The Forest Service decision on the National Forest portion of the proposed plan is subject to administrative review (appeal) in accordance with the provisions of the Forest Service Appeal Regulations set forth in 36 CFR 217. Any appeal of the Forest Service decision must include the information required by 36 CFR 217.9 (content of a notice of appeal), including the reasons for the appeal. Two (2) copies of the Notice of Appeal must be made in writing and submitted within 45 days of the date of publication of the decision to the Regional Forester:

Gray F. Reynolds, Regional Forester
Intermountain Region (R-4), USDA Forest Service
Federal Building, 324 25th Street
Ogden, Utah 84401

A BLM protest, or Forest Service or Bureau of Reclamation appeal must be filed separately if the reviewer wishes to direct concerns on lands administered by the BLM, Forest Service, or Bureau of Reclamation. Those people not wishing to protest or appeal but wishing to comment may send comments to Bureau of Land Management, Burley District Office at the address below. All comments received will be considered in the preparation of the BLM Record of Decision.

A copy of the SWIP FEIS/PPA will be sent to all persons, organizations, or agencies who received the SWIP DEIS/DPA, or to anyone requesting a copy. Please address requests for copies of the SWIP FEIS/PPA to:

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Sincerely,

Gerald L. Quinn

Gerald L. Quinn
District Manager

COVER SHEET
Southwest Intertie Project
Final Environmental Impact Statement/Proposed Plan Amendment

( ) Draft
(X) Final

(X) Administrative
( ) Legislative

Lead Agency

U.S. Department of Interior
Bureau of Land Management

Cooperating Agencies

U.S. Department of Agriculture
Forest Service

U.S. Department of Interior
Bureau of Reclamation

U.S. Department of Interior
National Park Service

U.S. Department of Interior
Bureau of Indian Affairs

EIS/PA Contact

Comments on this FEIS/PPA should be directed to:
Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Copies of the FEIS/PPA have been sent to and comments requested from:
Refer to Appendix B

Date FEIS/PPA Mailed to the Public:
July 6, 1993

Date by Which Comments, Protests Must Be Received or Postmarked By:
August 17, 1993

Abstract

The Southwest Intertie Project (SWIP) is a proposed 500kV electrical transmission line system between the Midpoint Substation near Shoshone, Idaho and a proposed substation in Dry Lake Valley, northeast of Las Vegas, Nevada (referred to as the *Midpoint to Dry Lake segment*), and between a proposed substation in the Ely, Nevada area and a proposed substation near Delta, Utah (referred to as the *Ely to Delta segment*). Idaho Power Company proposes to construct, operate, and maintain a 500kV transmission line on the requested right-of-way grant for the Midpoint to Dry Lake segment and requests that the Bureau of Land Management (BLM) assign the right-of-way for the Ely to Delta segment to the Los Angeles Department of Water and Power (LADWP). The LADWP proposes to construct, operate, and maintain a 500kV transmission line on the Ely to Delta segment on behalf of the participants of the Utah-Nevada Transmission Project (UNTP).

Equipment additions are proposed to the existing Midpoint Substation near Shoshone, Idaho. New substations are proposed near Ely and Las Vegas in Nevada, and near Delta in Utah. Series compensation stations are proposed midway between Midpoint Substation in Idaho and the proposed substation near Ely, Nevada, and in the Delamar Valley between the Ely area and the Dry Lake Valley. New microwave communication facilities are also proposed on the Midpoint to Dry Lake segment.

The Midpoint to Dry Lake segment of the SWIP would increase the ability to conduct northwest-southwest power exchanges, would increase the capacity and reliability of the interconnected electrical grid in the western U.S., and would enhance competition and economic efficiency of the regional power market. This segment of the SWIP would establish an "open marketplace" for power transfers in the Las Vegas area. Because of the increased capacity to share regional resources, an additional benefit would be deferring new generation facilities and diversifying fuel resources. The Ely to Delta segment of the SWIP would increase the reliability between the existing transmission systems in the Delta area and the planned north-south SWIP system and create a bi-directional transfer path between the Pacific Northwest and intermountain regions and between the intermountain region and southern Nevada.

Alternatives considered for the SWIP include the No-Action, energy conservation, alternative generating sources, alternative transmission systems, alternative transmission technologies, and the proposed action which includes nine routing alternatives on the Midpoint to Dry Lake segment, plus the agency and utility preferred routes, which have slight variations, and four (4) routing alternatives on the Ely to Delta segment:

Midpoint to Dry Lake Segment Routing Alternatives

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

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

Ely to Delta Segment Routing Alternatives

- Direct Route
- Cutoff Route
- 230kV Corridor Route (Agency and Utility Preferred)
- Southern Route

This SWIP Final Environmental Impact Statement/Proposed Plan Amendment (FEIS/PPA) assesses the environmental consequences of the federal approval for the project. Impacts of the proposed action would result from the access roads, tower sites, and staging areas required to construct the transmission line and related facilities. Impacts are expected to soils, vegetation, wildlife, cultural resources, scenic resources, and land uses. Electric and magnetic field effects have also been studied for this project.

Because this document is in an abbreviated format, please refer to the SWIP Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA) as a reference for this SWIP FEIS/PPA.

Corrections to the SWIP DEIS/DPA are made in Chapter 4 of this document. Additional studies are found in Chapter 3.

The Agency Preferred Alternative for the Midpoint to Dry Lake segment is identified in this document as a combination of Route A and G (as described in the SWIP DEIS/DPA). The Agency Preferred Alternative for the Ely to Delta segment is the 230kV Corridor Route (as described in the SWIP DEIS/DPA).

The Agency Preferred Alternative is to allow equipment additions to the Midpoint Substation, one proposed substation near Ely, Nevada, a proposed substation in the Dry Lake Valley in southern Nevada, and a proposed substation near Delta, Utah. The specific substation site in the Dry Lake area will depend on the routing decision for the Marketplace-Allen Transmission Project (MAT) proposed by the Nevada Power Company (refer to page 2-52 of the SWIP DEIS/DPA). Series compensation stations would also be needed about halfway between the two northern substation sites northeast of Wells, Nevada and in the Delamar Valley in southern Nevada to increase the electrical performance of the transmission system. The series compensation station near Wells, Nevada may be expanded in the future to accommodate switching equipment (i.e., substation).

The Agency Preferred Alternative would also construct microwave communication facilities at Hansen Butte, Cottonwood (in Idaho), and Ellen D, Six Mile, Rocky Point, Spruce Mountain, Long Valley, Copper, Cave Mountain, Mount Wilson, Highland Peak, Beaver Dam Mountain, and Glendale (in Nevada).

Idaho State Director
Bureau of Land Management

Date

SUMMARY

SUMMARY

Southwest Intertie Project

The Southwest Intertie Project (SWIP) is a proposed inter-regional transmission system consisting of two single-circuit 500 kilovolt (kV) alternating current (AC) transmission line segments (nearly 700 miles in total length), associated proposed substation facilities, intermediate series compensation stations, and microwave communication facilities. The transmission line segments are referred to as the Midpoint to Dry Lake segment and the Ely to Delta segment. The Ely to Delta segment was also referred to as the Crosstie in the SWIP Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA).

The Idaho Power Company (IPCo) proposes to construct, operate, and maintain the approximately 520 mile Midpoint to Dry Lake segment from the existing Midpoint Substation near Shoshone, Idaho interconnecting to a proposed substation in the Ely, Nevada area, and continuing south to a proposed substation site in the Dry Lake Valley northeast of Las Vegas, Nevada. The estimated capacity rating of this segment is 1200 Megawatts (MW). From the Ely, Nevada area the nearly 160 mile Ely to Delta segment is proposed to connect from a proposed substation in the Ely area east to a proposed substation near Delta, Utah. The estimated capacity rating of this segment is 1100 MW.

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 Utah-Nevada Transmission Project (UNTP), a proposed 500kV transmission line from Delta to a proposed substation site located approximately 13 miles southwest of Boulder City, Nevada. The UNTP proposal also included the line segment between Ely and Delta, which was proposed to be developed as a second Phase. The UNTP participants include utilities in Utah, Nevada, and California.

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 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 Phase II 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 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 Los Angeles Department of Water and Power (LADWP). The LADWP would, on behalf of the UNTP participants,

construct, operate, and maintain this portion of the line and the proposed substation near the Intermountain Generating Station near Delta, Utah.

The SWIP Midpoint to Dry Lake segment would be constructed 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 towers for the Midpoint to Dry Lake segment could range from 90-160 feet in height, but would average 120-130 feet. This segment of the project would require a proposed substation near Ely, Nevada, a proposed substation in Dry Lake Valley in southern Nevada, and equipment additions to the existing Midpoint Substation. Series compensation stations would also be needed about halfway between the two northern substation sites northeast of Wells, Nevada, and in the Delamar Valley in southern Nevada to increase the electrical performance of the transmission system. The series compensation station near Wells, Nevada may be expanded in the future to accommodate switching equipment (i.e., substation). A proposed microwave communication system to operate the system would also be required between Midpoint Substation and the proposed substation at Dry Lake. In addition, a fiber optic ground wire may be installed instead of conventional ground wires to serve the needs of commercial communications companies. If installed, access to the fiber optic system would only be allowed upon completion of all environmental permitting activities (e.g., the National Environmental Policy Act) and right-of-way acquisition.

The towers for the Ely to Delta segment could range from 90-160 feet in height, but would average 120-130 feet. The Ely to Delta segment would require a new substation near Delta, Utah. Tower types between Ely to Delta would be constructed using:

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

An existing microwave communication system between Ely, Nevada, and Delta, Utah would be used with only minor upgrades.

The Agency Preferred Alternative is to grant the IPCo a 200-foot right-of-way across approximately 700 miles of lands administered by the BLM, the Forest Service (FS), and the Bureau of Reclamation. Idaho Power would obtain easements for the portion of the route crossing private lands. 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 five proposed substation or series compensation sites 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.

Purpose and Need

Electrical utilities have a responsibility to provide adequate supplies of reliable and economical electricity to all classes of customers. State and federal regulatory agencies review the proposed actions of utilities to assure electrical customers the lowest possible costs. Utilities focus on least cost planning, which considers conservation equally with new generation options, to provide reliable electrical service at the lowest reasonable infrastructure cost.

The purpose of the SWIP is to meet the goals of least cost planning, to increase transmission capacity and reliability, and to allow for the sharing of the electrical supplies between the regions of the West. The increase in transmission capacity and reliability would benefit electrical consumers by keeping their costs as low as possible in a future electrical market with high demands for conservation, environmental awareness, and cost consciousness.

The need for increased power exchanges in the western United States is particularly evident between the Northwest and the Southwest. Two main avenues of transmission now being used are the Pacific Interties in the West and various smaller lines around the east side of the Great Salt Lake. These major paths are presently unable to accommodate the full need for electric power transfers between the northern and southern portions of the western transmission system. Electrical demand and consumption in the Desert Southwest are greatest in the summer, as opposed to the Pacific Northwest, where they are greatest in the winter. This seasonal diversity between these western regions has been identified to be approximately 3000 MW. This seasonal diversity can be captured by increasing the transmission capacity between the regions of the West.

The proposed addition of the SWIP to the regional power grid is being considered to allow the Northwest, the Southwest, and the Intermountain regions of the country to take advantage of the various load pattern diversities, including variations in electrical demand and supply within the region. It would create an additional bi-directional transfer path between the Pacific Northwest and the Intermountain regions of the West. Currently, these areas are interconnected only by lower voltage transmission lines with limited electric load-carrying capability. It would also create an additional bi-directional transfer path between the Intermountain area and the Southwest including southern Nevada, an area that is rapidly growing and is in need of additional energy and capacity resources to serve its native load.

The proposed addition of the SWIP would provide regional economic benefits by capturing current and future efficiencies within the electric power system of the western United States. It would enable the regions' utilities to realize these efficiencies by interconnecting the systems of the Northwest and Southwest with firm transmission access via the SWIP's proposed "open marketplace" concept. Open access across the SWIP would facilitate creative energy transactions which, driven by the forces of the open market, would take economic advantage of the load and resource diversities between the regions. Transactions on the SWIP would allow interconnected utilities to better use existing internal transmission capacity. These transactions would benefit the wheeling utility by creating revenues that can be applied against its internal system costs, including seasonal exchanges, resource coordination, nonfirm sales and purchases, firm sales and purchases, and reserve sharing. The SWIP would also provide other benefits including improved system reliability and environmental enhancements.

The SWIP would allow utilities in the Northwest and the Southwest to add capacity and reliability to the western electrical system at an economical price. Specifically, the SWIP would fulfill the major needs as outlined below:

Seasonal Exchanges

Seasonal exchanges provide benefits by taking advantage of the load pattern diversities between regions. By directly interconnecting and exchanging power between the winter peaking Northwest and the summer peaking Southwest, both regions would benefit from increased operating efficiencies of existing resources. Seasonal exchange transactions could reduce operating expenses through fuel diversity, as well as reduce capital cost expenditures by deferring costly new generating resources.

The SWIP would allow the Northwest, the Southwest, and the Intermountain areas to take advantage of the various load pattern diversities including variations in electrical demand and supply within the region. The Ely to Delta segment would create an additional bi-directional transfer path between the Northwest and the Intermountain regions of the West. Currently, these areas are interconnected only by lower voltage transmission lines with limited electric load-carrying capability. It would also create an additional bi-directional transfer path between the Intermountain area and the Southwest including southern Nevada. This is an area that is rapidly growing and is in need of additional energy and capacity resources to serve its native load.

Resource Coordination

The SWIP would enable regional resources with diverse generating characteristics to operate jointly in a manner that increases overall operating efficiencies. For example, the Northwest could use the surplus peaking capacity and storage capability of its hydro system in conjunction with the base loaded thermal resources of the Southwest, thus increasing load-carrying capability as well as reducing production costs. Resource coordination agreements, like seasonal exchanges, benefit the utilities by both reducing operating expenses and potentially deferring new generating resources.

Nonfirm Sales and Purchases

Nonfirm sales and purchases provide benefits by lowering the total power production expenses of the parties involved. Nonfirm or economy transactions accomplish this by taking advantage of the diversity in incremental production costs between generating resources, such as displacing oil resources with coal resources or displacing coal with hydro. The purchasing party benefits from lower production expenses than it would have otherwise incurred, while the selling party benefits from the revenues received that are in excess of its incremental production costs. Nonfirm transactions are generally short-term in nature, ranging from the next hour to several months, since incremental costs are very sensitive to the uncertainty of future load requirements, generating unit availability, and fuel costs or availability, such as spot gas prices or winter snow pack.

Firm Sales and Purchases

Firm agreements tend to be longer in term and place a higher level of obligation on both parties. As such, they are included in the utility's long-term planning process. The economic benefits derived from firm sales and purchases are therefore somewhat broader than those of the nonfirm market. Firm transactions benefit the purchaser by deferring large capital outlays associated with the acquisition of a new generating resource. They benefit the seller by sharing the output and the fixed costs of an existing resource until such time as the seller can fully utilize the resource.

Reserve Sharing

Reserve margin is generating capacity that must be available to respond to emergency conditions. Additional transmission capacity between the Northwest and Southwest would enhance the utilities' abilities to meet these reserve margin requirements by using the load and resource diversities that exist between regions. Thus, reserve sharing would benefit the utilities by optimizing the existing and future regional resources in meeting reserve margins.

Refer to Chapter 3 of this document for an expanded Purpose and Need statement and to the Purpose and Need in Chapter 1 of the SWIP DEIS/DPA.

Scoping and Project-Related Studies

Scoping Process

As required by the National Environmental Policy Act (NEPA) of 1969, the BLM, the FS, the Bureau of Reclamation, the Bureau of Indian Affairs, and the National Park Service completed numerous scoping activities. Scoping is an information-gathering process open to the public early in a project, to identify the range or scope of issues to address, in the ensuing environmental studies. Scoping served to identify significant issues to be analyzed, determine the scope with which they were to be treated in the DEIS/DPA, and eliminate issues and alternatives from detailed study where appropriate. Information from the agencies and the public received during scoping provided the basis for identifying alternative routes and developing the work plan for environmental baseline, impact assessment, and mitigation planning for the project.

Scoping activities included:

- reviewing previous studies of transmission projects in the area
- completing a regional siting study, including resource sensitivity analyses, agency contacts, and public scoping meetings
- identifying project issues
- identifying alternative transmission line routes

A Notice of Intent to prepare a DEIS/DPA for a transmission line project between Midpoint Substation, Ely, Nevada, and Delta, Utah, was published in the Federal Register on March 3, 1989 (Vol. 54, No. 41). Public scoping meetings were held during March 1989 in the following locations:

- Twin Falls, Idaho
- Wells, Nevada
- Ely, Nevada
- Delta, Utah

In April 1990, the project was expanded to include a route from the Ely, Nevada area to the Dry Lake Valley area in southern Nevada. A Notice of Intent to expand the scope of the SWIP DEIS/DPA and to tier from the White Pine Power Project EIS was published in the Federal Register on June 4, 1990. Three additional public scoping meetings were held in Las Vegas, Ely, and Caliente, Nevada during June 1990. A public information meeting was held in Moapa, Nevada during December 1990 to discuss the ongoing studies in southern Nevada.

Corridor Studies

Alternative transmission line routes were identified based on previous studies, the regional siting study, and public and agency input. Subsequently the environment was inventoried and the data were compiled along all final alternative routes. This baseline was then used in assessing project-related impacts.

Six public workshops were held in January and April 1991 in the same locations as the scoping meetings to report the results of the environmental studies, present the preliminary alternatives, and gain public input regarding the acceptability of those alternatives.

Alternatives Including The Agency Preferred Alternative

Six general alternatives were evaluated by the IPCo to meet its system needs:

- energy conservation and load management
- new generation sources
- alternative transmission systems
- alternative transmission technologies
- proposed action
- no action

The first four of these alternatives were eliminated from further consideration because they did not meet the system requirements or the stated purpose and need (refer to Chapter 2 of the DEIS/DPA).

The IPCo has developed and implemented numerous energy conservation and load management programs. Conservation, although effective in reducing energy use, cannot be considered an alternative action that would meet the stated need for the project.

The IPCo evaluated many alternative generation sources, including hydroelectric, thermal, solar, wind, cogeneration, solid waste, combustion turbine, fluidized bed, and nuclear fusion. Because these alternatives would not meet the goal of deferring new generation, providing for seasonal exchanges, diversifying fuel resources, and the other stated purposes of the project, this action was eliminated as an alternative.

The IPCo evaluated the feasibility of increasing power purchases from other utilities and wheeling power over the existing transmission system. This alternative is not considered viable because the present system is operated at capacity.

Alternative transmission technologies (e.g., voltages other than the proposed 500kV, direct current [DC] instead of alternating current [AC], underground construction, microwave, laser, super conductors, etc.) were evaluated. However, these technologies were not considered to be viable alternatives due to their substantially higher costs, increased environmental impacts, and/or technological infeasibility.

Advantages of the No-Action alternative would include preclusion of environmental impacts within the project study area and elimination of financial costs associated with construction and operation of a 500kV transmission line. The disadvantages would include environmental, socioeconomic, and electrical service impacts that would result due to other mitigating actions taken to ensure adequate and affordable energy supplies within the western electrical system.

Agency Preferred Alternative

The Agency Preferred Alternative is to allow the IPCo to construct, operate, and maintain 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. A second transmission line segment, the Ely to Delta segment, would also connect about midway along the Midpoint to Dry Lake segment, near Ely, Nevada east to a proposed substation near Delta, Utah. Tower types on the Midpoint to Dry Lake segment would be constructed using V-guyed and self-supporting steel lattice structures, and steel pole H-Frame towers in agricultural areas. Tower types on the Ely to Delta segment would be constructed using self-supporting steel lattice structures and steel pole H-Frame for visual mitigation and in agricultural areas. The average span between towers would be approximately 1500 feet.

The Agency Preferred Alternative is to allow equipment additions to the Midpoint Substation, one proposed substation near Ely, Nevada, a proposed substation in the Dry Lake Valley in southern Nevada, and a proposed substation near Delta, Utah. Series compensation stations would also be needed about halfway between the two northern substation sites northeast of Wells, Nevada and in the Delamar Valley in southern Nevada to increase the electrical performance of the transmission system. The series compensation station near Wells, Nevada may be expanded in the future to accommodate switching equipment (i.e., substation).

A new microwave communication system to operate the system would also be required on the Midpoint to Dry Lake segment. Of the 13 microwave communication sites only two are currently undeveloped. These undeveloped sites would be developed without constructing new roads or power facilities. Helicopters would be used to construct and maintain them. Solar panels would

power the five sites with no existing power facilities. The following microwave communication sites are identified on Figure 1-1:

• 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

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

The Midpoint to Dry Lake segment is scheduled to begin construction in 1995 and placed into commercial operation by late 1997. The Ely to Delta segment is scheduled to begin construction in 1996 and placed into operation by late 1998.

The proposed substation in the Dry Lake area would be the southern terminus of the SWIP. In 1990 the BLM asked the IPCo to help coordinate the transmission needs of utility companies with new transmission facilities planned in southern Nevada, particularly those needing transmission access to the McCullough Substation area located south of Boulder City, Nevada. The regional utilities developed a corridor concept which would maximize the capacity of the corridor while minimizing environmental impacts. Subsequent discussions with the Nevada Power Company (NPC) and other utilities resulted in the Marketplace-Allen Transmission Project (MAT), which is planned to be proposed to the Nevada Public Utility Commission in July 1993 by NPC. This approximately 53 mile project would connect the proposed SWIP substation in the Dry Lake area to a proposed marketplace substation in the McCullough Substation area. Two high capacity 500kV transmission lines would connect the two substations of the "open marketplace". The combined capacity of over 3000 megawatts would allow utilities to interconnect at either substation and conduct transactions.

Although the MAT would be operated by NPC, several other regional utilities would likely be participants in the project. The MAT would provide a major electrical transmission path through the constricted Las Vegas area. This project would also provide capacity for NPC's internal system needs. The combined capacity rating of over 3000 MW would be possible because of the relatively short distance between the two proposed marketplace substations. The high capacity of this system would allow the planned transmission lines to connect on either end, while minimizing the number of lines through this sensitive area. The MAT is proposed to be in service in 1997.

Routing Alternatives

Final routing alternatives for the proposed line were determined through a process of documentation and elimination of alternatives with serious constraints. Alternative routes were eliminated for a number of reasons, including environmental conflicts, public and agency opposition, and system planning/performance criteria.

For routing options remaining, detailed environmental studies were conducted to form the basis for comparing those alternatives. Approximately 2000 miles of alternatives routes were studied in detail. To select routing preferences, the environmental consequences of each route were summarized based on impact assessment results, environmental resource preferences, and agency and public comments. A network of routes was organized into two major routing alternatives:

- the north-south system from Midpoint Substation south to the Dry Lake Valley (the Midpoint to Dry Lake segment)
- the east-west system from Ely, Nevada to Delta, Utah (the Ely to Delta segment)

Each of these contained several routing options. The final routing alternatives are 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 Alternative** 345kV*-Cottonwood Creek-Thousand Springs-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative
- **Agency - Preferred Alternative** 345kV*-Cottonwood Creek-Thousand Springs-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative

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

Ely to Delta Segment

- **Delta Direct Route**
- **Cutoff Route**
- **230kV Corridor Route (Agency Preferred Alternative and Utility Preferred alternative)**
- **Southern Route**

Affected Environment

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 province. 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.

Twelve vegetative communities have been identified in the SWIP study corridors, including shadscale, greasewood, samphire-iodine bush, Great Basin sagebrush, Mojave desertscrub, 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. Nearly 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 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 use. The Mojave population of the desert tortoise was formally listed as a federally threatened species by the United States Department of Interior Fish and Wildlife Service 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 the following:

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

Several 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.

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 wilderness study areas (WSAs) inventoried within the study corridors include portions of Salmon Falls Creek WSA in Idaho and 14 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.

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, 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 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

The consequences, or impacts, to the environment caused by implementing the SWIP were assessed by considering the existing condition of the environment and the effects of the activities of the SWIP (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 would be considered to be adverse, direct, and long-term. Some impacts (e.g., visual, cultural, and biological impacts) would be considered adverse, indirect, and long-term.

The principal type of impacts associated with earth resources is the potential for increased erosion hazards, although some short-term soil compaction impacts could occur in agricultural areas and 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 generally be associated with the removal of vegetation and habitat cause 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.

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 within local jurisdictions. These effects could be both adverse and beneficial.

Visual impacts would be considered adverse, indirect, 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 Great Basin National Park 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, health and safety effects from the Agency Preferred Alternatives were assessed. These include corona effects, electric and magnetic field effects, and public safety.

The Stateline Resource Area is currently preparing a Resource Management Plan (RMP) which would designate utility corridors. The RMP corridor studies and the SWIP EIS studies have been coordinated, and the preferred alternatives are similar. The Federal Land Policy and Management Act of 1976 mandates to the extent practical that the BLM consolidate future utility projects within the corridor that is established.

Public Issues and Management Concerns

Need for Project - The public and agencies expressed a concern about the need for the project.

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.

Visual Impacts - The study area is characterized by relatively open, uninterrupted views with minimal overstory vegetation cover. Significant concern is expressed over the views from the parks, recreation, residence, and preservation areas, views from highways, scenic routes, sensitive cultural sites, and impacts affecting inherent aesthetic value of the landscape.

Minimize Impacts to Biological Resources - There is a wide variety of both vegetation and wildlife in the project area. A total of twelve vegetation communities were identified within the SWIP study corridors with 73 plant species identified as sensitive on the state and/or federal level. Wetlands do occur in the project area, but would be avoided. Within the project area, there are 560 species of vertebrates, 111 species of mammals, 15 species of amphibians, and 70 species of fish. Issues for wildlife species and important wildlife habitats are related primarily to increased public access into remote areas and/or ground disturbance. Ground disturbance caused by construction of the transmission line could result in habitat loss and destruction. Increased public access may result in more harassment for all wildlife. There is considerable public concern regarding the tortoise hatchlings falling prey to ravens, and raptors colliding with transmission lines.

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. The public and agencies are aware of the archeological sites and are concerned that many of these sites would be impacted due to construction and increased accessibility.

Health and Safety - In recent years there has been growing public concern over the possible effects that electromagnetic fields (EMF) could have on human health. Some studies have shown a statistical association between EMF and certain diseases, while other studies have failed to show this relationship. Ongoing research into EMF has detected no cause-and-effect relationship between EMF and disease. While EMF can produce biological effects, it is unclear whether these effects

would be of any consequence to human health. Please refer to Chapter 3 of this document for a discussion of recent EMF research results.

Wilderness/Wilderness Study Areas (WSAs) - One wilderness area and a number of 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 adjacent lands potentially affecting the designation of WSAs as wilderness.

Minimize Land Use Impacts - The primary issues associated with the construction of the transmission line would be expected to occur from conflicts with the land uses found throughout the project area (i.e., agricultural lands, irrigation systems, airport clear zones, residences, and planned development).

Use Existing Transmission Line Corridors - Both the public and agencies expressed a desire to locate the transmission line along existing transmission corridors, wherever possible, to minimize environmental impacts.

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.

Effects of Alternatives on Agency Land Management Plans - The BLM plans and designates corridors for linear utility use. Portions of the Agency Preferred Alternatives (Midpoint to Dry Lake segment and Ely to Delta segment), evaluated along with other alternatives in the SWIP DEIS/DPA and in this document, would not follow designated or planning utility corridors. Several BLM resource management plans would be amended by approval of this document (refer to Proposed Plan Amendments in Chapter 1).

Route Comparisons

The comparative environmental consequences are summarized below for each of the final alternative routes. This summary compares only a few of the many resources evaluated. For a complete comparison, see Table 1-1 and 1-2 in this document.

Midpoint to Dry Lake Segment

Route A:

- crosses 131.1 miles within Military Operating Areas (MOAs) of Hill and Nellis Air Force Bases
- crosses 35.2 miles of sage grouse leks and wintering range
- crosses 15.3 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.3 miles near ferruginous hawk nests
- crosses 24.1 miles of crucial pronghorn habitat
- crosses 39.0 miles of potential high water erosion soils
- crosses 58.8 miles of potential high wind erosion soils
- 370.4 miles in designated or planning corridor
- 142.6 miles outside designated or planning corridor
- crosses 18.4 miles of predicted high sensitivity cultural zones
- crosses 95.2 miles of private land

Route B:

- crosses 182.9 miles within MOAs of Hill and Nellis Air Force Bases
- crosses 36.8 miles of sage grouse leks and wintering range
- crosses most (32.8) miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.4 miles near ferruginous hawk nests
- crosses least (7.2) miles of crucial pronghorn habitat
- crosses most (53.1) miles of potential high water erosion soils
- crosses 58.9 miles of potential high wind erosion soil
- 363.1 miles in designated or planning corridor
- 153.0 miles outside designated or planning corridor
- crosses 19.3 miles of predicted high sensitivity cultural zones
- crosses 97.3 miles of private land

Route C:

- crosses 131.1 miles within MOAs of Hill and Nellis Air Force Bases
- crosses 30.7 miles of sage grouse leks and wintering range
- crosses 16.3 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.3 miles near ferruginous hawk nests
- crosses 16.2 miles of crucial pronghorn habitat
- crosses 44.4 miles of potential high water erosion soils
- crosses 58.8 miles of potential high wind erosion soils
- 337.0 miles in designated or planning corridor
- 169.9 miles outside designated or planning corridor
- crosses 17.2 miles of predicted high sensitivity cultural zones
- crosses 104.6 miles of private land

Route D:

- crosses 129.5 miles within MOAs of Nellis Air Force Bases
- crosses 34.1 miles of sage grouse leks and wintering range
- crosses least (5.8) miles bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.3 miles near ferruginous hawk nests
- crosses 34.9 miles of crucial pronghorn habitat
- crosses least (35.5) miles of potential high water erosion soils
- crosses 52.1 miles of potential high wind erosion soils
- 377.1 miles in designated or planning corridor
- 136.4 miles outside designated or planning corridor
- crosses 20.5 miles of predicted high sensitivity cultural zones
- crosses 98.7 miles of private land

Route E:

- crosses 182.9 miles within MOAs of Hill and Nellis Air Force Bases
- crosses 36.3 miles of sage grouse leks and wintering range
- crosses 18.2 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.3 miles near ferruginous hawk nests
- crosses 18.6 miles of crucial pronghorn habitat
- crosses 48.6 miles of potential high water erosion soils
- crosses 64.3 miles of potential high wind erosion soils
- 365.6 miles in designated or planning corridor
- 158.1 miles outside designated or planning corridor
- crosses 18.4 miles of predicted high sensitivity cultural zones
- crosses 88.5 miles of private land

Route F:

- crosses 131.1 miles within MOAs of Hill and Nellis Air Force Bases
- crosses 32.8 miles of sage grouse leks and wintering range
- crosses 16.3 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.3 miles near ferruginous hawk nests
- crosses 16.5 miles of crucial pronghorn habitat
- crosses 47.8 miles of potential high water erosion soils
- crosses most (73.3) miles of potential high wind erosion soils
- least (329.1) miles in designated or planning corridor
- most (194.9) miles outside designated or planning corridor
- crosses least (11) miles of predicted high sensitivity cultural zones
- crosses most (115.6) miles of private land
- visual impacts to Hagerman Fossil Beds National Monument
- impacts airstrip used by agricultural spraying operations

Route G:

- crosses 131.1 miles within MOAs of Hill and Nellis Air Force Bases
- crosses 40.6 miles of sage grouse leks and wintering range
- crosses 19.6 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.4 miles near ferruginous hawk nests
- crosses 39.7 miles of crucial pronghorn habitat
- crosses 36.4 miles of potential high water erosion soils
- crosses 46.7 miles of potential high wind erosion soils
- most (379.4) miles in designated or planning corridor

- least (125.3) miles outside designated or planning corridor
- crosses most (20.6) miles of predicted high sensitivity cultural zones
- crosses 85.3 miles of private land
- reduces visual impacts to U.S. Highway 93

Utility:

- crosses 131.1 miles within MOAs of Hill and Nellis Air Force Bases
- crosses most (42.2) miles of sage grouse leks and wintering range
- crosses 19.6 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.4 miles near ferruginous hawk nests
- crosses 39.7 miles of crucial pronghorn habitat
- crosses 36.4 miles of potential high water erosion soils
- crosses least (44.1) miles of potential high wind erosion soils
- 376.3 miles in designated or planning corridor
- least (125.3) miles outside designated or planning corridor
- crosses 20.5 miles of predicted high sensitivity cultural zones
- crosses 87.0 miles of private land
- reduces visual impacts to U.S. Highway 93

Agency Preferred Alternative:

- crosses 146.6 miles within MOAs of Nellis Air Force Bases
- crosses 37.2 miles of sage grouse leks and wintering range
- crosses 6.0 miles of bald eagle habitat
- crosses 53.2 miles of desert tortoise habitat
- crosses 1.3 miles near ferruginous hawk nests
- crosses most (43.2) miles of crucial pronghorn habitat
- crosses 37.3 miles of potential high water erosion soils
- crosses least (49.5) miles of potential high wind erosion soils
- 370.4 miles in designated or planning corridor
- 132.7 miles outside designated or planning corridor
- crosses 18.4 miles of predicted high sensitivity cultural zones
- crosses least (83.1) miles of private land
- reduces visual impacts to U.S. Highway 93

Ely to Delta Segment

Direct Route:

- crosses 55.1 miles within R-6405 Restricted Area
- crosses 130 miles within restricted air space and MOAs of Utah Testing and Training Range (UTTR)
- crosses 7.9 miles of sage grouse leks and wintering range
- crosses 7.0 miles of bald eagle habitat
- does not cross ferruginous hawk nesting areas
- crosses least (56.5) miles of crucial pronghorn habitat
- crosses least (6.8) miles of potential high wind erosion soils
- least (14.3) miles in designated or planning corridor
- 115.8 miles outside designated or planning corridor
- crosses least (0.8) miles of predicted high sensitivity cultural zones
- crosses least (0.0) miles of private land

- shortest route and crosses least public and private land
- avoids visual impacts to Great Basin National Park
- crosses wetlands known as the Leland-Harris Spring Complex

Cutoff Route:

- crosses 104.2 miles within MOAs of UTTR
- crosses 6.8 miles of sage grouse leks and wintering range
- crosses 8.4 miles of bald eagle habitat
- does not cross ferruginous hawk nesting areas
- crosses 70.1 miles of crucial pronghorn habitat
- crosses 12.7 miles of potential high wind erosion soils
- 75.5 miles in designated or planning corridor
- 78.4 miles outside designated or planning corridor
- crosses least (0.8) miles of predicted high sensitivity cultural zones
- crosses least (0.0) miles of private land
- insignificant visual impacts to viewpoints within Great Basin National Park

230kV Corridor Route: (Agency Preferred Alternative)

- crosses 102.5 miles within MOAs of UTTR
- crosses 7.1 miles of sage grouse leks and wintering range
- crosses most miles (17.8) of bald eagle habitat
- crosses 4.5 miles of ferruginous hawk nests
- crosses 71.5 miles of crucial pronghorn habitat
- crosses 19.2 miles of potential high wind erosion soils
- most (145.9) miles in designated or planning corridor
- least (14.9) miles outside designated or planning corridor
- crosses most (8.0) miles of predicted high sensitivity cultural zones
- crosses (10.2) miles of private land
- utilizes existing 230kV corridor
- crosses most private and national forest lands
- insignificant visual impacts to viewpoints within Great Basin National Park

Southern Route:

- crosses least amount of MOAs of UTTR
- crosses 11.8 miles of sage grouse leks and wintering range
- does not cross bald eagle habitat
- crosses the most (10.1) miles of ferruginous hawk nests
- crosses most (85.7) miles of crucial pronghorn habitat
- crosses most miles (40.0) miles of potential high wind erosion soils
- 49.5 miles in designated or planning corridor
- most (161.5) miles outside designated or planning corridor
- crosses 6.0 miles of predicted high sensitivity cultural zones
- crosses (1.6) miles of private land
- highest overall environmental impacts
- longest route

Preferred Alternative Selection

Based upon review of potential impact characterizations, significant, unavoidable adverse effects, agency and public comments, and cumulative environmental consequences of the alternative routes, the preferred routes were identified (refer to Identification of Preferred Alternatives in Chapter 2 in the DEIS/DPA and page 1-9 of this document).

Route A is the Environmentally Preferred Route for the Midpoint to Dry Lake segment. The least impact route on the Ely to Delta segment is the Cutoff Route, however the 230kV Corridor Route would cause similar environmental impacts and would be environmentally acceptable. 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.

The Agency Preferred Alternative for the Midpoint to Dry Lake segment is a combination of Route A and Route G. The Agency Preferred Alternative for the Ely to Delta segment is the 230kV Corridor Route. The Agency Preferred Alternative substation sites include: Site #4 of the Thousand Springs siting area, Site #10 of the Robinson Summit siting area, Site #14 of the Intermountain siting area and in the Dry Lake siting area, all of the potential substation sites are environmentally acceptable and will be determined through the analysis of the Marketplace-Allen Transmission Project. The Agency Preferred Alternative proposes to construct microwave communication facilities at Hansen Butte, Cottonwood, Ellen D, Six Mile, Rocky Point, Spruce Mountain, Long Valley, Copper, Cave Mountain, Mount Wilson, Highland Peak, Beaver Dam Mountain, and Glendale.

The IPCo prefers the Agency Preferred Alternative route for the Midpoint to Dry Lake segment with two important modifications:

- prefer Link 102 over Links 715 and 713 near Contact, Nevada
- prefer Link 280 over Link 291 north of the Robinson Summit Substation site

The Utility Preferred Route on the Ely to Delta segment is the 230kV Corridor Route.

The significant, unavoidable adverse effects of the Agency Preferred Alternative involve biological, visual, and cultural resources only, as summarized below:

Resource Category	**Significant Unavoidable Adverse Impacts**
Biological Resources	On the routes between Midpoint Substation and Dry Lake, Route A would potentially cross 3.2 miles of riparian habitat (although none is actually expected to be disturbed), 52.1 miles of sensitive desert tortoise habitat, and 35.2 miles of sage grouse leks and wintering range. Route G would potentially disturb 4.8 miles of riparian habitat, a similar disturbance to desert tortoise, and 40.6 miles of sage grouse leks and wintering range.

Resource Category	Significant Unavoidable Adverse Impacts
	On the Ely and Delta segment, the Cutoff Route would potentially cross 1.2 miles of riparian habitat (although none is actually expected to be disturbed) and 6.8 miles of sage grouse leks and wintering range. The 230kV Corridor Route would potentially disturb 0.9 miles of riparian habitat and 7.1 miles of sage grouse leks and wintering range. Although riparian areas and desert tortoise are significant issues, the impacts would be largely mitigated. Impacts to sage grouse habitat would be significant where there are no existing transmission lines.
Visual Resources	On the Midpoint Substation and Dry Lake segment, Route A would potentially result in 13.5 miles of significant impacts to the area's visual resources. Significant impacts are predicted to approximately 83 residences within one mile of the route, and to one scenic highway. The route would cross 7.3 miles of the BLM and the FS lands managed to retain visual quality (VRM Class II and VQO Retention, respectively). Route G would potentially result in 14.7 miles of high impacts to the area's visual resources. Impacts are predicted to approximately 93 residences within one mile of the route, and to one scenic highway crossed. On the Ely and Delta segment, the Cutoff Route would potentially result in 1.2 miles of significant impacts to the area's visual resources. Significant impacts are predicted to 2 residences within one mile of the route. The 230kV Corridor Route would potentially result in 7.3 miles of high impacts to the area's visual resources. Impacts are predicted to approximately 26 residences within one mile of the route.
Cultural Resources	On the routes between Midpoint Substation and Dry Lake, Route A would potentially result in 6.8 miles of significant impacts to cultural resources. Among the 454 sites identified within one mile, 53 are historic, 13 are ethnohistoric, and 388 are prehistoric. Route G would potentially result in 7.3 miles of significant impacts to cultural resources. Among the 474 sites identified within one mile, 61 are historic, 14 are ethnohistoric, and 399 are prehistoric. On the Ely to Delta segment, the Cutoff Route would potentially result in 4.6 miles of significant impacts to cultural resources. Among the 39 sites identified within one mile, 5 are historic, 8 are ethnohistoric, and 26 are prehistoric. The 230kV Corridor Route would potentially result in 5.5 miles of significant impacts to cultural resources. Among the 100 sites identified within one mile, 12 are historic, 8 are ethnohistoric, and 80 are prehistoric.

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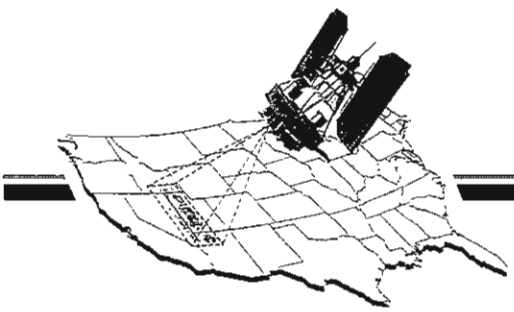
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CHAPTER 1
PROPOSED PLAN

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PROPOSED PLAN

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.

THE PROPOSED PLAN

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 designated 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 structnres
- 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 aud 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.

Seleeting 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 ares, 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 Pahranagat 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)

Route	Federal	State	Private
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)

Route	Federal	State	Private
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)

Route	VRM Class II	Scenic Quality A	Miles of Route Visible From Residences within 1 Mile	Residences within 1 Mile
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)

Route	VRM Class II	Scenic Quality A	Miles of Route Visible From Residences within 1 Mile	Residences within 1 Mile
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)

Route	Desert Tortoise	Bald Eagle	Peregrine Falcon	Ferruginous Hawk	Sage Grouse	Riparian
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)

Route	Desert Tortoise	Bald Eagle	Peregrine Falcon	Ferruginous Hawk	Sage Grouse	Riparian
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)

Route	Historic Sites w/in 1 mile	Ethnohistoric Sites w/in 1 mile	Prehistoric Sites w/in 1 mile	Predicted High Sensitivity Zone
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)

Route	Historic Sites w/in 1 mile	Ethnohistoric Sites w/in 1 mile	Prehistoric Sites w/in 1 mile	Predicted High Sensitivity Zone
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)

Route	Wildernesses passed	WSAs passed	<1/4 mi.	1/4 to 1 mi.	1 to 3 mi.
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)

Route	Wildernesses passed	WSAs passed	<1/4 mi.	1/4 to 1 mi.	1 to 3 mi.
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)

Route	Hill AFB MOA	Hill AFB Restricted	Nellis AFB MOA	Agricultural Lands	Range Allotments	Mining Claims
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)

Route	Hill AFB MOA	Hill AFB Restricted	Agriculture Lands	Prime/Unique Farmlands	Range Allotments	Mining Claims
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)

Route	Parallel to existing transmission lines	Miles in Designated or Planning Utility Corridor	Miles Outside Designated or Planning Utility Corridor
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)

Route	Parallel to existing transmission lines	Miles in Designated or Planning Utility Corridor	Miles Outside Designated or Planning Utility Corridor
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	C	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	C	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									
CULTURAL RESOURCES									
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	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
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	448.7	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	23.6	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	7.8	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	85.9	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	28.3	473.7	0	25.6	471.3

COMMENTS

*Route A**
- low impacts to ferruginous hawks
- crosses least miles of riparian habitat
- crosses most miles of sage grouse habitat

Route B
- crosses least miles of riparian habitat
- crosses most miles of bald eagle nesting areas
- most miles of high water erosion potential soils
- least mileage visible from residences

Route C
- crosses least miles of sage grouse habitat
- crosses least miles of BLM-administered lands
- crosses least miles of VRM Class II landscapes

Route D
- crosses most miles of riparian habitat
- crosses least miles of bald eagle nesting areas
- crosses high mileage of sage grouse habitat

Route E
- crosses most BLM-administered lands
- crosses high mileage of sage grouse habitat
- high impacts to peregrine falcon

Route F
- visual impacts to Hagerman Fossil Beds National Monument
- crosses most agricultural land
- crosses most private lands
- most cultural sites within one mile
- most miles of high wind erosion potential soils

Route G
- reduces visual impacts to U.S. Highway 93
- crosses least miles of private land
- crosses high mileage of crucial pronghorn habitat

Utility Preferred Route
- crosses least steep terrain
- reduces visual impacts to U.S. Highway 93
- crosses most miles of sage grouse leks

Proposed Action
- reduces visual impacts to U.S. Highway 93
- crosses most miles of crucial pronghorn habitat
- crosses high mileage of sage grouse habitat
- most number of residents in 1 mile

	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)

	Direct Route**	Cutoff Route**	230kV Corridor Route*	Southern Route
EARTH RESOURCES (miles crossed, except as noted)				
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
HUMAN ENVIRONMENT				
LAND JURISDICTION (miles crossed)				
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
LAND USE (miles crossed, except as noted)				
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
VISUAL RESOURCES (miles crossed, except as noted)				
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				
CULTURAL RESOURCES (miles crossed, except as noted)				
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		
SUMMARY OF ENVIRONMENTAL CONSEQUENCES												
Impact Value	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

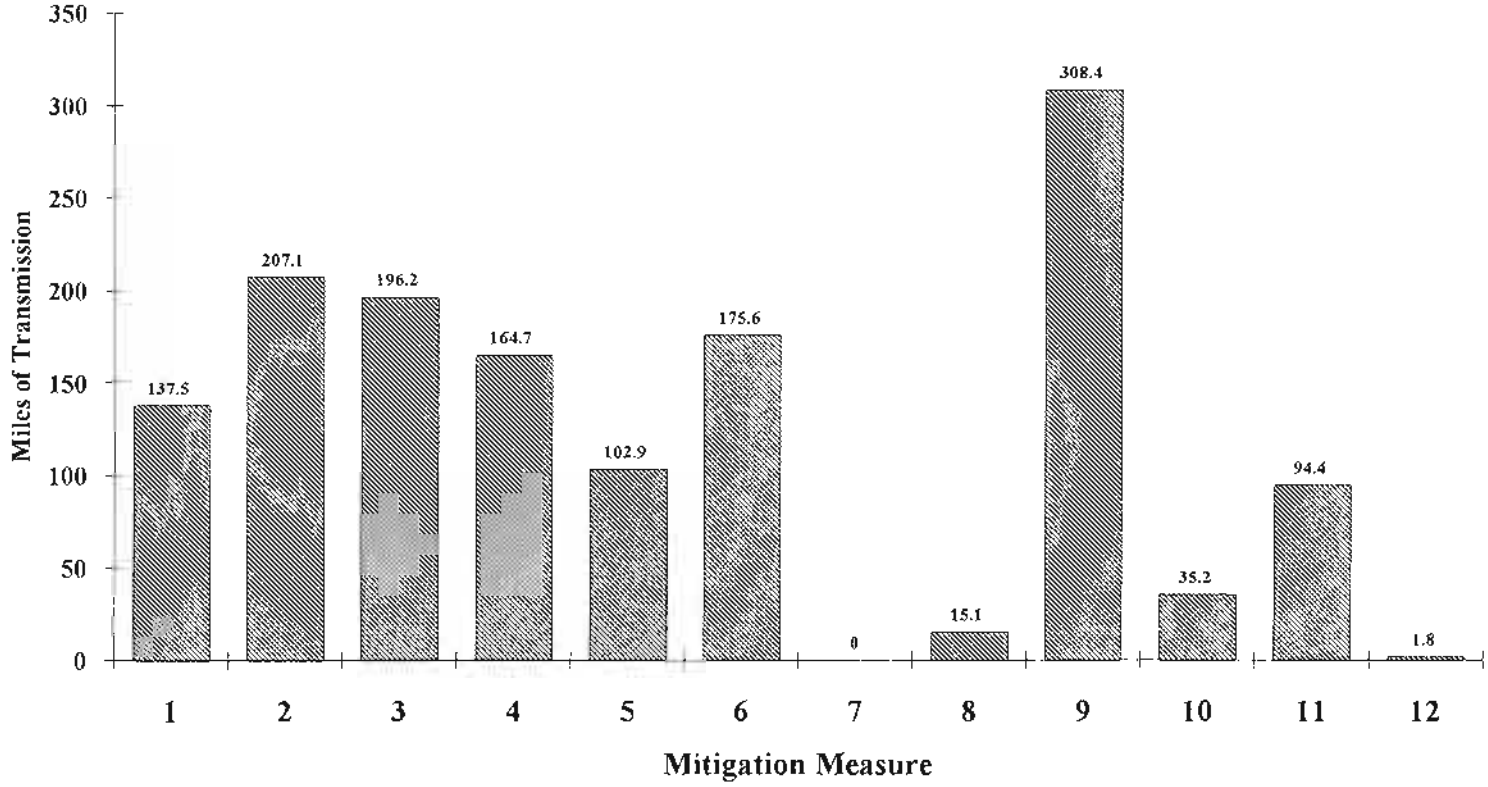
* *Proposed Action, Environmentally and Agency/Utility Preferred Routes*

** *Preferred by the National Park Service*

TABLE 1-3

SUMMARY OF SELECTIVELY COMMITTED MITIGATION FOR THE PROPOSED ACTION

Midpoint to Dry Lake Segment

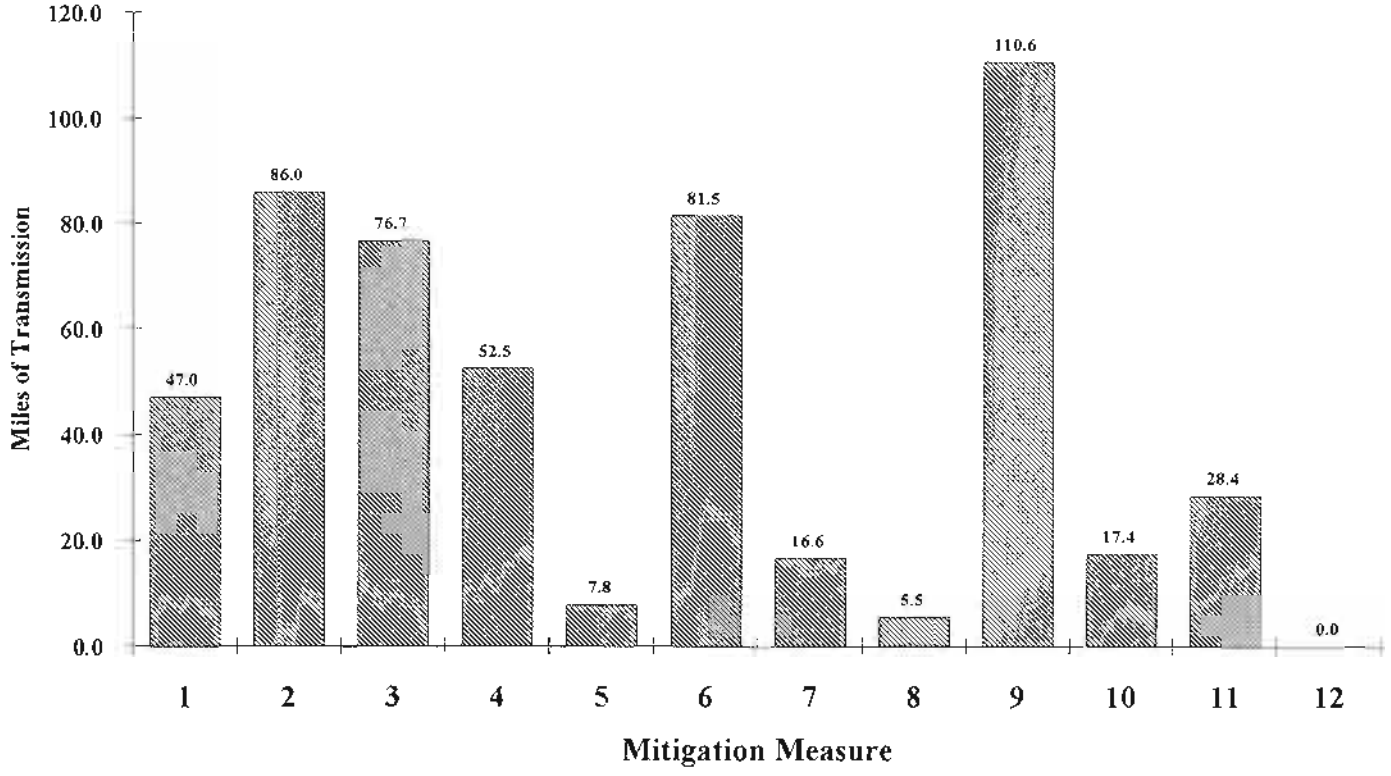


Note: Selectively Committed Mitigation Measures are described in Table 1-5

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 predisturbed 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

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)

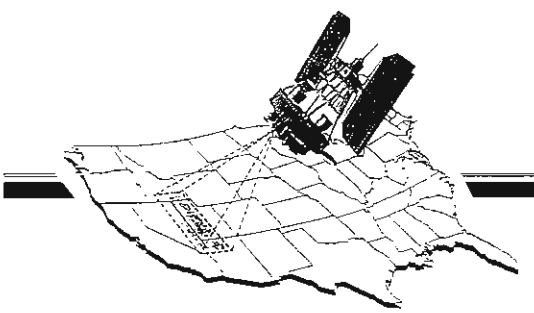
17. During operation of the transmission line, the right-of-way would be maintained free of non-biodegradable debris.

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.



CHAPTER 2
PUBLIC PARTICIPATION

CHAPTER 2
PUBLIC PARTICIPATION

INTRODUCTION

In response to the National Environmental Policy Act of 1969 (NEPA) and the Council of Environmental Quality (CEQ) regulations (1978) for implementing the NEPA, an extensive coordination program was developed for the Southwest Intertie Project (SWIP) to ensure that all the appropriate members of the public and federal, state, and local agencies were contacted, consulted, and given an adequate opportunity to be involved in the process. Chapter 5 (Consultation and Coordination) in the Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA) describes the public and agency scoping process, the public participation program, the issues and concerns identified from the public and agency comments, and the environmental planning process. This section describes activities of this process that have occurred during the review of the SWIP DEIS/DPA and the preparation of the Final Environmental Impact Statement/Proposed Plan Amendment (FEIS/PPA).

PUBLIC INFORMATION

During the course of the project 12 newsletters, fact sheets, and project updates were published to inform the interested parties about the environmental process, the project status, and opportunities to participate. Publications were sent to the individuals, organizations, and agencies on the project mailing list. The mailing list included names and addresses from the lead and cooperating agencies and Idaho Power Company's (IPCo) existing mailing lists, as well as all potentially affected public and federal, state, and local agencies and environmental organizations. The mailing list was expanded to over 3,000 interested parties during the process. Copies of the newsletters, fact sheets, and project updates sent out prior to the release of the SWIP DEIS/DPA are located in the Volume I - Objectives, Procedures, and Results technical report.

A Project Update was published in May 1992 announcing the release of the SWIP DEIS/DPA to the public for review and comment. Information regarding the comment period for the SWIP DEIS/DPA was also given. The Formal Public Meetings were announced indicating where and when the public could comment on the accuracy or adequacy of the SWIP DEIS/DPA.

A Project Update was released in June 1992 notifying the public concerning an error in the SWIP DEIS/DPA on Panel 4 in the Map Volume. A map inset was shown to correct the error. Meeting times and places for the formal public meetings were also announced again.

A Project Update was released in June 1993 announcing the release of the SWIP FEIS/PPA with information regarding the protest and appeal period for affected agencies. A summary of the comments received on the SWIP DEIS/DPA was also included.

STEERING COMMITTEE

A Steering Committee was established at the outset of the project to guide Dames & Moore through the EIS preparation and to review data and decision criteria. The Steering Committee was comprised of representatives of:

- Bureau of Land Management (BLM)
  - Burley District (Idaho)
  - Boise District (Idaho)
  - Shoshone District (Idaho)
  - Elko District (Nevada)
  - Ely District (Nevada)
  - Las Vegas District (Nevada)
  - Richfield District (Utah)
  - Utah State Office
  - Idaho State Office
  - Nevada State Office

- Forest Service
  - Humboldt National Forest (Nevada)

- National Park Service
  - Great Basin National Park (Nevada)
  - Western Region (California)

- Bureau of Indian Affairs

- Dames & Moore

- IPCo

- Los Angeles Department of Water and Power (LADWP)

Eleven Steering Committee meetings were held throughout the SWIP to discuss the status and issues of the project and to provide review and input:

- first meeting (February, 1989) - discussion of the coordination between the agencies, the progress of the regional study, and the selection of alternative corridors

- second meeting (May, 1989) - public meetings, responses, and letters from the first fact sheet were reviewed, wildlife was the major topic of discussion

- third meeting (August, 1989) - discussion and review of the BLM actions on the SWIP including record requirements, right-of-way applications, and plan amendments

- fourth meeting (November, 1989) - discussion of a new alternate route from the North Steptoe area, Hill Air Force Base conflicts, and the impact assessment/mitigation planning process

- fifth meeting (April, 1990) - discussion of scope expansion, right-of-way application amendments, and draft purpose and need statement; Dames & Moore presented the substation site selection, the subroute analysis process, and Geographic Information Systems (GIS) processing for resource impacts

- sixth meeting (June, 1990) - the draft purpose and need statement, results of GIS impact assessment modeling, the subroute analysis process and the feasibility of expanding the SWIP south of Ely were the main points of the meeting; the dates for additional scoping meetings were also announced

- seventh meeting (September, 1990) - opening discussion began with the Clark County desert tortoise Conservation Plan and how this plan should be addressed in the SWIP; the route selection process, Dry Lake alternative, and mitigation commitments were also discussed

- eighth meeting (December, 1990) - the SWIP DEIS/DPA outline, purpose and need statement, and the effects of the impact assessment results on the routing alternatives were discussed; the desert tortoise issue as well as the cumulative effects of the SWIP and the visual effects to Great Basin National Park and Interstate 84 were discussed

- ninth meeting (July, 1991) - a preliminary SWIP DEIS/DPA was submitted to the Steering Committee for review; the addition of several new routing alternatives were discussed as well as the issue of potential visual impacts to Wilderness Study Areas (WSA)

- tenth meeting (March, 1992) - discussion included final review of comments on the preliminary SWIP DEIS/DPA; the Stateline Resource Area of the BLM's Draft Resource Management Plan (RMP) and the on going desert tortoise consultation and Habitat Conservation Plan

- eleventh meeting (December, 1992) - discussion included comments and responses on the preliminary SWIP FEIS/PPA, content of the Purpose and Need, and the findings of the field review of Leland Harris Spring Complex.

FORMAL PUBLIC MEETINGS

The purpose of the Formal Public Meetings was to receive views and comments regarding the accuracy and adequacy of the SWIP DEIS/DPA. Six Public Meetings were held in August 1992 in Idaho, Nevada, and Utah at six locations:

City	Location	Date
Twin Falls, Idaho	Weston Plaza	August 3rd, 1992
Wells, Nevada	Wells High School	August 4th, 1992
Ely, Nevada	Bristlecone Convention Center	August 5th, 1992
Delta, Utah	City Council Chambers	August 6th, 1992
Caliente, Nevada	Soil Conservation Service Center	August 19th, 1992
Las Vegas, Nevada	BLM District Office	August 20th, 1992

The meetings were announced in the May and June 1992 SWIP Update and distributed to the approximately 3,000 people on the mailing list. Press releases were sent out in July and August, 1992 to 17 newspapers serving the communities in the area to announce the meetings:

Location	Paper	Insertion dates
Boise, Idaho	Idaho Statesman	Wed 7/29
Caliente, Nevada	Lincoln County Record	Week 7/27
		Week 8/3
Cedar City, Utah	Daily Spectrum	Wed 8/5
St. George, Utah	Daily Spectrum	Wed 8/5
Delta, Utah	Millard County Chronicle Progress	Thurs 7/27
Elko, Nevada	Free Press	Wed 7/29
		Fri 7/31
Ely, Nevada	Times	Fri 7/31
		Mon 8/3
Filmore, Utah	Millard County Gazette	Week of 8/3
Las Vegas, Nevada	Sun	Wed 8/5
Las Vegas, Nevada	Review Journal	Thurs 8/6
Nampa, Idaho	Press Tribune	Wed 7/29
Reno, Nevada	Gazette Journal	Wed 7/29
Richfield, Utah	Reaper	Week of 7/27
Salt Lake City, Utah	Deseret News	Wed 7/29
Salt Lake City, Utah	Tribune	Thurs 7/30
Twin Falls, Idaho	Times News	Wed 7/29
		Fri 7/31
Wendover, Nevada	High Desert Advocate	Week of 7/27

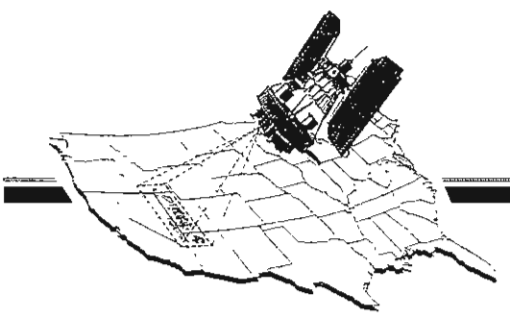
Meeting information flyers were also posted in the community at and around public establishments.

Each meeting began with introductions and a presentation given by a BLM representative with project personnel from the BLM, the IPCo, LADWP and Dames & Moore present. The presentation addressed the project description, purpose and need, the SWIP DEIS/DPA planning process, alternative routes identified, and the project schedule. The meeting then opened up for comments from the public.

A total of 75 people attended the six formal public meetings held in August, 1992. All comments and questions concerning the SWIP DEIS/DPA at the meetings were recorded and have been responded to in Chapter 5 of this document.

Frequently voiced comments included:

- visual impacts to residences
- health and safety
- minimize land use impacts
- property values
- need for the transmission line
- alternatives to the project



CHAPTER 3

MODIFICATIONS AND ADDITIONAL STUDIES

CHAPTER 3
MODIFICATIONS AND ADDITIONAL STUDIES

PURPOSE AND NEED

Because of public concern about the purpose and need for the Southwest Intertie Project (SWIP) Draft Environmental Impact Statement (DEIS/DPA), additional information about the Purpose and Need is presented in this chapter. This information is an expansion of the Purpose and Need described in Chapter 1 of the SWIP DEIS/DPA.

Introduction

Today's electric generation and transmission system play a critical role in the nation's economic and social well being. Many utility customers take its operation for granted as they enjoy electric services relatively free of interruption. There is an increasing need for utilities in the western United States to work cooperatively to maintain greater resource and transmission flexibility and enhance service reliability through transmission system interconnections.

Electric utilities are responsible for providing adequate supplies of reliable, economic electricity to their customers. The present load growth in the western United States, coupled with the expense and difficulties of building new generating resources, reinforces the need to provide for inter-regional transfers of energy.

The principal function of any interconnected transmission system is to provide for the reliable transfer of electric energy from one regional electric system to another, including generation from plants at various locations within that regional system to various load centers at other locations. The integration of large and small generating units in a transmission network permits not only efficient economic dispatch of power within regions during normal conditions, but also the transfer of power between regions during emergencies. The strategic importance of transmission is much greater than is indicated by its relative low cost as compared to the overall cost of electricity. Adequate interconnections provide the key to generation resource diversity, sharing of reserve generating capacity, and efficient utilization of conservation and new or existing generating capacity. In short, interconnection is the coordinating medium that makes possible the most efficient use of electrical facilities in any area or region.

Diversity Between Regions of the WSCC

There is a regional need to take advantage of the seasonal diversity which exists between the loads and resources of the Northwest and the Southwest. Purchases and exchanges over the SWIP would help the entire Western Systems Coordinating Council (WSCC) region meet load growth by utilizing existing resources more efficiently. It is this seasonal diversity, specifically between the Arizona-New Mexico Power Area (ANMPA) and the Northwest Power Pool (NWPP) and between the NWPP and the California-Southern Nevada Power Area, that the SWIP is needed to serve. There are adequate

markets in both the NWPP and the Southwest for over 1200 megawatts (MW) of seasonal diversity transmission with a resulting potential for deferring significant generation resource additions.

Figure 3-1 illustrates the projected WSCC regional peak and average loads, generation capability, inter-regional transfer capability, and summer/winter load diversity for the year 2000 (WSCC 1992 IE-411). The generation capacity numbers reflect all generators at their rated capacity, but are not representative of actual available resources at any one time (does not include reserve margin, effects of variable water flows, or the impacts of unplanned outages). For example, in the NWPP region, the reserve margin requirements total approximately 8000 MW. Therefore, the planned available capacity for the year 2000 is 61,000 MW (total installed capacity = 69,000 MW). The available seasonal diversity in this figure is the difference between the peak winter load and the peak summer load of that region. The inter-regional transfer capability shown is the rated capability expected for the year 2000 less the firm inter-regional generation transfers.

Northwest Power Pool

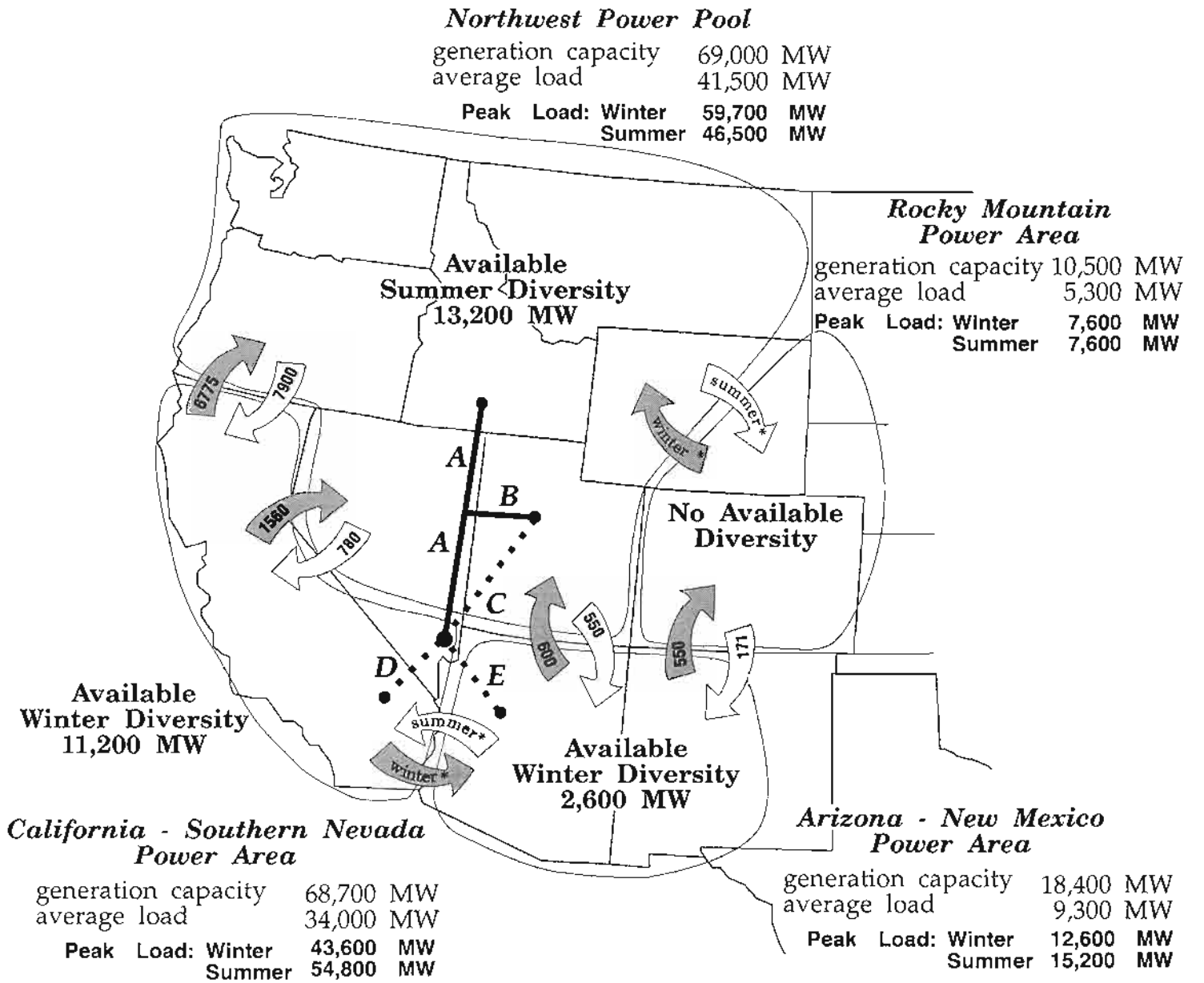
The NWPP has about 13,200 MW of seasonal load diversity available during the summer peak period. The total summer export capability from the NWPP is about 9200 MW (7900+780+550). During the winter, there is about 13,800 MW of seasonal load diversity available in the California and Arizona power areas. The total winter import capability to the NWPP is about 8900 MW (6775+1560+600). About 3000 MW of seasonal load diversity remains untapped and available for seasonal exchange.

The transfer capability between the NWPP and the California-Southern Nevada Power Area is in two major paths. The northwestern path is made up of the Pacific Alternating Current (AC) Intertie (3-500 kilovolt (kV) transmission lines = 4800 MW north to south and 3675 MW south to north) and the Pacific Direct Current (DC) Intertie (+/- 500kV = 3100 MW bi-directional). The southwestern path is made up of three subcomponents, the Sierra Pacific Power-Pacific Gas and Electric transmission lines (2-120kV lines and 1-60kV transmission line = 160 MW bi-directional), the PacifiCorp-Nevada Power transmission line (345kV = 300 MW north to south), and the Intermountain Transmission System (ITS) DC transmission line (+/-500kV = 1920 MW north to south and 1400 MW south to north). The ITS has a total capability of 1920 MW, however, 1600 MW are reserved for Intermountain Generating Station (IGS). The south to north capability is restricted by two 345kV ITS/PacifiCorp interconnections. In order to utilize this 1920 MW ITS capability, the IGS generation would need to be displaced which is not likely due to its low power production cost.

The transfer capability between the NWPP and the ANMPA is made up of one 230kV PacifiCorp/Western Area Power Administration (WAPA) interconnection and one 345kV PacifiCorp/Arizona Public Service transmission line. Together these transmission lines are rated at 550 MW north to south and 600 MW south to north. The 345kV interconnection capability is usually restricted by ANMPA system transfers south and west of the Four Corners area.

Rocky Mountain Power Area

The transfer capability between the Rocky Mountain Power Area (RMPA) and the NWPP is not significant due to internal transmission constraints. The RMPA has little seasonal diversity.



Note: all values in megawatts (MW), peak load excludes interruptable load

SWIP Projects (A & B)
Other Proposed Projects (C,D,E)

Map Symbol	Transmission Project	Transmission Rating (MW)
A	SWIP (Midpoint to Dry Lake)	1200
B	SWIP (Ely to Delta)	1100
C	Utah-Nevada (UNTP)	1100
D	Mead-Adelanto	1200
E	Mead-Phoenix	1300

Transmission Capacity is firm capability less firm inter-area generation transfers.

winter summer

* Transfer capability not significant due to internal transmission or no inter-area seasonal diversity.

SOURCE: WSCC 1992 IE-411 Report

WSCC Seasonal Diversity Potential for the Year 2000

Figure 3-1

The transfer capability between the RMPA and the ANMPA is shown as the combination of the 230kV and 345kV transmission lines between Colorado and Arizona-New Mexico. The transmission lines are capable of 550 MW bi-directionally, however, a firm generation integration commitment of 379 MW north to south exists.

Arizona-New Mexico Power Area

The ANMPA has about 2600 MW of seasonal diversity available during the winter peak period. Of this 2600 MW, only about 600 MW are currently usable between the ANMPA and the NWPP.

The transfer capability between ANMPA and the California-Southern Nevada Power Area is about 7000 MW, with nearly half of this capability committed for firm generation integration commitments. This transmission path is generally not significant for seasonal diversity exchanges due to the two regions having coincidental peaks.

Diversity Benefits from Interconnections

Current forecasts of utility resource requirements portray the fact that the future is uncertain and identify steps to reduce the risks resulting from that uncertainty. For the same reasons that investors diversify investment portfolios to minimize the risks associated with individual stocks, utilities seek to diversify their system resources to minimize the risks associated with individual resource options. To reduce the risks associated with uncertainty of load growth, utility planners favor resources (e.g., transmission interconnection, new power plants, or other generation facilities) that can be developed in the shortest possible length of time, or shortest "lead time". Reducing the lead time needed to acquire new resources allows the actual commitment to construct a resource to be made when forecasting uncertainty has been reduced as much as possible. Taking advantage of regional diversity through the SWIP would increase the number of resource options available to a utility and would serve as a tool for reducing the risk of overbuilding or underbuilding generating resources as a result of load and resource uncertainties.

Transmission lines play a major role in managing the costs of an electric system service. Adequate and available transmission capacity allows interaction between supplies and markets for the most economical exchange of power, with benefits including:

- *Diversity of Area and Use* - Over the history of electric system development, diversity was first captured in neighborhoods, then cities and regions as transmission systems were expanded. The fact that the system is used at different times for different purposes means that the broader the area the system encompasses, the fewer generating resources are required to serve it, lowering the total amount of required generation.

- *Market Diversity* - Competitive forces should drive down the cost of the utilities' future resource options as suppliers of generation and conservation gain access to the transmission grid.

- *Fuel and Supply Diversity* - Transmission provides a way to enhance plans for environmental mitigation between regions. For example, generation may be reduced in one region during times when there are air quality concerns or river flows may be increased for migrating salmon. Transmission also provides shifting among fuel supplies (e.g., coal versus natural gas) for cost savings as prices fluctuate or as air emission requirements change.

Conservation and Demand-Side Management

Conservation and other demand-side management programs are expected to reduce, but not eliminate, the region's need for new generating resources. Conservation and demand-side management programs are an integral part of the resource strategy of every utility considering partnership in the SWIP. Regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest cost resources. However, conservation does not correspondingly reduce the value of regional transmission for minimizing resource costs.

Even with reduced generating requirements, environmental and economic considerations may require siting new generation at substantial distances from population and load centers, thus requiring transmission such as the SWIP. Regional conservation may be more fully developed given the availability of adequate regional transmission. Without such transmission, the cost effectiveness of conservation programs must be determined on the basis of the avoidable generating resource costs of an individual utility. Utilities having a lower avoided cost may be unable to develop economical conservation resources at the same level as those utilities with a higher avoided cost. With transmission, conservation throughout the region could be developed to the level of the highest avoidable generating costs in the region.

Transmission facilities like the SWIP would contribute to the region's task of meeting future load growth most efficiently with the least amount of new generating capacity. It is important to recognize the seasonal load diversity within the region. Transmission would allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (e.g., generation) can be reduced by transmission. Transmission, such as the SWIP, should be considered as a resources option along with new generating resources.

Utility Cost Minimization Initiatives

The goal of electric utilities is to provide reliable electrical service at the lowest reasonable infrastructure cost. Both state and federal regulatory agencies establish rules and review the proposed actions of utility companies to assure that electrical consumers are provided service at the lowest possible costs. Recent industry initiatives to minimize costs have focused on three areas:

- *Integrated Least Cost Planning* - Utilities are required by state utility commissions to consider both conservation and new generation options equally in developing a resource plan that achieves the lowest cost to electrical consumers.

- *Free Enterprise in the Generation Market* - Additional competition in the generation market brought about by independent power producers allows the market's competitive forces to drive down the cost of new generation. Generation represents the largest cost component of the electric power system.

- *Environmental Costs* - As part of the Clean Air Act, governmental and regulatory bodies are attempting to establish values for emissions from power plants to quantify and reduce "total societal costs" associated with resource options.

Environmental and Consumer Benefit Tests

Transmission lines must meet two tests to be shown beneficial to society: environmental impacts and consumer benefits. The first test is to determine if the potential impacts of the transmission line would be environmentally acceptable, and the second is the consumer benefit test. Until a project has cleared environmental hurdles it is not considered prudent to include it in least cost plan alternatives. Utilities cannot make plans to meet service requirements without some confidence that a resource option will be possible. Further, to do so would presume a favorable decision through the National Environmental Policy Act (NEPA) process.

As the nation continues to reduce dependence on imported oil, renewable energy resources such as wind, solar, geothermal, biomass, and hydropower which may be available only at fixed sites need to be encouraged through better access to markets. In order to economically develop these resources, as well as other independently developed power plants, their developers must have access to transmission facilities to move the power to utilities that need additional sources of power.

The SWIP could facilitate transactions which help protect the environment. For example, transmission contracts could be structured which redistribute inter-regional generation in such a way that northwest river flows could aid in the salmon recovery process. There are currently many proposals being considered regarding the operation of federal dams on the Columbia River. It is unknown how Columbia River operations and salmon recovery plans will affect northwest-southwest power exchanges at this time. As environmental costs become an important consideration in the resource planning process, low environmental cost (green) resources become more important. The ability to move these green resources to the load centers would be expanded with the addition of the SWIP.

The second test is the consumer benefit test. Utilities must demonstrate to their regulators that a transmission line would reduce the total costs, thereby benefiting the consumers. Once the project (i.e., the SWIP) is permitted, utilities may then begin including the project in their least cost plans. When and if a sufficient number of utilities have demonstrated the cost effectiveness of the project to their regulators, those project participants would move the project forward (i.e., implement that part of their least cost plan).

Generation vs. Transmission

When utilities consider whether to jointly build generation and share it via transmission, or build redundant plants in their respective service territories, they must consider:

- power plant construction cost
- transmission line construction cost
- the extent to which generation can be shared because of regional diversity
- transmission energy losses

For example, if we assume that a power plant is needed for summer air conditioning in the Southwest, and in the winter needed for light and heat-related loads in the Northwest, there is potential for sharing a generating station.

"Despite the progress of the last 10 years, the region enters the 1990s without the capability to successfully run conservation programs in all sectors of the economy and without an inventory of resources that can be developed quickly. Even with moderate growth, the region will need an additional 2000 MW by the turn of the century. Of all the options the region faces, inaction would expose the people and the economy to the greatest risk." (Northwest Power Planning Council, 1991).

In response to this, northwest utilities are soliciting proposals for new generating stations and conservation projects during the 1990s. The Idaho Power Company (IPCo) is sponsoring conservation programs and constructing power plant enhancements. California and Nevada utilities are taking similar actions. Desert Southwest utilities anticipate similar requirements later in the decade.

There is wide recognition in the electric utility industry that new transmission would make the best use of the scarce capital available for resource development by providing for the sharing of resources. There are new transmission projects proposed and being built to provide additional capacity between the Northwest and California, and between the Desert Southwest and California. The SWIP would increase the capacity between the Northwest and Southwest. That interconnection is important to extend the cost savings of transmission to the West.

Construction Costs

As part of their least cost planning, utilities routinely examine the average cost of bringing additional capacity into their systems. Least cost options are determined, in part, by evaluating the cost per kilowatt for various resources:

- a coal plant costs approximately $1200 per kilowatt
- a natural gas plant costs approximately $600 per kilowatt
- conservation may cost approximately $900 per kilowatt (conservation in one region can free resources to supply another region in lieu of new generation)
- transmission costs approximately $300 per kilowatt (assume 500 miles at 1200 MW capacity is approximately $360,000,000)

Note: These numbers are conceptual order of magnitude estimates and do not reflect any particular project costs.

Using these examples: (1) a coal generating station with one fourth (300/1200) of its output shared between regions would justify transmission, rather than building plants in two locations, (2) a natural gas plant with one half (300/600) of its output shared would justify transmission, and (3) the transmission would be justified if it would free one third (300/900) of the energy saved from conservation for use in another region.

Losses on a transmission system of this distance are typically 4 percent to 6 percent of the energy transmitted. The cost of losses would adjust the above ratios to determine whether the transmission was justified.

Transmission System Reliability

The WSCC is an organization of utilities throughout the western U.S. that was organized in August 1967. It establishes reliability criteria and provides the coordination which is essential for operating and planning a reliable and adequate electric power system for the western part of the continental U.S., Canada, and Mexico.

Due to the vastness and diverse characteristics of the region, WSCC's members are faced with unique and challenging problems both in coordinating the day-to-day interconnected system operation and the long-range planning needed to provide reliable and affordable electric service to more than 59 million people in WSCC's service territory.

It has become apparent to the WSCC and its member utilities that the bulk power system in the western U.S. and parts of Canada has evolved into a highly integrated interconnected system.

The SWIP would significantly improve the reliability of the regional power system. A WSCC study indicated the potential for voltage instability in several areas under transmission or generation outage conditions during peak demand periods. Voltage instability can result in the uncontrolled loss of customer load. Steps are being taken to mitigate the problem by installing new transmission equipment and interconnecting segregated systems, like the Intermountain area, to more stable regional systems. The SWIP would directly reinforce the Intermountain area which would improve system reliability and reduce the likelihood of isolating areas from the regional system. It would provide additional transmission capacity to help support the electrical integrity of the western system in the event of the loss of critical generation or transmission facilities.

By interconnecting the SWIP and the Utah-Nevada Transmission Project (UNTP), the SWIP Crosstie (hereafter referred to as the Ely to Delta segment) would provide an alternative path if either transmission line were curtailed due to scheduled or unscheduled outages. This would allow for optimal transfer capability ratings for the SWIP and the UNTP systems. The resulting interconnected system would have a larger transfer capacity than would be possible if these projects were not interconnected.

The total electrical strength of all ties between the northern and southern portions of the transmission system in the West would significantly increase with the construction of the SWIP. This would reduce the potential for and the severity of electrical disturbances during operating emergencies. Reliability would be increased by providing an additional transmission path between Idaho, Nevada, and Utah. The geographical and electrical separation between existing north-south transmission facilities and the SWIP would be substantial. This separation would increase system reliability by reducing the portion

of all major north-south ties that can be disrupted by a single event, such as an earthquake, storm, or vandalism.

Regional Economic Benefits of the SWIP

Capturing current and future efficiencies within the electric power system of the western United States would provide regional economic benefits. Interconnecting the systems of the Northwest and Southwest with firm transmission access via the SWIP's proposed "open marketplace" concept would allow the regions' utilities to realize these efficiencies. Open access to other regions would facilitate creative energy transactions which, driven by the forces of the open market, would take economic advantage of the load and resource diversities between the regions. Energy transactions between interconnected utilities would better use existing internal transmission capacity. These transactions would benefit the wheeling utility by creating revenues that can be applied against its internal system costs, including seasonal exchanges, resource coordination, nonfirm sales and purchases, firm sales and purchases, and reserve sharing. Interconnections between utilities would also provide other benefits including improved system reliability and environmental enhancements.

The addition of the SWIP would allow utilities in the Northwest and Southwest to add capacity and reliability to the western electrical system at an economical price. Specifically, the SWIP would fulfill the major needs as outlined below:

Seasonal Exchanges

Seasonal exchanges provide benefits by taking advantage of the load pattern diversities between regions. By directly interconnecting and exchanging power between the winter peaking Northwest and the summer peaking Southwest, both regions would benefit from increased operating efficiencies of existing resources. Seasonal exchange transactions could reduce operating expenses through fuel diversity, as well as reduce capital cost expenditures by deferring costly new generating resources.

The SWIP would allow the Northwest, the Southwest, and the Intermountain areas to take advantage of the various load pattern diversities including variations in electrical demand and supply within the region. The Ely to Delta segment would create an additional bi-directional transfer path between the Northwest and the Intermountain regions of the West. Currently, these areas are interconnected only by lower voltage transmission lines with limited electric load-carrying capability. It would also create an additional bi-directional transfer path between the Intermountain area and the Southwest including southern Nevada. This is an area that is rapidly growing and is in need of additional energy and capacity resources to serve its native load.

Resource Coordination

The SWIP would enable regional resources with diverse generating characteristics to operate jointly in a manner that increases overall operating efficiencies. For example, the Northwest could use the surplus peaking capacity and storage capability of its hydro system in conjunction with the base loaded thermal resources of the Southwest, thus increasing load-carrying capability as well as reducing

production costs. Resource coordination agreements, like seasonal exchanges, benefit the utilities by both reducing operating expenses and potentially deferring new generating resources.

Nonfirm Sales and Purchases

Nonfirm sales and purchases provide benefits by lowering the total power production expenses of the parties involved. Nonfirm or economy transactions accomplish this by taking advantage of the diversity in incremental production costs between generating resources, such as displacing oil resources with coal resources or displacing coal with hydro. The purchasing party benefits from lower production expenses than it would have otherwise incurred, while the selling party benefits from the revenues received that are in excess of its incremental production costs. Nonfirm transactions are generally short-term in nature, ranging from the next hour to several months, since incremental costs are very sensitive to the uncertainty of future load requirements, generating unit availability, and fuel costs or availability, such as spot gas prices or winter snow pack.

Firm Sales and Purchases

Firm agreements tend to be longer in term and place a higher level of obligation on both parties. As such, they are included in the utility's long-term planning process. The economic benefits derived from firm sales and purchases are therefore somewhat broader than those of the nonfirm market. Firm transactions benefit the purchaser by deferring large capital outlays associated with the acquisition of a new generating resource. They benefit the seller by sharing the output and the fixed costs of an existing resource until such time as the seller can fully utilize the resource.

Reserve Sharing

Reserve margin is generating capacity that must be available to respond to emergency conditions. Additional transmission capacity between the Northwest and Southwest would enhance the utilities' abilities to meet these reserve margin requirements by using the load and resources diversities that exist between regions. Thus, reserve sharing would benefit the utilities by optimizing the existing and future regional resources in meeting reserve margins.

Existing and Future Generation

Utilities attempting to reduce their need for new generation construction look to existing generating stations with surplus capacity. Many of these plants, designed for forecasted demands that were not realized due to shifts in growth and energy conservation efforts, are oversized for current demand. They now provide cost-effective alternatives to new plant construction. Regional transmission access to these plants is either non-existent or constrained by systems currently loaded to capacity. The economics of pursuing transmission facilities to access regional surpluses to displace more costly generation justifies a regional intertie network necessary for cost-effective load management.

Bonanza Generating Station (Bonanza)

The Deseret Generation and Transmission Cooperative (DG&T), a Utah cooperative, has constructed and operates Bonanza, a coal-fired generating station consisting of a 400 MW unit, plus possible construction of a second 400 MW unit. The Bonanza plant has a dedicated coal mine with a dedicated rail system. The Bonanza site is approximately 7 miles northwest of Bonanza, Utah.

Nevada is uniquely positioned between Rocky Mountain and Northwest energy sources and California and Southwest consumption centers. As such, having open market substations as well as access to these stations (e.g., the Ely area) is essential in this keystone state. The Ely to Delta segment would provide a critical path for the DG&T to access these marketplace substations in Nevada where energy transactions can take place.

Intermountain Generating Station (IGS)

The IGS was constructed on behalf of a group of Utah, California, Nevada, Wyoming municipalities, rural electric cooperatives, and a privately owned company to supply their respective communities with a firm supply of electrical energy. The IGS, as proposed, was to construct and operate four 750 MW, coal-fired units, two of which are currently operational. The IGS currently supplies Los Angeles and other southern California cities with over 25 percent of their electrical energy needs over the 500kV DC transmission line.

The Ely to Delta segment would create a supplementary transmission link to the IGS which would reduce the potential for a serious electrical disturbance to the interconnected Utah electrical system. Presently, a lower voltage transmission line interconnects the IGS to the electrical system in Utah. However, this transmission line is less robust and requires a complicated remedial action scheme and relays designed to protect Utah's electrical system(s) from a DC transmission failure.

The Ely to Delta segment would also reduce the potential for, and severity of, electrical disturbances to the existing and future IGS generation units.

White Pine Power Project (WPPP)

The WPPP, although no construction dates have been scheduled, is a major option in future resource planning for the City of Los Angeles and other metropolitan areas.

The Los Angeles Department of Water and Power (LADWP), as many utilities throughout the country, has implemented conservation, load management, and customer energy efficiency programs. The LADWP has projected a deferment of 600 MW of supply-side resource requirements by the year 2000 as a result of implementing demand-side management programs. When these programs are combined with the SWIP transmission system, they would provide access to the surplus generation in the Northwest and Intermountain regions of the country. The LADWP could defer the need for major new generating plants during the next ten years.

Due to the financial risk associated with the large capital expenditures required to build new generating facilities, utilities are reluctant to commit to large new projects. The cost of the transmission system associated with generation projects is a relatively small percentage (10 to 15 percent) of the total project cost, yet the billions of dollars invested in a power plant can be held hostage awaiting transmission system permitting, approval, and construction. One factor that often impairs the ability to install new resources in a timely manner is the long lead times required to fulfill the permitting process. Therefore, these transmission lines must be assured or be in place before the decision to construct future WPPP units can be made.

CUMULATIVE EFFECTS

Anticipated Utility Projects in the Ely Area

Scenario 1 - Cutoff Route to North Steptoe/Robinson Summit

In this scenario the SWIP Ely to Delta segment would utilize the Cutoff Route. The least-impact Cutoff Route could be constructed to the North Steptoe Substation siting area and then southwest to the Robinson Summit Substation site (refer to Figure 3-2). This route would not require a substation at the North Steptoe site but would allow a potential interconnection of the Ely to Delta segment with the Midpoint to Dry Lake segment at Robinson Summit. In this scenario there would be two lines from North Steptoe to Robinson Summit.

If the environmental impacts would be assumed to be similar on the Cutoff and the 230 kilovolt (kV) Corridor Routes, as described on page 2-53 of the SWIP Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA), then the environmental impacts would be incrementally higher between North Steptoe and Robinson Summit because of the second line. The 230kV Corridor Route would then become the Environmentally Preferred Alternative.

If the White Pine Power Project (WPPP) is constructed there would be one additional line built from the North Steptoe area to Robinson Summit and two additional lines south from there. Neither the Midpoint to Dry Lake segment nor the Ely to Delta segment would necessarily interconnect at the WPPP, however, all three lines could be interconnected at Robinson Summit.

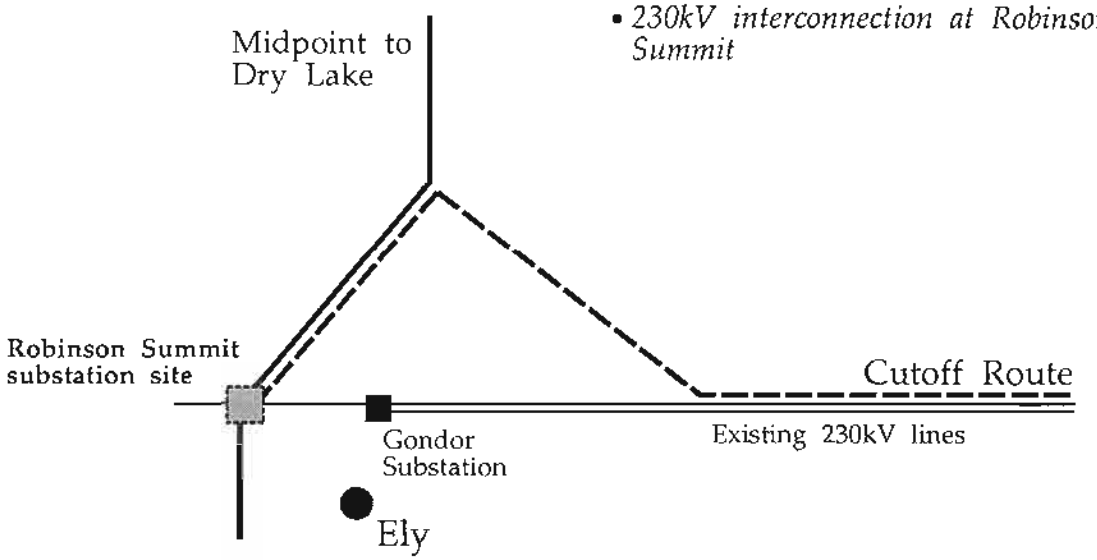
Scenario 2 - Cutoff Route to North Steptoe Substation

In this scenario the Cutoff Route would be constructed for the Ely to Delta segment and the marketplace substation would be constructed at North Steptoe. Then a 230kV line would need to be constructed from the Gondor Substation to North Steptoe to provide the future the SWIP interconnection with the 230kV system (refer to Figure 3-3). This would likely result in a 230kV line from Gondor Substation to the Robinson Summit area then paralleling the SWIP line to North Steptoe. This scenario would result in impacts similar to the Cutoff Route to Robinson Summit scenario (see above). If the 230kV interconnection occurred, again the 230kV Corridor Route would be environmentally preferred over the Cutoff Route.

If the WPPP is constructed, there could be four lines from North Steptoe to the Robinson Summit area (3-500kV lines and 1-230kV line), then 3-500kV lines south from Robinson Summit. This scenario would result in the most cumulative impacts of all of the scenarios. The only advantage of this scenario over the Cutoff Route to North Steptoe/Robinson Summit scenario (above) is that only one substation site would be needed.

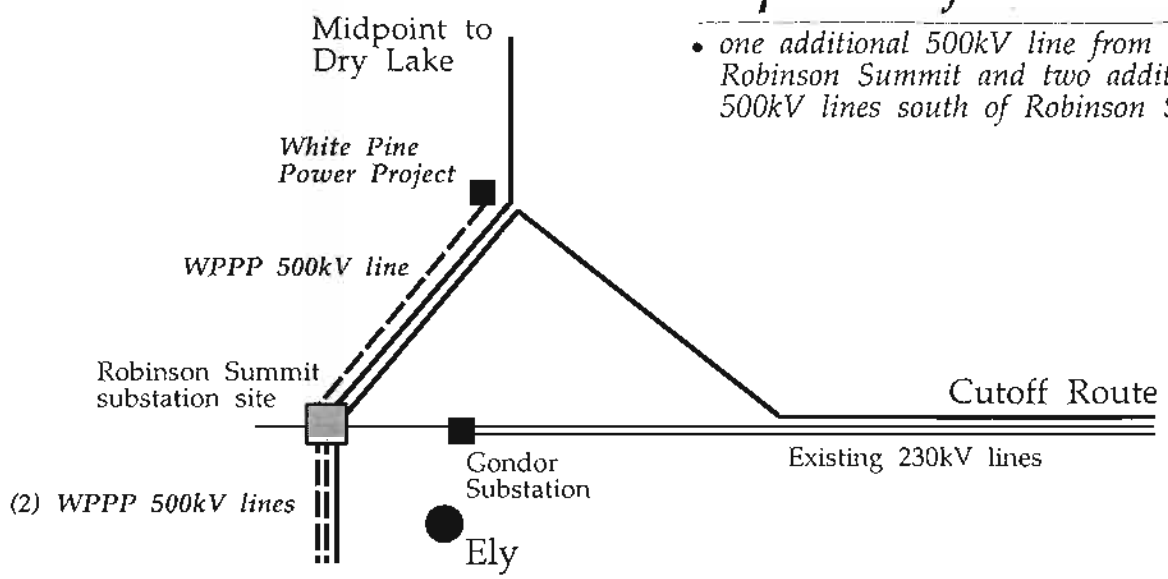
Sequence of Events

- *500kV connection of the Cutoff Route at Robinson Summit*
- *230kV interconnection at Robinson Summit*



Sequence of Events

- *one additional 500kV line from WPPP to Robinson Summit and two additional 500kV lines south of Robinson Summit.*

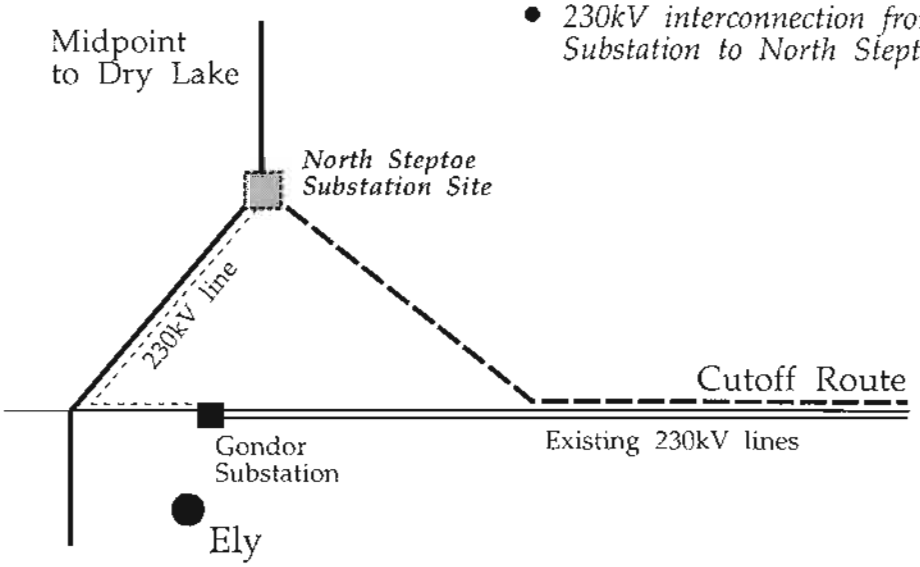


Scenerio 1
Cutoff Route to North Steptoe/Robinson Summit

Figure 3-2

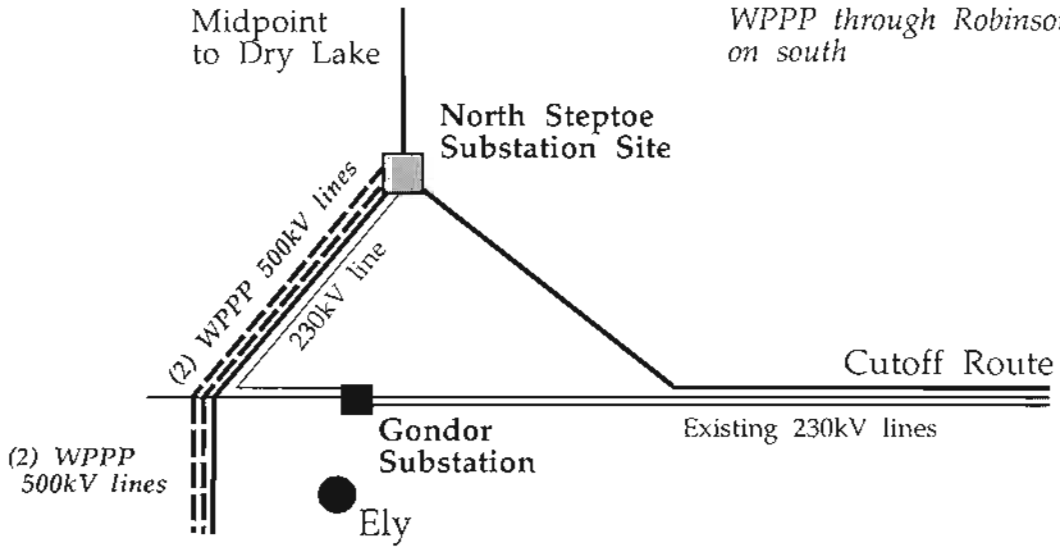
Sequence of Events

- *500kV connection of the Cutoff Route to North Steptoe.*
- *230kV interconnection from Gondor Substation to North Steptoe*



Sequence of Events

- *two additional 500kV lines from WPPP through Robinson Summit and on south*

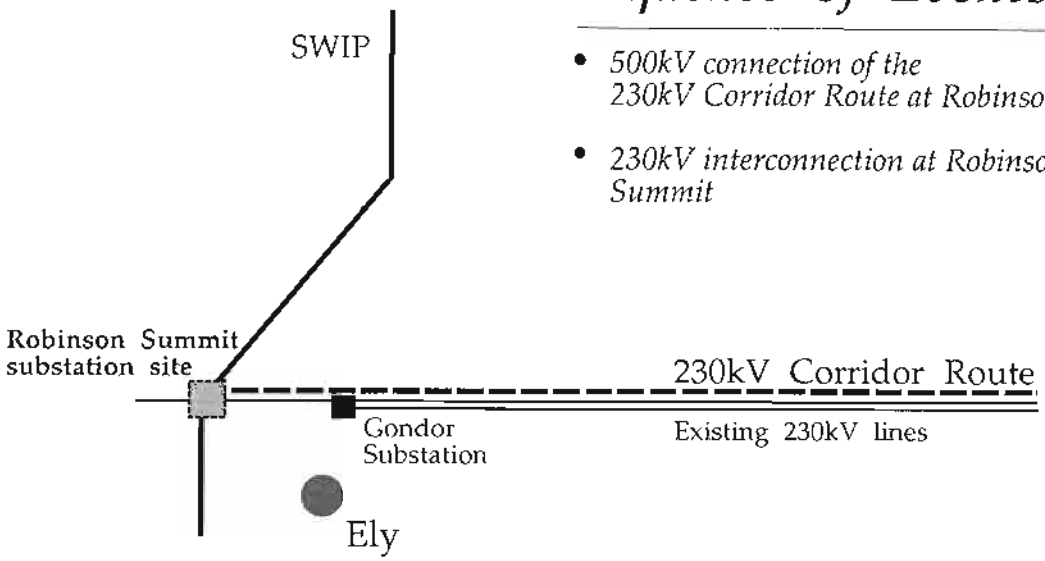


Scenerio 2
Cutoff Route to North Steptoe Substation

Figure 3-3

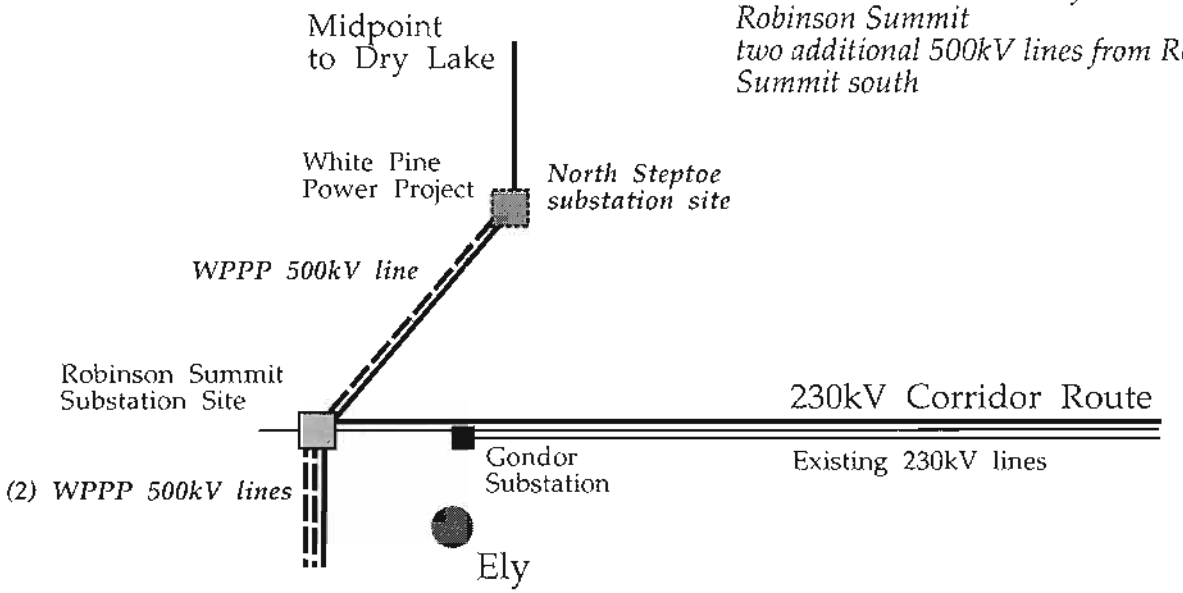
Sequence of Events

- *500kV connection of the 230kV Corridor Route at Robinson Summit*
- *230kV interconnection at Robinson Summit*



Sequence of Events

- *North Steptoe substation is constructed w/ WPPP and Midpoint to Dry Lake is interconnected.*
- *one additional 500kV line from WPPP to Robinson Summit*
  two additional 500kV lines from Robinson Summit south



Scenerio 3
230kV Corridor Route to Robinson Summit

Figure 3-4

Scenario 3 - 230kV Corridor Route to Robinson Summit

With this scenario the Ely to Delta segment would utilize the 230kV Corridor Route and the substation would be constructed at Robinson Summit where the interconnection with the 230kV system could occur (refer to Figure 3-4). If the 230kV interconnection were to occur, this scenario would have the least cumulative impacts to this point in the "buildout".

If the WPPP is constructed, the SWIP could interconnect at the North Steptoe area (at WPPP), one new 500kV line would be constructed from WPPP to Robinson Summit and two new 500kV lines would be constructed south of there. If the WPPP were constructed this scenario would cause the least cumulative environmental impacts.

Environmental Comparison of the Scenarios

The following table illustrates the environmental preferences of the expected future utility development in the Ely area.

Summary of Cumulative Effects
Environmental Preference in the Ely Area

	SWIP (Midpoint to Dry Lake and the Crosstie)	**230kV Interconnection**	**White Pine Power Project**
Scenario 1			
Scenario 2			
Scenario 3			

Environmental Preference

- Most Preferred
- Second-Most Preferred
- Least Preferred

The Marketplace-Allen Transmission Project

The proposed substation in the Dry Lake area would be the southern terminus of the SWIP. In 1990 the BLM asked the Idaho Power Company (IPCo) to help coordinate the transmission needs of utility companies with new transmission facilities planned in southern Nevada, particularly those needing transmission access to the McCullough Substation area located south of Boulder City, Nevada. The regional utilities developed a corridor concept which would maximize the capacity of the corridor while minimizing environmental impacts. Subsequent discussions with the Nevada Power Company (NPC) and other utilities resulted in the Marketplace-Allen Transmission Project (MAT) project, which is planned to be proposed to the Nevada Public Utility Commission in July 1993 by NPC. This approximately 53 mile project would connect the proposed SWIP substation in the Dry Lake area to a new marketplace substation in the McCullough Substation area. Two high capacity 500kV transmission lines would connect the two substations of the "open marketplace". The combined capacity of over 3000 megawatts (MW) would allow utilities to interconnect at either substation and conduct transactions.

Although the MAT would be operated by NPC, several other regional utilities would likely be participants in the project. The purpose and need for the MAT would be to provide a major electrical interconnection point for the Inland Southwest, with connection points on its north end (i.e., the proposed Dry Lake Substation site) and south end (i.e., the proposed marketplace substation near McCullough Substation). This project would also provide capacity for NPC's internal system needs. The combined capacity rating of over 3000 MW would be possible because of the relatively short distance between the two proposed marketplace substations. The high capacity of this system would allow the planned transmission lines to connect on either end, while minimizing the number of lines through this sensitive area. The MAT is proposed to be in service in 1997.

There are two major potential routing alternatives for this project. The first would run straight south through the Apex development parallel to the proposed Utah-Nevada Transmission Project 500kV line, then cutting southeast to the Gypsum Wash area, and then south through the Sunrise Mountain and Henderson areas. The second major routing alternative would cross Interstate 15 at the north end of the Dry Lake range and run straight south paralleling the Intermountain Power Project (IPP)-Adelanto 500kV Direct Current (DC) line and the Navajo-McCullough 500kV line to the Sunrise Mountain and Henderson areas.

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 4 of the SWIP DEIS/DPA.

Potential Fiber Optic Ground Wire

To protect conductors from direct lightning strikes, two overhead ground wires, 3/8 to 1/2 inch in diameter, would be installed on the top of the towers. Electrical current from lightning strikes would be transferred through the ground wires and structures into the ground. There is an opportunity to install ground wire with fiber optic capability to serve the needs of commercial communication companies rather than traditional ground wire. Further, the fiber optic ground wire could also be used to supplement the communication needs of the SWIP. However, the planned microwave communication system would be the primary communication system.

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., NEPA) and obtaining the right-of-way. Regeneration stations, which are typically small concrete buildings approximately 10 feet by 10 feet, would be needed at 20-40 mile intervals along the transmission line right-of-way. They would likely be placed on or immediately adjacent to the SWIP right-of-way.

Similar to the conductors, ground wire would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment as shown on Figure 2-5 in the SWIP DEIS/DPA. Sites for tensioning equipment and pulling equipment would be approximately 2 miles apart. If a fiber optic ground wire is installed rather than conventional ground wire, the construction methods would be the same. The appearance of a fiber optic ground wire is the same as conventional ground wire. The regeneration stations would likely cause insignificant visual impacts.

ADDITIONAL STUDIES AND INFORMATION

Analysis of the No-Action Alternative

Information and analysis about the No-Action Alternative is presented here as a supplement to the section analyzing the No-Action Alternative in Chapter 2 of the SWIP DEIS/DPA on pages 2-10 and 2-11. Within this section the potential impacts associated with No-Action are assessed.

Biology

Selection of the No-Action alternative would have the effect of creating no project related impacts to biological resources in the States of Idaho, Nevada, or Utah. Impacts that would not occur under this alternative are varied and include short and long term losses of habitat to a wide array of wildlife species resulting from construction roads and disturbance at tower sites and ancillary facilities (e.g., line pulling and tensioning sites and equipment storage yards). In addition to short term impacts to wildlife, some populations of rare plant species would not be affected under this alternative.

Long term impacts, both direct and indirect, that would be avoided under the No-Action alternative include permanent commitment of small amounts of wildlife and plant habitat to transmission line tower footings, potentially increased OHV use along transmission line roads (even after closure of such roads), a potential for limited bird mortality resulting from collisions with conductors and static lines, and creation of hunting or nesting sites for predatory bird species.

In southern Nevada, the federally listed desert tortoise would suffer no direct impacts from short or long term disturbance of habitat, no permanent loss of habitat to transmission line tower footings, and no harassment, injury, or mortality from construction-related activity. Potential indirect benefits of this alternative include no project-associated, unintended, increases in public access to tortoise habitat or from activities associated with operation and maintenance of the transmission line. Impacts from increases in public access could include further habitat degradation from unauthorized off-road vehicle activity, direct mortality from tortoises being crushed by vehicles, increased mortality from vandalism (e.g., shooting of tortoises), and increased illegal collecting of tortoises for pets.

In northern Nevada, and to some extent, southern Idaho, the No-Action alternative would provide both direct and indirect benefits to local populations of sage grouse. Although it is likely that direct impacts to crucial sage grouse wintering and strutting areas can be avoided by judicious tower placement, there may be some impact to these habitat features. The primary indirect benefit to sage grouse from this alternative would be that transmission line towers would not be present to provide hunting perches for golden eagles, or other birds such as ravens, to prey on sage grouse during particularly vulnerable segments of their life cycle.

The No-Action alternative may also result in indirect benefit to big game species. In the absence of the project, individual pronghorn antelope, mule deer, bighorn sheep, and elk may realize net benefits through no increases in the potential for human access to habitat areas used by these species at various times of the year. However, the No-Action alternative may not result in measurable benefit to regional populations of these species.

The No-Action alternative may also result in no net benefit accruing to some species and result in a scenario that is reflected by the currently existing environment. The introduction of transmission line towers into some areas may provide nesting and hunting sites for some species (e.g., some species of hawks) where none currently exist. Conversely, the No-Action alternative may be of benefit to individual birds of prey inasmuch as perched birds and nests on transmission line towers are highly visible, making them more vulnerable to illegal shooting by humans.

Some particularly sensitive habitats and the wildlife and plants that occur there (e.g., the Leland Harris spring complex in Juab County, Utah) may realize beneficial indirect effects from this alternative. In the case of the Leland Harris springs, most notable would be the absence of any project related impacts to the springs and wetlands associated with them. Secondary, indirect beneficial impact may accrue to this area by virtue of the entire planning process for this project, which has brought heightened attention to the degraded nature of the existing environment at this sensitive site.

Cultural Resources

The No-Action Alternative would result in continued management of cultural resources in accordance with current agency programs. No intensive surveys would be undertaken along an approved construction corridor and most of the estimated 200 to 400 cultural resources likely to be present probably would not be discovered and recorded in the near future. None of these resources would be affected by the transmission line construction activities, nor would the setting of these resources be altered by introduction of a new transmission line. No archaeological or historical studies would be undertaken nor would other types of measures be implemented to mitigate the impacts of constructing the proposed transmission line. The public accessibility of the region would not be enhanced by construction of access roads and therefore cultural resources are unlikely to be threatened by increased vandalism or inadvertent damage as a result of more visitation.

The No-Action Alternative would be similar to the Existing Environment (refer to Chapter 3 of the SWIP DEIS/DPA.

Visual Resources

The No-Action Alternative would not alter the Visual Resources beyond that already described in the existing environment (refer to Chapter 3 of the SWIP DEIS/DPA).

Land Uses

The No-Action Alternative would not affect present land uses as described in the existing environment in Chapter 3 of the SWIP DEIS/DPA.

Soils/Geology/Paleontology

The No-Action Alternative would not alter the Soils/Geology/Paleontology beyond that already described in the existing environment (refer to Chapter 3 of the SWIP DEIS/DPA).

Recreation Resources

The No-Action Alternative would not create any additional recreation access beyond that already described in the existing environment (refer to Chapter 3 of the SWIP DEIS/DPA).

Wilderness/WSAs

The No-Action Alternative would not alter the Wilderness/WSAs beyond that already described in the existing environment (refer to Chapter 3 of the SWIP DEIS/DPA).

Electric and Magnetic Field Effects

The No-Action Alternative would not alter the Electric and Magnetic Field Effects beyond that already described in the existing environment. Refer to Table 4-5 and 4-6 in the SWIP DEIS/DPA for a comparison of Electric and Magnetic Field Effects that currently exist with Electric and Magnetic Field Effects that would exist if the SWIP were constructed, also refer to Chapter 3 of the SWIP DEIS/DPA.

Socioeconomics

With the No-Action Alternative the cost of power may be increased within the western U.S. over time because of the inability for the utilities to implement least-cost planning alternatives (i.e., the SWIP). The tax bases of the counties under the No-Action Alternative would be the same as the existing environment, refer to Table 4-4 in the SWIP DEIS/DPA and Chapter 4 page 4-14 of the SWIP FEIS/PPA for a description of estimated county tax revenues that would be foregone by county residents if the SWIP is not constructed (refer to Chapter 3 of the SWIP DEIS/DPA).

Grazing

For grazing lessees the No-Action Alternative would be an adverse impact because of less access for rangeland purposes. It would also be a beneficial impact to the lessee because the No-Action Alternative would also provide less access onto rangeland by the public, and therefore less disruption to grazing operations, less chance of vandalism, and less chance of harassment of domestic livestock.

Recent EMF Research Results

Additional information has been provided on electromagnetic field (EMF) research which has been published since the SWIP Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA). For a complete discussion of EMFs, please refer to the Chapters 3 and 4 of the SWIP DEIS/DPA.

In September 1992, two Swedish residential and occupational EMF studies were released. One case-control study investigated cancer in both children and adults living near high voltage transmission lines in Sweden during a 25-year period. The Swedish researchers found a weak association between historical EMF exposure and leukemia in children, but could find no evidence of an increased risk for adults. The occupational study's results showed a modest association for both leukemia and brain tumors in adults who had occupational exposures to EMFs. The researchers concluded that the results of the studies provide some support for an association between EMF and cancer development.

In October 1992, the Danish Cancer Registry released preliminary results from their own EMF studies. They paralleled their Swedish colleagues with one childhood and one occupational study. Their findings, however, did not support those of the Swedish study. For childhood leukemia, the Danish study results do not support a conclusion of an elevated risk from EMF exposure. Nor was a leukemia exposure-response trend evident. The occupational study, on the other hand, reports an increased risk of leukemia in working adults exposed to continuously elevated EMFs. The reason for this increase is not clear. In addition to magnetic fields, other factors may also be present in the work environment.

The Electric Power Research Institute (EPRI) has analyzed the Swedish studies and finds that they contain important new information and innovative measurement techniques that better identify the exposure variables. The Swedish studies are also consistent with other studies that have found a correlation. However, there are weaknesses. In the residential study, there was a relatively small number of cases that estimated the leukemia risk, making it difficult to draw statistically significant conclusions. Additionally, the long term exposure tracked over the 25 year period necessitated estimations that did not take into account possible exposures from other sources. The Swedish occupational study, however, did adjust for exposures to various other environmental factors. The Edison Electrical Institute (EEI) also notes that although the studies were credible and thoroughly researched, they were incomplete and showed no definite link between EMFs and cancer.

Right-of-Way

Right-of-Way Width Requirement and Grounding

A right-of-way width of 200 feet is required to accommodate the conductor blowout (i.e., swinging of the conductor midway between towers) due to wind, guy wires and anchors, and maintenance clearances at the tower sites. All power lines produce EMFs. These fields produce static charges on conductive objects within a certain distance from the line. The amount of charge depends on the conductive object's size, shape, and orientation to the line. These static charges can be eliminated by either using nonconductive materials or by grounding the conductive objects that would be of sufficient size to produce a charge. Buildings or structures with conductive surfaces located outside of the right-of-way, but within 200 feet of the assumed centerline, would be grounded. Buildings or

structures beyond 200 feet would be reviewed in accordance with the National Electric Safety Code (NESC) to determine grounding requirements.

The NESC requires grounding "as one of the means of safeguarding employees and the public from injury that may be caused by electric potential." The grounding standards of the Idaho Power Company (IPCo) exceed the NESC requirements. IPCo grounds all buildings, fences, and other structures with metal surfaces located within 200 feet of the assumed centerline of transmission lines. Typically, residential buildings located 200 feet outside the assumed centerline would not require grounding. The IPCo also grounds all metal irrigation systems that parallel a transmission lines for distances of 1000 feet or more within 100 feet of the assumed centerline. If grounding is required outside the right-of-way, a temporary use permit or landowner consent would be obtained as necessary. Grounding of fences, buildings and other structures would be fully detailed in the SWIP Construction, Operation, and Maintenance (COM) Plan.

Right-of-Way Separation between the SWIP and the UNTP

Where the SWIP would parallel the proposed Utah-Nevada Transmission Project (UNTP), the rights-of-way of the two transmission systems would need sufficient separation to meet reliability and outage criteria of the Western States Coordinating Council (WSCC) (also refer to the transmission system reliability section in the updated Purpose and Need in this chapter and to page 1-2 of the SWIP DEIS/DPA). Without adequate separation the criteria considers the simultaneous outage of the SWIP and the UNTP to be a credible event or an event that has a significant likelihood of occurring. The simultaneous loss of the SWIP and the UNTP under heavy transfer conditions could precipitate a major electrical system disturbance resulting in a cascading failure of the western power system. Building and operating the system in this manner would be inconsistent with the WSCC reliability criteria.

The projects must (1) reduce capacity (which has the effect of rendering one project economically impractical), (2) provide measures to avert system breakup (considered technically and economically impractical), or (3) construct the projects so a simultaneous outage is not credible (e.g., use adequate circuit separation). While the latter course is preferable to the project participants, the specific amount of separation required to achieve this determination has not been defined in the criteria. However, based on the terrain and environmental considerations in the area of parallel right-of-way, it is believed that 2,000 feet would be adequate.

Each right-of-way evaluation or request within the WSCC system should consider the specific line combinations to determine whether a specific separation is required. The issue is the credibility of a simultaneous loss of the circuits involved. The WSCC criteria state:

> "the credibility of loss of a particular set of lines will depend upon the total distance of common corridor shared by the lines and upon the vulnerability of the circuits over that distance to a common mode failure. Considerations for this vulnerability assessment will include line design, length, location, whether forested, agricultural, mountainous, etc., outage history, operational guides, and separation. For example, some utilities use separation by more than the span length as adequate to designate the circuits as being in separate corridors."

This issue is not new. For example, the Third Pacific 500kV AC Intertie requested and received miles of separation between it and the existing two 500kV interties in forested areas. This separation was

required to allow adequate response time to adjust the system following the loss of the existing lines and a potential loss of the third 500kV line. Similar to the SWIP and the UNTP, the consequences of such an outage would be wide spread outages in the WSCC system. Without this separation, that project probably would not have been feasible.

The reason for separating the SWIP and the UNTP lines is to meet the WSCC reliability criteria for regional transmission facilities. Placing these lines closer together or on the same double circuit tower could result in a considerably lower capacity rating that would render the projects economically infeasible. The capacity rating of the SWIP line would not be permitted if the project developer does not comply with WSCC separation requirements.

Double circuit towers or a separation of less than 2,000 feet would exist in isolated areas along the route due to terrain or land use conflicts (e.g., Pahranagat Wash). These transmission towers would have to be designed with a safety factor that is several more times redundant than would be otherwise necessary. The project developer hopes that the WSCC would be willing to allow the 1200 MW rating with these design concessions for a short distance (i.e., less than 1 percent of the total line length).

The SWIP and the UNTP would converge near Robber's Roost Hills (Link 675 - milepost 12), and would be parallel for 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 SWIP would cross through the southern end of the Arrow Canyon Range into the Dry Lake Valley. A separation of 2,000 feet would be needed for this entire distance except where it is not physically possible to maintain this separation.

In the Pahranagat Wash area, the SWIP and the UNTP lines may need to be closer than 2,000 feet for two miles or more. Because the Delamar Mountains and Evergreen Wilderness Study Areas (WSAs) are within about 1/2 mile of each other and other linear features are present (e.g., U.S. Highway 93 and the Lincoln County Coop 69kV line), the SWIP and the UNTP lines would each be constructed on double circuit towers, with one circuit left open. The plan is for the two future WPPP lines to be placed on the open circuits of the SWIP and the UNTP lines through this area. The proposed configuration of the planned lines through this area is shown schematically in the cross-sections included in the Map Volume accompanying the SWIP DEIS/DPA. To help compensate for this lack of separation and to meet the WSCC criteria outlined above, the structures within this area would need to be engineered to a higher standard to better withstand potential physical disturbances (e.g., earthquakes, etc.). Refer to Cumulative Effects section in Chapter 4 of the SWIP DEIS/DPA.

If the Delamar and Evergreen WSAs are not designated as Wilderness by Congress by the time all of the lines are constructed, the involved utilities may pursue amending the right-of-way grants to allow all of the lines to be placed on separate circuits.

In the 88.5 miles where the SWIP and the UNTP lines would be separated by 2,000 feet, the SWIP and the UNTP lines would form the outside edges of the utility corridor that would include the two planned 500kV WPPP transmission lines. The cross-sections in the Map Volume accompanying the SWIP DEIS/DPA schematically show the relationship of the four planned 500kV transmission facilities. Refer to the Cumulative Effects section in Chapter 4 of the SWIP DEIS/DPA. The involved regional utilities will coordinate with the Las Vegas District of the BLM on the final configuration of this corridor.

Where the SWIP would not parallel the UNTP line, a minimum separation of 200 feet from other transmission facilities, centerline to centerline, would be required (i.e., for some facilities the rights-of-way could be side by side). With this separation, if either the SWIP or the lower voltage line failed, neither would fall into the other.

Military Air Space

In a comment on the SWIP DEIS/DPA, the National Park Service (NPS) requested additional information about the significant potential impacts of the alternative routes on military airspace. This section describes Federal Aviation Administration (FAA) regulations and agreements, the Air Force's concerns for the SWIP alternative routes, and the potential impacts of each alternative route on flight operations and military airspace.

The SWIP would affect two of the largest flight training areas in the West: the Utah Testing and Training Range (UTTR) of Hill Air Force Base (AFB) and the Desert Military Operating Area of Nellis AFB. Each of these ranges have a series of military operating areas (MOAs) where a large variety of low-level flights are conducted for combat training maneuvers and exercises.

Flights in these areas are conducted under visual flight rules (VFR) to provide low-attitude navigation and radar-simulated combat exercises (FAA Order 7610.4, Special Military Operations). Because of the low-level high-speed nature of the flight operations in MOAs, surface structures (e.g., radio towers, transmission line towers, etc.) present significant potential danger to pilots and aircraft, particularly when altitude ceiling and visibility conditions are impaired. Although flight operations can be altered to avoid the potential hazards of transmission line facilities, the low-altitude training operations are a pre-existing use of the airspace (FAA Part 77, 7400.2C Procedures for Handling Airspace Matters, 1984). FAA procedures state that when proposed structures that exceed the obstruction standards are being sited and the military has determined the alternative would be detrimental to their flight operations, an attempt to persuade the project sponsor to lower or relocate the alternative should be identified by the military (7400.2C Procedures for Handling Airspace Matters, Chapter 7 - Evaluating Aeronautical Effect).

Military Operating Areas and Restricted Areas - The Military has negotiated agreements with the FAA to set aside special airspace areas to contain flight activities that, because of their nature, may impede other aircraft operations that are not part of those activities. These airspace areas, called MOAs and restricted areas, establish positive control area to separate certain non-hazardous military activities from instrument flight rules (IFR) traffic (e.g., conventional commercial aircraft) and to identify for VFR traffic (e.g., small aircraft) where these military activities are conducted (7400.2C Procedures for Handling Airspace Matters, May 1, 1984). Military activities can include air intercepts, supersonic flight, acrobatic maneuvers, air combat exercises, and other flight training. Restricted Areas and MOAs contain these activities and prevent non-participating aircraft from being affected or interfered with during military operations.

Military airspace is divided into two categories: those that involve rulemaking actions and those that involve non-rulemaking actions. Rulemaking actions relate to the assignment, review, modification, or revocation of airspace by a rule, regulation, or order as prescribed in the Federal Aviation Regulations (FAR Part 11). Restricted Areas fall into this category. Because an agreement between affected military units, FAA representatives, and jurisdictional owners or administrators (e.g., the BLM) is required, it is difficult to amend and/or change the operation plans in these areas. Non-rulemaking

areas include MOAs, firing areas, and alert areas where the FAA has the authority to make the final decision but does not render that decision by issuing a rule, regulation, or order (7400.2C Procedures for Handling Airspace Matters, May 1, 1984). The SWIP alternatives would pass through both categories of military airspace.

A letter of agreement between the controlling agency, the FAA, and the using agency, Hill AFB, is used to establish special airspace areas. This agreement regulates and coordinates military activities with other aircraft and private land owners and public land administrators. The controlling agency is the agency, organization, or military command whose activity the special airspace was established for when first designated.

The controlling agency will establish a MOA or restricted area as a non-joint use area, joint use area, or point source area. This designation allows the special airspace to be used or not used when all or part of the airspace is not required for its prescribed purpose or used for other purposes when missions are not taking place. To determine the useable limits of each, MOAs and restricted areas are described in terms of horizontal and (boundaries), vertical (altitudes) dimensions, the time it will be used (specified times and days of the week), and the types of activities or missions that will take place. Because of their small size, geographic location, or high degree of use, some areas are impractical for use all of the time or at all. These areas are usually termed as non-joint use. Areas that are used periodically may be termed joint use and areas that are used frequently, such as specific valleys, may be termed point source use.

Letters of agreement are signed as part of the negotiations between the controlling agency and the using agency. Agreements are necessary when military activity is to be designated below 1,200 feet above-ground-limit (AGL) and when the underlying land belongs to a private owner or is administered by a public agency other than the military. The agreements state reasonable and timely aerial access to such lands and grant the Air Force permission to fly missions over lands they do not administer. In order for the military to designate activities down to the ground surface, the proponent must either own, lease, or by letter of agreement control the underlying surface.

Affected Environment

All of the alternative routes for the Ely to Delta segment would affect restricted airspace or MOAs of the UTTR (Hill AFB) and all of the alternative routes for the Midpoint to Dry Lake segment would affect several MOAs operated by Nellis AFB.

Agreements - The are no signed letters of agreement between the BLM and the Department of Defense for the MOAs and restricted areas affected by the SWIP alternative routes. There are existing agreements between the BLM and FAA and the FAA and the Department of Defense. These agreements established the MOAs and restricted areas for Hill AFB in Utah and Nellis AFB in Nevada.

There are no regulations governing the allowed uses on the BLM-administered lands under a restricted areas or MOA. The BLM has jurisdictional rights and can permit a utility line under airspace administered by the military.

Hill Air Force Base Flight Operations - The UTTR of Hill AFB is located in northwestern Utah and extends across the state line into northeastern Nevada. The portions of MOAs in Nevada are used primarily for flight maneuvers and air combat training, as well as approaching and departing targets

located in the adjacent restricted areas of the UTTR (UTTR, 1988). Flight levels extend from 100 feet-AGL to 9,000 feet (6,500-feet Mean Sea Level (MSL). All supersonic flights are conducted under VFR during the daylight hours (U.S. Air Force, Hill AFB, 1985). Altitude floors for the Lucin A, Lucin B, Gandy, Sevier A, and Sevier B MOAs of the UTTR are set throughout at 100-feet AGL.

Hill AFB was contacted and notified of the SWIP alternative routes during the inventory. The airspace coordinator provided maps for locating Restricted Areas and MOAs and a letter expressing concerns about alternative study corridors. The portion(s) of the UTTR affected are described for each alternative route:

Delta Direct Route - This route would cross 19.5 miles in the Gandy MOA, 44.5 miles in the R-6405 Restricted Area, 12.8 miles in the Sevier A MOA, and 13.8 miles in the Sevier B MOA. Hill AFB stated that a route across the R-6405 Restricted Area would likely not be feasible. Areas of high concern were also identified along the portion of the Gandy MOA that would be affected by this route.

Cutoff Route - This route would cross 33.8 miles in the Gandy MOA, 62.5 miles in the Sevier A MOA, and 20 miles in Sevier B MOAs. Flight operations in these areas may occur down to 100-feet AGL in a joint use arena.

230kV Corridor Route - This route would cross 40.4 miles in the Sevier A MOA and 20 miles in the Sevier B MOA. Flight operations may occur in these areas down to 100-feet AGL in a joint use arena.

Southern Route - This route would cross 1.2 miles in the Sevier A MOA and 82 miles in the Sevier B MOA. Flight operations in these area may occur down to 100-feet AGL in a joint use arena.

The specific mileage of each alternative route in MOAs and Restricted Areas is listed in Table 3-1. Restricted Areas and MOAs are illustrated in the study corridors in blue and MOAs are illustrated in green on the Land Use Resources maps in the SWIP DEIS/DPA Map Volume.

As one of the largest flight training areas in the in the U.S., the UTTR is highly regarded as a valuable testing and training center and is considered very important by the Department of Defense, especially in light of the recent closing of military bases around the country by Congress.

Nellis Air Force Base Flight Operations - Nellis AFB operates several MOAs located in southern Nevada collectively called the Desert Military Operating Area. The FAA has authorized the Nellis Air Traffic Control Facility (NATCF) to govern this airspace. NATCF controls the entry and exit of military aircraft in their airspace while the Range Control Center monitors mission activities within the airspace.

Flight operations in the Desert Military Operating Area include high-speed low-level flight training maneuvers and supersonic flight exercises at or above 5,000-feet AGL. Operations may occur during daylight hours Monday-Saturday. The MOAs operated by Nellis AFB administer the airspace from the ground level to 55,000 feet.

Nellis AFB was contacted and notified of the SWIP alternative routes during the inventory. Nellis AFB is opposed to alternative routes through the White River Valley (Link 671), Dry Lake Valley

(Link 673), and Kane Springs Wash (Link 680) because of low-level flight activity and air to air intercepts exercises that occur in these areas.

In October 1990, Nellis AFB sent maps recommending specific route changes and tower height restrictions. Nellis AFB expressed a preference for a route that would turn east at a point south of the Wayne Kirch Wildlife Management Area across Cave Valley through a pass at the southern end of the Schell Creek Range (Link 672) then turning southeast across Muleshoe Valley (Link 674) toward the Bristol Range and south along the east side of Dry Lake Valley. This routing would begin paralleling the existing Lincoln County 69kV transmission line near Robber's Roost Hills (Link 675). The Caliente Resource Area of the Las Vegas District of the BLM agreed that the routing proposed by Nellis AFB should be studied. Subsequently, the described route segments were added (refer to the Panel 5 - Land Use Resources map in the SWIP DEIS/DPA Map Volume).

The individual MOAs affected by alternative routes include Reveille (Links 672, 673), Caliente West (Links 675, 690), Caliente Alpha (Link 690), and Sally Corridor (Link 690). Nellis AFB then identified "areas of high concern" along the alternative study corridors mapped during the inventory. These areas of high concern occur along portions of Links 671, 672, 673, 674, 675, 680, and 690.

The specific mileage of each alternative route in MOAs and Restricted Areas are listed in Table 3-1. Restricted Areas and MOAs are illustrated in the study corridors in blue and MOAs are illustrated in green on the Land Use Resources maps in the SWIP DEIS/DPA Map Volume.

Environment Consequences

The construction of the SWIP through military airspace in a Restricted Area or MOA would introduce a potentially hazardous obstruction across high-speed low-level flights routes used by aircraft approaching or departing targets. The Air Force has stated that maintaining their current operations with such an obstruction in the area would risk pilots and aircraft unless many low-level flight maneuvers were curtailed or otherwise altered.

The potential impacts of alternative routes on flight operations in Restricted Areas and MOAs is described below. All moderate residual impacts are considered significant.

Midpoint to Dry Lake Segment - All of the alternative routes for the Midpoint to Dry Lake segment would adversely effect MOAs operated by Nellis AFB. Alternative routes would pass through 64.7 miles of areas of high concern in the Desert Military Operating Area. To reduce the potential hazard of the transmission line towers, the AGLs of the affected MOAs would have to be raised to 200 feet. Changing the AGLs would require modifications to flight operations (e.g., exercises, flight routes, etc.) and potentially change the use designation (e.g., non-joint, joint, or point source use) of affected MOAs. Curtailed or altered flight operations could diminish the effectiveness of flight training exercises available in the Desert Military Operating Area.

The use of shorter towers was recommended as mitigation to reduce moderate initial impacts to low residual impacts. The potential application of this mitigation was negotiated with the airspace manager of Nellis AFB. However, there is no agreement with Nellis AFB to accept this mitigation. Nellis AFB did not submit comments on the SWIP DEIS/DPA.

Ely to Delta Routes - The Direct Route would result in 55.1 miles of moderate residual impacts where it would pass through the R-6405 Restricted Area operated by Hill AFB. Following a series of

meetings and correspondence, Hill AFB's airspace coordinator submitted a letter (May 22, 1991) stating the position of Hill AFB and the concerns of the Department of the Air Force regarding the four Ely to Delta routes. Hill AFB is opposed to any power line construction above 30 feet in height in the Restricted Area or would prefer the transmission line be buried. The letter cited that safety was of high concern above and below the test and training aircraft.

The other Ely to Delta routes would affect only MOAs. Hill AFB is opposed to towers above 105 feet in areas of high concern and above 154 feet in all other areas of the affected MOAs. Shorter towers (i.e., 105 feet) were recommended as mitigation within the areas of high concern following negotiations with the Hill AFB airspace coordinator. The locations of shorter towers are illustrated on Figure 3-5. Hill AFB agreed in a letter that shorter towers would be acceptable in the MOAs.

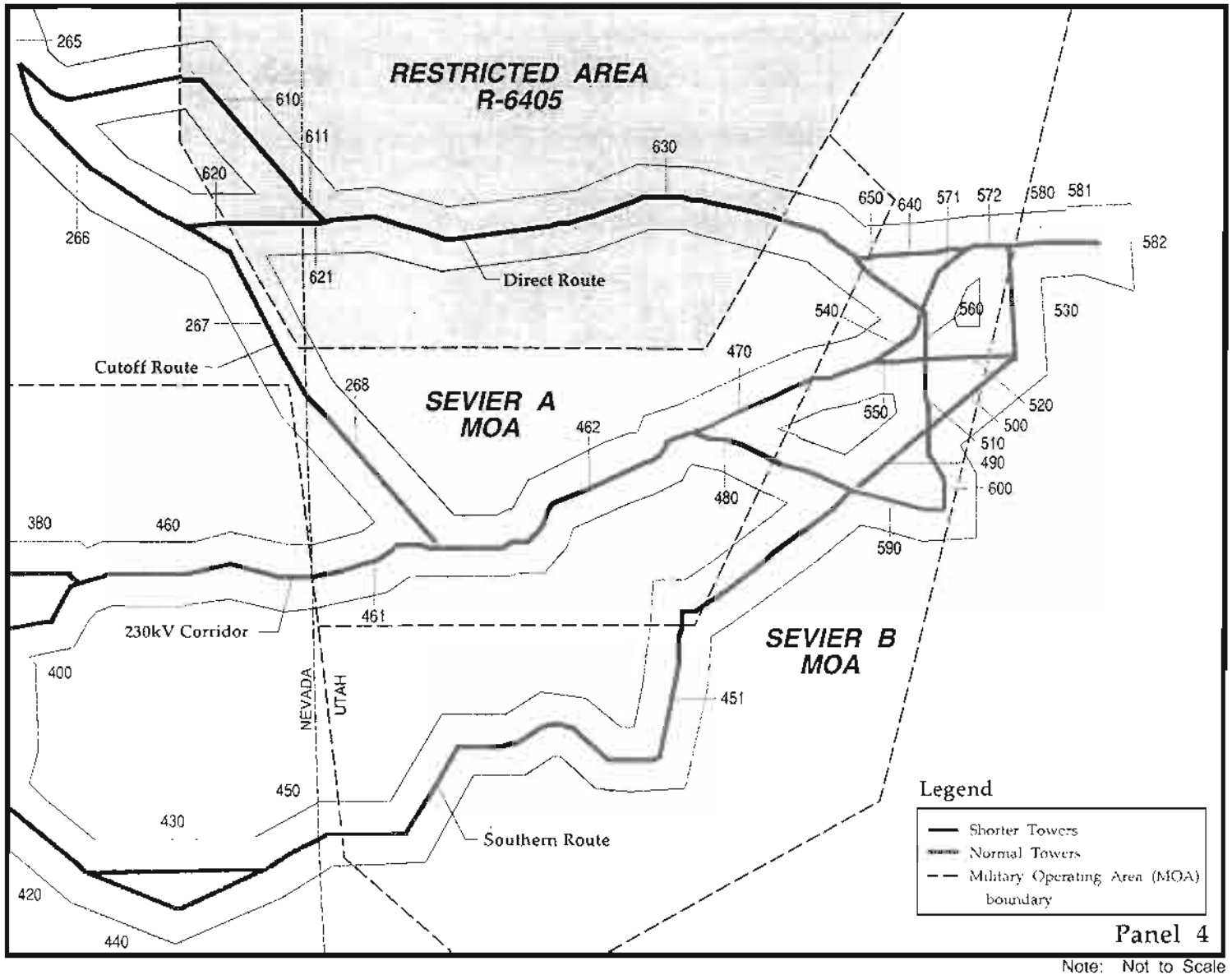
Effects to Wilderness Areas, Wilderness Study Areas, and Instant Study Areas

No wilderness areas, Wilderness Study Areas (WSAs), or instant study areas (ISAs) would be directly affected by any of the alternative routes. None of the alternative routes is expected to adversely affect the natural integrity, apparent naturalness, opportunities for solitude, or primitive recreation opportunities of wilderness or WSAs. The primary issue of concern for these areas is the potential effects (indirect) of a transmission line on the visual resource of adjacent areas.

As described under Visual Resources in the SWIP DEIS/DPA, viewpoints were identified and mapped within 3 miles of the assumed centerline of each alternative study corridor (i.e., link). No specific viewpoints (e.g., trail, vista, etc.) were identified within wilderness, WSAs, or ISAs during the inventory. Because recreation use in wilderness areas, WSAs, and ISAs is generally dispersed, views may occur from an indefinite number of potential viewpoints. And since none of these areas that fall within the study corridors have any designated viewpoints or management plans, it is not possible to estimate specific visual impacts.

Buffer zones around wilderness areas are specifically addressed in Chapter I of the BLM Handbook H-8560-1, Management of Designated Wilderness Areas under Section A.1.b. which states, "Wilderness must be viewed in context with other public lands, recognizing that no buffer zones will be created. Construction of high standard roads, recreation facilities or developments adjacent to a wilderness should consider the effect they will have on the wilderness." It further states that non-wilderness activities or uses that can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area (BLM, 1983). However, the handbook also states that effects of adjacent activities or land uses outside of wilderness areas should be identified. This policy also applies to WSAs and ISAs because the BLM must manage these areas as wilderness in accordance with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM document H-8550-1). If Congress designates them wilderness, the Interim Management Policy would cease to apply. Areas not designated as wilderness would be returned to multiple use in accordance with existing BLM planning documents. Since WSAs and ISAs are being managed as potential wilderness, impacts to these areas from influences outside of their boundaries must also be assessed.

Based on direction from the BLM Handbook and the BLM's Nevada State Director, potential effects of the alternative routes to dispersed viewpoints in wilderness areas, WSAs, and ISAs were addressed. Because it is not possible to assess specific impacts to dispersed viewpoints that could potentially



Note: Not to Scale

Locations of Shorter Towers in Utah Testing and Training Range

Figure 3-5

occur anywhere within these areas, potential effects considered the general viewing conditions (e.g., distance zone, view orientation, existing visual conditions - dominant or subordinate, etc.) and the visual contrasts of each alternative route.

Potential Effects

The project study area in Nevada and Utah is part of the Basin and Range physiographic province. Wilderness areas and WSAs in this physiographic province are generally associated with the mountain ranges, with one notable exception, Lower Salmon Falls Creek WSA in southern Idaho. Because of this tendency, views from wilderness areas and WSAs typically look out over large basins towards distant mountain ranges. Views can easily range beyond 30 miles under clear conditions.

The SWIP would likely tend to dominate views when seen from less than one-half mile away depending on specific viewing conditions (e.g., screening, viewer position and orientation, time of day, etc.). Because steel-lattice towers are proposed, it is expected that the transmission line would quickly become less visually evident with increasing distance from the viewer. In context with the grand scale of Basin and Range landscapes, the SWIP would be subordinate.

Because most of the landscapes surrounding wilderness areas and WSAs would be viewed from a superior position (i.e., looking down or over) in mountainous topography, most dispersed recreation users would likely tend to overlook the SWIP as they viewed the landscapes beyond (i.e., vast basins and rugged mountains) and the transmission line would be "backdropped" by the landscape. This viewing position would tend to make visual intrusions less evident and subordinate in the landscape. In a few cases, the SWIP may be viewed from an inferior position (i.e., looking up) which would tend to accentuate visibility, especially where it would be viewed against the sky or the horizon (skylined).

Under certain lighting conditions, the SWIP may be visible at greater distances because of the light reflected from towers and conductors. The use of dulled towers and non-specular conductors would be expected to largely mitigate this effect.

Mitigation The selectively committed mitigation measures (#9 and #10 in Table 1-5) were recommended to minimize potential adverse visual impacts of the SWIP. Mitigation was recommended based on the distance of the alternative routes from the boundaries of wilderness areas and WSAs:

- 0 to 1 mile — dulled towers and non-specular conductor
- 1 to 3 miles — non-specular conductor

This section describes the characteristic views and visibility of alternative routes for each wilderness area and WSA, and documents the potential effects of each alternative route on visual resources of these areas. The locations of wilderness areas and WSAs are illustrated on the Land Use Resources maps in the SWIP DEIS/DPA Map Volume. Tables 3-2 and 3-3 show, by wilderness area and WSA, the mileage of each alternative route that would pass within 0 - 1/4 mile, 1/4 - 1 mile, and 1 - 3 miles of their boundaries.

Idaho

Lower Salmon Falls Creek WSA - This WSA is the portion of Lower Salmon Falls Creek from Salmon Falls Creek Reservoir to Balanced Rock State Park. Because viewers in this WSA would be in the canyon, none of the alternative routes would be visible. Route F would parallel the existing Upper Salmon to Wells 138kV transmission line along the east boundary of this WSA and would be openly visible to viewers on the west rim of the canyon.

Nevada

Mt. Moriah Wilderness - This wilderness is situated 30 miles east of Ely near the Nevada-Utah state line within the boundaries of the Humboldt National Forest. Although the Cutoff Route (Link 267) would be visible for some distance to views northeast and east from this wilderness, it would be a subordinate feature in the vast open landscape of the Snake Valley. The 230kV Corridor Route (Link 464, 469, 471) would also be visible to some middleground and background views from this wilderness in the Sacramento Pass area (also refer to the Sacramento Pass Mitigation Reroute section in Chapter 3 of this document).

South Pequop WSA - This WSA is located in southern half of the Pequop Mountains in southeastern Elko County. With the exception of the Union Pacific Railroad and a few unpaved roads in Independence Valley and Goshute Valley, views from this WSA are of largely undisturbed natural landscapes.

Routes A, C, F, and G would be visible in the middle of Goshute Valley from 1 to 3 miles where these routes would parallel the Nevada Northern Railroad (Links 212, 230). From viewing positions in the northeast and east portion of this WSA, most of these routes would be backdropped by the Goshute Mountains east across the valley and would be visually subordinate to the landscape. Route D would tend to dominate views north where this route would pass within 1/4 mile of the boundary of this WSA at the railroad tunnel (Link 190) in the Pequop Mountains.

Bluebell WSA - This WSA is located in the northern part of the Goshute Mountain Range approximately 10 miles southwest of Wendover, Nevada. The landscape of this WSA is dominated by steep, mountainous topography with numerous canyons radiating along a north-south trending mountain range.

Routes B and E would pass north and east of this WSA and would be openly visible in Pilot Creek Valley (Link 222). From the northern portion of this WSA, views include Interstate 80 and several unpaved roads in the valley with occasional long-distance views of the salt flats beyond Wendover, Nevada. Views east, from north of Clifside to as far south as Felt Wash, include U.S. Highway 93 Alternate and unpaved access roads.

Routes D and E would dominate views where these routes would pass within 1/4 mile of the WSA for 2.4 miles. Routes A, C, F, and G would traverse in the center of Goshute Valley (5-6 miles away) parallel to the Nevada Northern Railroad and would be subordinate to views west from this WSA.

Goshute Peak - This WSA is located in the southern portion of the Goshute Mountain Range. Similar to Bluebell WSA, the landscape of this WSA is dominated by steep, mountainous topography with numerous canyons radiating from a north-south trending mountain range.

Routes B and E (Links 222, 225, 226) would be openly visible to views east and southeast from this WSA, except for a portion that may be screened by Ferguson Mountain. There are also distant views to the southwest of U.S. Highway 93. These routes would dominate views where they would be visible within one-quarter mile of this WSA (Link 226) for 1.3 miles and visible within 1/4 mile to 1 mile (Link 225, 226) for 3.4 miles.

Goshute Canyon - This WSA is located in the Cherry Creek Mountains from the Elko/White Pine county line to approximately 2 miles north of Cherry Creek. Views north are of the wide flat expanse of Steptoe Valley toward dark rugged forms of the Cherry Creek Range. The only apparent visual intrusions include U.S. Highway 93 on the far side of the valley, several two-track roads, and a series of seismic survey lines that cross the valley.

Routes D and G (Links 241, 242) would be largely subordinate views east from this WSA where they would be backdropped by the Shell Creek Range. Routes D and G may dominate some views across north Steptoe Valley from visitors to Goshute Cave where these routes would pass within 1 mile.

Marble Canyon WSA - This WSA is situated 30 miles northeast of Ely near the Nevada-Utah state line adjacent to the Mt. Moriah Wilderness in the Humboldt National Forest. Part of this WSA was included with the designation of the Mt. Moriah Wilderness. Although the Cutoff Route (Link 267) would be visible for some distance northeast and east from this WSA, it would be a subordinate feature in the vast open landscape of the Snake Valley. The Cutoff Route would be most noticeable along the lower portion of the alluvial benches that stretch from Marble Wash to Smith Creek Canyon within 1 to 2 miles of the east boundary of this WSA. Refer to Figure 4-5 in the Errata in Chapter 4 for the location of this WSA.

Swamp Cedar ISA - This ISA is located in Spring Valley several miles east of U.S. Highway 6/50. The 230kV Corridor Route (Link 380) is approximately one mile to the south of this area parallel to two existing 230kV transmission lines. Situated in the open valley, this route would be openly visible to middleground views. However, because of weaker structure contrasts associated with the existing transmission lines, the 230kV Corridor Route would not cause significant change in this landscape.

Mount Grafton WSA - This WSA is located on Mount Grafton approximately 30 miles southeast of Ely, Nevada, on the White Pine/Lincoln County line. The landscapes seen from the northern portion of this WSA are largely undisturbed, except for the Horse and Cattle Camp Backcountry Byway, an unpaved scenic route. The Southern Route would dominate views where it would pass adjacent to the northern boundary of this WSA. This route would be visible in Steptoe Valley (Link 364) from north of Mollys Nipples until it drops out of sight through numerous rock outcrops and scattered peaks north of Burnt Knoll Spring.

Fortification Range WSA - This WSA is located in Lincoln County between Lake Valley and Spring Valley just east of U.S. Highway 93. Only a very small portion of this WSA extends into the study corridor (Link 440). Only visitors to the northern part of the WSA would be affected by the Southern Route (Links 420, 430). Looking from mountain peaks above Indian Springs, viewers would see faint views of the SWIP where it would cross Spring Valley east towards Big Springs Wash. Views within the WSA to the west, south and far east would not be affected.

Delamar Mountains WSA - This WSA is located in the southern half of the Delamar Mountain Range east of the Pahranagat Wash Wildlife Refuge and Desert National Wildlife Refuge in Lincoln County. All of the alternative routes for the Midpoint to Dry Lake segment would use Link 690

which would traverse the base of these mountains along the west side of the WSA. The SWIP would be visible in the narrow valley formed by Pahranagat Wash.

When viewing north from this WSA, the SWIP would be seen for over 20 miles approaching across Delamar Valley parallel to the UNTP 500kV transmission line and the Lincoln County 69kV transmission line. All the routes would be visible along Link 690 where they would pass within one-quarter mile of the west boundary of this WSA for approximately 23 miles and would tend to dominate views west. However, because the SWIP would be parallel to two existing transmission lines, there would be only a slight incremental increase in the effect.

Evergreen WSA - This WSA is composed of three parcels of land, contiguous to the Desert National Wildlife Range (Link 690), located east of U.S. Highway 93 in the flat of Pahranagat Wash. All of the alternative routes for the Midpoint to Dry Lake segment would pass through the center of Pahranagat Wash adjacent to this WSA and parallel to U.S. Highway 93, the UNTP 500kV transmission line, and the Lincoln County 69kV transmission line (Link 690). Although backdropped by the Delamar Mountains, views from this relatively flat WSA would be dominated by the transmission lines and the highway in Pahranagat Wash. The addition of the SWIP would be a slight incremental increase in the visual effect of the existing lines and highway.

Fish and Wildlife 1, 2, & 3 WSA - Similar to the Evergreen WSA, this WSA is composed of three parcels of land contiguous to the Desert National Wildlife Range (Link 700, 720). All of the alternative routes for the Midpoint to Dry Lake segment would pass through the center of Coyote Spring Valley adjacent to this WSA and parallel to U.S. Highway 93, the UNTP 500kV transmission line, and the Lincoln County 69kV transmission line. Except for some views from points in the Elbow Range, the SWIP would be subordinate from this largely flat WSA. Parallel to two existing transmission lines and the highway in the middle of Coyote Springs Valley over one mile away, adding another transmission line would be a slight incremental increase in the visual effect.

Arrow Canyon WSA - This WSA is located in the Arrow Canyon Range, which rises abruptly along the east edge of Coyote Spring Valley (Link 720). All of the alternative routes for the Midpoint to Dry Lake segment would pass through Coyote Spring Valley below this WSA parallel to U.S. Highway 93, the UNTP 500kV transmission line, and the Lincoln County 69kV transmission line. From the southern portion of this WSA, views west would be dominated by transmission lines and the highway where the line would be within one-quarter mile of the east boundary for 4.3 miles. However, because the SWIP would be parallel to two existing transmission lines and the highway, there would be only a slight incremental increase in the visual effect. The SWIP would be subordinate in views west from the northern portion of this WSA.

Utah

Howell Peak WSA - This WSA is located north of Marjum Canyon in the Middle Range just south of the Swasey Mountains. The SWIP along the Cutoff Route or the 230kV Corridor Route (Links 462, 470) would dominate views south into the highly scenic and narrow Marjum Canyon, where these routes would parallel two existing 230kV transmission lines. From high points these routes would be visible to views southwest as they would cross Tule Valley, disappearing momentarily into Marjum Canyon and reappearing heading northeast across Whirlwind Valley.

King Top WSA - This WSA is located in the Confusion Range (Link 451). From the southern portion of this WSA, the Southern Route would be visible first where it would come around Pyramid

Knolls in the west. This route would dominate views along the southern boundary for approximately 3 miles. Knolls and hills west of the Confusion Range would screen some of the views of this route. Once past Warm Point the route would be screened by the Barn Hills. Views east from the northeast portion of this WSA would be of the Southern Route, where the route would parallel U.S. Highway 6/50 toward Sevier Lake.

Notch Peak WSA - This WSA is located in the House Range between U.S. Highway 6/50 on the south and Marjum Canyon on the north. Looking west viewers would first see the 230kV Corridor Route and the Cutoff Route (Link 462) across Tule Valley coming from Payton Canyon in the Confusion Range parallel to two existing 230kV transmission lines. From Pines Peak 3 miles north of Notch Peak, viewers would see the transmission line corridor continue from Tule Valley to south of Marjum Canyon. From the northern boundary, views would likely be dominated where the SWIP would pass through the highly scenic Marjum Canyon. Only viewers in the extreme northeast portion of the WSA would see these routes exit Marjum Canyon heading northeast across Whirlwind Valley.

From the southern portion of this WSA, viewers would see the Southern Route (Link 451) where it would traverse north across Tule Valley. The Southern Route would begin to dominate views south where it would turn northeast to parallel U.S. Highway 6/50 into the Sevier Desert.

Wah Wah Mountains WSA - This WSA is located in the Wah Wah Mountains north of Utah State Highway 21 (Link 451). Only a small portion of the northwest boundary of this WSA would view the Southern Route. At over 2.5 miles away, the Southern Route would be subordinate in the landscape.

Fish Springs WSA - This WSA is located in Fish Springs Range between Snake Valley and Fish Springs Flat (Link 630). From the southern end of this WSA viewers would see the Direct Route over one mile away. In this largely undisturbed landscape, the Direct Route would be noticeable, but would not be a dominant feature in the vast expanse of Tule Valley in the distance.

Swasey Mountain WSA - This WSA is located in the House Range (Link 630) between Tule Valley and Whirlwind Valley. Only two small portions of the northern boundary fall into the study corridors. Distant views of Direct Route from these areas would likely be screened by isolated hills at the end of the Swasey Mountains. The Direct Route would be subordinate to views northeast across Whirlwind Valley and Swasey Bottom over 3 miles away.

The 230kV Corridor Route and Cutoff Route (Link 470) would parallel two existing 230kV transmission lines across Whirlwind Valley. These routes would be subordinate to views south from this WSA and would be less than 2 miles away.

Recreation Effects

Although no developed recreation sites would be directly affected by the alternative routes, the SWIP would indirectly affect recreation resources. The presence of transmission line facilities may affect the experience available to recreation users. Towers, construction disturbances, and roads may affect recreation activities and experiences where they border, pass through, or cross developed and proposed recreation sites and areas. All park, recreation, and preservation areas within 3 miles of the assumed centerlines of the alternative study corridors were identified, mapped, and described during the inventory.

In general, all of the alternative routes would have a minor affect on dispersed recreation in the region. Off-highway vehicle (OHV) use (i.e., 4-wheel drives, motorcycles, and other all-terrain vehicles) could increase in some remote areas because of roads kept open for transmission line maintenance. This would be a potential benefit to public land users with OHVs. There could also be some benefit to dispersed hunting opportunities within remote areas because of potentially increased access.

The potential effects of the SWIP routes on recreation resources and the specific parks, recreation, and preservation areas that occur along each route are described below.

Midpoint to Dry Lake Segment

Route A - From Midpoint Substation to Jackpot, Nevada, several recreational sites occur along the route. Route A would pass adjacent to the Minidoka Relocation Center Interpretive Site (Link 20), adversely affecting the recreation experience of visitors to this historic site. The route would pass through the Snake River Rim Recreation Area, a BLM special management area between Interstate 84 and the Snake River canyon. That encompasses a large area of rural agricultural lands interspersed with the BLM-administered lands. In this largely developed area the adverse effects of Route A would be minimal except at a few specific recreation sites or features. In particular, the portion of this route that would cross the Murtaugh section of the Snake River, proposed for designation as a Wild and Scenic River, would diminish the experience of recreation users (e.g., river floaters) (Link 41). Similarly, the sight of this route crossing the Oregon Trail (Link 41) would briefly diminish the experience of users on this national recreation trail. Route A would minimally affect recreation at Nat-Soo-Pah, a private development located approximately 1 mile away. This route would only slightly increase the effects to recreation experiences where it would parallel the Upper Salmon to Wells 138kV and the Midpoint to Valmy 345kV transmission lines (Links 50, 70) near existing and proposed BLM campgrounds and recreation facilities located in the Salmon Falls Reservoir Special Recreation Management Area (SRMA).

From Jackpot, Nevada to the Robinson Summit Substation site, Route A would cross the California National Historic Trail three times (Links 1612, 211, 212), and the Pony Express Trail (Link 291). Construction disturbances and the presence of the SWIP at these crossings would diminish the recreation experience of users of these national trails. For dispersed recreation users in the South Pequop WSA (Link 212), the presence of Route A, 3 miles away in the Goshute Valley, would go largely unnoticed under most viewing conditions.

From the Robinson Summit Substation site to the Dry Lake Substation site, Route A would cross a portion of U.S. Highway 93, a designated scenic route (Link 675), and the proposed Kane Springs Backcountry Byway (Links 690, 700). Because viewing scenery is the major activity for users of these travelways, Route A would significantly diminish the experience of recreation travelers where it would be visible. Similarly, a large part of the dispersed recreation users' (e.g., hikers) experience can be attributed to viewing undisturbed natural landscapes. The presence of the SWIP would also adversely affect this recreation experience where Route A would pass near the Wayne Kirch Wildlife Management Area (Link 672), the Pahranagat National Wildlife Refuge, the Evergreen WSA (Link 690), the Delamar WSA (Link 690), the Desert National Wildlife Refuge (Link 690), the Fish and Wildlife 1, 2, & 3 WSAs (Link 700), and the Arrow Canyon WSA (Links 700, 720). The effects of Route A on primitive recreation opportunities would be significant where the SWIP would dominate views from WSAs (refer to Wilderness Effects in this chapter).

Route B - Route B is the same as Route A from Midpoint Substation to Jackpot, Nevada. From Jackpot, Nevada to the North Steptoe Substation site, Route B would cross the California National Historic Trail and California Trail Back Country Byway (Link 140), where viewing scenery is the major activity. Route B would introduce transmission line towers into the largely undisturbed landscape of Toano Draw, and the recreation experience of users would be significantly affected at each of the trail and byway crossings. This route would also pass within one-half mile of the Bluebell WSA (Link 222) and the Goshute Peak WSA (Links 222, 224, 226). The effects of Route B on primitive recreation opportunities would be significant where the SWIP would dominate views from WSAs (refer to Wilderness Effects in this chapter). From North Steptoe Substation site to Robinson Summit Substation site, Route B would cross the Pony Express Trail (Link 280). From Robinson Summit Substation site to the Dry Lake Substation site, Route B is the same as described for Route A.

Route C - Recreation effects for Route C from Midpoint Substation to Jackpot, Nevada, would be the same as those described for Route A. From Jackpot to the vicinity of Oasis, Nevada (Link 200), recreation effects would be the same as described for Route B. From the vicinity of Oasis to the Dry Lake Substation site, the recreation effects would be the same as those described for Route A.

Route D - From Midpoint Substation to HD Summit (Link 162), northeast of Wells, Nevada, recreation effects for Route D would be the same as those described for Route A. Route D would cross the California National Historic Trail (Link 167, 180, 190) three times. Like Route B, the recreation user experience would be significantly affected at each of the crossings of this trail. Route D would also pass adjacent to the South Pequop WSA (Link 190), where the effects on primitive recreation opportunities would be significant (refer to Wilderness Effects in this chapter). From Goshute Valley (Link 230) to Dry Lake Substation site, recreation effects for Route D would be the same as those described for Route A, except Route D would pass closer to Goshute Canyon WSA (Link 241, 242) in Steptoe Valley.

Route E - From Midpoint Substation to the vicinity of Oasis, Nevada (Link 200), the recreation effects of this route would be the same as those described from Route A. From the vicinity of Oasis to the Dry Lake Substation site, recreation effects would be the same as those described for Route B.

Route F - From Midpoint Substation to Jackpot, Nevada, Route F would pass through the Snake River Rim Recreation Area, a BLM special management area between Interstate 84 and the Snake River Canyon which encompasses a large area of rural agricultural lands interspersed with the BLM-administered lands. In this largely developed area, the adverse effects of Route F would be minimal, except where it would pass near or adjacent to a section of the Snake River that is proposed for Wild and Scenic River designation (Link 61), the west boundary of Hagerman Fossil Beds National Monument (Links 62, 64), and Salmon Falls Creek WSA (Link 64). In addition, this route would cross two portions of the Oregon Trail (Link 61, 64), U.S. Highway 30, and the Thousand Springs Scenic Route (Link 61) near Hagerman, Idaho. Near Hagerman, Route F would pass near Malad Gorge State Park (Link 61), parallel part of the Salmon Falls Creek Area of Critical Environmental Concern (ACEC), and pass within one-mile of the Balanced Rock State Park (Link 64). Route F would slightly increase in effects to recreation experiences where it would parallel the Upper Salmon to Wells 138kV and the Midpoint to Valmy 345kV transmission lines (Links 50, 70) near existing and proposed BLM campgrounds and recreation facilities in the Salmon Falls Reservoir SRMA.

From Jackpot, Nevada, to the vicinity of Oasis, Nevada (Link 200), recreation effects would be the same as those described for Route B. From the Oasis area to the Dry Lake Substation site, recreation effects would be the same as those described for Route A.

Route G - Recreation effects for Route G from Midpoint Substation to the vicinity of Contact, Nevada, would be the same as those described for Route A (to Link 130). At Link 130, Route G would turn southeast (Link 151) and cross the California National Historic Trail and the California Trail Back Country Byway. Like Route B, this route would introduce transmission line towers into a largely undisturbed landscape. The recreation experience of trail and byway users would be significantly affected at the crossings. From the Oasis vicinity (Link 200) to Currie, Route G is the same as described for Route A. From Currie to the North Steptoe Substation site, Route G would pass by the Goshute Canyon WSA (Links 241, 242, 244). The effects of Route G on primitive recreation opportunities would likely not be significant except where the SWIP would dominate views by visitors to Goshute Cave (Link 241) in the Goshute Canyon Special Natural Area. From North Steptoe Substation site to Robinson Summit Substation site, recreation effects for Route G would be the same as those described for Route B. From Robinson Summit Substation site to Dry Lake Substation site, recreation effects for Route G would be the same as those described for Route A.

Ely to Delta Segment

Direct Route - This route would cross three segments of the Pony Express Trail (Links 265, 266) near Stonehouse, Nevada, near the southern end of the Antelope Range. The recreation experience of users would be significantly affected in the area around the crossings of this trail by the introduction of transmission line towers into a largely undisturbed landscape.

The Direct Route would pass near the Fish Springs WSA and the Swasey Mountain WSA (Link 630). The effects of the Direct Route on primitive recreation opportunities would be significant where the SWIP would dominate views from wilderness areas or WSAs (refer to Wilderness Effects in this chapter). This route would also pass near the Topaz Lake Wildlife Management Area (Link 572).

Cutoff Route - The Cutoff Route would have the same effects on the Pony Express Trail (Links 265, 266) as described for the Direct Route. This route would pass within 2 miles of the Gandy Mountain ACEC. From Eskdale, Utah (Link 461), to Delta, Utah, the only significant recreation effects of the Cutoff Route would occur where the SWIP would dominate some dispersed views from WSAs including the Mt. Moriah Wilderness (Link 267), Howell Peak WSA (Link 462, 470), Notch Peak WSA (Link 462, 480), and the Swasey Mountain WSA (Link 470) (refer to Wilderness Effects in this chapter). The Cutoff Route would not affect the proposed interpretive site (Link 462) for Great Basin National Park (GBNP) or the Topaz Lake Wildlife Management Area (Link 572).

230kV Corridor Route - The 230kV Corridor Route would cross the entrance road to Cave Lake State Recreation Area (Link 380) parallel with two 230kV and one 69kV transmission lines. However, the addition of the SWIP would slightly increase the adverse effects of the existing lines in this area, but this route would not affect recreation in the park itself. The 230kV Corridor Route would pass near proposed BLM recreation areas at Comins Lake (Link 380) and through to the proposed Weaver Creek Scenic Area (Link 460). No impacts were identified at the Weaver Creek Scenic Area, as the withdrawal has been revoked by a notice published in the Federal Register by the BLM. The 230kV Corridor Route would pass within 2 miles of the northern boundary of GBNP in Sacramento Pass (Link 460). Part of the purpose of GBNP is to interpret the Basin and Range physiography of the region. Although the 230kV Corridor Route would not directly affect recreation in GBNP, this route would cross U.S. Highway 6/50 that many park visitors use to access the area. The 230kV Corridor Route, parallel to the existing 230kV transmission lines, would only slightly increase the affect on visitor's experience of the basin areas interpreted by the park. The route would also pass over one

mile from the Swamp Cedar Special Natural Area (Link 380) and more than 2 miles from Osceola Geologic Area (Link 460). These areas would be slightly affected by another line in this corridor. The 230kV Corridor Route from Eskdale (Link 462) to Delta, Utah would be the same as described for the Cutoff Route.

Southern Route - The Southern Route would cross the Horse and Cattle Camp Scenic Backcountry Byway (Link 364) twice. The recreation experience of users of this byway would be significantly affected at the crossings of this trail by the introduction of transmission line into a largely undisturbed landscape. This route would also pass within 2 miles of Ward Charcoal Ovens State Historic Site (Link 364) and within one mile of two proposed GBNP interpretive sites [on U.S. Highway 93 (Link 420) and Utah State Highway 21 (Link 451). These sites are proposed as part GBNP's interpretation of the Basin and Range physiography of the region. This route would adversely affect the potential future recreation experience of visitors to the area. The Southern Route would have significant recreation effects where the SWIP would dominate views from wilderness areas or WSAs, including the Mt. Moriah Wilderness, the Grafton WSA (Link 364), Wah Wah Mountains WSA (Link 451), King Top WSA (Link 451), and Notch Peak WSA (Link 451).

Herd Management Areas

Public lands in Nevada and Utah are home to herds of wild horses and burros. The BLM and Forest Service (FS) manage these animals under the Wild and Free Roaming Horse and Burro Act (1971), which states that wild and free roaming horses and burros are protected from capture, branding, harassment, or death. Wild horses are defined as unbranded and unclaimed horses with progeny that have used public lands on or after December 15, 1971, or that use Federal lands as all or part of their habitat. The Herd Management Areas (HMAs) are areas of public land where habitat is provided for one or more wild horse herds in order to maintain a good population, social structure, and age-sex ratio of the animals. The horses can move freely within the HMAs and often migrate every year as a function of weather and availability of food and water.

Following the release of the SWIP DEIS/DPA in June of 1992, the BLM raised the issue of potential effects of the SWIP routes on HMAs and what the impact would be on wild horses and burros. Their primary concern centered on the potential harassment of wild horses and burros during the construction phase of the SWIP transmission line and the loss of forage from the construction of access roads and tower sites. Other concerns were establishing fences that would inhibit movement to food and/or water and conflicts with humans.

Affected Environment

The SWIP alternative routes would affect HMAs in Nevada and Utah (refer to Tables 3-4 and 3-5). The BLM's highest concerns in Utah occur where critical habitats are crossed. These areas are monitored yearly and evaluated using trend plots. The trend plots are located in all HMAs to monitor habitat through the use of water and feed during extended periods of time. The trend plots help determine an accurate population of the herds, age-sex ratio, social structure, and general physical condition of horses and burros within the HMAs. On the Ely to Delta Segment, the Direct Route would disturb 7.8 miles of critical habitat and 2.5 miles on the Cutoff Route. No other routes within the Ely to Delta Segment or the Midpoint to Dry Lake Segment affect critical areas.

On the Midpoint to Dry Lake Segment, Route B would cross the most miles of HMAs within the study area (159.8 miles) and Routes A & C the least (123.8 miles). The agency preferred route crosses only 115.1 miles of HMAs. The worst route on the Ely to Delta Segment is the Direct Route which crosses 28.0 miles HMA and 7.6 miles of critical horse habitat. The southern route crosses only 13.1 miles of HMAs and no critical habitat.

Environmental Consequences

Because of their size and numbers throughout the study area HMAs, like range allotments, are unavoidable by the alternative routes. Issues considered during the impact analysis included the transmission lines creating a barrier or hazard to the movement of any wildlife species and the potential harassment by increased human activity/public access.

Ground disturbance caused by construction of the SWIP would result in the insignificant loss of habitat within HMAs. Access road construction and tower footings would result in insignificant long-term loss of forage. Construction of the SWIP transmission routes would likely displace herds from the vicinity of the right-of-way during high activity. However, the line would not inhibit the movement of the herds after its completion. Increased public access into the remote areas during construction may result in increased human harassment and trappings of wild horses. The increased harassment would alter the current plot trend studies and may create new locations to be established or borders moved.

Mitigation

To reduce potential impacts resulting from ground disturbance and increased levels of public access in HMAs crossed by alternative transmission routes, generic and selectively recommended measures would be applied. For example, restricting vehicle movement of construction equipment to routes (#1) and recontouring and revegetating disturbed areas where necessary (#3 & 4) would minimize the loss of forage. Limiting construction activities during sensitive periods (foaling season) (#11) would minimize harassment.

Impacts in the Oasis Area

During the formal public meetings for the SWIP DEIS/DPA in Wells, Nevada on August 4, 1992, residents of Oasis opposed the preferred alternatives 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. These proposed developments were not identified during the SWIP inventory because neither of these developers have been actively seeking action by Elko County. This section addresses the concerns of these future developments. Written comments as well as a summary of comments expressed at the formal public meeting held in Wells by the residents of Oasis and representatives of these development companies are listed in Chapter 4 of this document.

Northern Holdings, Inc. - Northern Holdings, Inc. has future plans to develop residential and commercial uses in R66E T36N Sections 2 and 3, west of the existing development at Oasis. The development plans would be phased. The first phase would develop commercial uses, including infrastructure, traveler facilities, truck repair, restaurant, and other similar facilities. The second phase

would consist of subdividing a portion of Section 2 near the existing mobile home park into lots for a residential subdivision. There are also future plans to subdivide part of Section 3 for residential development. The primary concerns of the developers are the potential visual effects that the preferred alternatives would have on views from future residential areas, property values, and the unknown effects of EMFs.

CSY Investments - CSY Investments owns over 100,000 acres of land, much of it distributed in checkerboard fashion among the BLM-administered lands, in the Goshute Valley and around Oasis. Conceptual plans propose a large recreation and vacation development that extends from north of Interstate 80 near Oasis south into Goshute Valley. CSY Investments' planned development is particularly concerned with Link 211 which would traverse southwest from Squaw Creek across Interstate 80 and would then turn northwest and would pass within one mile of the Big Springs Ranch Headquarters. CSY Investments is concerned that Routes A, C, F, and G would significantly affect the scenery of Goshute Valley and marketability of the mini-ranch sites and water ranch sites proposed in the Big Springs Ranch Development Plan. The Big Springs Ranch Development Plan conceptualizes 24,960 acres of mini-ranch sites in the western half of Goshute Valley, 8,320 acres of mountain cabin and retreat areas along the foothills of the Pequop Mountains, 13,440 acres for a hunting club and wildlife management area, 8,960 acres of recreational use areas (e.g., off road vehicle use and camping facilities) on the east side of the Goshute Valley south of Interstate 80, 6,400 acres of tourist/commercial sites, and 1,920 acres for industrial sites along the interstate (Big Springs Ranch Proposed Land Use Diagram, 1992). CSY Investments also expressed concern for a private, unregistered grass airstrip near the Big Springs Ranch Headquarters.

Subroute Comparison

Link 211 was compared with Links 221 and 223 (Subroute Set 9) in Appendix D of the SWIP DEIS/DPA. The comparison summarized the impact data for the five resource disciplines of concern (i.e., biology, earth, visual, land use, and cultural). These links have been re-evaluated to consider the proposed developments of CSY Investments, Northern Holdings, Inc., and other public comments from the residents at Oasis.

Link 211 was environmentally preferred in the SWIP DEIS/DPA because it would be a less visually intrusive crossing of Interstate 80, a low visibility corridor designated by the Elko District of the BLM managed with Visual Resource Management (VRM) Class II (refer to Visual Resources in the SWIP DEIS/DPA). With the dark colors of the Pequop Mountains as a backdrop, this link would cause weaker visual contrast to travelers on Interstate 80.

Strong and moderate visual contrasts along Link 211 would result in high and moderate visual impacts to views from the possible future recreational ranch properties being planned along the base of the Pequop Mountains. Links 221 and 223 would traverse the center of the valley along the edge of one of the planned development area. Although visual contrasts would be strong to moderate, these links would be viewed from several miles away and would result in insignificant visual impacts to views from the planned recreational ranch properties. However, Links 221 and 223 would likely be more highly visible at the crossing of Interstate 80 in the middle of the valley and to views from dispersed recreation users in the Pequop Mountains and Toano Range.

In addition, Link 211 would cause less disturbance to shallow ground water areas, but would cross numerous intermittent streams east of the Big Springs Ranch Headquarters. Links 221 and 223 would

also cross numerous intermittent streams and some areas with high flood potential north of Shafter along the existing railroad.

The only sensitive wildlife species that would be effected by this link would be sage grouse leks in Goshute Valley. Link 211 is part of Routes A, C, F, and G, and is the environmentally preferred subroute through Goshute Valley. Sage grouse leks occur near the end of Link 221.

Links 221 and 223 would better utilize the BLM utility planning corridor, which follows the railroad corridor through the center of Goshute Valley, and would pass through the edge of the Lucin C MOA. Link 211 would require a plan amendment to the BLM's planning utility corridor in this area.

Impact Summary Table

Links	Biology			Earth			Land Use			Cultural			Visual				Comments
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	VRM	
211	0	0	1.6	17.6	0	0	0.8	14.5	0	7.1	0 9	0. 3	15 1	17.0	0	5.8	Better crossing of I-80, closer to ranch
211 & 223	0.1	0	1.5	17.5	0.1	0	16 2	7 3	0	10 8	1.0	0.4	16.7	8.2	0	4.4	Utilizes railroad corridor, crosses less future development

Conclusions

In response to the public comments from residents at Oasis and the potential cumulative effects to planned developments by Northern Holdings, Inc. and CSY Development, the Agency Preferred Alternative has been modified slightly to follow Links 221, 223 along the railroad corridor through the center of Goshute Valley. The utility also prefers this subroute. This subroute would completely avoid future potential conflicts with Northern Holdings' properties and would minimize potential future impacts to significant portions of the CSY Investments' development. Because neither of these developments have been formally filed with Elko County the Environmentally Preferred Subroute is still Link 211.

Antelope Spring Trilobite Beds

The National Park Service, in a comment letter on the SWIP DEIS/DPA, identified an area of outstanding paleontological resources in the House Range that would be crossed by the 230kV Corridor Route.

The scientific value of the paleontological resources in the House Range has been described in a number of papers dating to 1875. The House Range, located in west central Utah, is famous for its Cambrian and Ordivician fossils including brachiopods, clams, sponges, trilobites, and other fossils totaling over forty different species (Bostick and Niles, 1975). Occurring primarily in the Notch Peak limestone strata of the House Range and adjacent outcrops, trilobites are the prize of commercial and amateur (i.e., rock hounds) fossil-gathers that use the area.

A study conducted in 1975 inventoried an area known as the Antelope Spring Trilobite Beds and found it to have paleontological resources of important scientific value. The study recommended that the area be evaluated for potential registry as a National Natural Landmark. The 1979 site evaluation included an area of 144 sections or approximately 92,000 acres. This potential site evaluation area would be crossed by the 230kV Corridor Route. The specific boundaries have yet to be determined and impacts to the potential registry as a National Natural Landmark cannot be assessed. However, impacts to paleontological resources were analyzed in the SWIP DEIS/DPA (refer to pages 4-4 through 4-8 of the DEIS/DPA).

The Agency Preferred Alternative (230kV Corridor Route) would cross through Marjum Canyon in the House Range. Much of this area was inventoried for the SWIP using a high sensitivity level for paleontological resources (also refer to the Volume II - Natural Environment Technical Report). Potential impacts of the construction in the area were determined to be low. Mitigation measures including use of existing access roads, overland access routes, and monitoring of construction by a qualified paleontologist are expected to minimize any impacts (refer to Tables 1-5 and 1-6 of this document). Specific stipulations will be developed in the COM Plan to mitigate significant resources that may be found during construction.

Sacramento Pass Mitigation Reroute

In response to public comments about impacts to private lands and potential visual impacts to travelers on U.S. Highway 6/50, several mitigation reroute alternatives were analyzed.

Affected Environment

This section provides a description of the resources potentially affected by rerouting for mitigation through the Sacramento Pass area. The following resources were inventoried:

- earth resources (soils, geology, paleontology, minerals, surface hydrology)
- biological resources (vegetation, wildlife, riparian, wetlands, and threatened, endangered, and other special-status species)
- land use resources (land jurisdiction, existing and planned land uses, parks, recreation, preservation areas, transportation and access, grazing and mining claims and extractive uses)
- visual resources (viewpoints, natural scenery)
- cultural resources (prehistory, enthnohistory, history, archaeology)

The inventory was completed to provide a basis to evaluate the impacts of each mitigation reroute alternative. Inventory methods were the same as described in the SWIP DEIS/DPA and the Technical Reports.

The resource discussions that follow are based on the following subroutes:

- Subroute 1 - Links 463, 469, 471, 473

- Subroute 2 - Links 464, 465, 469, 471, 473
- Subroute 3 - Links 464, 466, 468, 471, 473
- Subroute 4 - Links 464, 466, 467, 472 (part of the original 230kV Corridor Route)

Earth and Water Resources

Geology - There are no known active faults or geologic hazards in the Sacramento Pass area.

Paleontology - High sensitivity paleontological resources may be present in younger Tertiary sedimentary rocks (Tys) near Weaver Creek in the Snake Range as well as in Quaternary alluvium and colluvium (Qs) in large areas of the Snake Valley. Links 463, 464, 465, 466, 467, 468, 469, 471, 472, and 473 cross these areas, however, no known significant fossils have been found in the area.

Mineral Resources - Portions of the Osceola and Black Horse Mining Districts occur in the area. Mineral resources include silver, gold, copper, zinc, tungsten, and lead found in veins along faults and as replacement deposits in limestone. Placer deposits are also common. Mining in the area occurred primarily in the early 1900s but there are still some small placer operations (BLM 1993). Links 463, 464, 465, 566, 467, 469, 469, and 471 cross areas which may have mineral resources.

Soils - The soils include Typic Camborthids - Typic Torriorthents - Xerollic Haplargids with a slight erosion hazard (Links 467 and 471), Xerollic Durorthids - Xerollic Durargids - Xerollic Haplargids with a moderate erosion hazard (Links 476 and 471), Typic Xerorthents - Lithic Xerorthents (may unit 49) with a moderate erosion hazard (Links 463, 464, 465, 466, 467, 468, 469, and 471), and Aridic Haploxerolls - Lithic Argixerolls - Rock Outcrop with a moderate erosion hazard (Links 463 and 464). These soil units are described in Table ER-6 of the SWIP DEIS/DPA.

Water Resources - Several intermittent drainages occur in the Sacramento Pass area. Perennial streams in the area include Weaver Creek and Silver Creek. Silver Creek is crossed by Link 467 at two location, and by Link 471 at two locations. Weaver Creek is crossed at one location each along Links 464, 467. 467, and 468. Springs located within 0.5 mile of the proposed centerline occur along Link 467 (2 spring locations) and Link 469 (1 spring location). Numerous springs occur in the region.

Refer to Figure 3-6 for an illustration of sensitive Earth Resources.

An inventory of the Sacramento Pass alternatives was completed based on the methods and results as described in Chapter 3, Affected Environment, of the SWIP DEIS/DPA as well as in the Technical Report for the Natural Environment-Volume II. Information on part of the area is discussed under the "230kV Corridor Route" section of the SWIP DEIS/DPA and under the section "Nevada" for the various disciplines geology, paleontology, mineral resources, soils, and water resources in the Technical Report, Volume II, Chapter 2, pages 3-1 to 3-27.

Subroute 1

This subroute crosses 5.4 miles of areas with potentially high sensitivity paleontological resources (Links 463, 469, 471), although no fossils have been found in the area. There is no prime farmland along this subroute.

Subroute 2

This subroute crosses 7.1 miles of areas with potentially high sensitivity paleontological resources (Links 464, 465, 469, 471) although no fossils have been found in the area. There is no prime farmland along this subroute.

Subroute 3

This subroute crosses 6.9 miles of areas with potentially high sensitivity paleontological resources (Links 464, 468, 471) although no fossils have been found in the area. There is 1.2 miles of prime farmland along the assumed centerline of Link 467.

Subroute 4

This subroute crosses 1.3 miles of areas with potentially high sensitivity paleontological resources (Links 464, 467) although no fossils have been found in the area. There is 1.2 miles of prime farmland along the assumed centerline of Link 467.

Biological Resources

Wildlife species which occur in the area include pronghorn antelope, mule deer, bobcat, mountain lion, coyote, whitetail, antelope squirrel, and desert cottontail. Common bird species include chukar partridge, horned lark, golden eagle, prairie falcon, and red-tailed hawk (Gordon, personal communication, 1993). Refer to Figure 3-7 for an illustration of sensitive Biological Resources.

The mitigation reroute alternatives through the Sacramento Pass area traverse sagebrush shrub, mountain shrub, grassland, and riparian communities (refer to Figure 3-8). Sagebrush scrub, characterized by greasewood and big sagebrush associations, occurs along all the subroutes. Mountain shrub, primarily pinon-juniper woodlands, occurs along the western links at higher elevations (Links 460, 463, 464, 465, and 466). Riparian woodlands, characterized by narrowleaf cottonwood and willow, are supported by Silver Creek (Links 467, 471). Grasslands, characterized by winter fat, galleta grass, and Indian ricegrass occur along the Utah portions and are scattered in Nevada. Playas, characterized by very sparse vegetation cover, occur near the Nevada-Utah border.

Subroute 1

Wildlife - Seven special status bird species have been identified as potentially occurring in the area by agency personnel in Utah (Gordon, personal communication, 1993). Bald eagle and peregrine falcon are listed as endangered at the federal and state levels. Bald eagles are residents of the Snake Valley and the Ferguson Desert (south of the area) during winter months, although no active nests are known to exist along the proposed links. Peregrine falcons are occasional migrants during the fall and spring. Ferruginous hawks and loggerhead shrikes (Federal candidate Category 2 species) and golden eagle, mountain bluebird, and Swainson's hawk (sensitive species) may nest in suitable habitat within the SWIP location.

The area provides year-long habitat for antelope. Link 471 crosses through identified crucial antelope kidding grounds (Podborny, personal communication, 1993). No crucial raptor habitat exists within the proposed area and no known active raptor nests occur within one mile of the assumed centerline.

Plants - Three special status plant species have been identified within the area. One of the three special status plant species is Swertia gypsicola. Its known habitat exists along the eastern links in Utah (Links 471 and 473), although exact locations were not identified. This is a Federal candidate, Category 2 plant species that occurs in desert areas characterized by greasewood-saltbush associations (Mendenhall, personal communication, 1993). Two special status plant species were identified within Nevada (NNHP 1993). Sclerocactus pubispinus occurs within the one-mile corridor for Link 463. It is protected in the State of Nevada by the Cactus and Yucca Law. Two populations of the third species, Cymopterus basalticus, occur. One is located within one-mile of Link 471 and one is along the assumed centerline of Link 471. This is Federally listed as 3C (more common than frequently believed) and is a watch species in Nevada (Northern Nevada Native Plant Society - NNNPS).

Subroute 2

Wildlife - Special status wildlife species are the same as those described for Subroute 1.

Plants - Known habitat for Swertia gypsicola exists along the eastern links in Utah (Links 471 and 473), although exact locations were not identified. This is a Federal candidate, Category 2 plant species that occurs in desert areas characterized by greasewood-saltbush associations (Mendenhall, personal communication, 1993). The third species, Cymopterus basalticus, occurs within one-mile of Link 465. This is Federally listed as 3C (more common than frequently believed) and is a watch species in Nevada (NNNPS).

Subroute 3

Wildlife - Special status wildlife species are the same as those described for Subroute 1.

Plants - Habitat for one special status plant species, Swertia gypsicola, occurs in Utah along Links 471 and 473 as described for Subroute 1.

Subroute 4

Wildlife - Special status bird species are the same as those described for Subroute 1.
Although the area provides year-long habitat for antelope, no critical habitat has been identified along these links. Antelope kidding grounds occur north of Link 467, within the one-mile corridor (Podborny, personal communication, 1993). Antelope kidding grounds are important. However, to remain consistent with the previous analysis, the grounds have not been identified as crucial. No crucial raptor habitat exists within the proposed area and no known active raptor nests occur within one mile of the assumed centerlines.

Plants - One special status plant species has been identified within the area. Known habitat for Swertia gypsicola exists along the eastern links in Utah (Links 467 and 472), although exact locations were not identified. This is a Federal candidate, Category 2 plant species that occurs in desert areas characterized by greasewood-saltbush associations (Mendenhall, personal communication, 1993).

Land Use

Land Jurisdiction - Approximately 90 percent of the lands in the Sacramento Pass area are administered by the BLM. Of the remaining lands, approximately 7 percent are private land, and about 3 percent are state-administered lands (refer to Figure 3-9).

Existing & Planned Land Uses - Several small ranches and farms occur in the Sacramento Pass area. The majority of the land in the area is range allotments administered by the BLM. An area of cultivated/agricultural lands occurs between Links 467 and 471 near the Nevada-Utah state line. No airports/airstrips occur within this vicinity. Two 230kV wood H-frame transmission lines, one 69kV transmission line, and one single-pole distribution line traverse through this area (Links 460, 464, 466, 467, 472, 461).

Parks, Recreation, and Preservation Areas - Parks, recreation, and preservation areas include a rest area maintained by the Nevada State Highway Department along U.S. Highway 6/50 (Link 463), Mt. Moriah Wilderness, and the Humboldt National Forest north of Links 469, and 471. Two undeveloped recreation areas include Weaver Creek Scenic Area south of Link 464 and Sacramento Pass Recreation Area northwest of Link 463.

Transportation and Access - U.S. Highway 6/50 is crossed by Links 463, 465, 468, and 467. Numerous unpaved roads and jeep trails occur in the Sacramento Pass area. These roads are unmaintained and provide access to the Forest Service-administered lands and the Mt. Moriah Wilderness.

Mining Claims and Extractive Uses - Numerous mining claims exist in the Sacramento Pass area. However, only a small percentage of these mining claim are maintained in active status.

Refer to Figure 3-10 for an illustration of the Land Use resource features.

Subroute 1

Subroute 1 would pass between the Weaver Creek Scenic Area and the Sacramento Pass Recreation Area (Link 463). Continuing northeast the subroute would cross U.S. Highway 6/50 through rolling basins and low grasslands. This subroute would pass to the north of cultivated lands along Silver Creek, then turn southeast (Link 471, 473) to rejoin the 230kV Corridor Route

Subroute 2

Subroute 2 would turn sharply to cross U.S. Highway 6/50 at a right angle (Link 465). Two miles beyond the highway, this subroute would turn east and follow Links 469, 471, and 473 as described in Subroute 1.

Subroute 3

Subroute 3 would cross U.S. Highway 6/50 just north of the original 230kV Corridor Route (Subroute 4). The subroute would cross the highway, roughly parallel to the existing 230kV transmission lines. From here, it would follow the same corridor as Subroute 1 (refer to Subroute 1).

Subroute 4

Subroute 4 would parallel the two existing 230kV transmission lines. The subroute would cross through the BLM Weaver Creek Scenic Area (Link 464) and pass to the north of GBNP (Link 464, 466, 468). The subroute would cross U.S. Highway 6/50 once.

Visual Resources

Characteristics common to all reroute alternatives include: No Class A scenery and no VRM Class II areas within the study corridors in the Sacramento Pass area.

All parks, recreation, and preservation areas have been identified as high sensitivity viewpoints. The BLM has stated that Weaver Creek Scenic Area is not a high sensitivity viewpoint and of low priority (Bunker, personal communication, 1993). However, the scenic area has been included as a high sensitivity viewpoint to be consistent with the previous visual inventory and analysis.

Refer to Figure 3-11 for an illustration of Visual Resource potential impact zones.

Subroute 1

Scenic Quality/Variety Class - Class B scenery primarily occurs in the mountain and foothills landscape character types (refer to page 6-15 of the Volume III - Human Environment technical report) along part of Link 463. Class C scenery predominately occurs in the rolling foothills and valley desert scrub landscape character type, in both Nevada and Utah (Links 463, 469, 471, 473).

Sensitive Viewpoints and Visibility - This subroute would be viewed in the foreground and middleground by users of the Sacramento Pass Recreation Area (Link 463). It would also be visible from the foreground and middleground views of users of the Weaver Creek Scenic Area (Link 463) and middleground to background views by backcountry users of the Mt. Moriah Wilderness (Link 471).

VRM - This subroute would cross VRM Class III areas for 8.5 miles (Link 463, 469, 471) in the Sacramento Pass area.

Subroute 2

Scenic Quality/Variety Class - Class B scenery occurs along a portion of Link 464 in the valley foothills landscape character type. The predominant scenic quality is Class C in this area and occurs in alluvial valleys (Link 464, 465), rolling foothills (Link 465, 469, 471), and valley desert scrub (Link 473) landscape character types.

Sensitive Viewpoints and Visibility - This subroute would be visible in the foreground (Link 464) and middleground (Link 465) to users from Weaver Creek Scenic Area. This subroute would not be visible to users in the planned campground located in the central area of Sacramento Pass Recreation Area. Although the central portion of the Sacramento Pass Recreation Area is higher in elevation than the surrounding area, the rock escarpment would shield users' views of this route. Middleground and background views from dispersed backcountry users in Mt. Moriah Wilderness are also visible from this route (Link 471).

VRM - VRM Class III areas are found along all of Links 465 and 469 and parts of Links 464 and 471 for a total of 8.5 miles.

Subroute 3

Scenic Quality/Variety Class - Class B scenery occurs in the valley foothills landscape character type (Link 464). This subroute would cross primarily Class C scenery in alluvial valleys (Link 464, 466), rolling foothills (Link 468, 471), and desert scrub (Link 473) landscape character types.

Sensitive Viewpoints and Visibility - This subroute would be visible in the foreground from the Weaver Creek Scenic Area (Link 464), a low sensitive viewpoint. It would also be visible in middleground and background views of backcountry users of Mt. Moriah Wilderness (Links 464, 469, 471).

VRM - This subroute would cross VRM Class III areas along all of Links 466 and 468 and portions of Links 464 and 471 for a total of 7.5 miles.

Subroute 4

Scenic Quality/Variety Class - Class B scenery occurs in the valley foothills landscape character type (Link 464). The predominate scenic quality is Class C in the area and occurs in the alluvial valley (Link 464, 466), rolling foothills (Link 467), and desert scrub (Link 467, 472) landscape character types.

Sensitive Viewpoints and Visibility - This subroute would be visible by users in the foreground from Weaver Creek Scenic Area (Link 464). This route would not be visible to users from the Sacramento Pass Recreation Area.

VRM - This subroute would cross VRM Class III along all of Link 466 and portions of Links 464 and 467 for a total of 7.0 miles.

Cultural Resources

The study strategy and methods previously developed for the cultural resources studies were also used to evaluate the Sacramento Pass subroutes. These methods and the cultural history of the region are summarized in the SWIP DEIS/DPA and further discussed in the supporting cultural resources technical report. They are not repeated here.

Agency files were reviewed to identify archaeological and historical sites previously recorded within 2-mile-wide corridors along the newly defined alternative links. Several surveys had been undertaken in

the general vicinity of the alternative subroutes for various types of projects including juniper chaining, highway upgrades, land exchanges, transmission line construction, telephone cable installation, and BLM recreation inventories and planning efforts (Busby 1974, Cain 1968, Henderson 1979, Moore 1988, Newkirk 1982, Revitte 1983, Stornetta 1988). These surveys encompass only a small percentage of the new alternative corridors. Nevertheless, they provide some indication of the types and frequencies of cultural resources present in the study area.

A total of 20 previously recorded archaeological and historical sites were identified within the 2-mile-wide corridors along the newly defined alternative links (Table 3-6). Fourteen other cultural resources inventoried for the original study are located within the corridors for the subroutes being compared. While collecting these data, documentation was reviewed on an additional 14 cultural resources recorded in the vicinity but beyond the limits of the 2-mile-wide corridors. In general, these resources were similar to those within the corridor.

One of the more significant cultural resources in the general area of the Sacramento Pass reroute alternatives is the Lehman Caves National Monument, which includes the Lehman orchard and aqueduct and the Rhodes cabin, both of which are listed on the National Register of Historic Places. The monument is located more than 5 miles to the south of any of the alternatives being considered and should not be affected. The Osceola Ditch, constructed in the 1880s for hydraulic placer mining, has been determined to be eligible for listing on the National Register of Historic Places. It would be crossed by Link 460 just to the west of the subroutes currently being evaluated. Therefore, the ditch would be crossed by all of the reroute alternatives being considered and has no bearing on the current analysis of the subroutes. Another potentially sensitive area is the Black Horse Mining District, which *boomed* in the early 1900s. The Black Horse town site and cemetery are located to the northwest of all the reroute alternative. In the Utah portion of the analysis area, archaeological site 42MD767 is a previously recorded prehistoric base camp rated as having moderate-high sensitivity, but it is located on Link 461 reroute alternatives likely to pass near this site.

The inventory of cultural resources recorded along the subroute corridors are dominated by isolated prehistoric lithic sites. More than 55 percent (19 sites) are such isolates, which are assigned a low sensitivity. These isolates typically consist of one or a few pieces of obsidian or chert waste flakes reflecting chipped stone use, but some are more formal tools such as projectile points or scrapers.

More extensive scatters of lithic tools and debris make up about 12 percent of the recorded inventory (four sites), and another four sites are artifact scatters that include lithic artifacts as well as ceramic sherds, including both Fremont gray wares and Shoshone brown wares. These lithic and artifact scatters are assigned a moderate sensitivity.

These isolates, lithic scatters, and artifact scatters make up approximately 80 percent of the recorded cultural resources. Most of these probably reflect prehistoric use of the region, although some may stem from the later ethnohistoric era when Europeans recorded Native Americans living in the area. (Jedidiah Smith is the first documented Euro-American to have crossed through Sacramento Pass in 1827.) The Snake Valley was designated as an ethnohistoric habitation zone. No actual reported camp sites of Shoshone or Goshute, who are reported to have been culturally and linguistically indistinguishable from the Shoshone (Steward 1938:123), have been recorded within the reroute alternative corridors, but the assigned moderate sensitivity reflects the potential for ethnohistoric sites to be present.

Six sites (less than 20 percent of the inventory) are historic sites. These include three trash scatters and a historic corral and chute, all of which are assigned a moderate sensitivity. One of the other two

sites is the historic Eldridge Ranch, which has a standing adobe house that may date from the 1880s and several outbuildings. The other site has concrete foundations and scattered trash and has been identified as the location of a mill associated with early twentieth century mining in the Black Horse District. Both of these particular sites are reported to have compromised integrity, but in accordance with the original methodology they were rated as having moderate-high sensitivity.

Subroute 1

A total of 21 cultural resources have been recorded within a 2-mile-wide corridor along the assumed centerline of Subroute 1. Eleven of these are low sensitivity prehistoric isolated finds, eight are moderate sensitivity sites, including two prehistoric lithic scatters, two prehistoric artifact scatters, the Snake Valley ethnohistoric habitation zone, two historic trash sites, and a historic corral. In addition, a historic ranch and a historic mining mill site, both rated as having moderate-high sensitivity, are located within the Subroute 1 corridor (Table 3-7).

Subroute 2

Twenty-three cultural resources have been previously recorded along the Subroute 2 corridor. Thirteen of these are low sensitivity prehistoric isolated finds. Three are moderate sensitivity prehistoric lithic scatters and four are prehistoric artifact scatters. The moderate sensitivity Snake Valley ethnohistoric habitation zone also is crossed by this subroute. A historic corral, rated as having moderate sensitivity, and a historic ranch, rated as having moderate-high sensitivity, are also within the Subroute 2 corridor.

Subroute 3

Twenty-two of the 23 cultural resources recorded along Subroute 2 are also within the Subroute 3 corridor. The historic ranch site is the one resource not within the Subroute 3 corridor.

Subroute 4

The 2-mile-wide corridor along the Subroute 4 assumed centerline includes 14 previously recorded resources. These include eight prehistoric isolated finds, which are rated as having low sensitivity. One prehistoric lithic scatter and three prehistoric artifact scatters are rated as having moderate sensitivity, as is the Snake Valley ethnohistoric habitation zone and a historic trash site.

It must be remembered that most of these recorded sites are unlikely to be directly affected by the SWIP, and that because of integrity problems many of the specific sites have been evaluated as having less sensitivity than we assigned based on site types. In addition, the numbers of resources largely reflect the degree of prior survey, rather than actual resource densities. To compensate for the lack of inventory data a model was developed to predict sensitivity zones. A total of 5.6 miles of moderate-high sensitivity zones are predicted along Subroute 4, Subroutes 3 and 4 each are predicted to have almost 5 miles of moderate-high zones each, and Subroute 1 is predicted to have 5.9 miles of moderate sensitivity zones, with each of the other subroutes having approximately 4 to 5 miles (refer to Figure 3-12).

In sum, previous research suggests that the Sacramento Pass and Snake Valley area have been occupied for perhaps 10,000 to 12,000 years, first by Paleo-Indians, then Archaic cultures, followed by farming Fremont groups, and then Numic speaking peoples who followed a more nomadic subsistence strategy similar to the Archaic cultures. Euro-American occupation has included episodes of initial exploration, mining, Mormon settlement, and ranching. The mountain pass and relatively abundant water sources have focused human activity in the region, and inventory surveys suggest that cultural resources are likely to be present within all of the alternatives.

Environmental Consequences

Earth and Water Resource

All of the subroutes would cross areas with potentially high sensitivity paleontological resources, although no fossils have been found in the area. With mitigation, no adverse impacts would be expected for paleontological resources.

Generally, the soils in the subroute areas would have low to moderate wind and/or water erosion hazards (refer to Figure 3-6).

Subroute 1

This subroute would cross 5.4 miles of potentially high sensitivity paleontological resources (Links 463, 469, 471). There would be a total of 20.5 miles of low residual impacts for soil erosion along this subroute. This subroute would cross six intermittent streams (Links 463, 469, 471) one perennial stream (Link 471) and 1.8 miles of shallow ground water (Links 471, 473). There is one spring (Link 469) located within 0.5 mile of the assumed centerline of this subroute.

Subroute 2

This subroute would cross 7.1 miles with potentially high sensitivity paleontological resources (Links 464, 465, 469, 471). There would be a total of 21.7 miles of low residual impacts for soil erosion along this subroute. This subroute would cross seven intermittent streams (Links 464, 465, 469, 471), three perennial streams (Link 464, 465, 471), and 1.8 miles of shallow ground water (Links 471, 473). There is one spring (Link 469) located within 0.5 mile of the assumed centerline along this subroute.

Subroute 3

This subroute would cross 6.9 miles of area with potentially high sensitivity paleontological resources (Links 464, 468, 471). There would be a total of 20.7 miles of low residual impacts for soil erosion along this subroute. The subroute would cross 5 intermittent streams crossings (Links 464, 468, 471), three perennial streams (Links 464, 468, and 471), and 1.8 miles of shallow ground water (Links 471, 473). Numerous springs occur in the area but none are located within 0.5 mile of the assumed centerline.

Subroute 4

This subroute would cross 1.3 miles of area with potentially high sensitivity paleontological resources (Links 464, 467). There would be a total of 19.4 miles of low residual impacts for soil erosion along this subroute. This subroute would cross three intermittent streams, (Links 464, 467), three perennial streams (Links 464, 467), and 2.3 miles of shallow ground water (Links 467, 472). There are two springs (Link 467) located within 0.5 mile of the assumed centerline. This subroute would cross 1.2 miles of prime farmland.

Biological Resources

Subroute 1

Wildlife - Impacts to wildlife along this subroute would be low (refer to Figure 3-7). No critical habitat has been identified for big game or raptors and no active raptor nests exist in the area. Antelope utilize the area throughout the year. Five miles of pronghorn habitat and 2.2 miles of antelope kidding grounds have been identified along the links associated with Subroute 1. Although antelope and other big game may avoid the area during the construction period, long-term impacts would be insignificant as antelope use areas where transmission lines currently exist (Gilbertson, personal communication, 1993).

Plants - Four vegetation communities occur along the various links. At higher elevations (Link 463), 0.4 miles of mountain shrub would be traversed. The other links cross 7.7 miles of sage scrub, 0.4 miles of grassland, and 0.4 miles of playa.

Cymopterus basalticus habitat exists along 0.9 miles of Link 463, with at least one known population occurring. *Swertia gypsicola* has the potential to exist along the eastern portion of Link 471 and along Link 473. Mitigation measures would result in low residual impacts to this species if the species is located during preconstruction surveys. A population of *Sclerocactus pubispinus* occurs within the one-mile corridor of Link 463. It is protected by the state Cactus and Yucca Law.

Subroute 2

Wildlife - Impacts to wildlife along this subroute would be low. No critical habitat has been identified for big game or raptors and no active raptor nests exist in the area. Of the area used by pronghorn throughout the year, 5.8 miles have been identified as pronghorn habitat and 2.2 miles are antelope kidding grounds.

Plants - Four vegetation communities would be traversed by the various links. Mountain shrub occurs along link 464 (0.4 miles) at the higher elevations. Sage scrub (8.3 miles), grassland (0.9 miles) and playa (0.4 miles) occur along all the links.

Swertia gypsicola has the potential to exist along the eastern portion of Link 471 and along Link 473. Mitigation measures would result in low residual impacts to this species if the species is located during preconstruction surveys.

Subroute 3

Wildlife - Impacts to wildlife along this subroute would be low. No critical habitat has been identified for big game or raptors and no active raptor nests exist in the area.

Plants - Four vegetation types would be traversed by Subroute 3. Mountain shrub occurs at the higher elevations along link 464 (0.4 miles). The other types are sage scrub (6.8 miles), grassland (0.8 miles), and playa (0.7 miles).

Swertia gypsicola has the potential to exist along the eastern portion of Link 471 and along Link 473. Mitigation measures, which would be applied if it is located during preconstruction surveys, would result in low residual impacts to this species.

Subroute 4

Wildlife - Impacts to wildlife along this subroute would be low. No critical habitat has been identified for big game or raptors and no active raptor nests exist in the area.

Plants - Six land cover types have been identified along these links, including non-irrigated agricultural lands, which is not discussed as a vegetation type. Mountain shrub occurs at the higher elevations along link 464 (0.4 miles). Sage scrub (4.8 miles), grassland (0.8 miles and playa (0.6 miles) occur. Wetland/riparian vegetation types (0.4 miles) occur along Silver Creek, which is traversed by link 467.

Swertia gypsicola has the potential to exist along the eastern portion of Link 467 and along Link 472. Mitigation measures would result in low residual impacts to this species if the species is located during preconstruction surveys.

Land Use

No moderate or high residual impacts would occur along the four subroutes (refer to Figure 3-10).

Subroute 1

This route would cause 1.4 miles of low impacts to land uses where it would cross the Sevier A MOA east of the Utah border (Link 473). As described in the SWIP DEIS/DPA, an agreement specifying the locations where shorter towers would be required along Link 467 and 472 (formerly Link 461) to mitigate potential conflicts with the AGL of the MOA has been negotiated with Hill AFB. Links 471 and 473 would also require shorter towers along a portion of this subroute and may require additional negotiation with Hill AFB.

This subroute would not cross any areas of private land.

Subroute 2

This subroute would have the same impact to land uses as described for Subroute 1.

Subroute 3

This subroute would have the same impact to land uses as described for Subroute 1.

Subroute 4

This subroute would cause 1.6 miles of low impacts to land uses. Links 467 and 472 would cross 1.2 miles of the Sevier A MOA. As described in the SWIP DEIS/DPA, an agreement with Hill AFB specifying the locations where shorter towers may be required along Links 467 and 472 (formerly Link 461) to mitigate potential conflicts with the AGL of the MOA.

This subroute would parallel two existing 230kV transmission lines through 1.2 miles of prime farmland/agricultural areas (Link 472) in Nevada and Utah. Specific tower placement and centerline position would reduce the potential impacts to prime farmland/agricultural land.

Visual Resources

Visual contrasts associated with all of the subroutes would comply with the VRM Class III and IV designations (refer to Figure 3-11).

The potential visual impacts of the crossings of U.S. Highway 6/50 by each of the subroutes is depicted in the photo simulations in Figures 3-14, 3-16, 3-18, and 3-19. Figures 3-13, 3-15, and 3-17 depict the existing conditions along U.S. Highway 6/50.

Subroute 1

High visual impacts would occur to views from the Sacramento Pass Recreation Area (Link 463) for 0.2 miles where this subroute would be visible in the foreground. An additional 1.7 miles of high visual impacts would occur where this subroute (Link 471) would cross a road that provides access to the Mt. Moriah Wilderness, and where it would be visible in the foreground from several rural residences near the Utah-Nevada state line (Link 473). This subroute would also cause 1.4 miles of moderate visual impacts to middleground views.

Travelers on U.S. Highway 6/50 driving west would view steel lattice transmission line towers (Link 463) skylined in the foreground on a ridge to the south of the highway for 0.5 miles (refer to Figure 3-14). Transmission line towers would also be visible to middleground views for 2.0 miles along the highway.

Subroute 2

This subroute (Link 471) would cause 1.7 miles of high visual impacts where it would cross a road that provides access to the Mt. Moriah Wilderness and where it would be visible in the foreground from several rural residences near the Utah-Nevada state line (Link 473).

Travelers on U.S. Highway 6/50 driving east would view a transmission line tower (Link 465) skylined in the foreground on the slope to the north of the highway for 0.5 miles (refer to Figure 3-16). Further, a massive steel lattice transmission line tower at the 90 degree turn (Link 465) would be highly visible in the valley south of the highway. Travelers driving west on the highway would view this subroute in the middleground for approximately 1 mile.

Subroute 3

This subroute (Link 471) would cause 1.7 miles of high visual impacts where it would cross a road that provides access to the Mt. Moriah Wilderness and where it would be visible in the foreground from several rural residences near the Utah-Nevada state line (Link 473).

Travelers on U.S. Highway 6/50 driving east would view steel H-frame transmission line towers (Link 468) for approximately 1 mile where this subroute would parallel the two existing 230kV transmission lines. Travelers driving west would view the transmission line in the foreground to middleground for approximately 1 mile. North of the highway the dark color of the steel H-frame transmission line towers would be viewed against background hills and mountains minimizing visual contrasts (refer to Figure 3-18 and 3-19).

Subroute 4

This subroute (Link 467) would cause 3.1 miles of high visual impacts where it would cross a road that provides access to the Mt. Moriah Wilderness and where it would be visible in the foreground from several rural residences near the Utah-Nevada state line (Link 467).

This subroute (Links 466, 467) would parallel the two existing 230kV transmission lines and would cause weak to moderate visual contrasts in the landscape. Impacts to travelers on U.S. Highway 6/50 would be slightly less than those described for Subroute 3.

Cultural Resources

Although some 14 to 23 cultural resources had been recorded within 2-mile-wide corridors along the four subroutes, the reference centerline of Link 464, which is a component of Subroutes 1, 2, and 4, is the only link to directly cross any of the recorded sites other than the broadly defined ethnohistoric Goshute habitation area that encompasses much of the Snake Valley (refer to Figure 3-12). The assumed centerline of Link 464 crosses a cluster of five prehistoric resources that include two isolated finds of lithic artifacts, two artifact scatters, and a small lithic scatter. This results in a low to moderate impact rating along 2 miles of this link (refer to Table 3-8).

Projected direct construction impacts within the predicted sensitivity zones accumulate to approximately 7 to 9 miles of moderate impacts and 3 to 5 miles of low impacts among the various subroutes (refer to Table 3-8). Impacts ranked as moderate could include disturbance of 7.5 to 12 acres per linear mile in moderate to moderate-high sensitivity zones. Low impacts were defined as disturbance of 6 to 12 acres per linear mile in low to moderate sensitivity zones.

Increases in public accessibility could lead to increased vandalism of cultural resources or attrition of cultural resources during post-construction years as a result of increased recreational use or vehicular

traffic. In general, the areas traversed by the Sacramento Pass subroutes are already accessible and the increase in public accessibility is projected to increase less than 20 percent along most of the subroutes as a result of constructing access roads for the SWIP. Approximately 2 to 3 miles of each of the four subroutes are predicted to experience a 50 to 100 percent increase in accessibility. Because so few known cultural resources are located in the path of the reference centerlines of the subroutes, the projected secondary impacts due to increased accessibility are rated as low to none (refer to Table 3-9).

The final factor considered was the potential for visual intrusions to degrade the integrity of historic properties. Typically such concerns focus on historic buildings or structures whose setting is an important part of their historical values. None of the known cultural resources within the corridors of the Sacramento Pass subroutes were identified as types of properties warranting specific viewshed analysis. The properties that were considered are the Eldridge Ranch House (CR5322) and the Black Horse town site and cemetery (CR80). The Eldridge Ranch House has been recommended as not being significant, and is located along Link 469, which is in terrain where the line would be seldom seen and visual impacts are rated as low. The Black Horse town site and cemetery have been identified as having potential for development as a recreation area, but the reference centerline of Link 463 is more than 2 miles from the town site. The analysis of the viewshed indicates the line is likely to be visible from this distance, but impacts are expected to be low.

Composite impacts scores were computed using the methods described in the SWIP DEIS/DPA (page 4-70) and cultural resources technical report (9-93). Subroute 1 has the lowest composite impact score (42.4), with Subroutes 2 and 3 having the highest (54.8 and 53.8 respectively). The Subroute Comparison yielded a moderate score of 48.7. Therefore, from a cultural resource perspective, Subroute 1 would be preferable over Subroute 4, which, in turn, is preferred over Subroutes 2 and 3. The range of variation among the routes is not great, no high impact zones are projected along any of the subroutes, and all of the potential impacts are likely to be mitigable through minor route modifications or data recovery studies. In sum, cultural resource factors are not a major factor in the selection of alternatives.

Environmentally Preferred Subroute

Subroute 3 is the environmentally preferred subroute. This subroute would not be visible from the Sacramento Pass Recreation Area and would avoid private lands (refer to Figure 3-20 for subroute locations). Although Subroutes 1 and 2 would not be visible from the Sacramento Pass Recreation Area, transmission line towers would be skylined along these subroutes and would cause significant visual impacts on views from U.S. Highway 6/50 (refer to Figures 3-14 and 3-16). Subroute 2 would cross the highway west of the existing 230kV transmission lines creating visual contrasts and impacts along a larger segment of the highway. Subroute 4 would cause similar visual impacts to the highway where it would parallel the existing 230kV transmission lines. However, Subroute 4 would not avoid private lands.

Although high visual impacts to views from the Weaver Creek Scenic Area were identified in the SWIP DEIS/DPA, the BLM no longer manages this area under a special designation and has returned it to multiple-use management. Subsequently, in this analysis, the Weaver Creek Scenic Area was assigned a low sensitivity and no impacts were identified. There would be no high impacts to the Earth, Biological, Cultural, or Land Use resources by the four subroutes analyzed (refer to Figure 3-21 for miles of impact to each resource).

BIOLOGICAL RESOURCES

Introduction

Due to a number of errors in the DEIS/DPA, the entire Biological Resources section is reprinted in this document.

Federal environmental legislation and regulations applicable to biological resources in the project area include the Endangered Species Act of 1973 as amended, the Sikes Act, Title II as amended, Federal Land Policy and Management Act, the Migratory Bird Treaty Act of 1986, the Bald Eagle Act of 1940 (amended in 1962 to include the golden eagle), Section 404 of the Clean Water Act (CWA) (and amendments), Executive Orders 11990 (protection of wetlands) and 11988 (floodplain management), Wild Free-Roaming Horse and Burro Act of 1971, and National Environmental Policy Act (NEPA). NEPA requires federal agencies to prepare environmental impact statements (EIS) on all major federal actions in accordance with Council of Environmental Quality implementing regulations (1978). Additional authority requiring the addressing of biological resources is listed in the technical report.

Affected Environment

Biological resource data for the states of Idaho, Nevada, and Utah were obtained from a secondary (existing) data source for the SWIP regional study conducted by Dames & Moore in 1988 (also refer to Chapter 2). The regional inventory focused on the distribution of highly sensitive species of wildlife and plants and similarly sensitive habitat types. Locations of federally listed species and sensitive habitats were used to select a number of preliminary corridors to be studied further.

Methods

A biological inventory was then conducted for the SWIP alternative routes using data from scientific literature, existing Dames & Moore files, satellite imagery at 1:100,000 scale, SPOT black and white satellite imagery at 1:24,000 scale, and agency contacts. Data was collected within the study corridors one mile on either side of the assumed centerlines for each routing alternative. Agency personnel were asked to provide information on potential or known occurrences of sensitive species of wildlife and plants and on habitats of special concern within the study corridors. The following agencies were contacted for information: the BLM, Forest Service (FS), Fish and Wildlife Service (FWS), Utah Division of Wildlife Resources (UDWR), Nevada Department of Wildlife (NDOW), Idaho Department of Fish and Game, and Idaho, Nevada, and Utah Natural Heritage Programs.

Data were collected and digitized into a Geographic Information System (GIS) at a 1:100,000 scale for:

- vegetation types
- common and characteristic plant species found in each vegetation type
- vertebrate species likely to be found in habitats in the project area
- species listed as federally threatened, endangered or as candidates under review for listing

- species classified as rare, sensitive or otherwise protected by state agencies
- areas of special biological value or interest, including riparian and wetland habitats

The technical reports contain detailed information on the vegetation and wildlife resources inventoried. The results of the biological resources inventory are summarized below.

Results

Vegetative Communities

Twelve vegetative communities have been identified within the SWIP biological study area. Satellite imagery facilitated the identification and distribution of vegetation (refer to Map Volume). The imagery was "classified" using a computer to distinguish various spectral qualities, or light reflectivity from the ground surface digitally recorded by a satellite. Since the spectral qualities of some communities were similar on the satellite images, the various communities were mapped into several vegetation types, and are described below.

Shadscale, greasewood, samphire-iodine bush, and Great Basin sagebrush are all included under sage scrub. Mojave desertscrub and grassland communities are both uniquely identified. Wetland and riparian areas are listed under riparian. Piñon-juniper and alpine tundra are represented by woodland/mountain shrub/grasses. Limber/bristlecone pine and quaking aspen are represented by the mountain conifer/broadleaf category.

Agriculture - This is most prevalent in the Snake River plain in southern Idaho where native vegetation has been cleared for agricultural purposes (i.e., Links 10, 20, 40, 41, 61, 62, and 63). Refer to the Land Use section in the DEIS/DPA and the Landcover maps in the Map Volume accompanying the DEIS/DPA for locations.

Grassland - Grassland communities occur throughout the alternative corridors, largely ecotonal with other plant communities, such as sage scrub (Links 71, 91, 92, 100, 110, 130, 160, 141, 142, 144, 152, 161, 200, 211, 221, 243, 259, 260, 270, 362-63, 420, 430, 450, etc.) and piñon-juniper (Links 263, 264, 280, 350), but are often present as discrete grassland units. Many native species have been replaced historically during land management practices by exotics, such as cheatgrass brome (*Bromus tectorum*), crested wheatgrass (*Agropyron cristatum*), filaree (*Erodium cicutarium*), tumble mustard (*Sisymbrium altissimum*), and Russian thistle (*Salsola iberica*). Native species include gramas (*Bouteloua* spp.), bluegrasses (*Poa* spp.), needlegrasses (*Stipa* spp.), galleta (*Hilaria jamesii*), sand dropseed (*Sporobolus cryptandrus*), Indian ricegrass (*Oryzopsis hymenoides*), and squirreltail (*Sitanion hystrix*).

Sage Scrub - The four distinct communities categorized under sage scrub are described below. The most common is Great Basin sagebrush, the other three have more specialized habitat requirements. Very few links cross sage scrub exclusively (e.g., Links 70, 300, 310, and 320), most being ecotonal with grasslands (links listed above).

- **Great Basin Sagebrush Community** - On low foothills at somewhat higher elevations, big sagebrush reach down to make contact with playa chenopods, and upward along ridges and in valley bottoms to mingle with piñon-juniper woodlands. In addition, portions of this community extend well above piñon-juniper to cover rocky ridges and

valleys at elevations as high as 10,000 feet. At higher elevations, soils are rocky and less dense, the water table is lower, and soils are free of salts. Vegetative cover is between 20 and 50 percent. Within this community, mountain mahogany (*Cercocarpus ledifolius*) occurs locally on south-facing slopes in dense stands. At higher elevations, quaking aspen (*Populus tremuloides*), Douglas fir (*Pseudotsuga menziesii*), and white fir (*Abies concolor*) may occur given moister climates. Limber pine (*Pinus flexilis*) and spruce (*Picea* spp.) occur in some parts of Nevada.

- **Shadscale Community** - Shadscale (*Atriplex confertifolia*) occurs in low elevation, often saline basins typified by low precipitation, heavy soils, and a water table too deep to support stands of greasewood. This shrub-dominated community normally has cover values of less than 12 to 15 percent, and plants that are often less than one meter in height.

- **Greasewood Community** - Greasewood (*Sarcobatus vermiculatus*) occurs in saline soils along the edges of playas where the water table is high. Salts from the soils are drawn in solution into the plant, the leaves drop off and rot causing a highly alkaline habitat in which only specialized, salt tolerant plants can survive. Vegetative cover in greasewood communities is usually less than 10 percent.

- **Samphire-Iodine Bush Community** - This community occurs where the combination of high water table and high soil salt content is so great that water often stands in pools of low playas and dense crusts of salt crystals form on soil surfaces and on the bases of plants.

Mojave Desertscrub Community - This community is found on the basin floors and bajadas below 4,000 feet. South of the Pahranagat Mountains and at the north end of Kane Springs Valley in Nevada, a transition to Mojave desertscrub vegetation occurs (e.g., Links 680, 690, and 700). Creosotebush (*Larrea tridentata*) is the most abundant plant, with white bursage (*Franseria dumosa*) as a codominant. Blackbrush (*Coleogyne ramosissima*) is common at higher elevations. Joshua trees (*Yucca brevifolia*), all-scale (*Atriplex hymenoclea*), desert holly (*A. hymenelytra*) and brittlebush (*Encelia farinosa*) occur locally.

Woodland/Mountain Shrubs/Grasses - Piñon-juniper and the alpine-tundra community are two distinct vegetation types represented by this category.

- **Piñon-Juniper** - In areas of generally higher elevations (5,000 to 8,000 feet) and steeper slopes, piñon-juniper woodlands dominate the upper foothill landscape. These woodlands or "pygmy forests" are limited along alternative links at higher elevations, primarily intermingling with grasslands and sage scrub (e.g., Links 263, 264, 280, 350, 364, and 460). In many areas, this vegetation type runs continuously from mountain range to mountain range. Annual precipitation in these sites varies greatly. Soils are often rocky, shallow, and poorly defined. Plant cover is often less than 15 percent with most of that existing as upper canopy cover. Grasses, forbs, and woody plants are limited. The most common woody plant is singleleaf piñon (*Pinus monophylla*). Where juniper (*Juniperus osteosperma*) dominates, neither singleleaf piñon nor piñon pine (*P. edulis*) occur within the study corridors in southern Idaho.

- **Alpine-Tundra Community** - Above timberline, at elevations exceeding 11,000 feet, low-growing, perennial herbs are virtually the only plant types present. Woody plants are rare or non-existent.

Mountain Conifer/Broadleaf - Two distinct high elevation communities, limber pine - bristlecone pine and quaking aspen, are represented by this category.

- **Limber Pine-Bristlecone Pine** - This high elevation community occurs between 8,000 and 10,000 feet of elevation. Common tree species are white fir (*Abies concolor* var. *lowiana*), bristlecone pine (*Pinus longaeva* var. *aristata*), and limber pine (*P. flexilis*). This vegetative community has not been specifically identified along any of the links.

- **Quaking Aspen** - Occurring at elevations ranging from 6,000 and 8,000 feet, quaking aspen are often found growing in pure stands. Understory conifers generally will eventually grow and shade out the aspen.

Riparian - Riparian areas are encountered infrequently within the alternatives, generally occurring in narrow communities along streams and marshes. Streams in the region traversed by the SWIP alternatives originate from perennial headwater spring sources or from snowmelt which creates numerous ephemeral and a few perennial streams. Typical intermountain vegetation along these waterways is comprised of cottonwoods (*Populus* spp.), willows (*Salix* spp.), dogwood (*Cornus* spp.), wild rose (*Rosa* spp.), birch (*Betula* spp.), chokecherry (*Prunus* spp.), and alder (*Alnus* spp.) (Links 241, 244, 245, 261, 267, 291, 292, and 620). A unique variety of swamp cedar (*Juniperus scopulorum*) exists in three known locations including the White River Valley (Link 670) and Spring Valley (Link 380). Climate and elevation will determine which species are present.

Wetlands - Wetlands are also present in the form of marshes and wet meadows within portions of the study area, primarily at lower elevations.

Other Natural Land Cover - Other categories of land cover that have been identified by satellite imagery are natural bare soils and playas. Natural bare soils occur along valleys, in dry areas, dunes, and those areas where vegetation is very sparse. Playas are dry lake beds, often with high mineral content. During wet years, playas, or alkali flats, may provide important habitat for waterfowl and shorebirds. They also represent potential nesting sites for the snowy plover (*Charadrius alexandrinus nivosus*), a federal Category 2 candidate species for listing among the threatened or endangered wildlife of the United States. A majority of the playas are located in Utah with a few scattered in Nevada (e.g., Links 190, 223, 230, 490, 500, 510, 520, 572, 290). None of the links are exclusively within a playa.

Wildlife

Approximately 560 species of vertebrates are likely to occur, over the course of a year, in habitats traversed by alternative corridors. These species are listed in Tables BIO-10 through BIO-15 of the technical reports (refer to Appendix H of the DEIS/DPA for the locations where technical reports can be reviewed).

Seventy species of fish are known to occur within aquatic habitats in the project area (refer to Tables BIO-10, BIO-11, BIO-12 of the technical reports). 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 in the project area are introduced.

Fifteen species of amphibians are expected to occur in aquatic, riparian, and wetland habitats in the project area. Sixty-two species of reptiles potentially occur in terrestrial habitats within the study corridors (refer to Table BIO-13 of the technical reports).

The Biological Resources Technical Report (Table BIO-14 of the technical reports) lists 316 species of birds that potentially occur within habitats in the project area. Of these 109 are most likely to occur in lower elevation swamp/slough areas and 109 (some overlap) are riparian species. Grasslands are habitat for approximately 62 different species and the sagebrush community hosts 81 species. Approximately 71 of the 316 bird species are permanent residents of the area and 143 are summer breeding residents. The remainder are likely to occur only during spring and/or fall migration periods, with a few winter residents.

A total of 111 species of mammals are expected to occur within habitats traversed by the alternative routing corridors of the SWIP (refer to Table BIO-15 of the technical reports). 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 in the project area are rodents (51 species). Large mammals include 19 species of carnivores and five species of native ungulates.

Approximately 34 species of vertebrates are not native to the region, introduced through accidental or intentional human activities.

Agencies responsible for wildlife management identified several species of wildlife as being of particular concern. These included the species listed below. More information is provided in the Special Status section and alternative routes descriptions.

Wild Horses and Burros - Free-roaming horses (*Equus caballus*) and burros (*E. asinus*) occur on public lands in the project area. These animals are descendants of horses and burros that escaped from man or were turned out onto the open range. Wild Horses are extremely mobile, readily moving great distances across public lands. They are fairly widespread throughout the northeastern part of Nevada and adjacent Utah. The BLM has established a number of management areas specifically for wild horses (also refer to Herd Management Areas in Chapter 3 of this document).

Gila Monster (*Heloderma suspectum*) - The range of the Gila monster in the United States includes the tip of southern Nevada, the southwestern corner of Utah, all of southern and southwestern Arizona, extreme southwestern New Mexico, and extreme southeastern California (Stebbins 1985). In the Mojave Desert, the Gila monster occurs primarily in Mojave desertscrub, but can also be found in lower most limits of juniper woodlands. They are more common in rocky habitats compared with the drier and sandier floors. Gila monsters are not uncommon, but are seldom seen since they spend most of their time underground (Lowe et. al 1986). They dig their own burrows or occupy those made by other species, such as desert tortoises (Stebbins 1985, Lowe et. al 1986). Gila monsters feed on small mammals, reptiles, lizards, carrion, and eggs, primarily of ground nesting birds (Stebbins 1985). This species is likely to occur in the vicinity of Links 690, 700, and 720. The Gila monster is a federal Category 3C species, and has protected status in Nevada.

Desert Bighorn Sheep - (*Ovis canadensis nelsoni*) - Desert bighorn sheep remain in several mountain ranges in Clark, Lincoln, and Nye counties, Nevada. These mountains include the Las Vegas, Sheep, Hiko, and Arrow Canyon ranges, and the Delamar and Meadow Valley mountains. They also occur in

the South Egan Range in White Pine County. There has been concern expressed for disruption of bighorn sheep movement and use of water sources.

Desert Tortoise - (*Gopherus agassizii*) - In recent years, dramatic declines in 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 disease, loss of habitat to development, degradation of habitat from livestock grazing, 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. As a result of these urban developments affecting desert tortoise, a Habitat Conservation Plan is being developed to minimize, monitor, and mitigate impacts to tortoises in the larger Clark County region. The plans currently identify the Coyote Spring Valley as a priority area for preservation of the species (Regional Environmental Consultants 1991). Desert Tortoise do not occur in Idaho or in the Utah portion of the SWIP.

Sage Grouse - (*Centrocercus urophasianus*) - 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. There has been concern expressed by state and federal agency biologists for other activities that would further impact the sage grouse populations.

Aquatic/Riparian Habitats

Idaho - Important aquatic/riparian habitats traversed by the SWIP alternatives or located in close proximity to project alternatives including the Snake River, Salmon Falls Creek and Reservoir, Little Wood River, Deep Creek, Cottonwood Creek, Goose Lake, Wilson Lake Reservoir, and Deep Creek Reservoir.

Nevada - Aquatic/riparian habitats traversed by the SWIP alternatives or in close proximity to project alternatives include the Humboldt River and tributaries, Salmon Falls Creek, Trout Creek, Shoshone Creek, Thousand Springs Creek, Bishop Creek and Reservoir, Duck Creek, Steptoe Creek and associated springs, Bassett Lake, Spring Valley Creek, the White River, Ellison Creek, Forest Home Creek, Whipple and Tule Field Reservoirs and Goshute Creek.

Several wetland areas traversed by the SWIP alternatives serve as nesting and wintering grounds for waterfowl and bald eagles. These occur in areas of Spring Valley, Steptoe Valley, White River Valley and Bassett Lake. Wetlands associated with Bassett lake are nesting habitat for white-faced ibis, long-billed curlew, and sandhill crane.

Natural springs and streams which are habitat for a number of sensitive fish species include Goshute Creek, Duck Creek, and associated springs of Steptoe Valley, Spring Valley Creek , and associated springs of Spring Valley, the White River, and springs of White River Valley and Town Creek.

Utah - Significant aquatic/riparian habitats that occur within the SWIP alternatives in Utah include the Sevier River and tributaries, Sevier Lake, Topaz Slough, Crafts Lake, Baker Creek, Jensen Spring, Rocky Knoll Spring, Coyote Spring, Gandy Salt Marsh lake, Leland-Harris Spring Complex, and Miller Spring.

Leland-Harris Spring Complex and Miller Spring occur within several miles of Link 63 in Snake Valley. These areas are habitat for four sensitive species: the desert dace, least chub, spotted frog, and Great Basin silver spot butterfly. The latter three are candidates (Category 2) for federal listing as threatened or endangered.

Special Status Species - Plants

Seventy-three plant species, which occur or potentially occur along proposed corridors, have been identified as sensitive on the state and/or federal level (refer to Tables BIO-16, 17, and 18 in the technical report). There are no known plant species occurring within the SWIP corridors that are presently listed as endangered on the federal level. One recently listed as threatened is unlikely to occur in the study area. Candidate species in the area include two that are Federal Category 1 (C1), 32 are Federal Category 2 (C2), and 35 are recommended for deletion Federal Category (C3). C1 means that substantial information exists to support proposing the species for listing as threatened or endangered, and a listing proposal is being or will be prepared. C2 indicates that listing of a species may be appropriate when additional information is gathered. The C3 category means that species that were once considered for listing are no longer being considered.

The listing used was the Federal Register 50 CFR Part 17, Wednesday, February 21, 1990. Most are found on at least one state list of species of concern. Although many of the species are not legally protected by the Endangered Species Act, they are protected by federal agency policies and regulations.

Known locations of 31 of the 73 plant species occur along, or within one mile, of alternative routes. The low number of known plant locations in the area is more likely a function of the lack of field research and does not preclude the existence of additional species.

Idaho - Seventeen sensitive plant species have been identified as occurring or potentially occurring within the SWIP corridors in Idaho. According to the most recent data available, none of these species is currently listed as threatened or endangered on the federal level. Of the sixteen species, three are federal Category 2 and one is C3. The State of Idaho identifies various levels of sensitivity as discussed below. Table BIO-16 in the Technical Report lists these 17 plants.

Four plants are classified as C2 on the federal level. One species of milk-vetch, Mulford's milk-vetch (*Astragalus mulfordiae*), is known from several counties, including Owyhee County (Moseley and Groves 1990). It grows on well-drained, deep, sandy soils on south-facing slopes (Rosentreter 1990). Mourning milk-vetch (*A. atratus* var. *inseptus*) is endemic to the mid-Snake River Plains of southern Idaho on flats, plains, and gentle slopes. Davis' peppergrass (*Lepidium davisii*) occurs along internally drained, hard-bottomed playas. These playas are often used for stock watering ponds and race tracks. Montane peppergrass (*L. montanum* var. *papilliferum*), known from Owyhee County can tolerate harsh conditions where other plants are unable to take root (Rosentreter 1990).

The categories used to identify state sensitive species are defined by The Idaho Native Plant Society. One species, wovenspore lichen (*Texosporium sancti-jacobi*), is considered state priority 1. It is part of an effort to identify rare non-vascular plants in Idaho (Moseley and Groves 1990). Only recently found in Idaho, it grows on decomposed grasses and on the underside of very old rabbit pellets where humidity is high (Rosentreter 1990).

Two-headed onion (*Allium anceps*), four-wing milk-vetch (*Astragalus tetrapterus*) and dimersia (*Dimersia howellii*) are listed as State Priority 2. Two-headed onion requires moist habitat and areas that are inundated in the spring. Four-wing milk-vetch is found in association with piñon-juniper at elevations of 3,500 to 6,500 feet. It is known from one site in Twin Falls County, Idaho and is being threatened by off-road vehicles and trampling. Dimersia is known from a limited number of sites in Owyhee County.

Owyhee morning milk-vetch (*Astragalus atratus* var. *owyheensis*) is a state sensitive species. Generally found on steep hillsides and flats over basalt, it is often entangled under sagebrush. Threats include range improvement and agricultural development. Other state sensitive species are Torrey's blazing star (*Mentzelia torreyi* var. *acerosa*), and thistle milk-vetch (*Astragalus kentrophyta* var. *jessiae*), known from a limited number of sites in southern Idaho. Large-flowered gymnosteris (*Gymnosteris nudicaulis*) and small-flowered gymnosteris (*G. parvula*) occur within the Shoshone District, BLM and may occur along proposed corridors (Popovich 1992). Large-flowered gymnosteris is on the BLM and state sensitive species lists. It grows on open, sandy places in the plains and foothills. Small-flowered gymnosteris, a review species on the state list, grows on open, dry to moderately moist slopes, flats, and drier meadows from the foothills to above timberline.

Webber's needlegrass (*Stipa webberi*) is more common than previously known and was recently de-listed (Popovich 1992).

Two species being monitored at the state level are Murphy milk-vetch (*Astragalus mulfordiae*) and white eatonella (*Eatonella nivea*).

Two species are Category 3. Picabo milk-vetch (*Astragalus oniciformis*), a BLM sensitive species was thought to be extinct (University of Idaho 1980), however, populations have been found on the Shoshone District of the BLM (Popovich 1992). Murphy milk-vetch (*A. camptopus*), found in arid, sandy soils of southeastern Idaho in association with shadscale (Clark 1989). A primrose (*Primula cusickiana*), is currently undergoing taxonomic review and has no status at this time.

Nevada - Forty-four plant species in Nevada have been identified by various agencies as requiring special consideration (Table BIO-17 in the Technical Report). Status information on the state level is from "Endangered, Threatened and Sensitive Plants of Nevada" updated February 13, 1989. There are no federally-listed endangered plant species known to occur or potentially occur within the SWIP corridors in Nevada. One plant listed as threatened has most likely been extirpated from the Great Basin.

Ute, or plateau, lady's tresses (*Spiranthes diluvialis*) historically occurred in Nevada. This species is supported by moist soils in mesic or wet meadows along springs, bogs, or open-seepage areas in cottonwood, tamarix, willow, and piñon-juniper associations at 4,400 to 6,810 feet in elevation. It was last collected in 1936 in Meadow Valley Wash east of the proposed corridors near Panaca, Nevada.

Monte Neva paintbrush (*Castilleja salsuginosa*) is a Category 1 species and critically endangered on the state list. It is found at Monte Neva Hot Springs in Steptoe Valley. Sand-loving buckwheat (*Eriogonum argophyllum*) is listed as Category 1 on the federal level, and critically endangered on the state level. It is located in the Ruby Valley area (Lindsey 1989).

Clokey milk-vetch (*Astragalus aequalis*) is a C2 species, recommended as threatened by the Northern Nevada Native Plant Society (NNNPS). It is found on gravelly hillsides and ridges at elevations ranging from 5,900 to 8,400 feet. Three-cornered pod Geyer milk-vetch (*Astragalus triquetrus*) is a

C2 species, listed as threatened by NNNPS (1989) and critically endangered by the State of Nevada. It grows in sandy soils on dunes or in washes. Known locations are along the southern extension in the Dry Lake Valley.

There are 15 species on the federal Category 2 list, which are also on the NNNPS watch list. Exact locations for most of these are unknown, although habitats supporting known populations are similar to those traversed by the SWIP corridors. Therefore, the potential for occurrence of several different species of concern exists. Sunnyside green gentian (*Frasera gypsicola*), a C2 species, is a mound-forming plant found within remnant playas. Known locations include White Pine and Nye counties. Welsh's catseye (*Cryptantha welshii*) is the C2 species with the highest potential for occurrence (Walker 1989). It has been located in Jake's Valley and is likely to be found within one mile of the proposed corridor due to similar habitat types.

Those Category 2 species with moderate potential for occurring along proposed corridors include maguire lewisia (*Lewisia maguirei*) and Blaine's pincushion (*Sclerocactus blainei*). Maguire lewisia is found on loose soils associated with piñon-juniper at elevations of 7,500 to 7,800 feet. Blaine's pincushion is currently not well documented. It is found in association with greasewood-shadscale. The Cactus and Yucca Law would apply to any found in the affected area. Jan's catchfly (*Silene nachleringae*), another newly described species, is found at elevations above 9,500 feet with subalpine vegetation.

Long calyx milk-vetch (*Astragalus oophorus* var. *lonchocalyx*) has low to moderate potential for occurrence (Walker 1989). It is located on dry, gravelly hillsides in association with piñon-juniper and sagebrush.

There are five species with low potential for occurrence. Eastwood milkweed (*Asclepias eastwoodiana*) is found on low alkaline clay hills away from other plants. Peck station milk-vetch (*Astragalus eurylobus*) grows in semi-badland sites with Utah juniper and black sagebrush. Currant milk-vetch (*A. uncialis*) is found on dry knolls and slopes at elevations of 5,300 to 6,500 feet. Sheep fleabane (*Erigeron ovinus*) grows on rocky outcrops at elevations exceeding 6,500 feet. Tuffed globemallow (*Sphaeralcea caespitosa*) is found on gravelly limestones with mixed shrub and piñon-juniper grass communities.

Seven additional C2-listed species include several which are newly described, making it difficult to discern the actual sensitivity of the species. The following descriptions are based on available information. Elko rock-cress (*Arabis falcifructa*) is found in barren or sparsely vegetated areas in Elko County and is of concern in the Wilkins area (BLM 1990). Grouse Creek rock-cress (*A. falcatoria*), also in Elko County, is found in high elevation coniferous forests. Goose Creek milk-vetch (*Astragalus anserinus*) is located in Elko County on undeveloped soils along Goose Creek and at Thousand Springs (BLM 1990). Broad fleabane (*Erigeron latus*) is found on gravelly or rocky hillsides. Not enough is known about this species to make definite statements about its sensitivity (USDI, BLM 1989). Arching pussytoes (*Antennaria arcuata*) grows in meadows that are not permanently wet and in riparian areas. Lewis buckwheat (*Eriogonum lewisii*), is known on gravelly steep slopes. Barren valley collomia (*Collomia renacta*) is found in "badland areas" and is of concern in the Pequop Summit area (BLM 1990).

Six C2 species exist which may occur on the southern extension to Las Vegas. Merriam or white bear poppy (*Arctomecon merriami*), found on shallow gravelly soils, is threatened by land development. Golden bear poppy (*A. californica*), considered critically endangered by the State, is found in gravelly desert flats in association with creosotebush. Alkali mariposa (*Calochortus striatus*) is found in alkali

meadows in association with saltgrass. Beaverdam breadroot (*Pediomelum castoreum*), recently listed (January 1992) is known to occur in sandy gravels of the Mojave Desert, especially along Kane Springs Wash (Link 680). Two subspecies of penstemon (*Penstemon bicolor* var. *bicolor, P. bicolor* var. *roseus*) occur next to the Dry Lake Substation site in the Dry Lake Valley. Both are known from shallow, gravelly soils and appear to survive in disturbed areas (Mozingo 1980). The first variety is a watch species. The latter is recommended for deletion on the state level.

Blaine's pincushion, Clokey pincushion (*Coryphantha vivipera* var. *rosea*), and Great Basin fishhook (*Sclerocactus pubispinus*) are three species of cactus specifically listed. All species of cactus and yucca are protected by The Cactus and Yucca Law, Nevada State Law (Revised Statutes 527). There are known populations of Great Basin fishhook along several of the links in the eastern part of the state. The proposed corridors may cross some healthy populations of cactus or yucca.

Eleven of the species identified are listed as 3C on the federal level. Habitat descriptions are given in Appendix C.

Two tree species merit mentioning. Bristlecone pine (*Pinus aristata*) occurs in eastern Nevada, found on dry, rock slopes and ridges of high mountains at elevations exceeding 7,500 feet. They are classed among the oldest known living plants and can provide important historical information. Additionally, a rare variety of juniper, known as swamp cedar (*Juniperus scopulorum*), occurs in White River Valley east of one link.

Utah - Fourteen species of sensitive plants that are known to occur, or have the potential to occur, within the corridors of the SWIP (Table BIO-18 in the Technical Report). According to the most recent data available, none of these species is listed as endangered on the federal or state level.

Ute, or plateau, lady's tresses (*Spiranthes diluvialis*) historically occurred in the Great Basin. This species is supported by moist soils in mesic or wet meadows along springs, bogs, or open-seepage areas in cottonwood, tamarix, willow, and piñon-juniper associations at 4,400 to 6,800 feet in elevation. None of the historical locations were within the proposed corridors and many of these populations have evidently been extirpated with the exception of some near Utah Lake.

Nine species are C2 on the Federal level. Compact catseye (*Cryptantha compacta*), recently downgraded from a C1 species, is found within Millard County in association with desertscrub and grassland. Sunnyside green gentian (*Swertia=[Frasera] gypsicola*) is considered extremely rare globally and statewide (Young 1989). Known locations include Millard County. Sand-loving buckwheat (*Eriogonum ammophilum*), associated with desertscrub, most likely occurs within the SWIP corridors. Frisco clover (*Trifolium andersonii* var. *friscanum*) is an S1 (S3) species, with this particular subspecies considered rare. It is found at elevations of 7,000 to 7,500 feet in association with piñon-juniper in Millard County.

Known locations of currant milk-vetch (*Astragalus uncialis*) exist near Delta, Utah. This species is found on dry knolls and slopes in limestone-derived soils. Depressed bitterweed (*Hymenoxys depressa*) is undergoing taxonomic recombination resulting in a more extended range than previously defined (Boyce 1989). It is found in association with black sagebrush. Tunnel Springs beard tongue (*Penstemon concinnus*) is known to occur in Millard County, although it may be south of proposed corridors. Jones globemallow (*Sphaeralcea caespitosa*) has been identified as occurring within a proposed corridor (USDI, BLM 1989). It is found on calcareous soils in association with mixed shrub and piñon-juniper communities at elevations of 5,000 to 6,500 feet.

The remaining five plants listed are categorized as 3C which indicates that they are no longer candidates for listing because they are more abundant than previously believed or have no federal status. They should still be taken into consideration, as the State of Utah lists several of them as species of concern. Calloway milk-vetch (*Astragalus callithrix*) and terrace buckwheat (*Eriogonum natum*) are listed as S2. Their ranges include Millard County. Limestone buckwheat (*E. eremicum*) and Great Basin pincushion (*Sclerocactus pubispinus*) have not been ranked on the state level yet. Both are found in Millard County. Transmission lines are listed as a threat to limestone buckwheat, and harvesting for horticultural purposes threatens the Great Basin pincushion. Low beard tongue (*Penstemon nanus*) is found in Juab, Millard, and Tooele counties.

Special Status Species - Wildlife

The FWS and the states of Idaho, Nevada, and Utah have all devised codes for defining the extent of rarity and level of threat to biotic taxa that are included on species lists maintained by each governmental entity. Definitions of these codes may be found in the technical reports. Concern for the species discussed below has been expressed by agencies contacted during the biological resource inventory.

Idaho - Federally-listed wildlife species known to occupy habitats within the study corridors include the bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus anatum*). Refer to Table BIO-19 in the technical reports for a list of special status wildlife species in the project area in Idaho.

Candidates for federal listing (Category 2) include one species of fish, the Shoshone sculpin (*Cottus greenei*) and five species of birds: ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and white-faced ibis (*Plegadis chihi*). The spotted bat (*Euderma maculatum*) is the only candidate species of mammal known to occur in the project area in Idaho. The long-billed curlew (*Numenius americanus*), a fairly common species in the project area, has recently (FWS, 1991) been downgraded to Category 3C, taxa that have been shown to be more abundant than previously thought. The FWS has also recently (1992) found that a petition to list the ferruginous hawk among the threatened or endangered wildlife of the United States was not warranted.

Species identified as sensitive or of concern to state agencies are sage grouse (*Centrocercus urophasianus*), burrowing owl (*Athene cunicularia*), and pronghorn (*Antilocapra americana*).

No specific locations of habitat for Swainson's hawk, yellow-billed cuckoo, white-faced ibis or spotted bat were identified within the study corridors. Although other species mentioned above occur within the SWIP study corridors, no specific locations of nests and/or crucial habitats were identified, with the exception of Shoshone sculpin and sage grouse strutting grounds.

Nevada - Federally-listed species identified within the study corridors include the desert tortoise (*Gopherus agassizii*), White River spinedace (*Lepidomeda albivallis*), bald eagle, and peregrine falcon. See Table BIO-20 in the technical reports for a detailed list of special status wildlife species in the project area in Nevada. The desert tortoise, bald eagle and peregrine falcon were included in the Biological Assessment (refer to Biological Opinion in Appendix C) prepared for the SWIP.

Candidates for federal listing (Category 2) in the project area in Nevada include four butterflies, the Baking Powder Flat blue butterfly (*Euphilotes battoides* spp.) and Mattoni's blue butterfly (E.

pallescens mattoni), White River wood nymph butterfly (*Cercyionsis pegala* spp), and Steptoe Valley crescent spot butterfly (*Phyciodes pascoensis*). Candidate fish species include: White River desert sucker (*Catostomus clarki intermedius*), White River speckled dace (*Rhinichthys osculus* spp.), Pahranagat speckled dace (*R. o. velifer*), Lahontan speckled dace (*R. o. robustus*), Preston White River springfish (*Crenichthys baileyi albivallis*), relict dace (*Relictus solitarius*), and Bonneville cutthroat trout (*Salmo clarki utah*).

One species of amphibian, the Arizona (southwestern) toad (*Bufo microscaphus*), and one species of reptile, the chuckwalla (*Sauromalus obesus*), are classified as a federal Category 2 species.

Category 2 bird species include ferruginous hawk, Swainson's hawk, western snowy plover (*Charadrius alexandrius nivosus*), western yellow-billed cuckoo, and white-faced ibis. The FWS has received a petition requesting the listing of the ferruginous hawk as a threatened species. This species is included in the Biological Assessment prepared for the SWIP.

Category 2 mammal species identified in the project area are the spotted bat (*Euderma maculatum*) , Desert Valley kangaroo mouse (*Microdipodops megacephalus albiventer*), Sierra Nevada red fox (*Vulpes vulpes necatur*), North American wolverine (*Gulo gulo luscus*), and North American lynx (*Felis lynx canadensis*).

Species classified as sensitive or of concern to state agencies include burrowing owl, sandhill crane (*Grus canadensis*), sage grouse, golden eagle (*Aquila chrysaetos*), Gambel's quail (*Lophortyx gambelii*), bighorn sheep (*Ovis canadensis*), pronghorn, elk, and mule deer (*Odocoileus hemionus*).

The breeding range of the loggerhead shrike occurs throughout the study area. The chuckwalla (*Sauromalus obesus*) is a resident of Mojave desertscrub communities. Chuckwallas prefer rocky hillside areas, particularly lava flows. Link 720 traverses chuckwalla habitat in the Arrow Canyon Range. Both species are Category 2 candidates for federal listing.

The burrowing owl is a species of concern to the NDOW. Burrowing owls occur in Mojave desertscrub habitat and, therefore, could occur on Links 690, 700, and 720. Burrowing owls often use desert tortoise burrows and could be found throughout all tortoise habitat.

No locations of habitat were identified within the SWIP study corridors for the following: Arizona toad, western snowy plover, yellow-billed cuckoo, white-faced ibis, Desert Valley kangaroo mouse, spotted bat, red fox, wolverine, lynx, White River springfish, White River spinedace, or Mattoni's and Baking Powder Flat blue butterflies. The White River wood nymph butterfly is known to occur in wetlands near the center of the White River Valley near the White Pine-Nye County lines, in the vicinity of Link 669. The Steptoe Valley crescent spot butterfly is known from wetlands near the Monte Neva Hot Springs in the Steptoe Valley (on Link 291).

Utah - Two federally-listed species occur in the project area in Utah, the bald eagle and peregrine falcon. Refer to Table BIO-21 in the technical reports for list of special status wildlife species in the project area in Utah.

A number of species are candidates for federal listing (Category 2). These include invertebrates such as the Great Basin silver spot butterfly (*Speyeria nokomis nokomis*) and a Category 2 species of amphibian, the western spotted frog (*Rana pretiosa*). Category 2 fish species include the Bonneville cutthroat trout, and least chub (*Iotichthys plegethonti*s).

Category 2 bird species occurring in Utah are the ferruginous hawk, Swainson's hawk, western snowy plover, western yellow-billed cuckoo, and white-faced ibis. Only one Category 2 mammal species, the spotted bat, is known to occur in the project area in Utah.

Species identified as sensitive or of state concern include the golden eagle, pronghorn, and mule deer.

No specific locations of habitat were identified within the SWIP corridors in Utah for bald eagle, peregrine falcon, Swainson's hawk, western yellow-billed cuckoo, white-faced ibis and spotted bat.

Midpoint to Dry Lake Segment

Route A

Wildlife - From the Midpoint Substation to the Idaho-Nevada state line (Links 10, 20, 40, 41, 50, and 70) near Eden, Hansen, and Rogerson would traverse habitat for burrowing owls, long-billed curlew nesting populations, ferruginous hawks and pronghorn in Idaho. Sage grouse leks and wintering grounds would also be north of Jackpot, Nevada (Link 70).

Numerous links on the route segment from Jackpot to Robinson Summit would traverse crucial big game habitats including pronghorn winter range from Jackpot to southwest of Wilkins (Links 72, 101, 102, 110, 130, 160, 161, 162), mule deer winter range from Jackpot to Knoll Creek Area (Links 72, 101, 102, 110, 130) and Toano Draw and Goshute Valley (Links 200, 211, and 212), pronghorn yearlong and summer habitat in the Steptoe Valley (link 250), and pronghorn kidding grounds adjacent to Raiff (Link 291). Sage grouse leks and wintering grounds also occur along many links (72, 100, 110, 160, 161, 162, 1612, 200, 211, 212, 291, and 293). Habitat for long-billed curlew and sandhill crane is encountered in the Steptoe Valley (Links 261, 270, 291, and 293). Ferruginous hawk nests are present in the Egan Range (Link 293) on this route. Route A would follow an existing transmission line where the cumulative effects of raptor predation on sage grouse (Links 72, 101, 102, 110, 130, 160, 161, and 162) would not be expected to increase substantially. Route A and the other alternative routes (Midpoint to Dry Lake) converge just north of Robinson Summit (Link 310).

From the Robinson Summit Substation site south to the Dry Lake Substation site, all the routes would follow the same links. A large number of ferruginous hawk nest sites occur on or near the route northwest of Riepetown (Link 340) and near Coyote Wash (Link 673). Other important raptor habitats include golden eagle nests and bald eagle winter habitat in the vicinity of Gap Mountain (Link 672), burrowing owl nesting (Link 363), and crucial raptor (cliff nesting species) nesting areas in the Horse Range (Links 669, 670) and the vicinity of Gap Mountain (Link 672). Extensive areas of mule deer winter use and migration areas are encountered on this part of the route (Links 670, 672, and 673). Sage grouse leks are traversed by alternatives near the north end of White River Valley (Link 340 and 669).

Route A would traverse Mojave desertscrub vegetation in southern Nevada and would encounter habitat for bighorn sheep, desert tortoise, gambel's quail near Delamar Valley (Link 690), Pahranagat Wash (Link 690), Arrow Canyon Range (Link 670), and sandhill crane habitat (Links 690, 670).

Plants - Route A would cover approximately 314 miles (61 percent) of sage scrub and 108 miles (21 percent) of grassland. Sage scrub, as mapped, represents four identified communities: Great Basin sagebrush on the lower foothills, shadscale at low elevation saline basins, greasewood in saline soils, and samphire/iodine bush. Samphire/iodine bush is a unique plant community found where salt

crystals form on the soil as a result of pooling water. Great Basin sagebrush is the most common and is not highly sensitive. Grassland communities, characterized by cheatgrass brome and crested wheatgrass, are found largely ecotonal with other plant communities. Approximately 8 percent of the land that would be crossed is agricultural, including prime farmlands. The route would cross 26 perennial streams through a small riparian area (less than 1 percent). Less than 1 percent of the route would traverse higher elevation piñon-juniper communities.

From Ely to the Dry Lake Substation site, the route would traverse the northern portion of Delamar Valley (Link 690) through sage scrub, most likely blackbrush and other cooler, Great Basin desertscrub species. Where the route would pass the southern edge of Pahranagat Mountains, there is a distinct transition to Mojave desertscrub, characterized by creosote/bursage with some Joshua trees locally present. The route would cross approximately 56 miles (10 percent) of Mojave Desertscrub.

Four plant species of concern occur along 1.3 miles of the assumed centerline of Route A and four occur within one mile on either side of the assumed centerline. In Idaho, four-wing milk-vetch (*Astragalus tetrapterus*) is found on the assumed centerline east of Browns Bench (Link 70), and populations of two-headed onion (*Allium anceps*) occur on the assumed centerline southwest of Eden (Link 41) and within one mile of assumed centerline (Link 70). Both are Priority 2 in the State. In Nevada, Elko rock-cress (*Arabis falcifructa*), a Category 2 species, occurs within one mile of the route east of the Thousand Springs Valley (Link 162). In the Steptoe Valley less than one mile east of the route, Monte Neva Hot Springs (Link 291) provides habitat for Monte Neva paintbrush (*Castilleja salsuginosa*), a Category 1 species, critically endangered in the Nevada.

Two plant species occur on the route from the Ely area to Dry Lake Substation site. One-leaflet Torrey milk-vetch (*Astragalus calycosus* var. *monophyllidius*), a watch species, is found on the assumed centerline of the route through Jakes Valley (Link 670). Meadow Valley range sandwort (*Arenaria stenomeres*), a watch species, occurs on Link 720. Yellow twotone beard tongue and rosy twotone beard tongue (*Penstemon bicolor, P. b. roseus*) and Three-cornered pod Geyer milk-vetch (*Astragalus triquetrus*) are Category 2 candidate species which occur in the vicinity of Links 690, 700, and 720. Only the milk-vetch (*Astragalus*) occurs within the one-mile corridor, although there is a high potential for the two varieties of penstemon to occur given habitat requirements and known ranges.

Route B

Wildlife - From Midpoint Substation to Jackpot, Nevada, Route B is the same as Route A. South of Jackpot, this route would turn southeast through Trout Creek (Links 91, 92, 140, 141, 142, and 144) instead of paralleling the existing transmission lines south where it would encounter sage grouse leks. Route B would encounter more sage grouse leks in Toano Draw (Link 200) and Goshute Valley (Links 221, 226), and again in the Steptoe Valley (Link 259) and Butte Valley (Link 280). Big game habitat on this route includes mule deer crucial winter range along the Toano Range and Goshute Mountains (Link 200, 222), and crucial summer habitat near Trout Creek (Link 91). Important raptor habitats include peregrine falcon winter habitat (Links 222, 224, and 226), bald eagle winter habitat (Links 259, 260), and ferruginous hawk habitat (Links 259, 260) and nest sites within the Butte Valley (Link 280). Habitat for long-billed curlew and sandhill crane would be encountered in Steptoe Valley (Links 259, 260, 270, and 261). An important water use area comprised of Antone Creek and surrounding springs is traversed by this route in Antone Pass (Link 280). The waters are important for wildlife, especially mule deer and sage grouse. From the Robinson Summit Substation site to the Dry Lake Substation site, Route B is the same as Route A.

Plants - Route B would traverse approximately 331 miles (64 percent) of sage scrub and 97 miles (18 percent) of grassland. Other plant communities crossed include agricultural land (8 percent), and less than 1 percent of both piñon-juniper and riparian areas. Twenty-seven perennial streams are crossed. The community types and vegetation described for Route A from the Robinson Summit Substation site to the Dry Lake Substation site also apply to Route B.

The four plant species of concern that occur along 1.3 miles of the route include four-wing milk-vetch (*Astragalus tetrapterus*) east of Browns Bench (Links 64 and 70), two-headed onion (*Allium anceps*) southwest of Eden (Link 41), one-leaflet Torrey milk-vetch (*Astragalus calycosus* var. *monophyllidius*) within the White River Valley (Link 670), and Meadow Valley range sandwort (*Arenaria stenomeres*) within the Coyote Spring Valley (Link 720). These species are identical to those discussed in Route A. One species that occurs in Nevada within the one mile zone adjacent to the Toano Range and Goshute Mountains (Link 222) is Great Basin fishhook (*Sclerocactus pubispinus*). Though it is a Category 3 species, it is protected by the Cactus and Yucca Law in Nevada. Plants along the southern corridors (690, 700, 720) are identical to Route A.

Route C

Wildlife - From Midpoint Substation to north of (Link 200), Route C is the same as Route B. From the crossing of Interstate 80 (Link 211) to Dolly Varden (Link 230), Route C is the same as Route A. Link segment 250 is unique to Route C. Route C would traverse crucial pronghorn winter range in the Currie Hills (Link 250) and would also cross sage grouse leks and bald eagle habitat. From the North Steptoe Substation site to the Dry Lake Substation site, Route C is the same as described for Route A.

Plants - Route C traverses approximately 320 miles (63 percent) of sage scrub and 96 miles (19 percent) of grassland. Approximately 8 percent of the area that would be crossed by this route is agricultural. The remainder is less than 1 percent piñon-juniper and less than 1 percent riparian. Twenty-three perennial streams would be crossed. Refer to Route A for a discussion of the communities and specific description of the Mojave desertscrub found south of the Pahranagat Mountains.

Plant species of concern occur along 1.3 miles of the assumed centerline, as discussed in Route A. Species occurring within the one mile area are *Castilleja salsuginosa* (Link 291) near Monte Neva Hot Springs in Steptoe Valley and *Allium anceps* (Link 41) near Dry Gulch in Idaho. The plants along the southern portion (Links 690, 700, and 720) are identical to those along Route A.

Route D

Wildlife - From Midpoint Substation to just north of HD Summit, Route D is the same as Route A. From HD Summit to approximately Town Creek, Route D would follow an existing transmission line roughly parallel to U.S. Highway 93 (Link 167) and would traverse crucial pronghorn winter range southwest of Wilkins near Bishops Creek (Link 1611), sage grouse leks west of the Windermere Hills (Link 167) and near Interstate 80 east of Wells (Links 180), long-billed curlew habitat southeast of Wells (Links 180, 190), crucial deer winter range in Independence Valley (Link 180, 190), and in the Goshute Valley north of Dolly Varden (Link 230).

From Dolly Varden to the North Steptoe Substation site (Link 241, 243, and 245), Route D would traverse antelope crucial summer range and antelope yearlong habitat. From the North Steptoe Substation site to the Dry Lake Substation site, Route D is the same as Route A.

Plants - Route D would traverse approximately 319 miles (62 percent) of sage scrub and 97 miles (19 percent) of grassland. Approximately 8 percent of the land that would be crossed is agricultural. Other communities consist of less than 1 percent piñon-juniper and less than 1 percent riparian areas. Refer to Route A for a discussion of the communities and specific description of the Mojave desertscrub found south of the Pahranagat Mountains. Plant species of concern occur along 1.3 miles of the assumed centerline, as discussed in Route A. Those within the one mile zone are also the same as those described for Route A (Links 41, 162, 291, and 700).

Route E

Wildlife - From Midpoint Substation to north of Interstate 80 (Link 200), Route E is the same as Route A. From north of Interstate 80 to the North Steptoe Substation site (Links 221, 222, 224, 226, 259, 260, 261, and 270), Route E is same as Route B. From the North Steptoe Substation site to the Dry Lake Substation site, Route E is the same as Route C.

Plants - Route E would traverse approximately 320 miles (61 percent) of sage scrub and 116 miles (22 percent) of grassland. Agricultural lands constitute approximately 9 percent of the land that would be crossed. Piñon-juniper and riparian communities constitute less than 1 percent of the land that would be crossed. The route would cross 22 perennial streams. Refer to Route A for a description of the communities and a description of the Mojave desertscrub found south of the Pahranagat Mountains.

Plant species of concern that occur along 1.3 miles of the route are identical to those discussed for Route A. Monte Neva paintbrush (*Castilleja salsuginosa*) found near Monte Neva Hot Springs in Steptoe Valley (Link 291), and two-headed onion (*Allium anceps*) near Dry Gulch (Link 41) in Idaho occur within the one mile the route. Great Basin fishhook (*Sclerocactus pubispinus*) appears adjacent to the Toano Range and Goshute Mountains (Link 222).

Route F

Wildlife - Route F would traverse west from Midpoint Substation (Links 61, 62). Near Hagerman, the route would traverse habitat for burrowing owl, ferruginous hawk, long-billed curlew nesting populations, and Shoshone sculpin. North and west of Hagerman, the route would traverse sage grouse leks, habitat for pronghorn and river otter at the Snake River (Link 62). Adjacent to the Hagerman Fossil Beds National Monument (Link 64), the route would also traverse several cooperative wildlife tracts that are managed for game birds, such as pheasant. On Link 64, the BLM, Burley District, wildlife biologists discovered two nesting pairs of ferruginous hawks during the late spring of 1992. Where the route would parallel Salmon Falls Creek Canyon, some long-billed curlew and burrowing owl habitat occurs.

From Jackpot, Nevada to north of Interstate 80 in Goshute Valley, Route F is the same as Route B. Then, the remainder of this route to Dry Lake Substation site is the same as described for Route C.

Plants - Route F would traverse approximately 317 miles (60 percent) of sage scrub and 110 miles (20 percent) of grassland. Approximately 11 percent of the land that would be crossed by this route is agricultural. Other plant communities that would be crossed consist of less than 1 percent piñon-juniper and less than one percent riparian. Eight perennial streams would be crossed. Refer to Route A for a description of the plant communities a description of the Mojave desertscrub found south of the Pahranagat Mountains.

Plant species of concern occur along 4.2 miles of the route. In Idaho, mourning milk-vetch (*Astragalus atratus* var. *inseptus*) occurs near Peters Gulch (Link 64), *Lepidium davisii* occurs from near Salmon Creek Falls Creek Reservoir (Link 64), two-headed onion (*Allium anceps*) east of Browns Bench (Link 70), and four-wing milk-vetch (*Astragalus tetrapterus*) adjacent to Salmon Falls Creek (Link 64, 70). In Nevada, one-leaflet Torrey milkvetch (*A. calycosus* var. *monophyllidius*) occurs in Jakes Valley (Link 670) and *Arenaria stenomeres* occurs in Coyote Spring Valley (Link 720). Other species known to exist within the one mile corridor are Torrey's blazing star (*Mentzelia torreyi* var. *acerosa*) northwest of Hagerman (Link 62) and Owyhee mourning milkvetch (*Astragalus atratus* var. *owyheensis*) adjacent to Salmon Falls Creek (Link 64). Three-cornered pod Geyer milk-vetch (*Astragalus triquetrus*), yellow twotone beard tongue and rosy twotone beard tongue (*Penstemon bicolor* var. *bicolor*, and *P. b. roseus*) are as described for Route A along Links 690, 700, and 720.

Route G

Wildlife - From Midpoint Substation to Jackpot, Nevada, Route G is the same as Route A. Route G would cross Salmon Falls Creek through the foothills west of Jackpot (Links 711, 714) and would traverse sage grouse leks and wintering grounds, crucial pronghorn and mule deer winter habitat, and bald eagle nesting and winter habitat.

From Jackpot to the Robinson Summit Substation site, Route G is the same as Route A, except Route G uses Links 713 and 715 near Contact Nevada and Links 150 and 151 near Wilkins. Wildlife habitats the would be traversed are essentially the same as those which occur on Links 72, 101, and 102 as described for Route A. In Thousand Springs Valley (Links 150, 151), the route would traverse two sage grouse leks, skirt the edge of another sage grouse lek buffer, and cross an area of pronghorn winter range. From Dolly Varden to the North Steptoe Substation site (Link 241, 243, and 245), Route G would traverse antelope crucial summer range and antelope yearlong habitat.

From the North Steptoe Substation site to the Robinson Summit Substation site, Route G is the same as Route B. From Robinson Summit Substation to Dry Lake wildlife habitats traversed Route G are the same as those described for these links on Route A.

Plants - Route G would traverse approximately 312 miles (62 percent) of sage scrub and 97 miles (19 percent) of grassland. Other plant communities the would be crossed include approximately 16.8 miles (3 percent) of agricultural land, less than 1 percent piñon-juniper at higher elevations, and less than 1 percent riparian. The route would cross about 78 miles (16 percent) Mojave desertscrub along the southern portion. Plant communities and vegetation types are the same as those described for Route A.

The four plant species of concern that occur along 1.3 miles of the route include four-wing milk-vetch (*Astragalus tetrapterus*) east of Browns Bench (Link 70), two-headed onion (*Allium anceps*) southwest of Eden (Link 41), one-leaflet Torrey milk-vetch (*Astragalus calycosus* var. *monophyllidius*) within the White River Valley (Link 670), and Meadow Valley range sandwort (*Arenaria stenomeres*) within the

Coyote Spring Valley (Link 720). These species are identical to those discussed in Route A. Elko rock-cress, a Category 2 species, occurs within one mile of the corridor in the Thousand Springs Valley (Link 151).

Ely to Delta Segment

Direct Route

Wildlife - The Direct Route would originate from the North Steptoe Substation site, cross the Schell Creek Range and continue past the Red Hills to a point south of the Little Hills (Links 262, 263, 265 and 266). This route would cross near areas of ferruginous hawk, long-billed curlew, bald eagle habitat, sage grouse wintering grounds, and lek and crucial pronghorn winter range. On Link 630, the Direct Route crosses the Confusion Wild Horse Management Area (HMA) between mile posts 3 and 27. From mile posts 8 to 14 the Confusion HMA have been designated crucial wild horse habitat. From mile posts 31 to 39 the line would cross the Swasey HMA, with the segment from mile post 33 to 34 crossing crucial habitat within that HMA.

Where this route would traverse the Snake Valley (Link 630), sensitive aquatic/wetland habitats are encountered. One of these, the Leland-Harris Spring Complex, is inhabited by least chub, desert dace, and spotted frog. Wetland areas associated with this spring complex are also habitat for the Great Basin silver spot butterfly. Crucial deer winter habitat would be traversed by this route in the House Range (Link 630). Crucial mule deer winter habitat and a migration corridor would also be encountered in the Drum Mountains (Links 630, 650). The route would traverse pronghorn habitat north of Sugarville (Link 582) at the Intermountain Substation site.

Plants - The Direct Route would traverse a mosaic of sage scrub for approximately 83 miles (64 percent) and grassland communities for 27 miles (20 percent). The route would cross approximately 21 miles (16 percent) of playa in Utah. No sensitive plant species are known to occur within one mile of the route.

Cutoff Route

The Cutoff Route is the same as the Direct Route from the North Steptoe Substation site to just south of the Little Hills. The route would then continue southwest across the Snake Valley (Link 266).

Wildlife - A number of raptor nesting areas would be traversed by this route including golden eagle nest sites within the Snake Valley (Link 268) and Tule Valley (Link 462). Ferruginous hawk nests also occur in the Tule Valley (Link 462). Crucial Mule deer winter range and migration corridors occur in the Confusion Range and Middle Range (Link 462) and a mule deer migration corridor is traversed in the Congor Range (Link 268). Other important wildlife habitats include critical pronghorn habitat and crucial water use areas in the Snake Valley (Link 268). The route would traverse pronghorn habitat west of Smelter Hills (Links 571) and north of Sugarville (Link 582) at the Intermountain Substation site. The Cutoff Route is also likely to affect populations of wild horses. Between miles 11 and 19 on Link 268, the route crosses the Conger Mountain HMA.

Plants - The Cutoff Route would traverse a mosaic of sage scrub for approximately 101 miles (66 percent) and grassland communities for 34 miles (22 percent). The route would cross approximately 18 miles (12 percent) of playa in Utah. One population of Great Basin fishhook (*Sclerocactus*

pubispinus) occurs along the assumed centerline of Link 462. The species is also known to occur on Link 268.

230kV Corridor Route

Wildlife - The 230kV Corridor Route would originate form the Robinson Summit Substation site and parallel two 230kV transmission lines east toward Ely, Nevada (Link 350). The route would traverse sage grouse leks and wintering grounds northwest of Ely (Links 350, 351, and 352) and in the Schell Creek Range (Link 380). Ferruginous hawk nests and long-billed curlew habitat occur on in the Steptoe Valley (Link 351, 352, and 370). From east of the Nevada-Utah state line (Link 460), this route is the same as described for the Cutoff Route. Links 461 and 462 traverse wild horse habitat in the Conger Mountain HMA. Specifically, miles 6 to 13 on Link 461 and miles 1 to 13 on Link 462 involve the Conger Mountain HMA.

Plants - The 230kV Corridor Route would traverse a mosaic of sage scrub for 104 miles (65 percent) and grassland communities for 37 miles (23 percent). In Utah, the route would cross approximately 14 miles (9 percent) of playa. One population of Great Basin fishhook (*Sclerocactus pubispinus*) occurs along the assumed centerline of Link 462.

Southern Route

Wildlife - The southern route exits the Robinson Summit Substation site from the south and follows the west side of the Egan Range. Ferruginous hawk nest sites are encountered along Link 340 northwest of Riepetown and at the north end of the Fortification Range on Link 420. Sage grouse leks occur at the north end of White River Valley (Link 364) and in Spring Valley (Link 420). Long-billed curlew habitat is encountered where Link 420 traverses Steptoe Valley. Antelope kidding grounds occur north of the Fortification Range (Link 420). Key deer winter ranges occur by Big Springs Wash north of GBNP (Link 430) and in the Antelope Valley near Utah State Highway 21 (Link 451). Link 451, between mileposts 11 and 17 cross the Burbank HMA and miles 24 to 34 involve the King Top HMA. Other important habitats include a crucial water use area (Link 364) and critical pronghorn habitat near the Nevada-Utah state line (Link 450). From here Link 571 through 582 are the same for both the 230kV Corridor Route and the Southern Route.

Plants - The Southern Route would traverse predominately sage scrub for approximately 154 miles (73 percent) with grassland intermingled for 27 miles (13 percent). Twenty-two miles (11 percent) of the route would cross areas of playa.

Five species that are known to occur along the route are:

- Great Basin fishhook (*Sclerocactus pubispinus*) along the southern end of the Snake Range (Link 430, 451)
- compact catseye (*Cryptantha compacta*), sand-loving buckwheat (*Eriogonum ammophilum*), and low beard tongue (*Penstemon nanus*) at the southern tip of the Tule Valley (Link 451)
- currant milkvetch (*Astragalus uncialis*) located in the Swasey Wash (Link 490)

Populations of species that occur within the one mile corridor include Great Basin fishhook, currant milk-vetch, Jones globemallow (*Sphaeralcea caespitosa*), limestone buckwheat (*Eriogonum eremicum*), Calloway milk-vetch (*A. callithrix*), and terrace buckwheat (*E. natum*).

Environmental Consequences

Introduction

The vegetation types, sensitive wildlife, and plant species inventoried are described in detail in the technical report (refer to Appendix H of the DEIS/DPA for the locations where technical reports can be reviewed). Impact matrices were developed to identify the initial impacts anticipated as a result of the SWIP, to recommend mitigation measures to minimize those impacts, and to determine residual impacts.

Issues for wildlife species and important wildlife habitats are related primarily to increased public access into remote areas and/or ground disturbance. Ground disturbance caused by construction of the transmission line could result in habitat destruction and degradation, and future erosion problems where stabilizing plants are lost. Increased public access into remote areas, during and following construction, may result in increased human harassment of all classes of wildlife, increased levels of poaching, and increased take of certain species by legal hunters, trappers, or fishermen. Increased public access can also result in habitat damage from ORV vehicle use, accidentally set fires, and direct mortality of individual animals resulting from increased or higher speed vehicular traffic.

The GIS impact assessment models and matrices are described in the technical reports. In the technical report are narrative descriptions and data tables for each of the alternative route segments studied. The technical reports are available for review at the agency offices listed in Appendix H of the DEIS/DPA.

Methods

Impact types considered in the impact analysis models were:

1) Threatened, Endangered, Rare or Unique Species:

   - affect any federally classified threatened or endangered species or critical habitat thereof
   - affect any state listed protected, threatened, unique or otherwise sensitive species or habitat thereof

2) General Wildlife:
   - create a barrier or hazard to the migration or movement of any wildlife species (see discussion below on potential hazard to migrating raptors and other larger bird species).
   - alter the diversity of any biotic community or populations of any animal species communities, or areas

3) Increase human activity/public access.

To determine the intensity (level) of impacts that would result from the construction and operation of the SWIP, two models were developed to identify direct and indirect impacts. The access requirements were determined in a model that was compared with sensitive wildlife resources and habitats.

Where access and other ground disturbance would be greater and sensitive biological resources were found (e.g., wildlife habitats, sensitive plants, etc.), initial impacts would be of a higher intensity. These adverse impacts would be long-term unless revegetation would be done.

Where access roads would have to be constructed into currently remote areas, indirect long-term impacts would likely result. These impacts would be from increased pressure on biological resources from potentially greater presence of humans (e.g., legal hunting, poaching, fishing, ORV access, etc.). Refer to cumulative effects for a discussion of some of these indirect impacts that would occur over time.

Adverse, indirect, and long-term impacts would also result simply from the presence of the transmission lines. For example, because golden eagles will use transmission towers for hunting perches, predation on sage grouse within their sensitive habitats (i.e., leks and wintering grounds) may increase. A similar predation issue is found for juvenile desert tortoise where ravens have transmission towers as hunting perches. These impacts were documented where these impact types could be identified and where sensitive habitats corresponded to the potential presence of one of the alternative routes.

Mitigation Planning

In order to reduce potential impacts resulting from ground disturbance and increased levels of public access along the various alternative routes of the SWIP, generic and selectively recommended mitigation measures were applied to initial impact levels.

Generic mitigation as part of the project description, is applied uniformly along the route and tends to reduce impact potential to many resources (refer to Table 1-6). For example, restricting vehicle construction equipment movement to predesignated routes (#1) and recontouring and revegetating disturbed areas where necessary (#3 and #4), and construction of roads at right angles to streams (#13).

Selectively recommended mitigation measures are more specific and are applied to mitigate specific initial impacts (refer to Table 1-5). These measures include overland access to minimize ground disturbance (#2), placement of towers to avoid sensitive features (#6), modified tower design to minimize avian conflicts (#7), use of helicopter construction under certain conditions (#12), and limiting construction activities during sensitive periods (#11).

Results

Midpoint to Dry Lake Segment

Route A

Wildlife - From the Midpoint Substation to Jackpot, Nevada (Links 10, 20, 40, 41, 50, 70), initial impact levels (before applying of mitigation) resulting from construction of the project would be generally low and moderate. Mitigation (discussed at the beginning of this section) would reduce these impacts to low. The only high residual impacts on this route in Idaho would be where sage grouse leks are located near the Nevada state line (Link 70).

Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4 of the DEIS/DPA and the expanded discussion in Chapter 3 of the document). Concern has focused on the increase in public access within sage grouse habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult, there would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

There is potential for impact to wild horses along Route A. Horses occur along the route and some disturbance to these animals is expected, especially during construction. Horses are extremely mobile and readily move large distances on open public lands. Consequently, long-term adverse impacts to horse populations are not anticipated.

There would be high initial impacts to long-billed curlew nesting habitat where the project would significantly increase potential public access (Links 10, 20, 40, 70) due to the difficulty of eliminating access in areas of flat or gentle terrain and the vulnerability of nesting curlews. These impacts would be adverse and long-term. However, mitigation measures (discussed at the beginning of this section) would reduce most of these impacts to insignificant levels.

From Jackpot to northwest of the Windermere Hills (Links 72, 101, 102, 110, 130, 160, 161, 162) in northern Nevada, Route A would cause mainly moderate to high initial impacts. These initial impact would be due primarily to crucial mule deer and pronghorn habitats, bald eagle wintering and potential nesting habitat (Link 72), and sage grouse leks and wintering habitat (Links 160, 161, 162). The impacts to sage grouse are largely unmitigable because of potential predation by golden eagles on adult and immature birds (see discussion above). There would be 0.2 mile of high residual impacts to sage grouse (Link 160). These impacts would be significant, adverse, and long-term. However, applying mitigation measures along this portion of Route A would reduce all other high impacts to insignificant levels.

Moderate residual impacts would occur in some areas along this segment of Route A where public access would be significantly increased in big game habitats and in ferruginous hawk habitats. These impacts would be adverse and long-term, but are not considered significant. Because it is difficult to completely restrict new access where roads and trails have been constructed, there can be increased pressure on these species by hunting/poaching and harassment.

From the Windermere Hills to north of Interstate 80 near Oasis, Nevada (Links 1612, 152, 200), Route A would traverse the northern toe of the Windermere Hills and then southeast to East Squaw Creek. High initial impacts along this portion of the route would be primarily caused by increased public access in pronghorn winter range for 0.5 miles (Link 1612). These high impacts would be reduced to moderate, insignificant levels following mitigation (discussed at the beginning of this section). An additional 1.8 miles of high initial impacts would result to sage grouse winter range and leks north of East Squaw Creek (Link 200). Similar to the impacts to sage grouse described above, these impacts would remain high following mitigation.

In the section of the Route A between north of Interstate 80 and Dolly Varden in the Goshute Valley (Links 211, 212), high initial impacts would be expected to result from increased public access. Potentially high initial impacts from ground disturbance to sage grouse leks would occur on Link 211 at the north end of Goshute Valley (between mileposts 14.7 and 16.3). Following mitigation, these impacts to sage grouse leks would be expected to remain adverse and significant for about 1.6 miles.

From the Dolly Varden in the southern end of Goshute Valley to the North Steptoe Substation site (Links 211, 230, 250, 259, 260), high initial impacts from ground disturbance would occur for 0.2 miles because of sage grouse leks and known occurrences of wintering bald eagles near the north end of Steptoe Valley (Link 259). Despite applying mitigation measures, 0.2 miles of high residual impacts (adverse and significant) would remain.

From the North Steptoe Substation site to the Robinson Summit Substation site (Links 270, 291, 293, 310), increased public access would cause high initial impacts to sage grouse leks, long-billed curlew, and sandhill crane from increased public access near Monte Neva Hot Springs at the base of the Egan Range (milepost 11.8 to 11.9). No high residual impacts would be expected following mitigation. Ground disturbance along this segment of the route would result in high initial impacts along the base of the Egan Range (Link 291) in the Steptoe Valley (mileposts 4.4 to 6.1 and 7.9 to 11.8) and (Link 293) in the Egan Range (mileposts 1.9 to 4.4 and 4.8 to 6.5). Following mitigation (discussed at the beginning of this section), high residual impacts would occur for 3.0 miles in the Steptoe Valley (Link 291) and for 4.5 miles in Dry Canyon (Link 293). High residual impacts (significant impacts) on both links would result from the presence of sage grouse leks (refer to previous discussion of sage grouse effects).

Route A from the Robinson Summit Substation site to the Dry Lake Substation site (Links 340, 362, 363, 669, 670, 672, 673, 675, 690, 700), would cross through Great Basin desertscrub habitats along the north portion of this segment and Mojave desertscrub habitats in the southern portion. Generally, initial impacts for most of the route would be moderate to high. High initial impacts would be most notable where habitat of the desert tortoise is encountered in Coyote Spring Valley (Links 690, 700). Adding a transmission facility would reduce the amount of suitable tortoise habitat because of roads needed to construct and maintain the line, and would increase the potential for human activity.

Links 690, 700, and 720 of the SWIP route traverse 53.2 miles of desert tortoise habitat. Link 690 enters desert tortoise habitat in the extreme southern portion of the Pahranagat Valley. The first 4.3 miles of habitat are in an area designated as Category III. This area is at the northern limit of species distribution and tortoise densities are very low (0 to 10 tortoises per square mile). The last 15.3 miles of Link 690 are in Category I habitat. Tortoise densities in this area (northern most extension of Coyote Spring Valley) range from low to very high (140+ per square mile).

Links 700 and 720 continue south along U.S. Highway 93 through Coyote Spring Valley, and traverse 30.2 miles of Category I habitat. Fourteen miles is located on private land owned by Aerojet

Corporation and is, therefore, not officially categorized by the BLM. However, for the purposes of this Biological Assessment, it was considered to be Category I habitat as requested by the BLM. Surveys in this area indicate relatively high densities of tortoises (45 to 140+ tortoises per square mile) in portions of the Coyote Spring Valley. The habitat is generally considered to be in good condition. As the SWIP enters the Dry Lake Valley (Link 720), it traverses 3.2 miles of Category III habitat. The dry lake bed itself is not tortoise habitat. Tortoise densities in this portion of the Dry Lake Valley are in the very low to low range (0 to 45 tortoises per square mile).

In general, all new alignments in desert tortoise habitat are in close proximity to the existing roadway and tortoise density may be lower than in adjacent habitat. Typically tortoise numbers are greatly reduced near paved roadways. Therefore, densities within the proposed corridor maybe lower than estimates for outlying areas.

The Coyote Spring Valley has been proposed as a Tortoise Management Area in the Short-term Habitat Conservation Plan for Clark County (Regional Environmental Consultants, 1990). Further, the FWS's Desert Tortoise Recovery Plan is likely to designate the Valley as a protected management area.

Impacts to desert tortoise from increased human activity include being crushed by vehicles, shooting, illegal collecting, and destruction of burrows. Adverse, indirect, and long-term impacts could result simply from the presence of the transmission lines because ravens may use the transmission towers for hunting perches, and predation on juvenile desert tortoise may increase. Predation by ravens is usually a problem near urban areas, water bodies, and solid waste disposal sites, where ravens are typically found. Although raven predation is not considered a significant problem at this time, federal biologists are concerned that the problem may become more significant if Las Vegas and surrounding areas continue to develop and expand.

Mitigation measures applied during construction would effectively mitigate direct impacts to desert tortoise (e.g., tortoise or tortoise burrows being crushed by vehicles, etc.). However, it is unclear how raven predation, if it becomes a significant problem in the future, can be effectively mitigated.

A Biological Assessment has been prepared for desert tortoise, and formal consultation was completed with the FWS under Section 7 of the Endangered Species Act (1974). The BLM requires that an opinion be rendered by the FWS on the desert tortoise prior to a Record of Decision on the SWIP. The Biological Opinion, released on May 12, 1993, was favorable to allow construction of the SWIP and the detailed mitigation contained in the opinion will become part of the stipulations required to construct and operate the SWIP. One of the major mitigation measures would be to favor constructing the project through the sensitive area during the winter months when the tortoise are inactive (refer to #11 in Table 1-5). The Stateline Resource Area has released its Draft Resource Management Plan (RMP) for public review. The area of Coyote Springs Valley was proposed in several alternatives as an Area of Critical Environmental Concern for desert tortoise. The BLM's RMP process is being prepared in coordination with the Short-term Habitat Conservation Plan for desert tortoise that was prepared by Clark County (1991). Refer to the Technical Report for a description of the habitat classification for desert tortoise (e.g. category I, II, and III). Also refer to Appendix C - Biological Opinion.

The burrowing owl is a species of concern to the NDOW. Burrowing owls occur in Mojave desertscrub habitat and, therefore, could occur on Links 690, 700, and 720. Burrowing owls often use desert tortoise burrows and could be found throughout all tortoise habitat along the project. Limiting construction to winter months to reduce conflicts with owls has been recommended by the BLM.

Other highly sensitive features include ferruginous hawk nest sites (Link 673, 340), crucial raptor nesting areas (Links 669, 672), sage grouse leks (Link 669), crucial mule deer winter range and migration corridors (Links 672, 669, 670, 363, 673), and desert bighorn sheep movement/migration corridors (Links 690, 700). There are two bighorn sheep water developments in the southern end of the Arrow Canyon Range and up to two more may be constructed before construction of the project. The BLM has recommended that construction occur in the winter months and no new access roads be constructed within 2 miles of water sources.

High initial impacts from potentially increased public access along this section of the Route A would result from the higher potential for human interaction with mule deer, desert bighorn sheep, and ferruginous hawks. Specifically, there would be potential high initial impacts to mule deer migration corridors and ferruginous hawk habitat along Sierra Valley into Jake's Wash (Link 363 between mileposts 10.6 and 11.1). There would also be potential high impacts to a mule deer migration between mileposts 11.3 and 11.7 on Link 363 at the southern end of Sierra Valley. Along the foothills at the western edge of White River Valley (Link 669) the route would cause high initial impacts for 6.5 miles in a mule deer migration corridor. There would be 0.3 miles of high initial impacts to key deer winter range at the southern limit of the Egan Range in the White River Valley (Link 672). These impacts would be mitigated to insignificant levels (mitigation discussed at the beginning of this section).

Where Route A would cross the northeast end of Dry Lake Valley (Link 673), there would be 1.7 miles of high initial impacts to ferruginous hawk nest sites and 0.7 miles of similar impacts to key deer winter range. There would be 2.3 miles of potentially high initial impacts relating to increased public access and desert tortoise habitat and bighorn sheep movement corridors along the southern end of Delamar Valley and into Pahranagat Wash (Link 690). These impacts would be mitigated to insignificant levels (mitigation discussed at the beginning of this section).

Along Route A in Sierra Valley and into Jakes Wash (Link 363) there would be 1.0 mile of high initial impacts (from ground disturbing activities) to ferruginous hawk habitat and nesting areas of other raptor species. There would be 12.7 miles of high initial impact from ground disturbance to mule deer migration corridors and staging areas and raptor nesting areas along the foothills at the western edge of White River Valley (Link 669). Where this route would cross the northeast end of Dry Lake Valley (Link 673), there would be 1.7 miles of high initial impact to nesting ferruginous hawks.

Mitigation measures (discussed at the beginning of this section) are expected to be effective in reducing high initial impacts on the Robinson Summit to Dry Lake section of the Route A to insignificant levels.

Moderate residual impacts would occur in some areas along this segment of Route A where public access would be significantly increased in big game habitats and in ferruginous hawk habitats. These impacts would be adverse and long-term, but are not considered significant. Because it is difficult to completely restrict new access where roads and trails have been constructed, there can be increased pressure on these species by hunting/poaching and harassment.

Moderate residual impacts to desert tortoise would likely result in some areas where public access is increased significantly.

Vegetation/Sensitive Plant Species - No federally listed endangered or threatened plant species is known to occur. However, this does not mean that none exist, as surveys have not been conducted over much of the area.

Ground disturbance along Route A would result in moderate to high initial impacts where two sensitive plant species, four-wing milk-vetch (*Astragalus tetrapterus*) and two-headed onion (*Astragalus anceps*), occur for 1.3 miles along the assumed centerline east of Salmon Falls Creek Reservoir (Link 70). Additional moderate to high initial impacts would be expected where One-leaflet torrey milk-vetch (*A. calycosus* var. *monophyllidius*) occurs in White River Valley (Link 670) and where Meadow Valley range sandwort (*Arenaria stenomeres*) occurs in Coyote Spring Valley and Arrow Canyon (Link 720). Potential increases in public access would not be considered a serious threat. Following mitigation, residual impacts would be expected to be low. Revegetation of disturbed areas in dry climates is difficult. Rehabilitation and revegetation would be addressed specifically in the Construction, Operation, and Maintenance COM Plan.

One C2 species and one C1 species occur within the one mile of the assumed centerline. monte neva paintbrush (*Castilleja salsuginosa*) (C1), also listed as critically endangered on the state list, occurs near Monte Neva Hot Springs in Steptoe Valley (Link 291). Increased public access to the Springs could result in trampling and destruction of habitat. Elko rock-cress (*Arabis falcifructa*), a C2 species, occurs along the western edge of Thousand Springs Valley (Link 162). Yellow twotoned beard tongue and rosy twotoned beard tongue (*Penstemon bicolor, P. b. roseus*) and three cornered pod Geyer milk-vetch (*Astragalus triquetrus*) (the only one with known locations within the one-mile corridor) are Category 2 candidate species which could occur on Links 790, 800, 830 and 840. These plant species would most likely not be impacted by construction, if overland access to tower sites along the assumed centerline were predesignated. Pre-construction surveys may not be adequate, as these species will only germinate during years when climatic conditions are favorable. Mitigation measures, such as removing and saving topsoil which may contain the seed base, would be addressed in the COM Plan.

Route B

Wildlife - From Midpoint Substation to Jackpot, Nevada, the initial and residual impacts expected for Route B would be the same as those described for Route A.

From Jackpot to north of Interstate 80 near Oasis, Nevada (Links 91, 92, 140, 141, 142, 144), there would be high initial impacts for 3.3 miles to sage grouse leks and crucial mule deer summer habitat along Trout Creek (Link 92) and 0.3 mile to sage grouse winter grounds in the Trout Creek area (Link 91) that would result from increased public access and ground disturbance. There would be high initial impacts to a sage grouse lek and 1.5 miles high initial impacts to sage grouse winter range in Toano Draw (Link 142). Near the headwaters of Trout Creek (Link 92), there would be 2.2 miles of initial high impacts associated with sage grouse leks. Another 4.4 miles of high initial impacts associated with sage grouse leks and sage grouse winter range would occur in Toano Draw (Link 142). Following mitigation (defined at the beginning of this section), there would remain 0.3 miles of high residual impacts to sage grouse winter range in Trout Creek (Link 91), 1.5 miles to sage grouse leks at the headwaters of Trout Creek (Link 92), and 4.4 miles to sage grouse leks and sage grouse winter grounds in Toano Draw (Link 142).

Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4). Concern has focused on the increase in public access within sage grouse

habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult. There would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

Ground disturbance would result in 0.3 mile of high initial impacts to key deer winter range, and pronghorn winter range in the Trout Creek area (Link 91). Near the headwaters of Trout Creek (Link 92), there would be 2.2 miles of initial high impacts associated with critical deer summer range. Mitigation measures (discussed at the beginning of this section) would be expected to effectively reduce high impacts to insignificant levels along this segment of Route B, except for long-term impacts of raptor predation on sage grouse.

Generally, impacts along the segment of Route B, from the north of Interstate 80 to the North Steptoe Substation site (Links 221, 222, 224, 226, 259, 260), would be low, with some moderate impacts. Moderate initial impacts along this segment of the route would be associated with occurrences of peregrine falcon and sage grouse. High initial impact to sage grouse leks would occur along this segment of Route B in the Goshute Valley (Links 221) and to sage grouse leks and bald eagle habitat in Antelope Valley (Link 226). Mitigation measures (discussed at the beginning of this section) would be expected to effectively reduce high impacts to insignificant levels along this segment of Route B, except for long-term impacts of raptor predation on sage grouse.

From the North Steptoe Substation site to the Robinson Summit Substation site, initial impacts for Route B would be generally low to moderate where Route B would cross through Antone Pass at the north end of the Egan Range into Butte Valley (Link 280). High initial impacts along this section of the route would occur where increased public access would be significant in important water use areas (milepost 5.7 to 6.1) and in an area that is used by bald eagle, ferruginous hawk, and sage grouse (milepost 11.8 to 11.9). Potential impacts from ground disturbance along this section of Route B would range from low to high, with a fairly extensive potential for high initial impacts in areas where sage grouse leks and long-billed curlew and sandhill crane occur. Key water use areas are also identified as locations where high impacts could occur, as are areas of sage grouse wintering grounds. High initial impacts would occur for 14.2 miles where this route crosses through at the north end of the Egan Range into Butte Valley (Link 280). Mitigation (discussed at the beginning of this section) would be expected to reduce the impacts from increased public access along this segment of Route B to insignificant levels. A total of 11.1 miles of high residual impact would be expected to persist from the construction and operation of the transmission line in the vicinity of Antone Pass (Link 280). Most of these high residual impacts would be associated with sage grouse leks (refer to discussion above regarding raptor predation).

Construction of the SWIP on Route B would likely affect wild horse populations along the route. The Butte HMA is partly located within the route. Given the mobility of this species, however, impacts are expected to short-term and little significance.

From the Robinson Summit Substation site to the Dry Lake Substation site, the potential impacts of Route B would be the same as those described for Route A.

Vegetation/Sensitive Plant Species - Generally, the plant species described along the assumed centerline of Route A would be the same as those for Route B. One species of cactus, Great Basin

fishhook (*Sclerocactus pubispinus*), occurs within one mile of the assumed centerline of the section of this route along the eastern foothills of the Toano Range and Goshute Mountains (Link 222). It is often collected for horticultural purposes and may be impacted by increased public access. Suitable habitat for this species extends to areas on the assumed centerline where ground disturbance could directly impact habitat and populations. This plant species is protected by the Cactus and Yucca Law in Nevada, which requires that permits be obtained from the Division of Forestry for removal of any plants.

Route C

Wildlife - From Midpoint Substation to Jackpot, Nevada (Links 10, 20, 40, 41, 50, 70), potential impacts to wildlife for Route C would be the same as described for Route A. From Jackpot to the southern end of Toano Draw north of Interstate 80 (Links 91, 92, 140, 141, 142, 144, 200), potential impacts to wildlife for Route C would be the same as described for Route B.

Then, from north of Interstate 80 in Toano Draw to the Dry Lake Substation site, potential impacts to wildlife for Route C would be the same as described for Route A.

Vegetation/Sensitive Plant Species - Potential impacts to sensitive plants for Route C would be the same as discussed for Route A, except for impacts described for Elko rock-cress (*Arabis falcifructa*) (Link 162).

Route D

Wildlife - From Midpoint Substation to Jackpot, Nevada (Links 10, 20, 40, 41, 50, 70), potential impacts to wildlife for Route D would be the same as described for Route A. Potential impacts to wildlife for Route D, from Jackpot to northwest of the Windermere Hills (Links 72, 101, 102, 110, 130, 160, 161, 162), would also be the same as described for Route A.

From the Windermere Hills to Dolly Varden in Goshute Valley (Links 1611, 166, 167, 1613, 180, 190, 230), initial impacts to wildlife resources for Route D from potentially increased public access and ground disturbance would be generally low or indiscernible. Some potential high initial impacts would occur in pronghorn winter range west of HD Summit in the Bishops Creek area (Link 1611). Because of the relatively good access along this segment of this route, other impacts from increased public access would be low or indiscernible. In addition, some other high initial impacts would occur further south in Bishops Creek (Link 167). There would also be some moderate to high initial impacts to sage grouse leks and pronghorn winter range in this area (Link 166). Potential high initial impacts to sage grouse leks and long-billed curlew habitat would also occur along the western toe of the Wood Hills (Link 180). Where this segment of Route D would cross Independence Valley to the Pequop Mountains (Link 190), there would be some moderate initial impacts to long-billed curlew, sandhill crane, and key deer winter habitat.

Mitigation (discussed at the beginning of this section) would be expected to reduce potential high initial impacts from increased public access to moderate or low residual impacts. Potential high impacts to sage grouse leks would be expected to remain high following mitigation in Clover Valley (between mileposts 17.6 and 18.7) along the western toe of the Wood Hills (Link 180). Other residual impacts for this segment of the route would be expected to be moderate to low.

Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4). Concern has focused on the increase in public access within sage grouse habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult. There would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

From the Dolly Varden area to the North Steptoe Substation site, Route D would result in some moderate and high initial impacts at the north end of the Steptoe Valley near Currie, Nevada (Link 241). These impacts would be associated with significant access increases in important pronghorn antelope habitat, long-billed curlew and sandhill crane habitat, Bonneville cutthroat trout habitat, and sage grouse leks. Other potential impacts in the Steptoe Valley would be expected to be moderate to low, with some high impacts. There would be high initial impacts to sage grouse leks, critical pronghorn habitat, and habitat of sandhill crane and long-billed curlew for 11.5 miles in the northern portion of Steptoe Valley (Link 241) and for 0.1 miles where the route would cross Steptoe Valley (Link 243).

Following mitigation (discussed at the beginning of this section), potential high initial impact levels from increased public access and ground disturbing activities along this segment of Route D would be reduced to moderate or low residual (insignificant) impacts. Approximately 1 mile of high residual impacts would be expected to sage grouse leks that occur (mileposts 28.3 to 29.4) in the northern portion of Steptoe Valley (Link 241) (refer to discussion above for long-term predation impacts to sage grouse).

From the North Steptoe Substation site to the Dry Lake Substation site, potential impacts to wildlife for Route D would be the same as described for Route A.

Vegetation/Sensitive Plant Species - The potential for impacts to occurrences of unique plant communities and/or sensitive plants on Route D would be the same as that described for Route A.

Route E

Wildlife - From Midpoint Substation to Jackpot, Nevada, potential impacts to wildlife for Route E would be the same as described for Route A. From Jackpot to northwest of the Windermere Hills (Links 72, 101, 102, 110, 130, 160, 161, 162), potential impacts to wildlife for Route E would be the same as described for Route A. Then, from the northwest of the Windermere Hills to north of Interstate 80 near Oasis, Nevada (Links 1612, 152, 200), potential impacts to wildlife for Route E would also be the same as described for Route A.

Continuing from the north of Interstate 80 near Oasis, Nevada to the North Steptoe Substation site (Links 221, 222, 224, 226, 259, 261), potential impacts to wildlife for Route E would be the same as described for Route B.

From the North Steptoe Substation site to the Robinson Summit Substation site (Links 270, 291, 293, 310), potential impacts to wildlife for Route E would again be the same as described for Route A.

Then, from the Robinson Summit Substation site to the Dry Lake Substation site, potential impacts to wildlife for Route E would also be the same as described for Route A.

Vegetation/Sensitive Plant Species - The potential for impacts to occurrences of unique plant communities and/or sensitive plants on Route E, from Midpoint Substation to north of Interstate 80, would be the same as those described to Route A. From north of Interstate 80 to the North Steptoe Substation site, the potential for impacts to occurrences of unique plant communities and/or sensitive plants for Route E would be the as same as that described for Route B. Then, from the North Steptoe Substation site to the Dry Lake Substation site, Route E would again be the same as described for Route A.

Route F

Wildlife - From Midpoint Substation to Jackpot, Nevada (Links 61, 62, 64, 70), 1.3 miles of high initial impacts occur to pronghorn habitat and long-billed curlew nesting areas from where Route F would traverse areas of open range east of Hagerman, Idaho (Link 61). In addition, considerable moderate initial impacts associated with pronghorn habitat and sage grouse leks would result in plateau areas along Salmon Falls Creek Canyon (Link 64). Ground disturbing activities and increased public access in the area east of Hagerman (Link 61) would result in mostly moderate initial impacts. In the plateau areas along Salmon Falls Creek Canyon (Link 64) initial impacts would vary from low to moderate. Wildlife species that would be affected include pronghorn, burrowing owl, long-billed curlew, pheasant, and sage grouse leks.

Following mitigation (discussed at the beginning of this section), no high residual impacts would be expected to remain along this segment of the Route F.

From Jackpot to the north of Interstate 80 near Oasis, Nevada (Links 72, 91, 92, 140, 141, 142, 144), potential impacts to wildlife for Route F would be the same as described for Route B. Then, from north of Interstate 80 near Oasis, Nevada to the Dry Lake Substation site, potential impacts to wildlife for Route F would be the same as described for Route A.

Vegetation/Sensitive Plant Species - From Midpoint Substation to Jackpot, Nevada (Links 61, 62, 64, 70), six sensitive plant species would be directly impacted by ground disturbance where they would occur along 4.2 miles of the assumed centerline on plateau areas above the Snake River (Links 61, 62) and along Salmon Falls Creek Canyon (Links 64, 70).

Two of the species that would be affected by the route are federal candidate species (C2). mourning milk-vetch (*Astragalus atratus* var. *inseptus*) (also a BLM sensitive species) occurs along the route near Peters Gulch (Link 70) and Davis' peppergrass (*Lepidium davisii*) on the plateau above Salmon Falls Creek Canyon (Link 64). Populations of four-wing milk-vetch (*A. tetrapterus*) also occur over a two square mile area along Salmon Falls Creek (Link 64) and two-headed onion (*Allium anceps*) occurs in the foothills west of Jackpot (Link 70). Both are Priority 2 species in the State of Idaho. One candidate species, Monta Neva paintbrush (*Castilleja salsuginosa*), and two watch species in Nevada, One-leaflet Torrey milk-vetch (*Astragalus calycosus* var. *monophyllidius*) and Meadow Valley range sandwort (*Arenaria stenomeres*), occur within a one mile area and may experience indirect impacts (refer to discussion under Route A).

From Jackpot, Nevada, to the Dry Lake Substation site, the potential for impacts to occurrences of unique plant communities and/or sensitive plants for Route F would be the same as that described for Route A.

Route G

Wildlife - From Midpoint Substation to Jackpot, Nevada, potential impacts to wildlife for Route E would be the same as described for Route A.

From Jackpot to northwest of the Windermere Hills, moderate to high initial impacts would be expected to occur where Route G would traverse crucial mule deer and pronghorn winter habitat, bald eagle potential nesting and wintering habitat and sage grouse leks and wintering grounds in the rolling hills between Jackpot and Contact (Links 711, 714). In addition, increased public access and ground disturbing activities would result in some high initial impacts to crucial mule deer and pronghorn habitats, and bald eagle nesting and wintering habitats in this area (Links 101, 713, 715). No high residual impacts would be expected to occur along this segment of Route G following the mitigation.

North of the Windermere Hills near Wilkins, Nevada (Link 150) in the Thousand Springs Valley, initial impacts would be moderate to high where pronghorn winter range and sage grouse leks occur along the assumed centerline. There would be some high initial impacts to sage grouse leks on the northern end of Link 151. Initial impacts on Link 150 would be moderate to high. Following mitigation there would be no high residual impacts expected to occur along this segment of Route G, except for the long-term significant impacts to sage grouse.

Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4). Concern has focused on the increase in public access within sage grouse habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult. There would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

From the Windermere Hills to Dolly Varden (Links 200, 211, 212, 230), potential impacts to wildlife for Route G would be the same as described for Route A. Then, from Dolly Varden to the North Steptoe Substation site (Links 241, 243, 245), potential impacts to wildlife for Route G would be the same as described for Route D.

From the North Steptoe Substation site to the Robinson Summit Substation site (Links 270, 280, 310), potential impacts to wildlife for Route G would be the same as described for Route B. Then, from the Robinson Summit Substation site to the Dry Lake Substation site, potential impacts to wildlife for Route G would again be the same as described for Route A.

Construction on Route G would likely have short-term effects on wild horse populations in the area. Part of the Butte HMA is included within this route and it is expected that construction activity would

likely result in horses moving away from human activity. No long term or significant impacts to these animals is anticipated, however.

Vegetation/Sensitive Plant Species - Elko rock-cress (*Arabis falcifructa*), a C2 species, occurs within one mile the assumed centerline of Route G in Thousand Springs Valley (Link 151). This plant would not be impacted if access to the right-of-way is adequately controlled. Other sensitive plant species potentially impacted along Route G are described under Route A (Links 41, 70, 670, 720).

Ely to Delta Segment

Direct Route

Wildlife - In Nevada, from the North Steptoe Substation site to the Little Hills (Links 262, 263, 265, 266), increased public access and ground disturbing activities would generally cause low to moderate impacts. High initial impacts would occur for 1 mile in Antelope Wash (Link 266) where increases in public access would be significant in areas of crucial pronghorn winter habitat and ferruginous hawk habitat. Mitigation measures (described at the beginning of this section) would reduce these impacts to insignificant levels.

Moderate initial impacts would also be expected along this route in the Schell Creek Range (Links 262, 263, and 620). There would be high initial impacts for 1.0 mile where sage grouse leks occur at the northern end of Spring Valley (Link 263). 2.6 miles of high initial impacts in sage grouse winter grounds would be expected to occur (between mileposts 3.0 and 5.0), where this route would cross Spring Valley (Link 266). 2.1 miles of high residual impacts to wintering bald eagle use areas would be expected to occur in the valley east of the Little Hills (Link 620). On Link 620, this route would result in high initial impacts from ground disturbance to bald eagle wintering areas for 2.1 miles.

Further east, the Direct Route would cross the Snake Valley, Tule Valley, and Swasey Bottom (Links 621, 630, 640) in Utah. Initial impacts would generally be low, moderate, and indiscernible in the vicinity of Delta (Links 572, 580, 581, 582). High initial impacts would occur for 3.6 miles from increased public access in the vicinity of the Leland-Harris Spring Complex (Link 630), where four federal candidate species (least chub, spotted frog, desert dace, and Great Basin silver-spot butterfly) are known to occur. High residual impacts from increased public access to the Leland-Harris Spring Complex would remain due to the potential long-term and cumulative effects of repeated public entry to this sensitive area. The BLM biologists are concerned that any direct impacts from construction activities or indirect, long-term impacts from increased public accessibility could endanger the survival of these sensitive species. Crossing of the Leland-Harris Spring Complex area would also require a permit under Section 404 of the Clean Water Act (1972) if any filling were to occur within jurisdictional wetland areas. In addition to concern for the Leland Harris Spring complex on Link 630, the Direct Route also crosses the Confusion Mountain and Swasey designated HMA's for wild horses. Included are 7.0 miles that are designated crucial wild horse habitat. Impacts to horses resulting from construction of the SWIP on Link 630 are likely to be of short term, related primarily to disturbance due to the presence of people and equipment. Initial impacts are considered to be moderate and residual impacts are projected to be low.

Except for the impacts to sage grouse leks (Links 263, 266, and 620) and the potential impacts to the Leland-Harris Spring Complex (Link 620), committed mitigation measures (described in the beginning of this section) would effectively mitigate these high initial impacts to insignificant levels. Residual impacts to sage grouse would be adverse, long term, and significant despite mitigative measures.

Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4). Concern has focused on the increase in public access within sage grouse habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult. There would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

Initial high impacts to critical deer winter range and pronghorn habitat would occur for 0.7 miles from increased public access south of the Drum Mountains (Link 640). Mitigation measures (discussed in the beginning of this section) would effectively mitigate these impacts to insignificant levels.

Vegetation/Sensitive Plant Species - No known populations of sensitive plant species or communities are known to occur along the Direct Route.

Cutoff Route

Wildlife - From the North Steptoe Substation site to the Little Hills (Links 262, 263, 265, 266), this route would result in the same potential impacts to wildlife as described for the Direct Route.

Impacts from increased public access and ground disturbance activities along the remainder of the Cutoff Route (Links 267, 268, 462, 470, 540, 571, 572, 580, 581, 582) would be to pronghorn, mule deer, wild horses, bald eagles, sage grouse leks and sage grouse wintering grounds. In the northern portion of the Snake Valley (Link 267), high initial impacts would occur in pronghorn winter range, sage grouse leks, and bald eagle habitats. Further south in the Snake Valley (Link 268), the route would result in a total of 2.2 miles of high initial impacts to crucial pronghorn habitat and key deer winter range, as well as one golden eagle nest location. Five miles of high initial impact would occur where public access would increase significantly in critical deer and antelope winter range further south in the Snake Valley (Link 268). Moderate initial impact to wild horses can also be expected on Link 268 in the Conger Mountain HMA (mileposts 11 to 19). This route would result in another 2.4 miles of high initial impact to key deer winter range and migration corridors (between mileposts 21.3 to 23.6) in the Confusion Range (Link 462). Mitigation measures (discussed in the beginning of this section) would effectively mitigate these impacts to insignificant levels, except for the adverse and significant impacts to sage grouse leks on Link 267.

Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4). Concern has focused on the increase in public access within sage grouse habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult. There would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

3.5 miles of initial high impacts to critical pronghorn habitat, key deer winter range, and deer migration routes would occur in the Confusion Range (Link 462). In addition, the route would result in 0.3 miles of high initial impact to pronghorn habitat in Whirlwind Valley (Link 470). No other high initial impacts would be expected to occur on the Cutoff Route. Mitigation measures (described at the beginning of this section) would be expected to effectively reduce these high impacts to insignificant levels.

Vegetation/Sensitive Plant Species - One known population of Great Basin Fishhook (*Sclerocactus pubispinus*) is known to occur along the assumed centerline of Link 462. Direct impacts could result from ground disturbance during the construction period and increased public access might result in the loss of specimens to plant collectors. Pre-construction surveys and mitigation measures designed to avoid populations of special status plant species would reduce residual impacts to a low level.

230kV Corridor

Wildlife - From the Robinson Summit Substation site to the Buckskin Hills, initial impacts along the 230kV Corridor Route from increased public access and ground disturbing activities would generally be moderate with scattered areas of high impact. On Link 350, 1.1 miles of initial high impacts would result because of sage grouse leks. Initial high impacts on Link 351 are associated with sage grouse leks and long-billed curlew habitat (0.8 miles), ferruginous hawk nests and habitat, sage grouse winter grounds, long-billed curlew and sandhill crane habitat (2.1 miles).

Link 370 has 4.5 miles of potentially high initial impacts as a result of the presence of ferruginous hawk nests and habitat, long-billed curlew and sandhill crane habitat, and bald eagle wintering grounds. On Link 380, a total of 9.4 miles of high initial impacts would be expected due to the presence of ferruginous hawk nests and habitat, sage grouse leks, long-billed curlew habitat, bald eagle wintering areas, elk and deer summer range, and crucial elk winter range.

A total of 1.6 miles of high initial impacts to key habitat areas for elk, critical pronghorn habitat, key deer winter range, (key) water source, and nesting areas for ferruginous hawks, and long-billed curlews would occur where the route crosses the southern end of the Schell Creek Range (Link 380) on the Humboldt National Forest and traverses the Snake Valley (Link 461). Initial high impacts on Link 462 (3.5 miles) would be reflected by the presence of critical pronghorn habitat, key deer winter range, and a deer migration area. There would be 0.3 miles of potential high initial impact associated with Link 470 (critical pronghorn habitat). No other high initial impacts from increased public access would be expected on the 230kV Corridor route.

Moderate initial impacts to wild horses are projected along portions of Links 461 and 462 in the Conger Mountain HMA. Impacts are expected along 7 miles of Link 461 and 12 miles of Link 462. These impacts are anticipated to be short term, occurring as a result of the presence of men and equipment during construction. Residual impacts within HMAs would be low to indiscernible.

Applying mitigation would result in only 0.1 miles of high residual impact to wildlife on the 230kV Corridor. Moderate residual impact persists in the Schell Creek Range (Link 380) where potential public access to long-billed curlew and ferruginous hawk habitat would increase significantly. With mitigation, most high initial impacts would be expected to be reduced to low or indiscernible for most of the route.

From the Buckskin Hills, in Utah, to the Intermountain Substation site (Links 462, 470, 540, 571, 572, 580, 581, and 582), potential impacts to wildlife for the 230kV Corridor Route would be same as those described for the Cutoff Route.

Vegetation/Sensitive Plant Species - One known population of Great Basin fishhook (*Sclerocactus pubispinus*) is known to occur along the assumed centerline of Link 462. Direct impacts could result from ground disturbance during the construction period and increased public access might result in the loss of specimens to plant collectors. Pre-construction surveys and mitigation measures designed to avoid populations of special status plant species would reduce residual impacts to a low level.

Southern Route

Wildlife -The Southern Route originates at the Robinson Summit Substation site and traverses south through Jake's Valley. Increased public access and ground disturbing activities would result in a total of approximately 54 miles of high initial impacts. On Link 364, 12.1 miles of high initial impact would be attributable to the presence of sage grouse leks on the route. Federal and state biologists are concerned that the SWIP would add yet another cumulative impact on sage grouse populations in southern Idaho and eastern Nevada (refer to cumulative effects section at the end of Chapter 4). Concern has focused on the increase in public access within sage grouse habitats, placement of towers and access roads in strutting or crucial wintering grounds, and the fact that predators of sage grouse (i.e., golden eagles) use the transmission towers as hunting perches. Adult and immature birds and nests are all thought to be vulnerable. Because there is no way to mitigate predation of sage grouse in these areas, these impacts would remain high even after mitigation and would be long term and significant. Eliminating access would be difficult. There would be some potential for disturbance and poaching in addition to the loss of habitat and disturbance due to construction activities.

Link 420 would have 6.2 miles of high initial impact due to potential disturbance to ferruginous hawk nests, ferruginous hawk habitat, antelope kidding grounds, and long-billed curlew habitat. There would also be high initial impacts to key deer winter range on Link 430, and critical pronghorn habitat on Link 450. Link 451 would be characterized by a substantial 28.5 miles of potentially high initial impact associated with the presence of a number of sensitive features including critical pronghorn habitat, key deer winter range, important water sources, raptor nesting areas, and ferruginous hawk nests. Most of the initial high impacts on this link (23.0 miles) would be associated with important pronghorn habitat. An additional 16 miles of moderate initial impact to wild horses are projected for Link 451 where it traverses the Burbank and King Top HMAs. There would be 0.5 miles of high initial impact on Link 490 associated with a known ferruginous hawk nest. In addition to these potentially high initial impacts, additional moderate effects to pronghorn, deer winter range, sage grouse leks, ferruginous hawk habitat and long-billed curlews would be anticipated.

Mitigation measures (described at the beginning of this section) would be expected to effectively reduce most of the high impacts along this route to insignificant levels, except for 10.3 miles of high residual impacts would remain due to unavoidable, long-term, deleterious effects on sage grouse leks on Link 364 (refer to discussion above).

From the Smelter Hills Substation site to the Intermountain Substation site (Links 571, 572, 580, 581, and 582), potential impacts to wildlife would be the same as described for the Cutoff Route. Residual impacts to wild horses within the Burbank and King Top HMAs are expected to be low to indiscernible.

Vegetation/Sensitive Plant Species - Isolated areas of high initial impacts are expected in areas where five species of sensitive plants that occur along the assumed centerline of this route would be directly impacted by ground disturbance. Two Category 2 species, compact catseye (*Cryptantha compacta*) and sand-loving buckwheat (*Eriogonum ammophilum*) occur at the southern tip of the Tule Valley (Link 451). A third Category 2 species, currant milk-vetch (*Astragalus uncialis*) occurs in the Swasey Wash on Link 490. low beard tongue (*Penstemon nanus*), an S3 species in Utah, has also been found along the assumed centerline in the Tule Valley (Link 451). Great Basin fishhook (*Sclerocactus pubispinus*), a species protected by the Cactus and Yucca Law of Nevada occurs along the assumed centerline near the southern end of the Snake Range (Link 430). This species, which is also a federal Category 3 candidate, also occurs on Link 451 in the Tule Valley of Utah.

Residual impacts to these species would be expected to be low following application of appropriate mitigation measures.

Populations of Great Basin fishhook (*S. pubispinus*), currant milk-vetch (*A. uncialis*), Jones globemallow (*Sphaeralcea caespitosa*), limestone buckwheat (*Eriogonum eremicum*), Calloway milk-vetch (*A. callithrix*), and terrace buckwheat (*E. natum*) occur within one mile of the study corridor assumed centerline in various areas. These plants, however, should not be directly impacted if access to the right-of-way is adequately controlled.

Avian Collision Hazards

An area of considerable concern for both the public and agency biologists is the potential of creating a significant collision hazard for raptors, waterfowl, and other larger species of birds by placing transmission lines in areas frequented by such species. Of particular concern is placement of such facilities in areas where such species occur during migration (i.e., Goshute Mountains) or may concentrate during some season(s) due to an abundance of forage, water, and/or cover (i.e., seasonally wet meadows such as the Murphy Meadows near the Kirch Wildlife Management Area in Nevada).

That man-made structures cause mortality in birds as a result of birds colliding with such structures is quite well documented (see Avery, et al., 1978 which contains 853 records of published accounts of such occurrences). The majority of avian mortality at man-made structures involves nocturnally migrating songbirds that collide with lighted structures including radio and television towers, airport celiometers, lighthouses, lightships, lighted chimneys or smokestacks, and cooling towers. Birds also collide with a variety of overhead wires, buildings, and windows. There have been documented cases of thousands of songbirds being killed over the span of only a few nights.

Most mortality occurs during the spring or fall migration, involves lighted structures, and occurs during periods of overcast weather. There are, however, virtually no data on songbird collisions with overhead wires. This problem is most often associated with large birds (waterfowl, pelicans, herons, etc.) with relatively low maneuverability and tendency to move about in flocks (Hoover, 1978; Beer and Ogilvie, 1972; Harrison, 1963; Ogilvie, 1967; Willard et al., 1977). Field feeding "puddle ducks" (i.e., pintail, mallard, shoveler, wigeon, and teal) are the most likely to sustain mortality from wire strikes due to their high speed flight and flocking behavior (Thompson, 1978; Boyd, 1961; Krapu, 1974).

The amount of mortality that occurs where conflicts exist between overhead lines and waterfowl appears to be quite low, possibly because overhead lines do not have the "attracting" qualities that

characterize lighted or light bearing structures. Kroodsma (1977) found that less than 1 percent of nonhunting mortality sustained by waterfowl at Redwing, Minnesota was due to collisions with overhead wires. Similarly, Stout and Cornwell (1976), summarizing available literature, generated a figure of 0.1 percent mortality due to line strikes. Lee (1978) estimated that 0.05 percent of bird flights (mostly waterfowl) in the vicinity of Bonneville Power Authority lines in Oregon resulted in fatal strikes.

The visibility of overhead wires is a major factor in the extent to which there is conflict with bird populations. Most collisions occur at night, during periods of foul weather, and/or at dusk and dawn (Thompson, 1978). High voltage transmission lines (i.e., 230kV and larger) may be less of a problem than smaller distribution lines or telephone/telegraph lines because of their greater size and, therefore, visibility (Thompson, 1978; Scott, et al., 1972). Lee (1978) found that 89 percent of birds flew over 230kV conductors, 9 percent flew under them, and 2 percent flew between conductors. This points up a problem with high voltage lines that has been discussed by Scott (1972). Most bird fatalities at such structures occur when birds attempt to fly over conductors and strike the smaller static or shield wires located a few to many feet above the conductors.

Within a local setting, the placement of transmission lines can have major significance relative to potential conflict with birds. Lines running parallel to movement corridors are much less of a problem than lines that run perpendicular to such corridors (Scott, et al., 1977). Thompson (1978) recommends clustering lines at river crossings, for example, in order to increase their visibility.

For new 230kV lines in corridors that already contain 230kV lines Thompson (1978) recommends that lines should be clustered in areas of bird concentration in order to make them more visible. The same is true in open country and feel it more appropriate to concentrate transmission lines within a single corridor rather than having numerous corridors, each with its own single line and separated from other such corridors by large distances (e.g., more than a mile).

A factor to consider in the placement of transmission lines is the behavior of birds in the placement area. This can be of significance to diurnal and nocturnal (i.e., migrating) birds alike. Areas where birds are likely to be landing or taking off in numbers rather than simply moving through an area represent poor locations for transmission line siting, especially smaller distribution lines.

Raptors are diurnal migrants, noted for their keen visual acuity. Given the size of conductor bundles that would be utilized in the SWIP, it is highly unlikely that collisions with the transmission lines would be significant. There is a possibility of occasional collisions between migrating raptors and the overhead shield wires that would be placed between towers to protect the system from lightning strikes. However, even these lines are fairly large (3/8 to 1/2 inch in diameter) and are likely to be avoided by the vast majority of migrating raptors.

Olendorff (1986) completed an analysis of raptor collisions with utility lines and concluded that "collisions with utility lines will always contribute to the proximate mortality of individuals, it does not seem likely that collisions could become an ultimate cause of population declines, except for critically endangered species such as the California condor." Olendorff's summary of known collisions by raptors with utility lines indicated that electrical transmission lines were involved in 26 of 72 documented collisions. Of the 26, 17 (65.4 percent) involved transmission lines with metal tower configurations. No data were available, however, on the relative importance of static wires versus conductor bundles as factors in these strikes (Olendorff, 1986, pg. 11).

It is interesting that an EIS in California estimated 20 cases of raptor mortality per year for a 50 mile transmission line. Olendorff and Lehman (1986, Raptor collisions with utility lines: an analysis using subjective field observations, Pacific Gas and Electric Co., San Ramon, CA.) issued a worldwide call for information on raptor mortality from collisions with utility lines. They received a total of 121 responses to their request for information. Of this number, only 88 could be analyzed due to inadequacy of information. Their conclusion: "Collision with utility lines apparently is a random, low level, and inconsequential mortality factor in raptor populations."

Collisions involving high voltage lines, regardless of the bird species considered, are very infrequent, highly random events that are unlikely to affect the long term probability of survival of any species within the SWIP corridors. There would undoubtedly be an increased level of raptor and other bird mortality within the SWIP corridors. However, the level of increased mortality likely to occur would not be measurable and would not adversely affect the population status of any raptor species. The annual mortality of raptors from illegal shooting in western Utah and eastern Nevada is probably far higher than would be experienced in a decade or two of presence of the SWIP transmission lines.

Potential Raptor Electrocution Hazard

Given the structural configuration of 500kV electrical transmission lines, the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission systems proposed for the SWIP would utilize tubular steel H-frame and/or steel lattice towers. Spacing of conductors on such structures is sufficient to prevent phase-to-phase or phase-to-ground contact. In order to achieve this safety measure, conductors are hung on the supporting structure in such a manner that they are 23 to 32 feet apart. Moreover, conductors are hung on insulating systems that would be 14 to 20 feet in length depending on tower design (see the SWIP DEIS/DPA pp. 2-12 through 2-14). Because of the distance of conductors from the support structure, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower.

Leland Harris Spring Complex

The Leland Harris Spring Complex is located in Snake Valley, Juab, and Millard Counties, in western Utah. Link 630 of the Direct Route between Ely, Nevada and Delta, Utah crosses the Snake Valley (Mileposts 0.0 - 10.0) just to the north of the spring complex (mileposts 3.0 - 5.0).

The Leland Harris Spring Complex provides habitat for several sensitive species: least chub (*Iotichthys phlegethontis*), western spotted frog (*Rana pretiosa*), western snowy plover (*Charadrius alexandrinus nivosus*), Great Basin silverspot butterfly (*Speyeria nokomis nokimis*), and a currently undescribed subspecies of dace (*Rhinichthys osculus*). With the exception of *Rhinichthys osculus*, all of these species are currently federal Category 2 candidates for listing among the threatened or endangered wildlife of the United States (FWS, 1991). The least chub is classified by the Utah Division of UDWR as a threatened species in Utah. The current distribution and occurrence of each of these species in the Leland Harris Spring complex is not completely known. The least chub was known to occur in the Leland Harris complex in 1977 and were also found there during surveys in 1985 (Osmundson, 1985). Osmundson (1985) did not find *Rhinichthys ocsculus* at Leland Harris. The western snowy plover, western spotted frog, and Great Basin silverspot butterfly are known to

have occurred at the Gandy Salt Marsh south of Leland Harris, and the silverspot butterfly has been recorded at Leland Harris as well (Richard Fike, BLM, Personal Communication to Geoffrey Pool, Dames & Moore, August, 1992). Given habitat similarities and proximity of the Gandy Salt Marsh to the Leland Harris complex, it seems reasonable to assume that most or all of these species are present at Leland Harris.

Link 630 of the Direct Route crosses the Snake Valley about one mile north of the northern-most spring in the Leland Harris complex that was sampled by Osmundson in 1985. To the east, in the Snake Valley, the link passes about 0.5 miles south of Miller Spring (S22, R18W, T14S). At its origin, Link 630 is 0.8 miles south of Coyote Spring. There are no identified springs directly on the assumed centerline. Consequently, it is expected that construction of the SWIP could occur on Link 630 with little or no impact to the Leland Harris Spring complex or the associated wetlands. Biologists with the BLM in Utah, however, disagree with this assessment and have expressed considerable concern over construction of Link 630. The BLM is concerned that even a small impact could cause the four species of concern known to occur in the vicinity of Link 630 to "go over the edge" which would require the request to the FWS for listing one or more them as Category 2 candidate species.

TABLES

TABLE 3-1

MILEAGE OF ALTERNATIVE ROUTES IN MILITARY AIRSPACE

		Alternative Routes									*Ely to Delta*			
	Link	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Utility	Agency Preferred	Direct	Cutoff	230 Corridor	Southern
Hill AFB														
Lucin A MOA	221	0	3	0	0	3	0	0	0	3	0	0	0	0
	222	0	13.7	0	0	13.7	0	0	0	0	0	0	0	0
	223	0	0	0	0	0	0	0	0	9.7	0	0	0	0
Total		0	16.7	0	0	16 7	0	0	0	12.7	0	0	0	0
Lucin C MOA	211	0.7	0	0 7	0	0	0.7	0.7	0.7	0	0	0	0	0
	212	0.9	0	0.9	0	0	0.9	0 9	0 9	0.9	0	0	0	0
	223	0	0	0	0	0	0	0	0	3 5	0	0	0	0
Total		1.6	0	1.6	0	0	1.6	1.6	1.6	4.4	0	0	0	0
Gandy MOA	222	0	8.3	0	0	8.3	0	0	0	0	0	0	0	0
	226	0	17 4	0	0	17.4	0	0	0	0	0	0	0	0
	266	0	0	0	0	0	0	0	0	0	17	17	0	0
	267	0	0	0	0	0	0	0	0	0	0	17.1	0	0
	620	0	0	0	0	0	0	0	0	0	2.8	0	0	0
Total		0	25.7	0	0	25 7	0	0	0	0	19.8	34.1	0	0
Restricted-6405	222	0	0.7	0	0	0 7	0	0	0	0	0	0	0	0
	224	0	5.9	0	0	5.9	0	0	0	0	0	0	0	0
	226	0	4.4	0	0	4 4	0	0	0	0	0	0	0	0
	620	0	0	0	0	0	0	0	0	0	8.4	0	0	0
	621	0	0	0	0	0	0	0	0	0	2.2	0	0	0
	630	0	0	0	0	0	0	0	0	0	44.5	0	0	0
	640	0	0	0	0	0	0	0	0	0	2.6	0	0	0
Total		0	11	0	0	11	0	0	0	0	57.7	0	0	0
Sevier A	267	0	0	0	0	0	0	0	0	0	0	3 5	0	0
	268	0	0	0	0	0	0	0	0	0	0	18.8	0	0
	451	0	0	0	0	0	0	0	0	0	0	0	0	1.2
	461	0	0	0	0	0	0	0	0	0	0	0	12.3	0
	462	0	0	0	0	0	0	0	0	0	0	27.9	27.9	0
	470	0	0	0	0	0	0	0	0	0	0	12.6	12 6	0
	630	0	0	0	0	0	0	0	0	0	8	0	0	0
	640	0	0	0	0	0	0	0	0	0	2.6	0	0	0
Total		0	0	0	0	0	0	0	0	0	10 6	62.8	52.8	1.2

Table 3-1, Mileage of Alternative Routes in Military Airspace (Continued)

		Alternative Routes									Ely to Delta			
	Link	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Utility	Agency Preferred	Direct	Cutoff	230 Corridor	Southern
Hill AFB														
Sevier B	451	0	0	0	0	0	0	0	0	0	0	0	0	67.9
	470	0	0	0	0	0	0	0	0	0	0	6.3	6.3	0
	490	0	0	0	0	0	0	0	0	0	0	0	0	9.1
	510	0	0	0	0	0	0	0	0	0	0	0	0	6.6
	540	0	0	0	0	0	0	0	0	0	0	6.9	6.9	0
	560	0	0	0	0	0	0	0	0	0	0	0	0	4.6
	571	0	0	0	0	0	0	0	0	0	0	7.6	7.6	7.6
	572	0	0	0	0	0	0	0	0	0	4	4	4	4
	580	0	0	0	0	0	0	0	0	0	1 5	1.5	1.5	1.5
	640	0	0	0	0	0	0	0	0	0	8.3	0	0	0
Total		0	0	0	0	0	0	0	0	0	13.8	26 3	26.3	101.3
Grand Total		1.6	53.4	1.6	0	53.4	1.6	1.6	1.6	17 1	101 9	123.2	79.1	102.5
Nellis AFB														
Reveille MOA	672	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	0	0	0	0
	673	19.2	19 2	19 2	19.2	19.2	19.2	19.2	19.2	19.2	0	0	0	0
Total		37.3	37.3	37.3	37.3	37.3	37.3	37 3	37.3	37.3	0	0	0	0
Caliente West	673	3	3	3	3	3	3	3	3	3	0	0	0	0
	675	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	0	0	0	0
	690	11.8	11 8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	0	0	0	0
Total		41.6	41.6	41.6	41.6	41.6	41.6	41.6	41 6	41.6	0	0	0	0
Sally Corridor	690	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23 6	23.6	0	0	0	0
	700	12.1	12.1	12.1	12.1	12 1	12.1	12 1	12.1	12 1	0	0	0	0
	720	5.7	5 7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	0	0	0	0
Total		41 4	41.4	41 4	41 4	41 4	41 4	41 4	41.4	41.4	0	0	0	0
Caliente Alpha	690	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9 2	9 2	0	0	0	0
Total		129.5	129.5	129.5	129.5	129.5	129.5	129.5	129 5	129.5	0	0	0	0
Grand Total		131.1	182.9	131.1	129.5	182.9	131 1	131 1	131.1	131 1	90 9	123.1	79	105.7

[redacted]

TABLE 3-2

MILES NEAR WILDERNESS AREAS AND WSAs

MIDPOINT TO DRY LAKE ALTERNATIVE ROUTES

	Alternative Routes										*Distance from Route*		
Wilderness/WSA	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Utility	Agency Preferred	Link	0-1/4 MILE	1/4-1 MILE	1-3 MILES
Lower Salmon Falls Creek WSA						▨				64	4.3	5.8	8.1
Goshute Canyon WSA				▨			▨	▨	▨	241	0	1.5	5.8
								▨	▨	244	0	0	5.4
Goshute Peak WSA		▨			▨					226	1.3	2.0	1.1
										225	0	1.4	4.5
		▨			▨					224	0	0	0.9
		▨			▨					222	0	0	5.9
Bluebell WSA		▨			▨					222	2.4	2.5	9.8
South Pequop WSA	▨		▨	▨		▨	▨	▨	▨	190	0.7	2.5	7.6
										230	0	0	6.2
Delamar Mountain WSA	▨	▨	▨	▨	▨	▨	▨	▨	▨	690	23 0	0.8	1.6
										680	7.0	4.5	5 1
Evergreen WSA	▨	▨	▨	▨	▨	▨	▨	▨	▨	690	8.8	1.2	0
Meadow Valley Mountain WSA										680	0.0	4.1	16.4
Fish & Wildlife 1, 2, & 3 WSA	▨	▨	▨	▨	▨	▨	▨	▨	▨	690	0.5	0	0
	▨	▨	▨	▨	▨	▨	▨	▨	▨	700	0	12.0	0
	▨	▨	▨	▨	▨	▨	▨	▨	▨	720	4.0	6.8	7 8
										750	3.5	0.7	2.4
Arrow Canyon WSA	▨	▨	▨	▨	▨	▨	▨	▨	▨	720	4.3	3.2	4.1
										730	3.7	5.5	1.6
										740	1.5	0 5	1.2
										770	1.2	0.5	0.2
										750	3 5	0.7	2.4

TABLE 3-3

MILES NEAR WILDERNESS AREAS AND WSAs

ELY TO DELTA ALTERNATIVE ROUTES

	Alternative Routes					Distance from Routes		
Wilderness/WSA	Direct	Cutoff	*230 Corridor	Southern	Link	0-1/4 MILE	1/4-1 MILE	1-3 MILES
Mount Moriah Wilderness				▨	267	0	0	2 6
Mount Grafton WSA				▨	364	0.4	4.1	5 3
Marble Canyon WSA	▨	▨			267	0	0.4	9.0
Wah Wah Mountains WSA				▨	451	0	0	0.9
King Top WSA				▨	451	3.0	0.1	6.1
Notch Peak WSA				▨	451	4.4	2.3	1.1
					480	3.2	0 6	0
		▨	▨		462	6.2	0.9	1.7
Howell Peak WSA		▨	▨		462	2.4	2.6	2.4
		▨	▨		470	0.8	0.4	1 7
					480	0.2	0 1	0.3
Swasey Mountain WSA		▨	▨		470	0	0	5.3
	▨				630	0	0	3.1
Fish Springs WSA	▨				630	0	0	4.8

* Agency Preferred Alternative

TABLE 3-4

MILES THROUGH HERD MANAGEMENT AREAS

MIDPOINT TO DRY LAKE SEGMENT

Herd Management Area (HMA)	*Alternative Routes*									Link	MILES WITHIN HMA
	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Utility	Agency Preferred		
Toano HMA		■			■					222	6.2
Goshute HMA		■			■					222	9.0
Spruce-Pequop HMA				■						190	7.9
Cherry Creek HMA				■			■	■	■	241	14.7
								■	■	242	0 9
				■			■			243	0.6
							■	■	■	244	1.0
Antelope Valley HMA		■			■					226	22.0
	■		■	■		■	■	■	■	230	0.8
				■			■	■	■	241	15.0
	■		■			■				250	20.9
Antelope HMA		■			■					226	8.6
				■			■			245	3.0
	■		■			■				250	3.8
	■	■	■		■	■				259	6.0
	■	■	■		■	■				260	4 7
	■	■	■	■	■	■	■			261	4.9
Butte HMA		■					■	■		280	23.4
	■		■	■	■	■			■	293	6.5
Jakes Wash HMA										331	2.1
										332	2.7
	■	■	■	■	■	■	■	■	■	340	5 8
										361	23.0
	■	■	■	■	■	■	■	■	■	362	9 9
	■	■	■	■	■	■	■	■	■	363	11.7
										660	2.8
	■	■	■	■	■	■	■	■	■	669	0.7
White River HMA	■	■	■	■	■	■	■	■	■	669	13.6
Seaman HMA	■	■	■	■	■	■	■	■	■	670	3.4
										671	20.5
	■	■	■	■	■	■	■	■	■	672	6.1
Dry Lake HMA										671	21.2
	■	■	■	■	■	■	■	■	■	672	5.3
	■	■	■	■	■	■	■	■	■	673	20 5
										674	23 1

TABLE 3-5

MILES THROUGH HERD MANAGEMENT AREAS

ELY TO DELTA SEGMENT

Herd Management Area (HMA)	*Alternative Routes*				Link	MILES WITHIN HMA
	Direct	Cutoff	*230 Corridor	Southern		
Confusion HMA	■				630	21.1 (7 6)
Swasey HMA	■				630	6.9 (0.2)
Conger HMA		■			268	8.0 (2.5)
			■		461	6.8
		■	■		462	7.5
Antelope HMA	■	■			262	4.1
	■	■			263	9.6
					264	10.4
	■	■			265	4.0
	■	■			266	6.9
					610	4 9
Jakes Wash HMA				■	364	4.1
Moriah HMA		■			267	5.4
					610	6.0
			■		620	7.9
King Top HMA				■	451	6.2
Burbank Hills HMA				■	451	6 9

Note : ( ) miles of area in high concern

* Agency Preferred Alternative

TABLE 3-6

Cultural Resource Data By Link

GISID	Site Number	Class	Type	Sensitivity	Comments
Link 463					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
	CR5320	Historic	Trash	Moderate	early 1900s bottles and cans; project 921p
	26WP1930/CR5638	Historic	Concrete footings & trash	Moderate-High	mill site associated with Black Horse mine; ca 1903-1913; project 928p
	26WP1931/CR5639	Historic	Dump	Moderate	about 85 bottles & 300 cans; ca 1900-1950; project 928p
Link 464					
7804	26WP1557/CR2544	Prehistoric	Artifact scatter	Moderate	<100 jasper & obsidian flakes; <20 Shoshone sherds, possible mano; project 555p
7804	26WP1558/CR2541	Prehistoric	Isolate	Moderate	jasper flake; project 555p
7804	26WP1560/CR2543	Prehistoric	Isolate	Moderate	4 flakes; project 555p
7804	26WP1561/CR2540	Prehistoric	Artifact scatter	Moderate	<100 jasper & chert flakes; project 555p
7804	26WP1637/CR2714	Prehistoric	Lithic scatter	Moderate	6 jasper flakes; project 555p
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 465					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 466					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 467					
9904	26WP1380/CR781	Historic	Trash	Moderate	about 50 cans; also 1 obsidian flake
9905	CR5631	Prehistoric	Artifact scatter	Moderate	project 928p
9906	CR5454	Prehistoric	Isolate	Low	1 flake, 1 shatter; project 315p
9907	CR5417	Prehistoric	Isolate	Low	quartzite lithic debris, project 315p
9907	CR5418	Prehistoric	Isolate	Low	projectile point, lithic debris; project 315p

Table 3-6. Cultural Resource Data by Link (Continued)

GISID	Site Number	Class	Type	Sensitivity	Comments
Link 467 (Cont'd.)					
9908	CR5461	Prehistoric	Isolate	Low	2 flakes
9908	CR5462	Prehistoric	Isolate	Low	obsidian flake
9908	CR5463	Prehistoric	Isolate	Low	quartz core
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974 280
Link 468					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974 280
Link 469					
	CR5322	Historic	Ranch house	Moderate-High	1880s adobe; project 921p
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 471					
	CR767	Prehistoric	Lithic scatter	Moderate	about 30 flakes; 1 projectile point fragment; project 315p
	CR768	Historic	Corral and chute	Moderate	may not be 50 years old; project 315p
	CR769	Prehistoric	Artifact scatter	Moderate	flakes and several project point fragments (Desert side-notched, Rosegate, large corner notched), 2 Snake Valley Gray sherds, project 315p
	CR773	Prehistoric	Lithic scatter	Moderate	several hundred obsidian biface thinning flakes; Rosegate and Humboldt concave base point fragments; project 315p
	CR5405	Prehistoric	Isolate	Low	<10 flakes; project 315p
	CR5406	Prehistoric	Isolate	Low	chert flake; project 315p
	CR5407	Prehistoric	Isolate	Low	obsidian biface, project 315p
	CR5408	Prehistoric	Isolate	Low	chert flake, project 315p
	CR5409	Prehistoric	Isolate	Low	obsidian point fragment; project 315p
	CR5410	Prehistoric	Isolate	Low	obsidian flake, project 315p
	CR5411	Prehistoric	Isolate	Low	obsidian flake; project 315p
	CR5412	Prehistoric	Isolate	Low	obsidian flake, project 315p
	CR5413	Prehistoric	Isolate	Low	1 chert and 1 quartzite flake; project 315p
	CR5414	Prehistoric	Artifact scatter	Moderate	Shoshone pot drop & 1 obsidian flake, project 315p

Table 3-6, Cultural Resource Data by Link (Continued)

GISID	Site Number	Class	Type	Sensitivity	Comments
Link 471 (Cont'd.)					
	CR5415	Prehistoric	Isolate	Low	1 chert and 1 obsidian flake, project 315p
	CR5416	Prehistoric	Isolate	Low	basalt scraper; project 315p
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 472					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 473					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280

Table 3-6. Cultural Resource Data by Link (Continued)

GISID	Site Number	Class	Type	Sensitivity	Comments
Link 471 (Cont'd.)					
	CR5415	Prehistoric	Isolate	Low	1 chert and 1 obsidian flake; project 315p
	CR5416	Prehistoric	Isolate	Low	basalt scraper; project 315p
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 472					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280
Link 473					
28010	Snake Valley	Ethnohistoric	Goshute habitation area	Moderate	Malouf 1974:280

TABLE 3-7

Cultural Resources Recorded Along the Sacramento Pass Subroutes

Resource Sensitivities	Subroute 1	Subroute 2	Subroute 3	Subroute 4
Prehistoric				
Low	11 (isolates)	13 (isolates)	13 (isolates)	8 (isolates)
Moderate	4 (lithic or artifact scatters)	7 (lithic or artifact scatters)	7 (lithic or artifact scatters)	4 (lithic or artifact scatters)
Ethnohistoric				
Moderate	1 (habitation area)	1 (habitation area)	1 (habitation area)	1 (habitation area)
Historic				
Moderate	3 (trash sites and a corral)	1 (corral)	1 (corral)	1 (trash)
Moderate-High	2 (ranch and mill site)	1 (ranch)		
All Resources				
Low	11	13	13	8
Moderate	8	9	9	6
Moderate-High	2	1	0	0
Totals	21	23	22	14

TABLE 3-8

Cultural Resources Along the Sacramento Pass Subroutes

Resource Sensitivities	Subroute 1	Subroute 2	Subroute 3	Subroute 4
Prehistoric				
Low	11 (isolates)	13 (isolates)	13 (isolates)	8 (isolates)
Moderate	4 (lithic or artifact scatters)	7 (lithic or artifact scatters)	7 (lithic or artifact scatters)	4 (lithic or artifact scatters)
Ethnohistoric				
Moderate	1 (habitation area)	1 (habitation area)	1 (habitation area)	1 (habitation area)
Historic				
Moderate	3 (trash sites and a corral)	1 (corral)	1 (corral)	1 (trash)
Moderate-High	2 (ranch and mill site)	1 (ranch)		
All Known Resources				
Low	11	13	13	8
Moderate	8	9	9	6
Moderate-High	2	1	0	0
Totals	21	23	22	14
Predicted Sensitivities				
None	9.4	8.8	9.0	8.9
Low	3.8	3.2	2.3	1.1
Moderate	5.9	4.8	4.5	3.8
Moderate-High	1.4	4.9	4.9	5.6
Total Miles	20.5	21.7	20.7	19.4

TABLE 3-9

Summary of Cultural Resource Impacts

	None	Low	Moderate	Moderate-High	Total Miles
Subroute 1					
Direct Construction Impacts on Known Sites	20.5	0	0	0	20.5
Direct Construction Impacts on Predicted Sensitivity Zones	9.0	5.0	6.5	0	20.5
Public Accessibility Increase	20.5	0	0	0	20.5
Subroute 2					
Direct Construction Impacts on Known Sites	19.7	0.3	1.7	0	21.7
Direct Construction Impacts on Predicted Sensitivity Zones	8.4	4.3	9.0	0	21.7
Public Accessibility Increase	17.1	2.0	0	0	21.7
Subroute 3					
Direct Construction Impacts on Known Sites	18.7	0.3	1.7	0	20.7
Direct Construction Impacts on Predicted Sensitivity Zones	8.6	4.3	7.8	0	20.7
Public Accessibility Increase	17.6	2.0	0	0	20.7
Subroute 4					
Direct Construction Impacts on Known Sites	17.4	0.3	1.7	0	19.4
Direct Construction Impacts on Predicted Sensitivity Zones	8.9	3.4	7.1	0	19.4
Public Accessibility Increase	16.9	2.0	0	0	19.4



Prepared by: Dames & Moore

Southwest Intertie Project

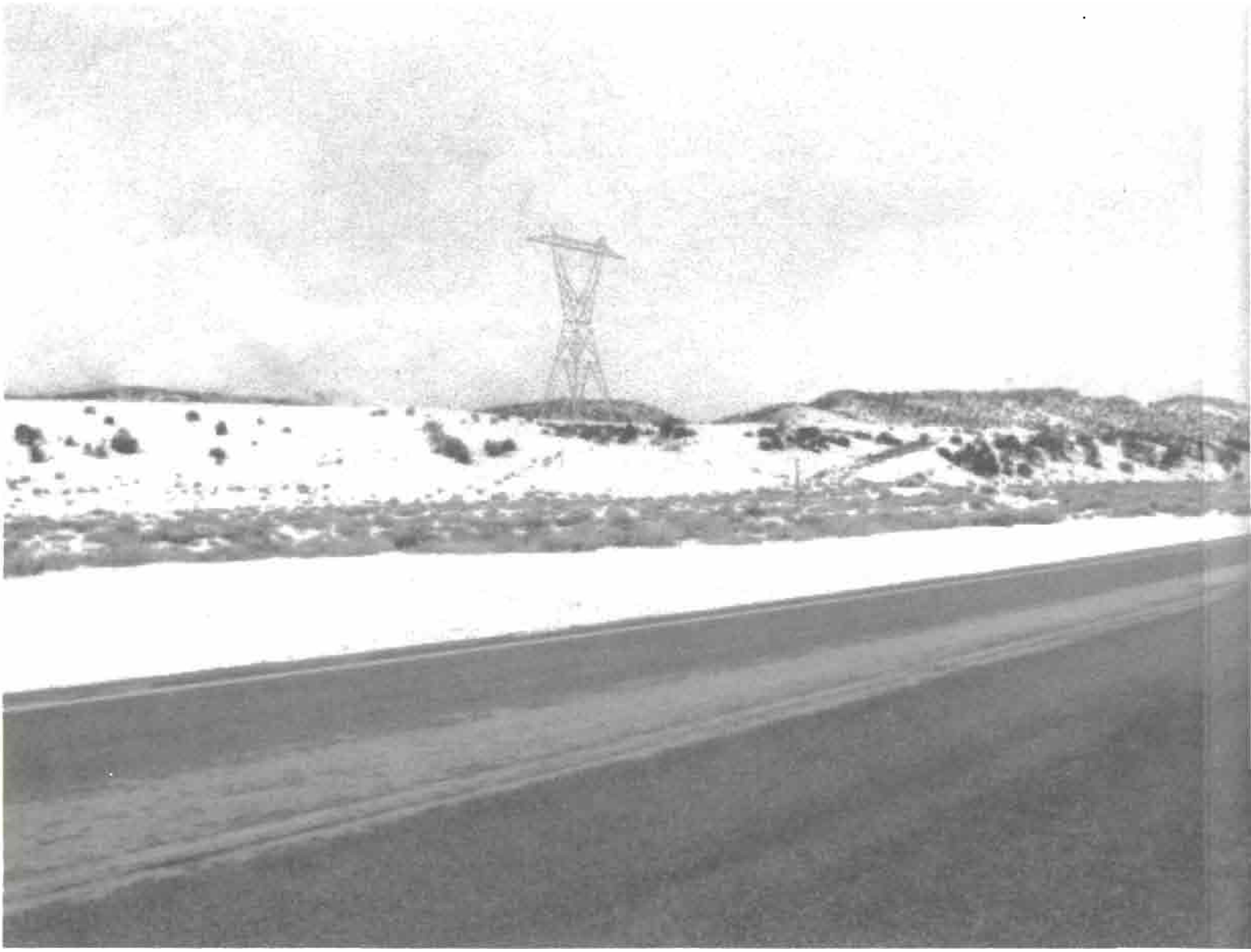


SACRAMENTO PASS MITIGATION REROUTE

Subroute 1 - Crossing of U.S. Highway 6/50
(Link 463)

EXISTING CONDITIONS

Figure 3-13



Prepared by: Dames & Moore

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SACRAMENTO PASS MITIGATION REROUTE

Subroute 1 - Crossing of U.S. Highway 6/50 (Link 463)

SIMULATION

Figure 3-14



Prepared by: Dames & Moore

Southwest Intertie Project

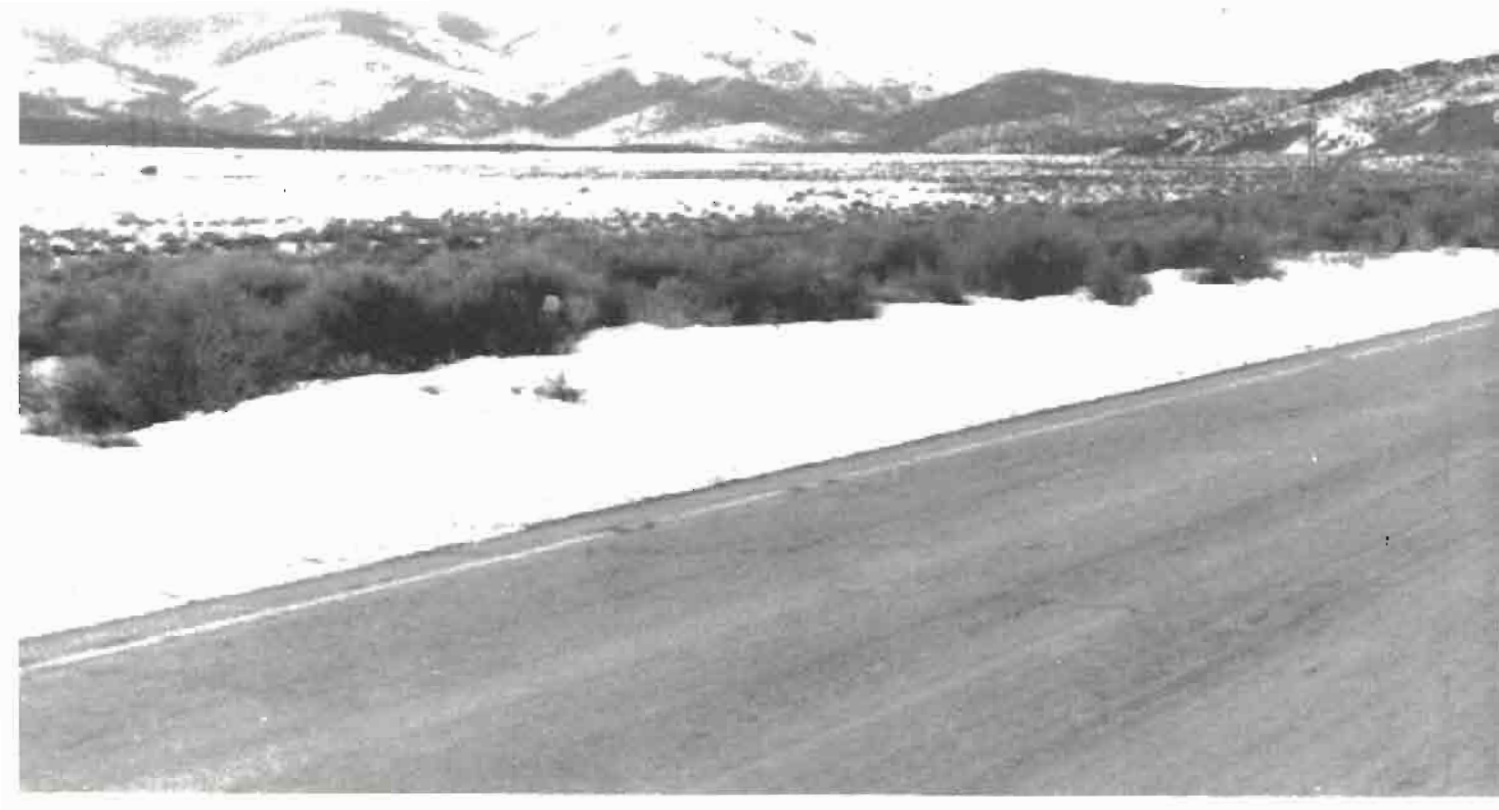


SACRAMENTO PASS MITIGATION REROUTE

Subroute 2 - Crossing of U.S. Highway 6/50
(Link 465)

EXISTING CONDITIONS

Figure 3-15



Prepared by: Dames & Moore

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SACRAMENTO PASS MITIGATION REROUTE

Subroute 2 - Crossing of U.S. Highway 6/50 (Link 465)

SIMULATION

Figure 3-16



Prepared by: Dames & Moore

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SACRAMENTO PASS MITIGATION REROUTE

Subroute 3 and 4 - Crossing of U.S. Highway 6/50
(Link 467 & 468)

EXISTING CONDITIONS

Figure 3-17



Prepared by: Dames & Moore

Southwest Intertie Project



SACRAMENTO PASS MITIGATION REROUTE

Subroute 3 - Crossing of U.S. Highway 6/50
(Link 468)

SIMULATION

Figure 3-18



Prepared by: Dames & Moore

Southwest Intertie Project

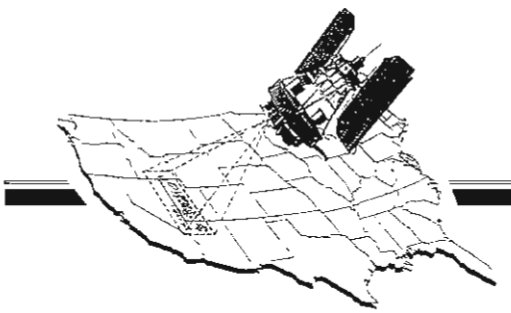


SACRAMENTO PASS MITIGATION REROUTE

Subroute 4 - Crossing of U.S. Highway 6/50 (Link 467)

SIMULATION

Figure 3-19



CHAPTER 4
ERRATA

CHAPTER 4
ERRATA

COVER SHEET

Page 2, 1st paragraph, 3rd line: change "...eight..." to "...seven...".

Page 2: change the heading "Crosstie Alternatives" to "Ely to Delta Alternatives"

SUMMARY

Page 1, 3rd paragraph, following 2nd sentence: Add the sentence: "Tower types between Ely to Delta would be constructed using:

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

Page 5, 2nd paragraph: Delete the last sentence starting with "The line would be..." and replace with:

"Tower types between Midpoint and Dry Lake would be constructed using V-guyed and self-supporting steel lattice structures, and steel pole H-Frame towers in agricultural areas. Tower types on the Crosstie would be constructed using self-supporting steel lattice structures and steel pole H-Frame for visual mitigation and in agricultural areas. The average span between towers would be approximately 1500 feet.".

Page 5, 3rd paragraph, 6th line: change "This series..." to "The series...".

Page 6, under the heading "Midpoint Substation to Dry Lake", after Route G, add:

" • **Utility** - 345kV*-Cottonwood Creek-Thousand Springs-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative

- **Agency** - 345kV*-Cottonwood Creek-Thousand Springs-Goshute Valley-Steptoe-Egan Range-Dry Lake Alternative"

Page 6: change the heading "Crosstie Routes from Ely, Nevada to Delta, Utah" to "Ely to Delta (Crosstie) Routes".

Page 7, 4th paragraph, 2nd line: change "...provinces." to "...province.".

Page 8, 2nd bullet at bottom of page: change "Curry" to "Currie". Also add: "Oasis"

Page 10, 4th paragraph, 1st line: change "other" to "otherwise".

Page 12, 2nd paragraph, 1st line: change "Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Page 12, under the heading "Direct Route" add: bullet item "• 118.8 miles outside of designated corridor".

Page 13, under the heading "Cutoff Route" add: bullet item "• 78.6 miles outside of designated corridor".

Page 13, under the heading "230kV Corridor Route", 5th line: change "..."bald" eagle nesting areas" to "..."golden" eagle nesting areas".

Page 14, 3rd paragraph, 1st sentence: change "Although the impacts to riparian areas and desert tortoise can be largely mitigated, they are considered significant because of the sensitivity of the resources." to "Although riparian areas and desert tortoise are significant issues, the impacts would be largely mitigated.".

Page 14, 3rd paragraph, last sentence: change to "Impacts to sage grouse habitat would be significant where there are no existing transmission lines.".

CHAPTER 1 - PURPOSE AND NEED FOR ACTION

Figure 1-1, in Nevada on the Map: change "Tonapah" to "Tonopah".

Page 1-1, 2nd paragraph, 5th line: change "...resource construction." to "...generation facilities.".

Page 1-1, 3rd paragraph, 6th line: change "...new..." to "...proposed...".

Page 1-1, 4th paragraph, 1st and 2nd lines: change "...two electrical utility systems in two different geographic areas..." to "...the SWIP and the existing Utah system, which includes the IPP-Adelanto DC transmission line, ...".

Page 1-1, 4th paragraph, 2nd line: change "...open marketplace substation..." to "...open marketplace...".

Page 1-2, 3rd paragraph, add to the end of the paragraph: "Future system modifications may allow an increased rating for the SWIP.".

Page 1-2, delete 4th paragraph beginning with "A direct current..." replace with the following four paragraphs:

"The IPCo chose not to develop this project as a Direct Current (DC) transmission system because a DC system for transmitting 1200 MW of power between Midpoint and the Dry Lake area would cost about $488 million compared to $356 million for the proposed AC project. The DC terminal installations (i.e., stations that convert AC to DC and DC to AC) cost about $144 million each. Two DC terminals are required. The cost of a DC transmission line is generally less than its AC counterpart by about $200 million. However, the line savings are overshadowed by the additional terminal expense.

Additionally, an AC system was selected because it would allow the SWIP more flexibility to connect to other AC systems. There is more difficulty and expense associated with connecting the DC system to intermediate AC busses. Such interconnections for a DC system would require construction of additional converter stations for local AC electricity use. The cost of each converter site is an order of magnitude greater than an AC interconnection ($100+ million versus $10+ million). This inflexibility does not meet the objectives of the SWIP.

DC systems can be an economical alternative to AC systems in some circumstances. DC systems can become economical when the distance exceeds 400 to 500 miles and the desired capacity exceeds the capability of a single AC line (generally above 1600 MW). One primary benefit of a DC transmission system is greater control of power flows. However, this benefit does not justify the considerable increase in project costs.

The actual efficiency of a comparable DC alternative would depend upon economic factors used in the design of that system (i.e., voltage rating and conductor selection). For example, for a 1200 MW flow on the existing Pacific DC Intertie line, the losses are currently about 5.7 percent compared to the estimated 6 percent for the SWIP.".

Page 1-2, 6th paragraph, 1st line: change "...between the Midpoint Substation and Las Vegas..." to "...between the Midpoint Substation and a proposed substation in Dry Lake located northeast of Las Vegas...".

Page 1-2, 1st paragraph, 2nd line: change "...and a new substation near Las Vegas." to "...and a proposed substation in Dry Lake Valley near Las Vegas.".

Page 1-4, last Paragraph, 1st sentence: change "(Midpoint to Ely to Las Vegas line)" to "(Midpoint to Dry Lake line)".

Page 1-10, 2nd paragraph, 3rd line: change "...defer the construction of new capacity..." to "...defer the construction of new generation capacity...".

Page 1-11, 5th paragraph, 2nd line: change "buyer to the seller." to "seller to the buyer".

Page 1-13, 1st paragraph, 5th line: change "...feasible alternative to building new resources." to "...feasible alternative to building new generation resources.".

Page 1-13, Summary, last line: change "...defer new resource construction." to "...defer new generation resource construction.".

Page 1-13, Planning Requirements, Environmental Review and Licensing: Reference BLM Manual 1620, "Supplemental Program Guidance" and BLM Manual 1623.5, "Supplemental Program Guidance for Land Resources."

Page 1-14, 2nd Paragraph, lines 2 through 5: change "The Forest Service, Bureau of Reclamation, National Park Service, and the Bureau of Indian Affairs would have lands affected by various routing alternatives and are federal cooperating agencies during the EIS process." to,

"The Forest Service, Bureau of Reclamation, National Park Service, , and the Bureau of Indian Affairs would have lands or resources (potential visual impacts to NPS lands) affected by various routing alternatives and are federal cooperating agencies during the EIS process.".

Table 1-1, page 1 of 8, under Agency, last item: delete "Lake Mead National Recreation Area (LMNRA)".

Table 1-1, page 1 of 8, under Permit, Approval or Review: change "Authorization to Cross LMNRA Lands" to "Compliance with Land and Water Conservation Act".

Table 1-1, page 1 of 8, under Relevant Legislation: change "Title 18 USC, 36 CFR 14" to "Title 16 USC, 460L-4".

CHAPTER 2 - ALTERNATIVES INCLUDING THE PROPOSED ACTION

Page 2-5: add the following section:

"Without adequate regional transmission, the cost effectiveness of conservation programs must be determined on the basis of the avoidable generating resource costs of an individual or local utility. Utilities having a lower avoided cost will be able to develop conservation resources to a lesser degree than utilities with a higher avoided cost.

Conservation is an integral part of the resource strategy of every utility considering partnership in the SWIP. Regulatory requirements dictate that conservation should be considered on an equal basis in a utility's plan to acquire the lowest cost resources. Conservation and other demand management programs are expected to reduce, but not eliminate, the region's need for new generating resources. Therefore, conservation plans cannot alone be considered an alternative action to meet the stated need for the project.

Transmission facilities like the SWIP would contribute to the region's task of meeting future load growth most efficiently with the least amount of new generating capacity. First, seasonal load diversity within the WSCC regions would allow transmission to meet the requirements in one part of WSCC with another region's existing generating capacity. Total regional resource requirements can be reduced as a result of such use. Secondly, when new generating capacity is needed within WSCC, transmission such as the SWIP would make more options available for the selection and location of those resources to minimize their cost and environmental impact.

Because of the seasonal diversity which exists between the Pacific Northwest and the Desert Southwest loads and resources, purchases and exchanges over the SWIP are expected to help the entire WSCC region meet load growth by utilizing existing resources more efficiently. Regional conservation potential may be developed more fully given the availability of adequate regional transmission.".

Page 2-6, 2nd paragraph, 5th sentence: change "The LTIAP allows a very small amount of firm intertie access to the northwest utilities. IPCo's share of firm access is 87 MW, and uses an allocation method to limit other northwest utilities non-firm access to the Intertie. Moreover, LTIAP restricts use of a utility's firm access for non-firm sales or firm contracts which BPA considers advance arrangements to sell non-firm energy." to "The LTIAP allows a very small amount of firm intertie access to the northwest utilities and uses an allocation method to limit other northwest utilities' non-firm access to the Intertie. The IPCo's share of firm access is 87

MW. Moreover, LTIAP restricts use of a utility's firm access for non-firm sales or firm contracts which BPA considers advance arrangements to sell non-firm energy.".

Page 2-7, add the following paragraphs:

"A direct current (DC) system can be an economical alternative to an AC system when a line exceeds 400-500 miles in length with no intermediate substations. The SWIP, however, would provide interconnections to other utilities at intermediate substations and would have the capability to integrate regional generation resources. Such interconnections for a DC system would require construction of expensive converter stations for local AC electricity use.

A DC transmission alternative for transmitting 1200 MW of power from Midpoint to the Dry Lake Area would cost about $488 million compared to $356 million for the proposed AC project ($200M for line and $144M for each line terminal). There must be a requirement for substantial additional capacity to justify a DC alternative.

The actual efficiency of a comparable DC alternative would depend upon the design of that system (i.e. voltage rating and conductor selection). For example, the Pacific DC Intertie line has been uprated twice in its history, once to increase its voltage rating and the other to increase its current rating. The line was originally designed to operate at 1600 MW at +/- 400kV. A 1200 MW flow at +/- 400kV would have generated 8.6 percent loss. In the 1980s, the Pacific DC Line was uprated to +/- 500kV and is now capable of 3100 MW. For a 1200 MW flow on the current DC system, the losses are currently about 5.7 percent compared to 6 percent for the SWIP.

Additional load taps are not nearly as feasible with a DC alternative. The cost of each site is an order of magnitude greater ($100+ million vs. $10 million) and are not included in the $488 million for the basic line.

From an environmental point of view, the DC vs. AC alternative would be similar in nature. DC line structures have one less conductor than those of an AC line. However, the DC substations are larger and also require neutral ground mats that are quite large.".

Following page 2-10, Figure 2-1, Legend: change "indentified" to "identified".

Page 2-16, replace last paragraph with: "If installed, access to the fiber optic ground wire by a commercial communications company would be allowed upon completion of all environmental permitting activities (e.g., NEPA) and obtaining the right-of-way. Regeneration stations, which are typically small concrete buildings approximately 10 feet by 10, would be needed at 20-40 mile intervals along the transmission line right-of-way. They would likely be placed on or immediately adjacent to the SWIP right-of-way.

Page 2-17, 2nd paragraph: change "land rights" to "rights-of-way".

Page 2-17, 4th paragraph, add the following to the end of the paragraph: "The conveyance of the Delta Grant would be contingent on the BLM's approval.".

Page 2-19, 1st paragraph, after "...overhead lines,...": add "(both Midpoint to Dry Lake and Ely to Delta routes)".

Page 2-19, 4th paragraph, after "...natural source for new growth.": add "...,however, reseeding may be required.".

Page 2-20, 6th paragraph, end of last sentence: add "...and approved by the permitting agency.".

Page 2-21, 5th paragraph, after first sentence: add "About one acre per mile would be used for construction yards and batch plants.".

Page 2-22, 4th paragraph, under "Ground Rod Installation": add to end of paragraph "Counterpoise could extend to the edge of the right-of-way, but are typically parallel with conductors in the right-of-way.".

Page 2-22, 6th paragraph, 4th line: change to "Oils, explosives, pesticides, chemicals and other hazardous materials would be hauled to a disposal facility authorized to accept such materials.".

Page 2-22, 6th paragraph, before the last sentence in the paragraph: add "Explosives would also be disposed of at an authorized disposal facility.".

Page 2-23, insert before last sentence in the 1st paragraph: "The IPCo would be responsible to fully remediate (i.e., clean up) any releases of any hazardous substances, hazardous materials, or petroleum products.".

Page 2-23, 6th paragraph, 1st sentence: change "...would be permitted.." to "...could be allowed by the permitting agency...".

Page 2-23, 6th paragraph, 1st sentence: delete "...adjacent to...".

Page 2-23, 7th paragraph, 1st sentence: delete "...adjacent to...".

Page 2-24, 6th paragraph, add to the end of the last sentence: "...as specified by the permitting agency.".

Page 2-28, under "Develop Scope/Preparation Plan", third bullet item: add "..., and the Schell Resource Area of the Ely District in Nevada".

Page 2-28, under "Develop Scope/Preparation Plan", fourth bullet item: change "...the Elko and Ely Districts..." to "...the Elko and Ely Districts, and the Caliente Resource Area of the Las Vegas District...".

Page 2-29, under "Human Environment", first bullet item: add ".., and prime/unique farmlands".

Page 2-29, 4th paragraph, "Prehistory" entry: change "lithic scatters" toe "artifact scatters".

Page 2-30. 5th paragraph, 5th line: change "Fossil Beds National Monument" to "Hagerman Fossil Beds National Monument".

Page 2-31. 9th paragraph, 5th line: change "...new..." to "...proposed...".

Page 2-35, 6th Paragraph, last line: change "(refer to page 2-23)" to "(refer to page 2-25)".

Page 2-38, under "Midpoint to Dry Lake Transmission Alternatives": add "260" to Route B: add "250, 259, 260," to Route D: and add "260" to Route E.

Page 2-41, 6th paragraph under "Route B: 345kV-Trout Creek-Wendover-Steptoe-Antone Pass-Dry Lake Alternative": after "...Nevada Northern Railroad right-of-way..." add "(Link 270)."; after "...Egan Range..." add "(Link 280)."; in the third sentence, after "..., the route would traverse Butte Valley..." insert "(Link 280)"; at the end of the last sentence "...site from the north." add "(Link 310).".

Page 2-46, the lists of microwave communication facilities sites under the headings at the top of this page are transposed. They should read as follows:

" **Robinson Summit**

Path 1

Hansen Butte*
Cottonwood
Ellen D (L&D)*
Six-Mile
Rocky Peak*
Spruce Mountain*
Long Valley
Copper*
Cave Mountain*
Mount Wilson*
Highland Peak*
Beaver Dam Mountain*
Glendale*

North Steptoe

Path 2

Hansen Butte*
Cottonwood
Ellen D (L&D)*
Rocky Point*
Proctor
Bald Peak*
Raiff
Squaw Peak*
Cave Mountain*
Mount Wilson*
Highland Peak*
Beaver Dam Mountain*
Glendale*

* - indicates existing developed microwave communication facilities sites"

Page 2-47, under "Direct Route", 3rd paragraph, last sentence: should be "If the SWIP is constructed on this route, Hill AFB would request that towers be designed and built at a height no taller than 30 feet. This would make this route technically infeasible because the minimum clearance for conductors on the proposed 500kV transmission line is 31 feet, per the National Electric Safety Code.".

Page 2-48, 6th paragraph: delete last sentence and replace with "The proposed wayside stations discussed in the Draft Great Basin National Park (GBNP) General Management Plan have been included in the SWIP analysis. The GBNP Enabling Act specifies that the Park Service may enter into cooperative agreements for the purpose of interpretive facilities outside the park. However, the SWIP document should not be considered as an allowance or non-allowance of this proposed action for GBNP. No agreement for the proposed interpretive facilities has been entered into as of this date. In any case, the National Park Service will require appropriate authorization and input for any project involving the BLM and Forest Service administered lands. The Notice of Intent for the SWIP was published on March 3, 1989, prior to the release of the Draft GBNP General Management Plan on September 9, 1991.".

Page 2-51, 7th paragraph, 1st sentence: change "The alternative substations sites at Robinson Summit (Sites #9 or #10) are very similar environmentally and there is no distinctive preference (also refer to Appendix E)." to "The alternative substations sites at Robinson Summit (Sites #9 or #10) are very similar environmentally, but because none of the alternative routes pass through Site #9, Site #10 is preferred.".

Page 2-53, under "Ely to Delta", 3rd paragraph, 8th line: after "...Hill AFB." add "(refer to Table 2-5)." Start new paragraph with the sentence that begins "The cumulative...".

CHAPTER 3 - AFFECTED ENVIRONMENT

Page 3-1, under "Cultural Environment": delete "archaeology".

Page 3-3: replace the 2nd full paragraph with "Three Class I areas, as defined by the federal Prevention of Significant Deterioration (PSD) rules (40 CFR 51.166), are identified as being within or near the study area corridors:

- Jarbidge Wilderness Area
  64,667 acres; approximately 26 miles from a study corridor

Under the federal PSD Program, Class I areas are afforded the most stringent degree of protection from air pollution sources, in the form of maximum allowable ambient air pollutant concentration increments over baseline concentrations (refer to Table AQ-1 of the Volume II - Natural Environment technical report).

Class I areas are identified as international parks of any size, national parks exceeding 6,000 acres, national wilderness areas exceeding 5,000 acres and national memorial parks exceeding 5,000 acres.

All other lands within the United States were initially designated under the PSD rules as Class II. These areas are afforded a less stringent level (e.g., higher ambient air pollutant concentration increments) of protection from air pollution sources (refer to Table AQ-1 of the Volume II - Natural Environment technical report).

The federal PSD rules also provide that certain other lands which exceed 10,000 acres in size and were established prior to August 7, 1977, may be redesignated as Class I. However, only national parks and national wilderness areas exceeding 10,000 acres and established after August 7, 1977 can be designated as Class I through state or federal legislation.".

Page 3-10, "Route F", 2nd paragraph, 13th line: change "Hagerman Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Page 3-11, "Route G", 3rd paragraph, 2nd sentence, 3rd line: change "180" to "280".

Page 3-34, 2nd paragraph, 2nd bullet: add "Oasis".

Page 3-37, 3rd paragraph, last sentence: revise to "The AGL for the Restricted Area R-6405 (located in all or portions of Links 222, 224, 225, 226, 611, 610, 620, 621, 630) is 100 feet, the Lucin A MOA (Links 211, 221, 222), Gandy MOA (Links 222, 226, 266, 267, 610, 620), and Sevier A and B MOAs (Links 267, 268, 451, 461, 462, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 571, 572, 580, 590, 600, 640, and 650) all have an AGL of 200 feet.".

Page 3-37, 4th paragraph, last sentence: revise to "There is a 100 foot AGL in the R-6405 Restricted Area (Links 222, 224, 225, 226, 610, 611, 620, 621, 630, 640, 650). There is a 200 foot AGL in the Lucin C MOA (Link 222); the Gandy MOA (222, 226, 266, 267, 610, 620); the Sevier A (Links 268, 461, 462, 470, 480, 630, 640, 650); and the Sevier B (Links 451, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 571, 572, 580, 590, 600, 640, 650).".

Page 3-39, 7th paragraph, end of the last sentence: add "...and in the Conger Range (Link 452).".

Page 3-49, under "Southern Route", 2nd paragraph, 3rd sentence: change "Nevada State Highway 21" to "Utah State Highway 21".

Page 3-60, 5th paragraph under "Route F", 3rd line: change "Hagerman Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Page 3-61, 2nd paragraph under "Route G": "...along the southern edge of the Windmere Hills (Link 180), in the Pequop Mountains (Link 190) and...".

Page 3-63, 2nd paragraph, 2nd sentence: revise to "Views from dispersed recreation users in the Notch Peak WSA (Link 462), the Swasey Mountain WSA (Link 470), the Howell Peak WSA (Link 462), Mt. Moriah Wilderness (Link 267), and the Marble Canyon WSA (Link 267) were also considered to be of high sensitivity.".

Page 3-64, 4th paragraph, after the fourth sentence: add "The proposed wayside stations discussed in the Draft Great Basin National Park (GBNP) General Management Plan have been included in the SWIP analysis. The GBNP Enabling Act specifies that the Park Service may enter into cooperative agreements for the purpose of interpretive facilities outside the park. However, the SWIP document should not be considered as an allowance or non-allowance of this proposed action for GBNP. No agreement for the proposed interpretive facilities has been entered into as of this date. In any case, the National Park Service will require appropriate authorization and input for any project involving the BLM and Forest Service administered lands. The Notice of Intent for the SWIP was published on March 3, 1989, prior to the release of the Draft GBNP General Management Plan on September 9, 1991.".

Page 3-81, last paragraph, 3rd line: replace "RI" with "...radio interference (RI).".

Page 3-81, 2nd paragraph, 1st line: change "...Idaho or Nevada." to "...Idaho, Utah, or Nevada.".

Page 3-82, 1st paragraph, 1st line: replace "TVI" with "...television interference (TVI)...".

Page 3-83, under "Methods", 1st paragraph, 2nd sentence: change "define a process" to "mandate a process".

Page 3-85, 2nd paragraph, 2nd sentence: change to "Other than old buildings, historic resources include ghost towns, mines, historic ranches, and a variety of structures, roads, railroads, and trails.".

Page 3-86, 4th paragraph, 1st sentence: change to "At about AD 1200 to 1300, the Formative and Archaic cultures are hypothesized to have been replaced by Numic speaking groups.".

Page 3-88, under "Regional Studies", 3rd paragraph, end of sentence: add "...(refer to p. 2-26).".

Page 3-89, 1st paragraph, end of paragraph: add "It must be noted that this analysis is based only on information about the most significant known cultural resources. Although this is a reasonable methodology for such regional siting studies, it must be recognized that because much of the region has never been thoroughly inventoried, it is likely that other significant unrecorded cultural resources are present within the various alternative corridors."

Page 3-90, 3rd paragraph, 2nd sentence: revise and insert "Historic resources in this group include such sites as:

- the Minidoka Japanese-American Relocation Center
- segment of the Nevada Northern Railroad operated as a historic tourist train
- segments of the Oregon, California, and Hastings Cutoff trails
- Kelton Road
- the Old Spanish Trail/Mormon Road
- the Pony Express/Lincoln Highway and other Pony Express routes
- the Osceola Ditch
- various historic cemeteries, burials, residences, and town sites

In addition, the remaining 133 miles of the Nevada Northern Railroad that now lie unused were ranked as having moderate-high sensitivity. The entire railroad was recently determined to be eligible for listing on the National Register of Historic Places and was considered to be an important historic resource as impacts were assessed.".

Page 3-91, 5th paragraph, last sentence: revised to "The highest sensitivity sites along this segment of the route are two alignments of the California Trail and the historie town of Contact.".

Page 3-91, 7th paragraph, end of the paragraph: add "This segment of Route A parallels portions of the historic Nevada Northern Railroad, as do other segments to the south. A total of 51 miles of the 150-mile-long railroad are within the Route A corridor.".

Page 3-92, 6th paragraph, after first sentence: add "This segment of Route B parallels 4 miles of the 150-mile-long Nevada Northern Railroad.".

Page 3-93, 2nd paragraph, end of paragraph: add "Route C parallels 51 miles of the 150-mile-long Nevada Northern Railroad.".

Page 3-93, 4th paragraph, after 5th sentence: add "Route D parallels approximately 35 miles of the 150-mile-long Nevada Northern Railroad.".

Page 3-93, 6th paragraph, end of paragraph: add "Route E parallels 19 miles of the 150-mile-long Nevada Northern Railroad.".

Page 3-94, 1st paragraph, end of paragraph: add "Route F parallels 51 miles of the 150-mile-long Nevada Northern Railroad.".

Page 3-94, 3rd paragraph, end of paragraph: add "Route G parallels 66 miles of the 150-mile-long Nevada Northern Railroad.".

Table 3-1: Add a double asterisks ("**") after 230kV Corridor.

CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES

Page 4-31, under "Route B", 2nd paragraph, 2nd sentence, after "R-6405 Restricted Area (Link 222, 224, 226)": add "...and 42.3 miles of low residual impacts to portions of the Gandy MOA (Links 222, 226) and the Lucin A MOA (Links 221, 222) which are...".

Page 4-32, under "Route E", 3rd paragraph, 1st sentence, after "...R-6405 Restricted Area (Links 222, 224, 226)...": add "...and 42.3 miles of low residual impacts to portions of the Gandy MOA (Links 222, 226) and the Lucin A MOA (Links 221, 222) which are...".

Page 4-33, under "Direct Route", 2nd paragraph, 1st sentence: change to "The route would result in a total of 55.1 miles of moderate residual impacts to the R-6405 Restricted Area (Link 620, 621, 630) and would cross 44.1 miles through portions of the Gandy MOA (Links 266, 620), the Sevier A MOA (Links 630,640), and Sevier B MOA (Links 572, 580, 640).".

Page 4-34, 1st paragraph, 1st line: change "30-foot-2" to "30-foot".

Page 4-34, under "Cutoff Route", 2nd paragraph, 1st sentence, 2nd line: change Link "265" to "266".

Page 4-34, under "230kV Corridor Route", 1st paragraph, 2nd sentence: add "..., Utah" after "Delta".

Page 4-34, under "230kV Corridor Route", 3rd paragraph, 2nd line: add Link "461".

Page 4-35, 1st full paragraph, 2nd line: delete Link "450" and add Links "572 and 580".

Page 4-43, 1st full paragraph, 4th line: change "Fossil Beds National Monument" to "Hagerman Fossil Beds National Monument".

Page 4-45, 2nd paragraph, third sentence: add "The proposed wayside stations discussed in the Draft Great Basin National Park (GBNP) General Management Plan have been included in the SWIP analysis. The GBNP Enabling Act specifies that the Park Service may enter into cooperative agreements for the purpose of interpretive facilities outside the park. However, the SWIP document should not be considered as an allowance or non-allowance of this proposed action for GBNP. No agreement for the proposed interpretive facilities has been entered into as of this date. In any case, the National Park Service will require appropriate authorization and input for any project involving the BLM and Forest Service administered lands. The Notice of Intent for the SWIP was published on March 3, 1989, prior to the release of the Draft GBNP General Management Plan on September 9, 1991.".

Page 4-45, 2nd paragraph, last sentence: change "...Spring Valley..." to "...Snake Valley...".

Page 4-72, 1st paragraph: change to "Construction of Route A would introduce visual intrusions into the settings of the Minidoka Relocation Center (Link 20), the Oregon Trail (Link 41), the historic Shafter town site (Link 211), Pony Express/Lincoln Highway route (Link 291), the California Trail (Link 1612), the City of Rocks archaeological district (Link 362), and for 51 miles of the 150-mile-long Nevada Northern Railroad (Links 212, 230, 270, and 291).".

Page 4-72, 5th paragraph, end of paragraph: add "In addition, Route B would result in visual intrusions along about 4 miles of the 150-mile-long Nevada Northern Railroad (Link 270).".

Page 4-72, 8th paragraph: revise to "Potentially high indirect impacts could result from visual intrusion into the setting of the Minidoka Relocation Center (Link 20), Oregon Trail (Link 140), the California Trail (Link 140), the historic Shafter town site (Link 211), the Hastings Cutoff (Link 212), the Pony Express/Lincoln Highway route (Link 291), and the City of Rocks archaeological district (Link 362). In addition, Route C would result in visual intrusions along 51 miles of the 150-mile-long Nevada Northern Railroad (Links 212, 230, 270, and 291).".

Page 4-73, 3rd paragraph, end of paragraph: add "In addition, Route D would introduce visual intrusions along 35 miles of the 150-mile-long Nevada Northern Railroad (Links 230, 270, and 291).".

Page 4-73, 6th paragraph, end of paragraph: add "In addition, Route E would introduce visual intrusions along 19 miles of the 150-mile-long Nevada Northern Railroad (Links 212, 230, 241, 242, 244, and 270)".

Page 4-74, 2nd paragraph, end of paragraph: add "In addition, Route F would introduce visual intrusions along 51 miles of the 150-mile-long Nevada Northern Railroad (Links 212, 230, 270, and 291)".

Page 4-74, 5th paragraph, end of paragraph: add "In addition, Route G would introduce visual intrusions along 66 miles of the 150-mile-long Nevada Northern Railroad (Links 212, 230, 241, 242, 244, and 270)".

Page 4-78, under "BLM Utility Corridors", last sentence: change "...utility projects within the corridors that is established." to "...utility projects adjacent to compatible existing rights-of-way and within designated or planning corridors established by the BLM".

Page 4-79, 3rd paragraph, 4th line: change "...600kV..." to "...500kV...".

Page 4-82, 4th paragraph, 4th line: change "Hagerman Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Page 4-86, 2nd paragraph: revise to "In general, site densities throughout the region seem to average about 2 to 6 per square mile. Linear features would encounter a disproportionately larger number of sites because of a statistical "edge effect," but there are few directly comparable prior linear surveys through the region to indicate how many sites might be encountered. The surveys for the Intermountain Power Plan project in southwestern Utah and southern Nevada resulted in the discovery of an average of one cultural resource occurrence every linear mile, but three-fourths of these were isolated artifacts. Occurrences designated as sites were found on average of every 4 to 5 miles. Some additional sites were found on access roads that had to diverge from the corridor. It can be conservatively estimated that surveys along the various alternative SWIP

corridors might encounter a cultural resource every 2 to 3, miles on the average. This indicates that some 200 to 400 cultural sites could be present along the selected alternative. Many of these could probably be avoided by minor adjustments in the project, but the project would undoubtedly diminish the regional resource base".

Page 4-89, 1st paragraph, 2nd sentence: revise to "The pipeline planned to transport the water from north of Clark County would utilize existing corridors designated by the BLM or Congress, or prepare a plan amendment".

Table 4-1, page 2 of 3, #13, end of paragraph: add "Towers would be sited with a minimum distance of 200 feet from streams".

Table 4-1, page 1 of 3, #5: add "...natural springs and/or..." before "developed".

Table 4-2, page 1 of 2, second line: change "Recommended" to "Committed".

Table 4-2, page 1 of 2, #6: change "water courses" to "perennial or intermittent streams with riparian vegetation".

Table 4-3a, page 1 of 2, under Allotment Name: add

	"	CUTOFF		230kv Corridor	
	Total Acres	Total Acres	Viable Acres	Total Acres	Viable Acres
"Conger Spring	78,971	26.3	21.9	43.00	38.60""

Table 4-3a, page 2 of 2, in the "Smith Creek" row: change

	"	CUTOFF		230kv Corridor	
	Total Acres	Total Acres	Viable Acres	Total Acres	Viable Acres
"Smith Creek	17,820	14.3	6.0	0.0	0.0""

Table 4-4, page 1 of 1, table is revised to include Tax Revenues for Agency Preferred and Utility Routes.

TABLE 4-4

Estimated County Tax Revenues[1] by Alternative Route

State/ County	Midpoint to Dry Lake Alternative Routes								
	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Agency Preferred	Utility Preferred
IDAHO									
Cassia	20,800	20,800	20,800	20,800	20,800	-----	20,800	20,800	20,800
Gooding	-----	-----	-----	-----	-----	211,500	-----	-----	-----
Jerome	455,700	455,700	455,700	455,700	455,700	144,100	455,700	455,700	455,700
Twin Falls	570,700	570,700	570,700	570,700	570,700	916,600	570,700	570,700	570,700
NEVADA									
Elko	759,200	769,100	727,100	767,600	801,200	727,100	729,200	729,200	729,200
White Pine	582,000	588,300	582,000	576,200	596,100	582,000	568,400	560,000	552,200
Lincoln	539,400	539,400	539,400	539,400	539,400	539,400	539,400	539,400	539,400
Nye	261,800	261,800	261,800	261,800	261,800	261,800	261,800	261,800	261,800
Clark	150,800	150,800	150,800	150,800	150,800	150,800	150,300	150,300	150,300

State/ County	Ely to Delta Alternative Routes			
	Direct	Cutoff	230kV Corridor*	Southern
UTAH				
Millard	355,200	846,000	853,700	998,700
Juab	296,100	-----	-----	-----
NEVADA				
White Pine	255,700	289,200	320,500	494,900

[1] Estimates are based on average 1990 property tax rates in each county and an average cost for the transmission lines and associated microwave communication and substation facilities. Figures are rounded to the nearest hundred. Estimates represent revenues during the first year of operation without depreciation.

* Agency Preferred Route

CHAPTER 5 - CONSULTATION AND COORDINATION

Page 5-10, 3rd paragraph, last sentence: change to "The only route preference identified was an alternative that would traverse Dry Lake Valley from west to east (Link 671 to Link 673).".

CHAPTER 6 - PREPARERS AND CONTRIBUTORS

Page 6-4, under "Philip Zeig": add the title "Soil Conservationist".

Page 6-5, under "Mark A Pierce": add the title "Wildlife Conservationist".

Page 6-5, under "Melanie Mendenhall": add the title "Range Conservationist".

Page 6-5, under "F. Rex Rowley": add the title "Area Manager - House Range".

Page 6-5, under "Lynn T. Fergus": add the title "Outdoor Recreation Specialist".

Page 6-9, under "William J. Lindsey": change to "Supervisory Range Conservationist".

Page 6-9, under "Mark Henderson": change "13 years with BLM" to "seven years with the BIA and seven years with the BLM".

Page 6-13, first item under Name/Title: change "Hagerman Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Page 6-13, first item under Involvement, change "Hagerman Fossil Beds" to "Hagerman Fossil Beds National Monument"

REFERENCES

Add to list: Chadwick, D.H. 1989. Mission for the 90's: The Biodiversity Challenge. Defenders Magazine Special Report.

APPENDICES FOR THE SWIP DEIS/DPA

Appendix C

Page C-7, under "National Park Service", under "Idaho": delete "Fossil Beds National Monument - Twin Falls".

Appendix D

Page D-5, under "Subroute Set 22", last sentence: add "Link 680 would traverse 5.6 miles of Category I, 7.4 miles of Category II, and 5.6 miles of Unclassified desert tortoise habitat while Link 690 would traverse approximately 15.5 miles of Category I and 4.3 miles of Category III desert tortoise habitat".

Appendix F

Page F-5: the lists of microwave communication facility sites under the headings at the top of this page are transposed, they should read as follows. Also, Beaver Dam Mountain and Glendale should have been added.

Robinson Summit	**North Steptoe**
<u>Path 1</u>	<u>Path 2</u>
Hansen Butte	Hansen Butte
Cottonwood	Cottonwood
Ellen D (L&D)	Ellen D (L&D)
Six-Mile	Rocky Point
Rocky Peak	Proctor
Spruce Mountain	Bald Peak
Long Valley	Raiff
Copper	Squaw Peak
Cave Mountain	Cave Mountain
Mount Wilson	Mount Wilson
Highland Peak	Highland Peak
Beaver Dam Mountain	Beaver Dam Mountain
Glendale	Glendale

Table F-1, page 2 of 3, under "Location for the Six Mile site": change "E. of Oasis" to "W. of Oasis".

Table F-1, page 2 of 3, under "Jurisdiction for the Six Mile site": change "BLM" to "private".

Table F-4, page 2 of 2, under "SOILS, for Cave Mountain Site": change "Calcic" to "carbonatic" and delete "carbonic".

Appendix G

Page G-2, under "National Park Service": change "Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Appendix H

Page H-3, Additional Technical reports available for review at the following locations:

University of Nevada Las Vegas
James Dickenson Library
4505 S. Maryland Parkway
Las Vegas, NV 89154

Charleston Heights Library
800 Brush Street
Las Vegas, NV 89108

Henderson Library
55 Water Street
Henderson, NV 89105

Lincoln County Library
Pioche, NV 89043

Rainbow Library
6010 W. Cheyenne
Las Vegas, NV 89108

Clark County Library
1401 E. Flamingo Road
Las Vegas, NV 89109

Sunrise Public Library
100 N. Nellis Boulevard
Las Vegas, NV 89110

MAP VOLUME

Panel 2 - Alternative Routes Map: Route D was incorrectly labeled on this map. The map shows Route D following Links 250, 259, and 260. Route D should actually follow Links 241, 243, and 245. Figure 4-1 indicates the corrected labeling of the alternative routes.

Panel 3 - Alternative Routes Map: Route D was incorrectly labeled on this map. The map shows Route D following Links 250, 259, and 260. Route D should actually follow Links 241, 243, and 245. Figure 4-2 indicates the corrected labeling of the alternative routes.

Panel 4 - Alternative Routes Map: The labels for the "230kV Corridor Route" and "Cutoff Route" are transposed on this map. Figure 4-3 indicates the corrected labeling of these alternative routes.

Panel 2 - Land Use Resources: The Big Springs Ranch private grass airstrip is missing from this map. Figure 4-4 indicates the location of the airstrip.

Panel 3 - Land Use Resources: Marble Canyon WSA is not shown on this map. It is located on Link 267 and illustrated in Figure 4-5.

Panel 3 - Land Cover: Between miles 15 and 20 on Link 267, portions identified as playa are labeled incorrectly. The correct identification is sage scrub.

Panel 4 - Land Use Resources: - The label indicates this map to be "Panel 3 - Land Resources", it should read "Panel 4 - Land Resources".

Panel 4 - Map Index: correct the name "Wah Wah Mountains" to "Wah Wah Mountains North"

Panel 4 - Land Use Resources: The R-6405 Restricted Area is mapped incorrectly. Figure 4-6 shows the corrected boundary and labeling. The proposed Antelope Spring Trilobite Beds was not mapped. The location of the Antelope Spring Trilobite Beds is illustrated in Figure 4-7.

Panel 5 - Land Use Resources: Labels identifying MOAs operated by Nellis AFB are missing. Figures 4-8 and 4-9 illustrate the labels for these MOAs.

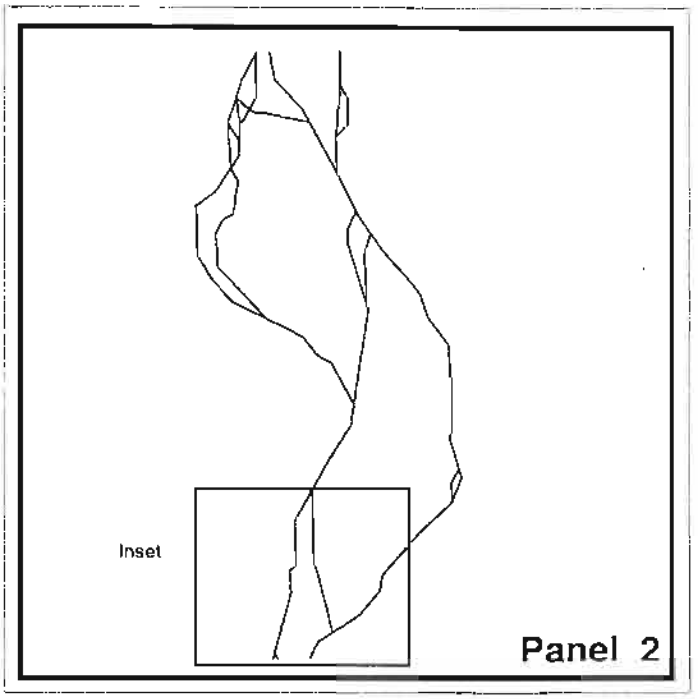
Panel 4 - Jurisdiction Map: This map is missing a small area of State land at T14S, R18W, Section 28, NW1/4, SW1/4 and a small area of private land of T14S, R18W, Section 28, NE1/4,SW1/4, S1/2SW1/4. Figure 4-10 indicates the locations of these parcels.

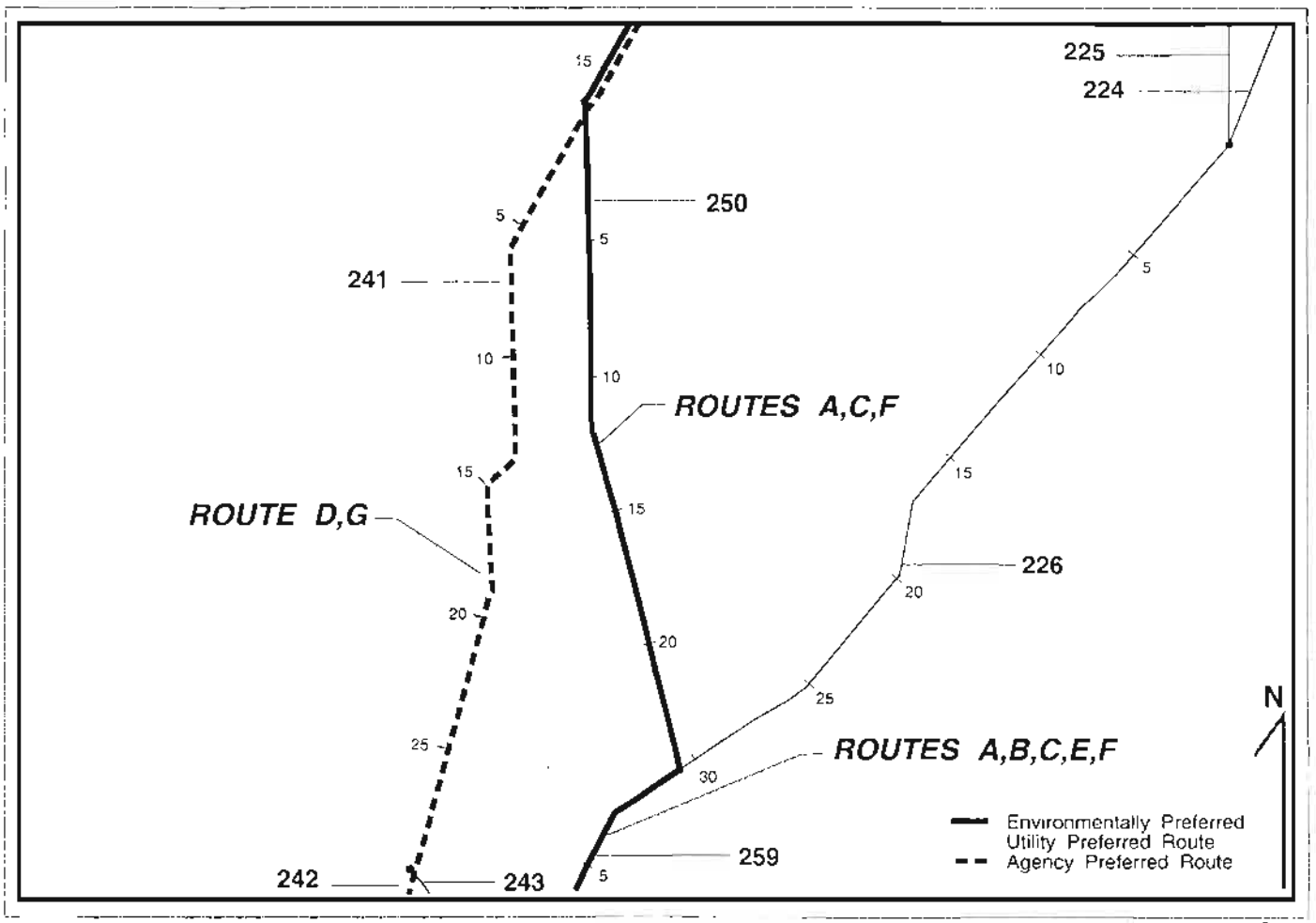
Panel 2 - Visual Resources: The BLM low visibility corridor around Interstate 80 did not appear on the map. The VRM Class II area is shown in Figure 4-11.

Panel 3 - All Maps: The boundary of the Humboldt National Forest South of Ely was left off of all the Panel 3 Maps. Figure 4-12 shows the approximate location of the boundary.

CORRECTIONS TO:
Panel 2 - Alternative Routes

The labels for Route D were incorrect on this map. The correct labeling for Route D is shown below.





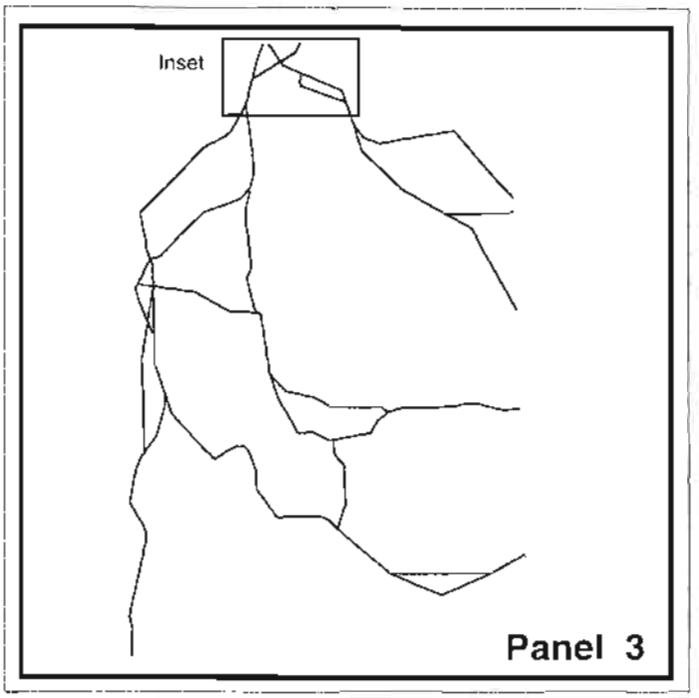
Note: Not to Scale

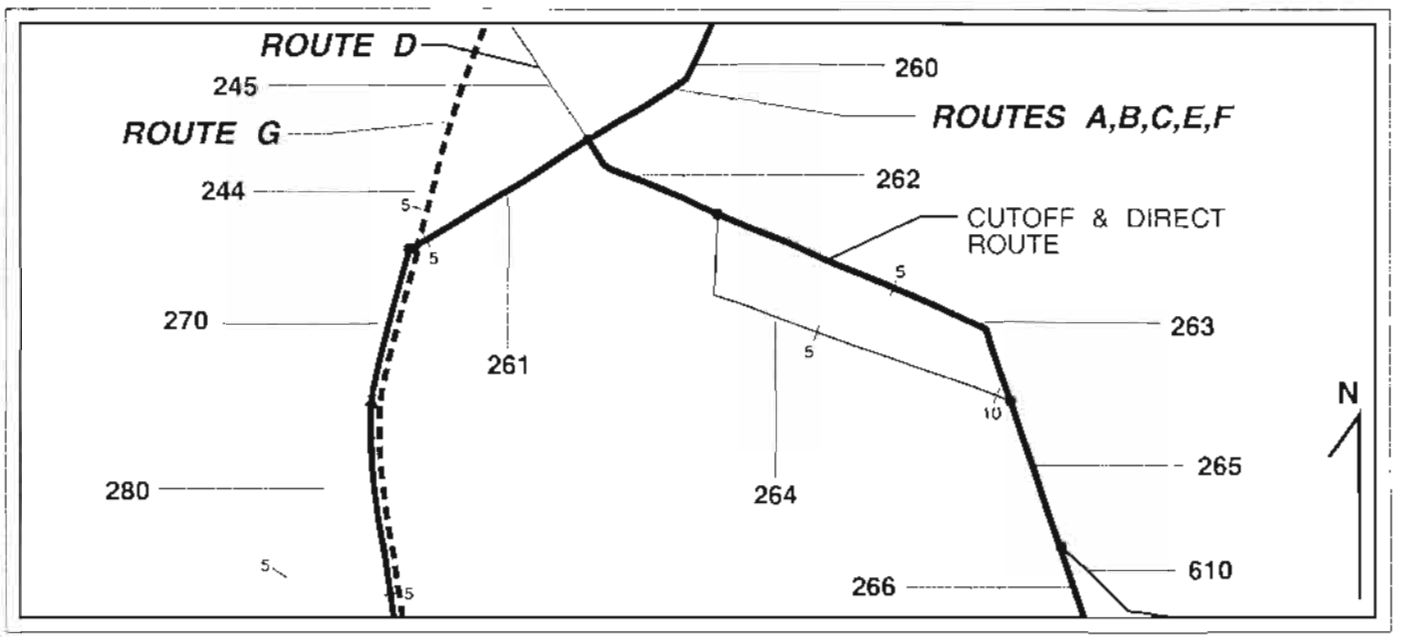
Errata for Map Volume

Figure 4-1

CORRECTIONS TO:
Panel 3 - Alternative Routes

The labels for Route D were incorrect on this map. The correct labeling for the Route D is illustrated below.



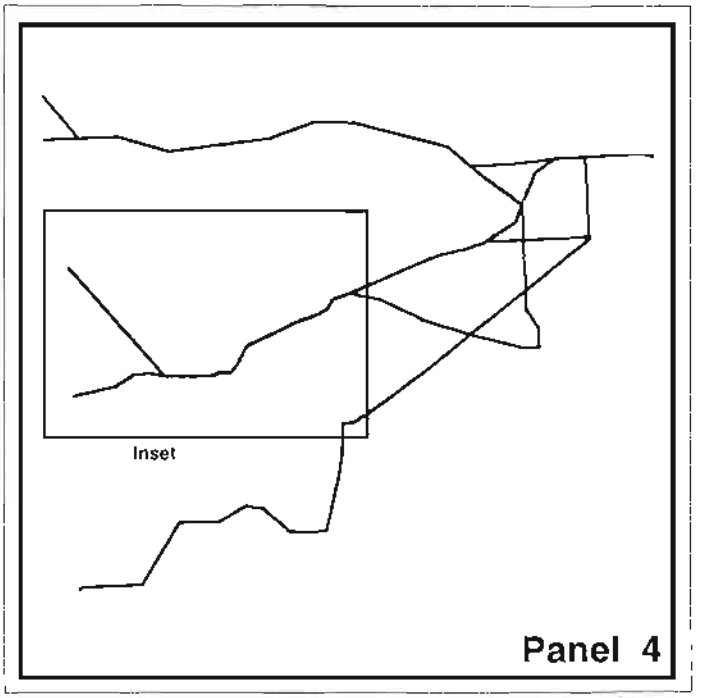


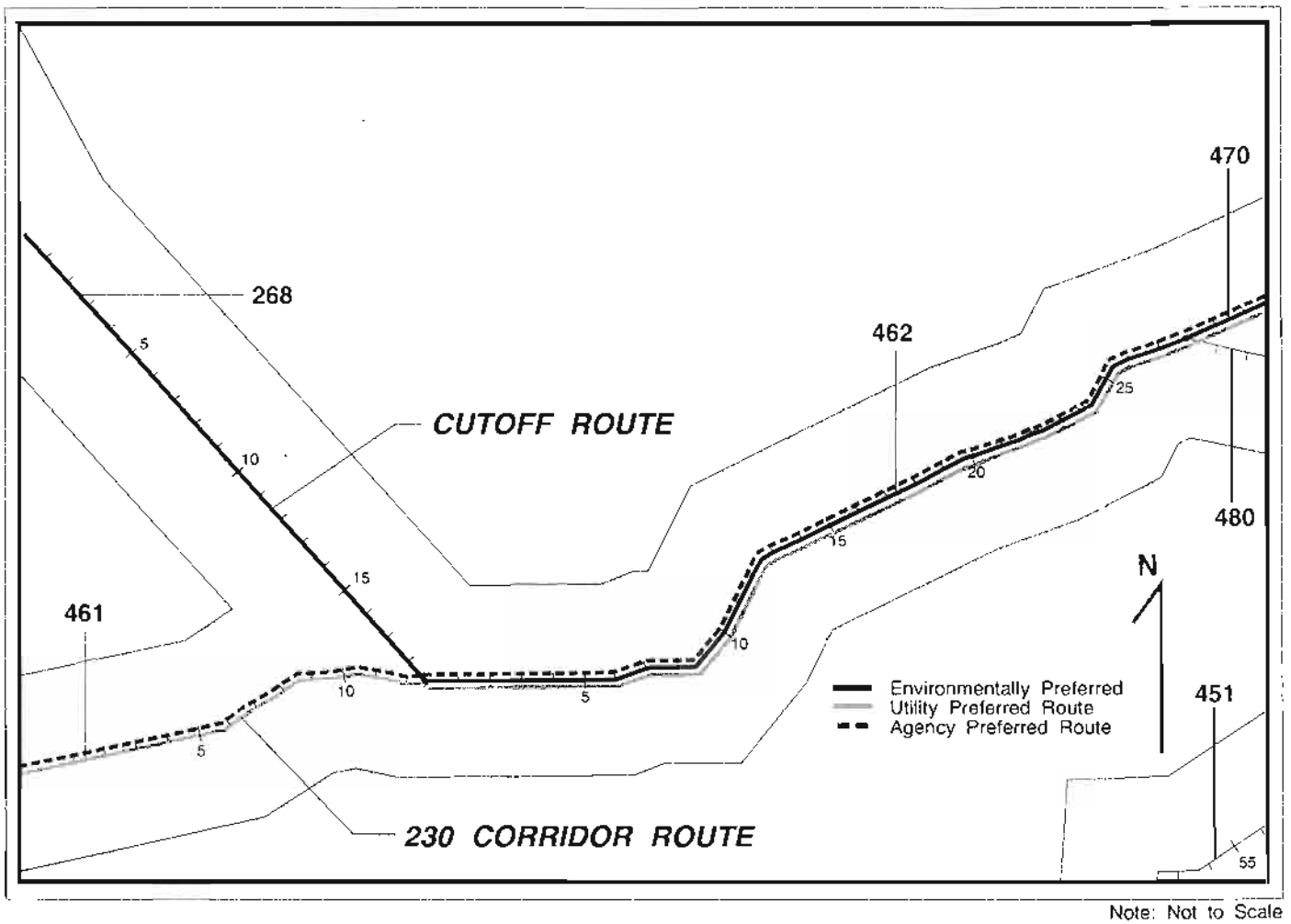
Note: Not to Scale

Environmentally Preferred
Utility Preferred Route
Agency Preferred Route

CORRECTIONS TO:
Panel 4 - Alternative Routes

The labels for "230 kV Corridor Route" and "Cutoff Route" were transposed on this map. The correct labeling is illustrated below.



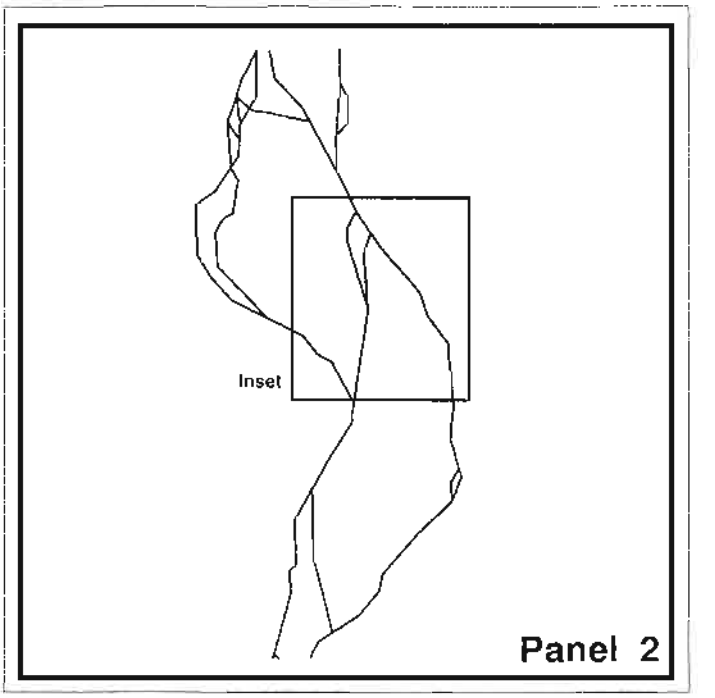


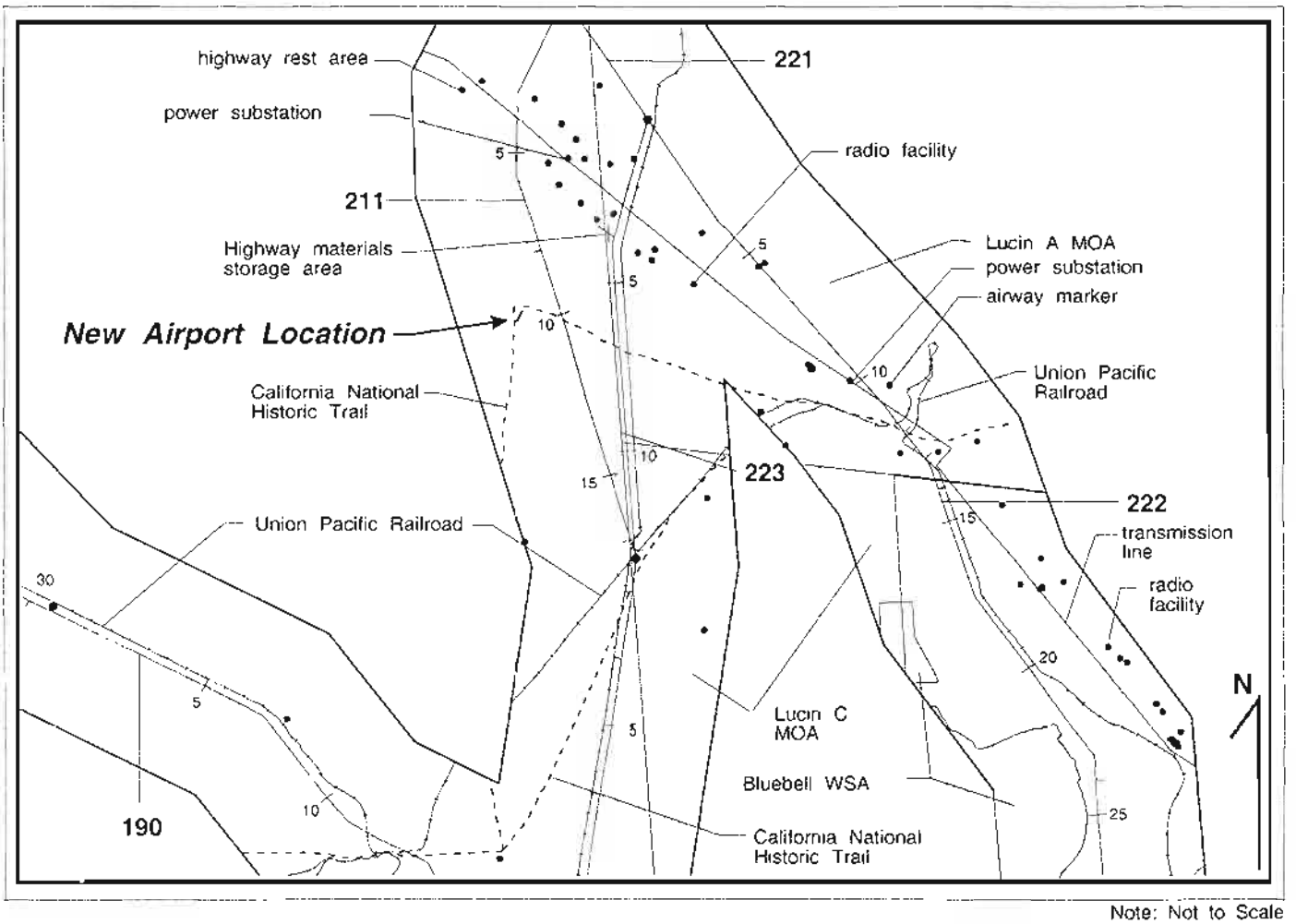
Note: Not to Scale

CORRECTIONS TO:
Panel 2 - Land Use Resources

A private grass airstrip near Big Springs Ranch was not shown on this map Its location is illustrated below.

Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.



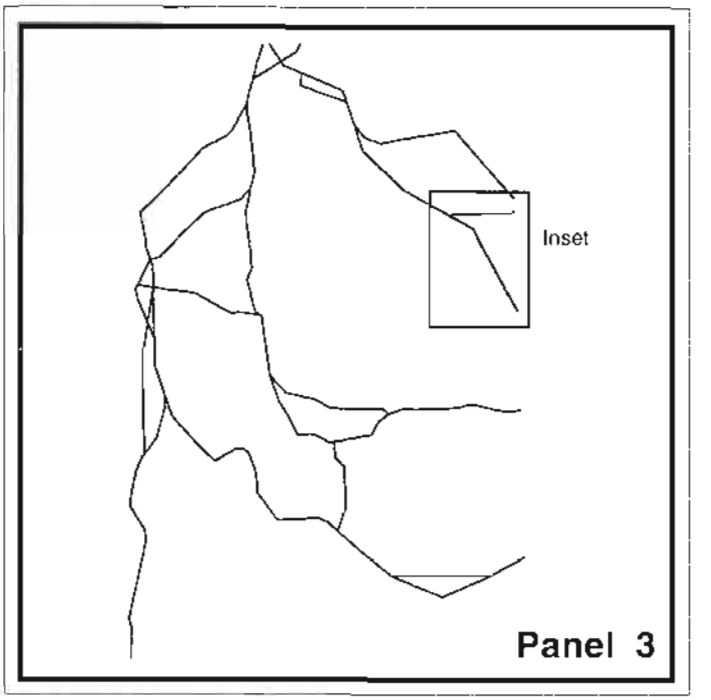


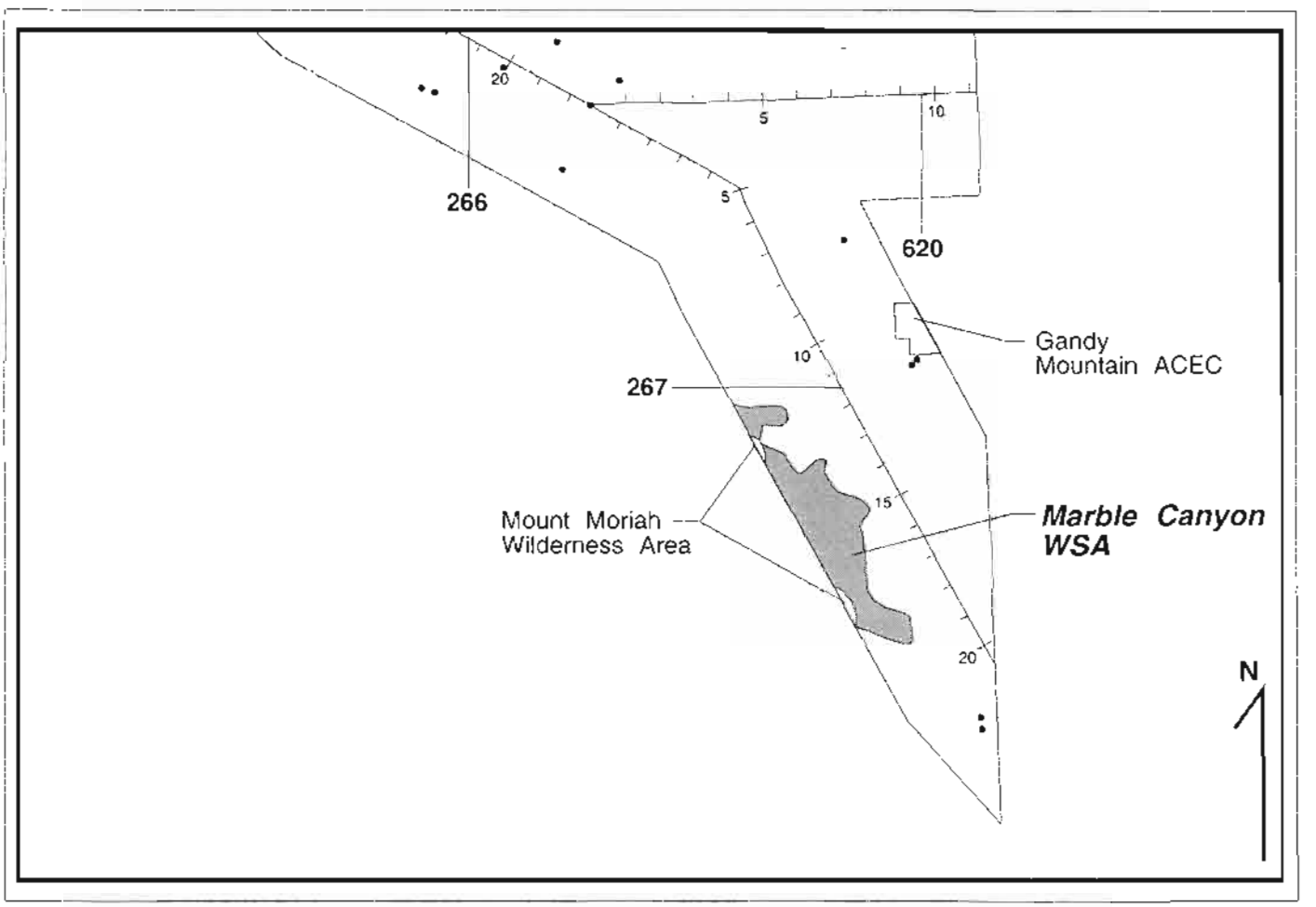
Note: Not to Scale

CORRECTIONS TO:
Panel 3 - Land Use Resources

Marble Canyon WSA was not shown on this map. The boundary for this area is illustrated below.

Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.





Note: Not to Scale

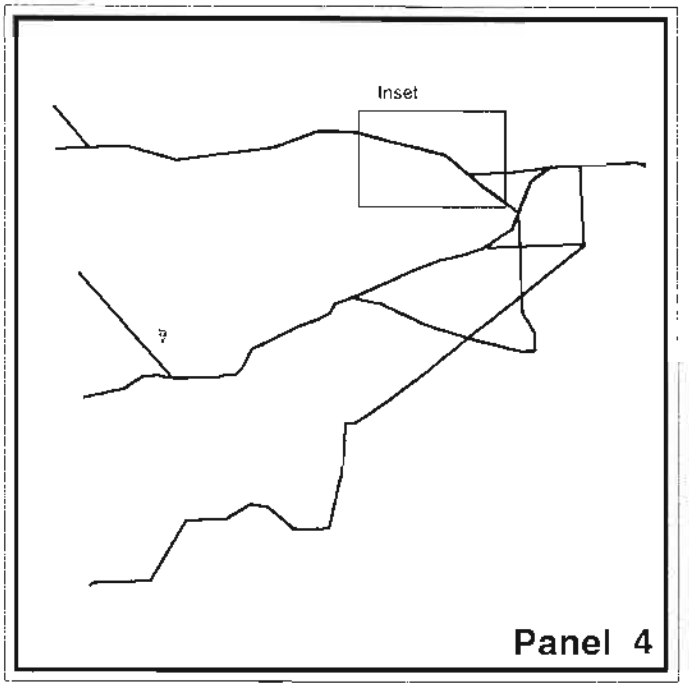
Errata for Map Volume

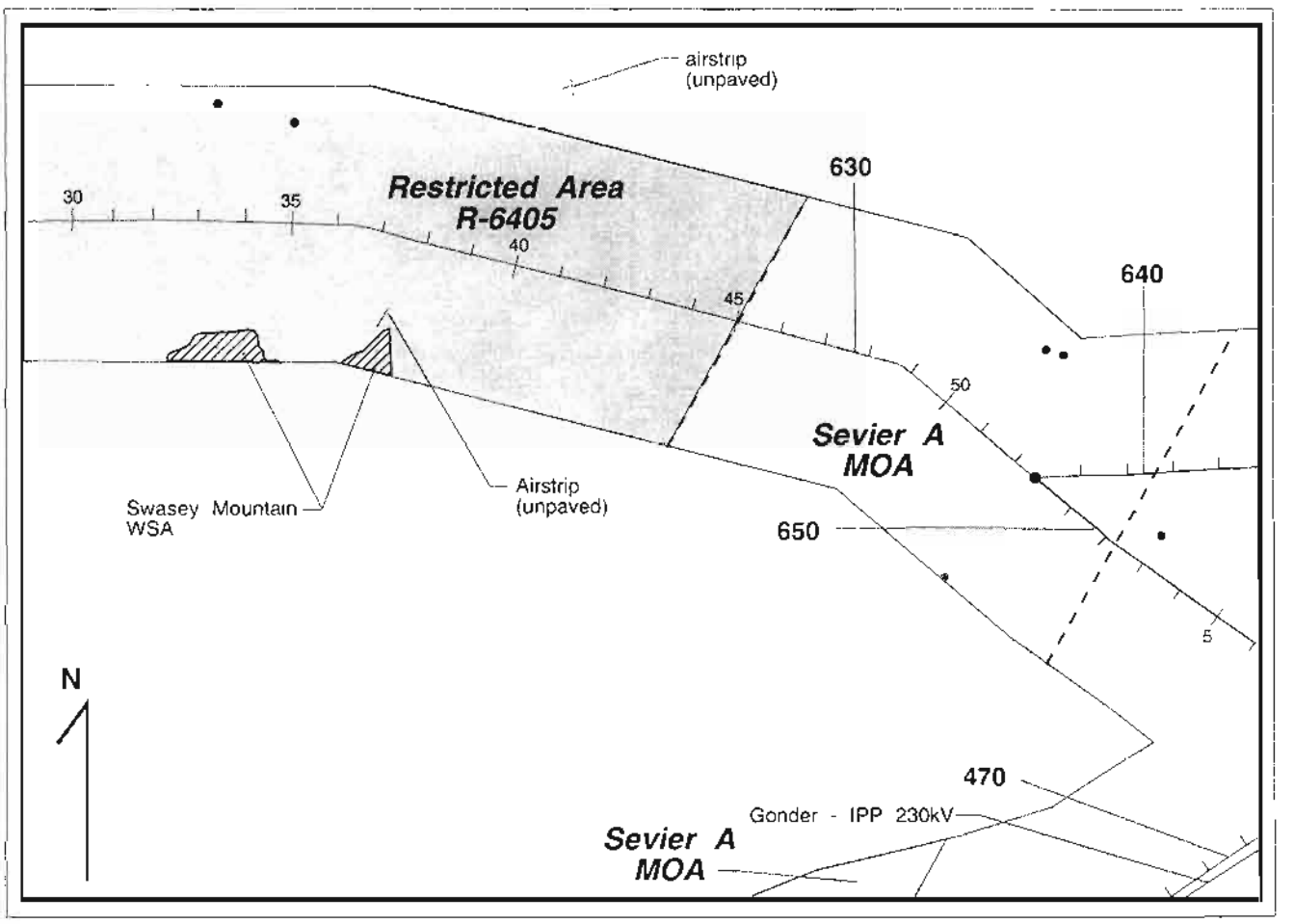
Figure 4-5

CORRECTIONS TO:
Panel 4 - Land Use Resources

The Restricted Area R-6405 was mapped incorrectly on the Panel 4 - Land Use Resources Map. It is illustrated in the below diagram.

Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.





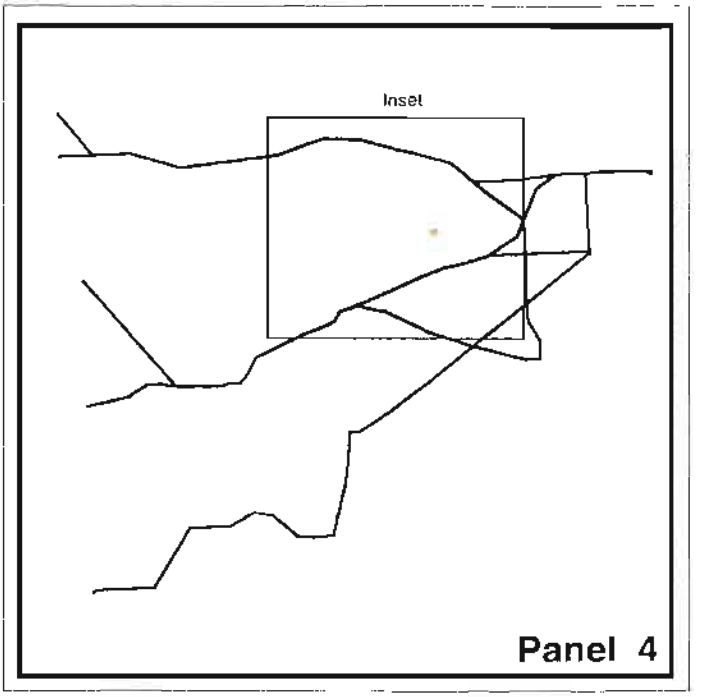
Note: Not to Scale

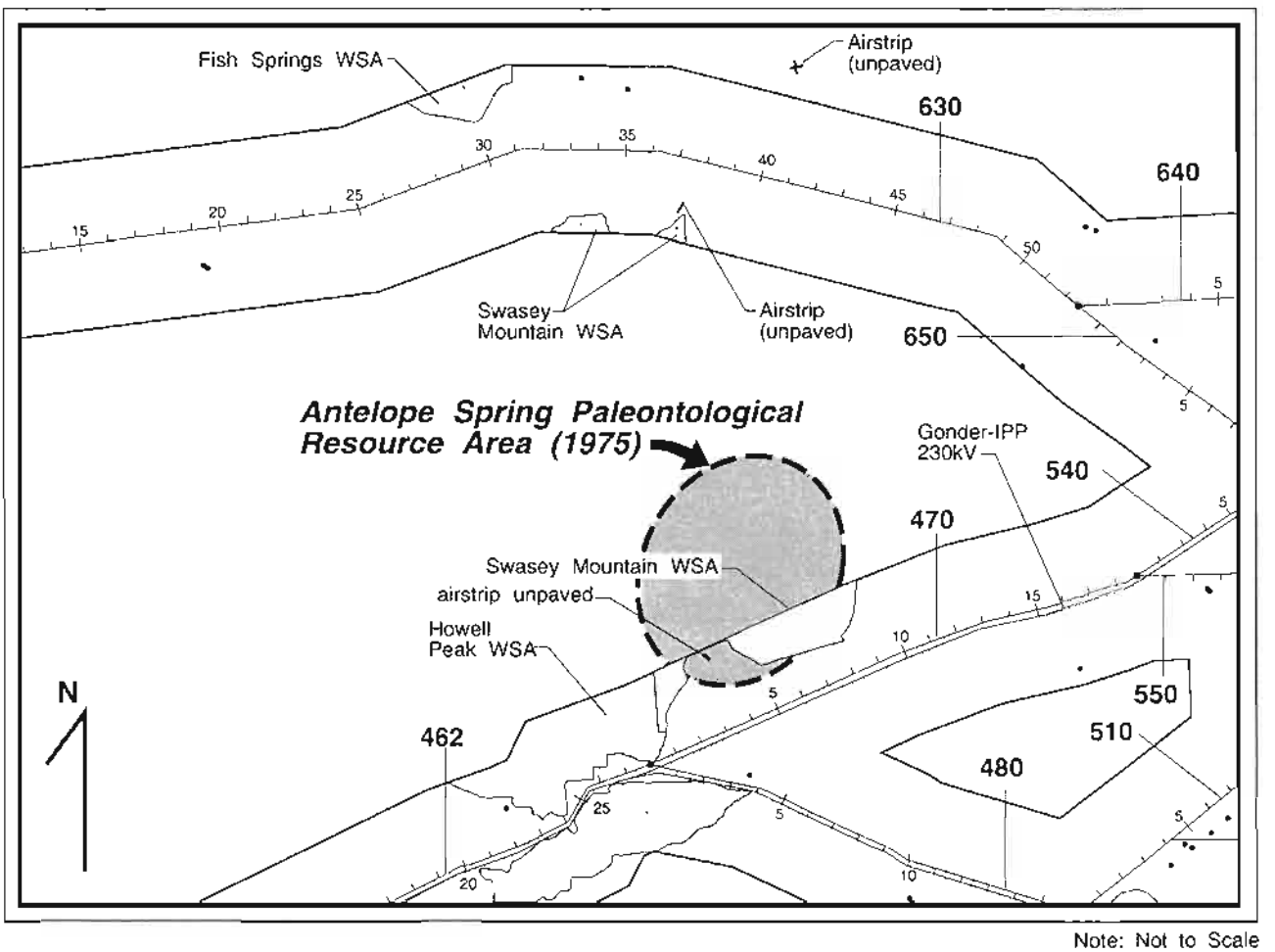
Errata for Map Volume

CORRECTIONS TO:
Panel 4 - Land Use Resources

The Antelope Spring Trilobite Beds were not shown on the land use map in the Map Volume accompanying the DEIS/DPA. The boundary of this is illustrated below.

Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.





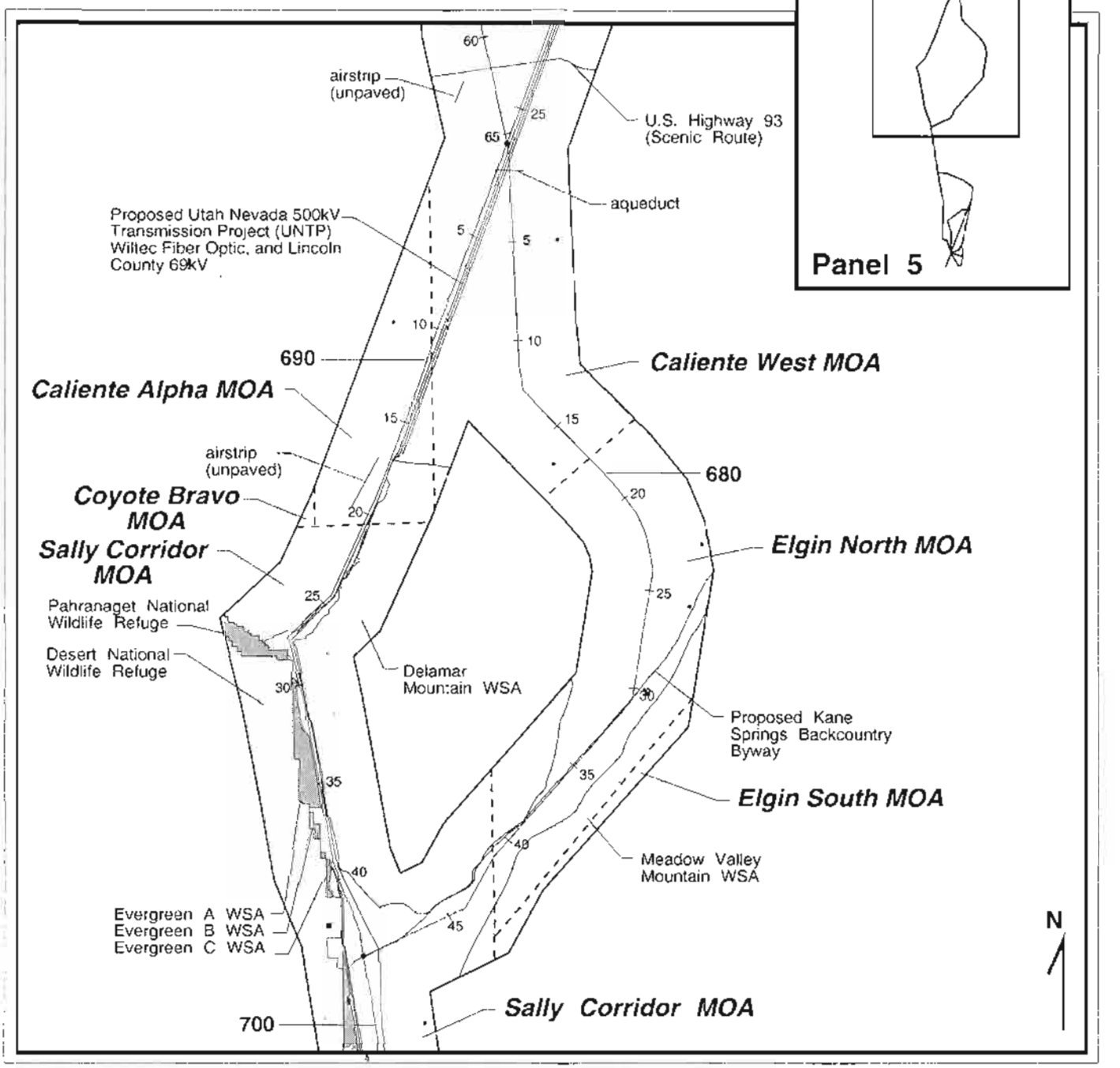
Note: Not to Scale

Errata for Map Volume

CORRECTIONS TO:
Panel 5 - Land Use Resources

The labels identifying MOAs are missing on this map. These additional labels are illustrated below.

Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.

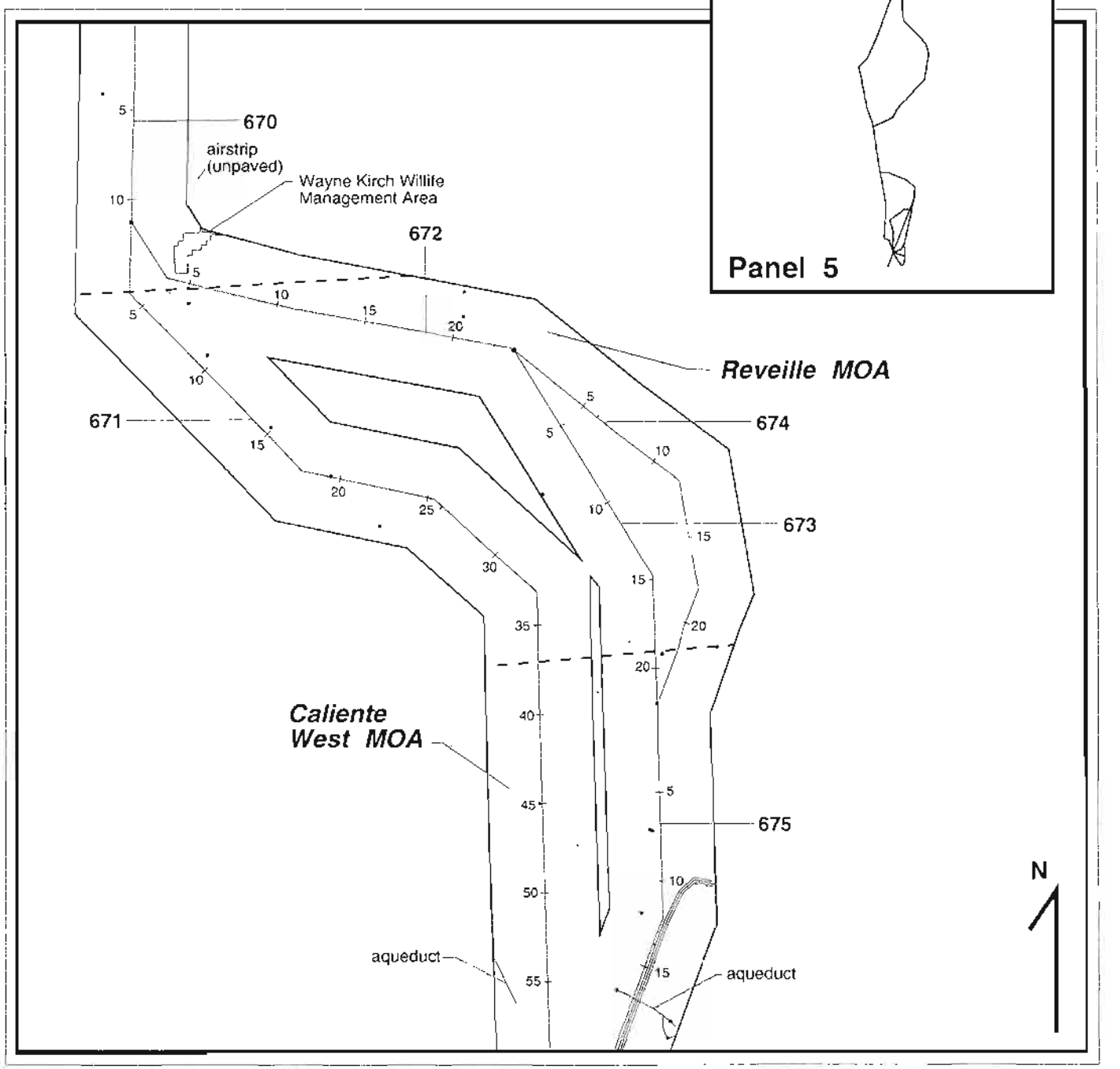


Note: Not to Scale

CORRECTIONS TO:
Panel 5 - Land Use Resources

The labels identifying MOAs are missing on this map. These labels are illustrated below.

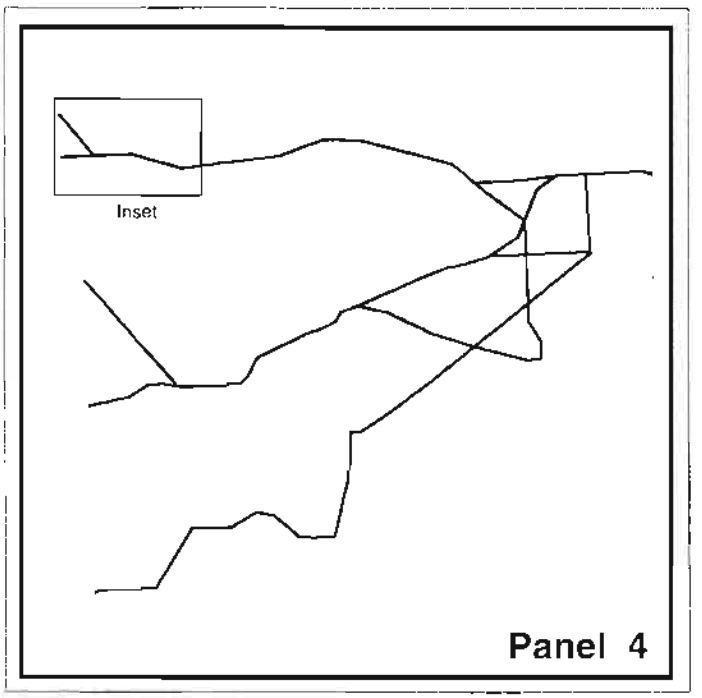
Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.

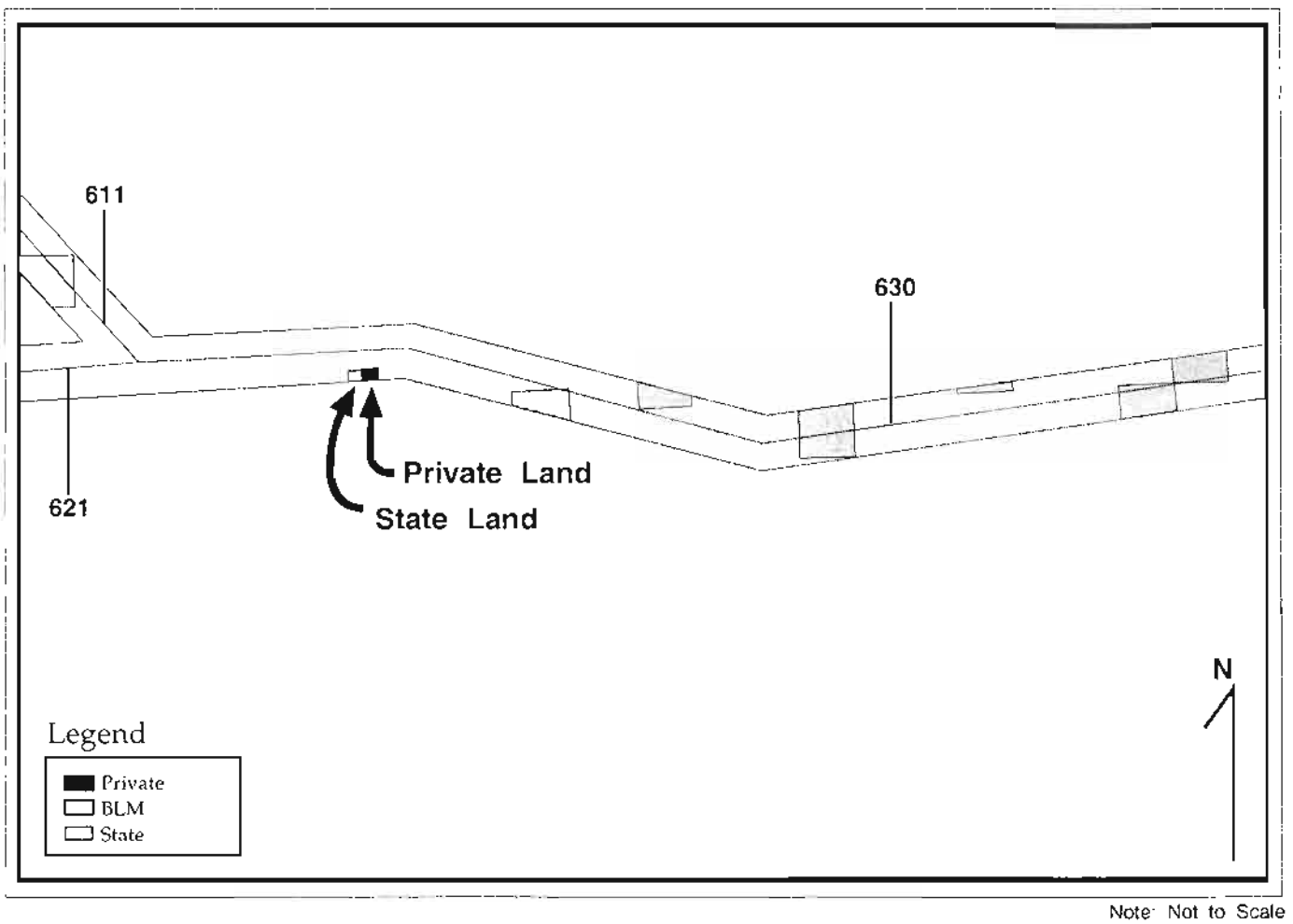


Note. Not to Scale

CORRECTIONS TO:
Panel 4 - Jurisdiction

A small area of State Land at T14S, R18W, Section 28, NW1/4 SW1/4 and a small area of private land at T14S, R18W, Section 28, NE1/4 SW1/4, S1/2 SW1/4 were missing on this map. These lands are illustrated in the map below.



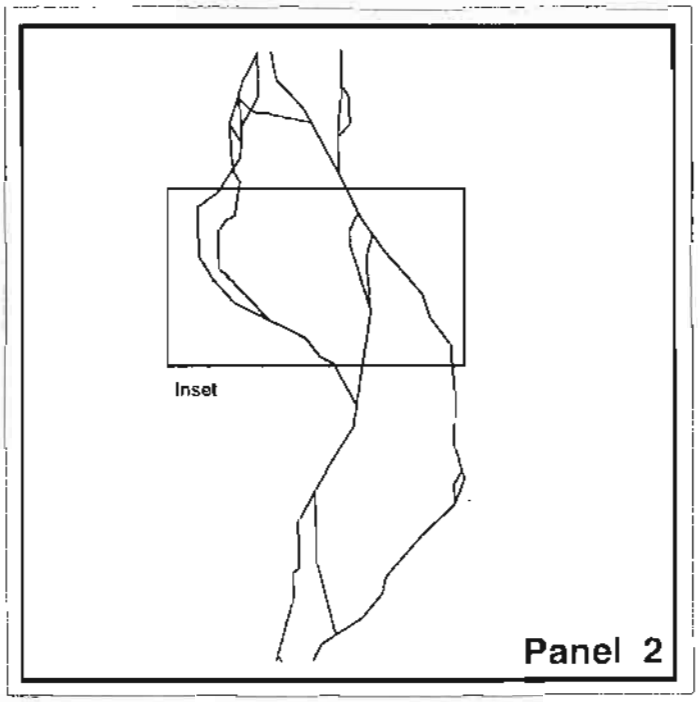


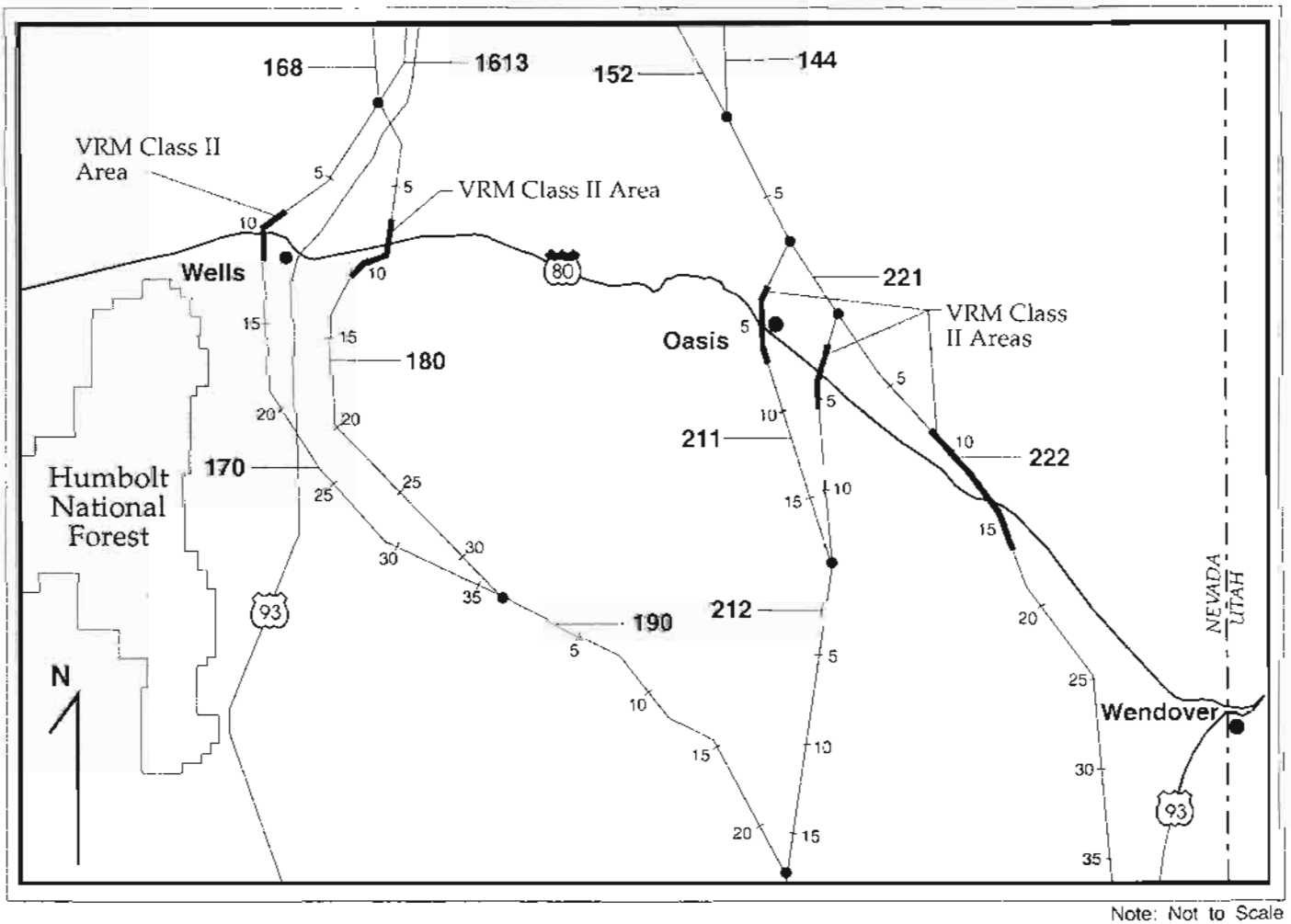
Note: Not to Scale

Errata for Map Volume

CORRECTIONS TO:
Panel 2 - Visual Resources

This map shows the portion of the alternatives that would cross VRM Class II in the Wells District (Interstate 80 low-visibility corridor).





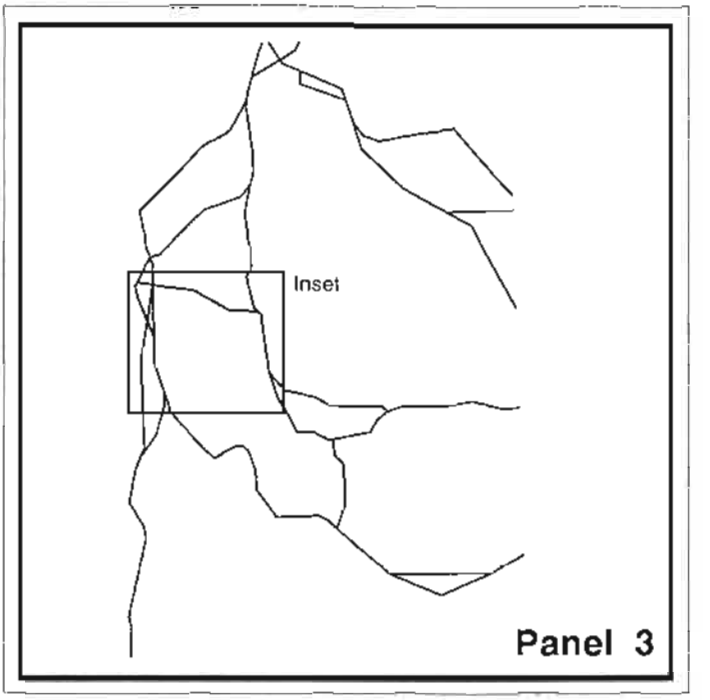
Note: Not to Scale

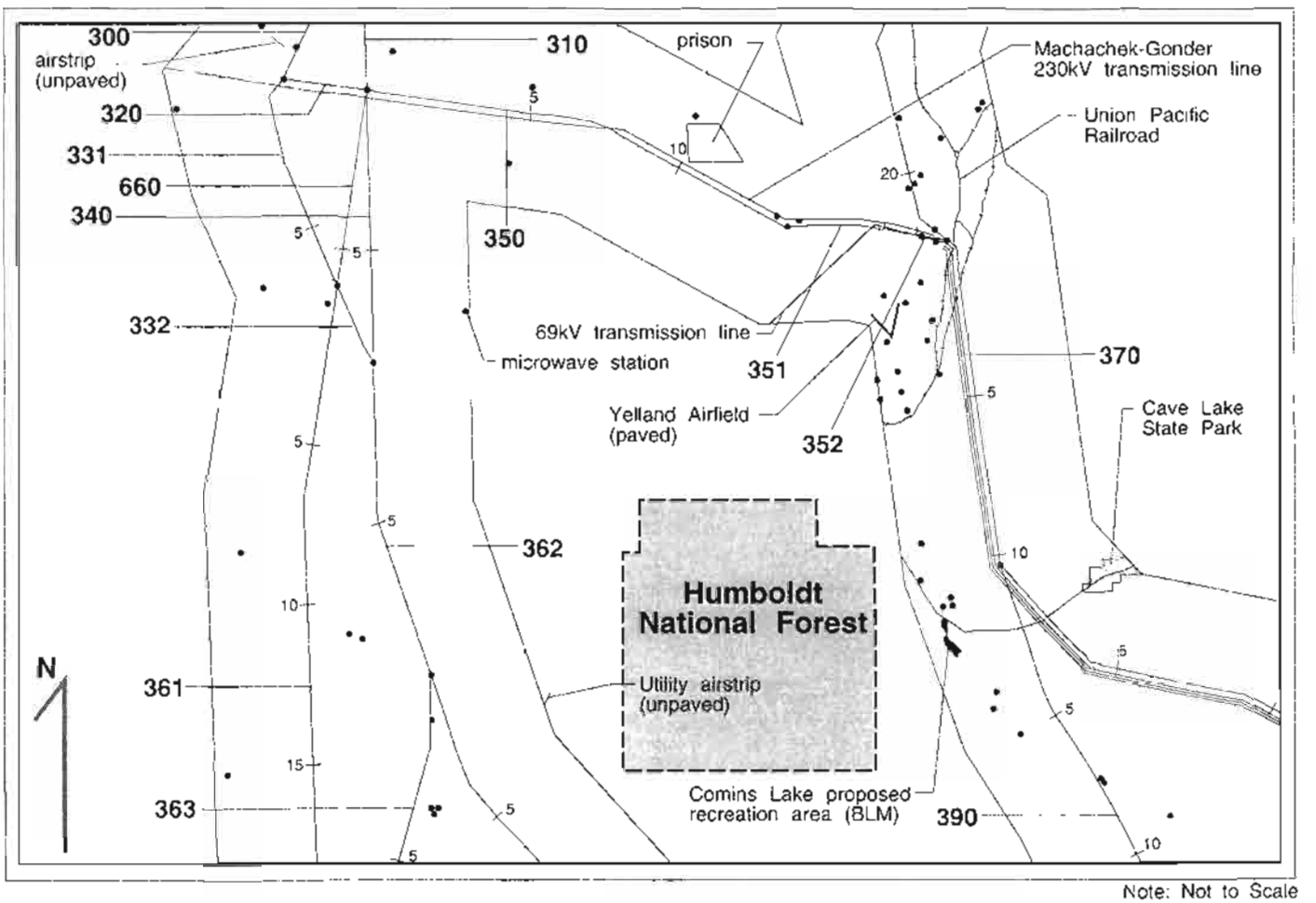
Errata for Map Volume

CORRECTIONS TO:
Panel 3 - All Resource Maps

All Panel 3 maps are missing the Humboldt National Forest Boundary for the area south of Ely. The boundary is illustrated below.

Note: The black dots on the map indicate corrals, wells, gravel pits, and various other land uses. Please refer to the map volume accompanying the DEIS/DPA for specific color identification of these land uses.





Note: Not to Scale

Errata for Map Volume

Figure 4-12

corridors might encounter a cultural resource every 2 to 3, miles on the average. This indicates that some 200 to 400 cultural sites could be present along the selected alternative. Many of these could probably be avoided by minor adjustments in the project, but the project would undoubtedly diminish the regional resource base".

Page 4-89, 1st paragraph, 2nd sentence: revise to "The pipeline planned to transport the water from north of Clark County would utilize existing corridors designated by the BLM or Congress, or prepare a plan amendment".

Table 4-1, page 2 of 3, #13, end of paragraph: add "Towers would be sited with a minimum distance of 200 feet from streams".

Table 4-1, page 1 of 3, #5: add "...natural springs and/or..." before "developed".

Table 4-2, page 1 of 2, second line: change "Recommended" to "Committed".

Table 4-2, page 1 of 2, #6: change "water courses" to "perennial or intermittent streams with riparian vegetation".

Table 4-3a, page 1 of 2, under Allotment Name: add

	"	CUTOFF		230kv Corridor	
	Total Acres	Total Acres	Viable Acres	Total Acres	Viable Acres
"Conger Spring	78,971	26.3	21.9	43.00	38.60""

Table 4-3a, page 2 of 2, in the "Smith Creek" row: change

	"	CUTOFF		230kv Corridor	
	Total Acres	Total Acres	Viable Acres	Total Acres	Viable Acres
"Smith Creek	17,820	14.3	6.0	0.0	0.0""

Table 4-4, page 1 of 1, table is revised to include Tax Revenues for Agency Preferred and Utility Routes.

TABLE 4-4

Estimated County Tax Revenues[1] by Alternative Route

State/ County	Midpoint to Dry Lake Alternative Routes								
	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Agency Preferred	Utility Preferred
IDAHO									
Cassia	20,800	20,800	20,800	20,800	20,800	-----	20,800	20,800	20,800
Gooding	-----	-----	-----	-----	-----	211,500	-----	-----	-----
Jerome	455,700	455,700	455,700	455,700	455,700	144,100	455,700	455,700	455,700
Twin Falls	570,700	570,700	570,700	570,700	570,700	916,600	570,700	570,700	570,700
NEVADA									
Elko	759,200	769,100	727,100	767,600	801,200	727,100	729,200	729,200	729,200
White Pine	582,000	588,300	582,000	576,200	596,100	582,000	568,400	560,000	552,200
Lincoln	539,400	539,400	539,400	539,400	539,400	539,400	539,400	539,400	539,400
Nye	261,800	261,800	261,800	261,800	261,800	261,800	261,800	261,800	261,800
Clark	150,800	150,800	150,800	150,800	150,800	150,800	150,300	150,300	150,300

State/ County	Ely to Delta Alternative Routes			
	Direct	Cutoff	230kV Corridor*	Southern
UTAH				
Millard	355,200	846,000	853,700	998,700
Juab	296,100	-----	-----	-----
NEVADA				
White Pine	255,700	289,200	320,500	494,900

[1] Estimates are based on average 1990 property tax rates in each county and an average cost for the transmission lines and associated microwave communication and substation facilities. Figures are rounded to the nearest hundred. Estimates represent revenues during the first year of operation without depreciation.

* Agency Preferred Route

CHAPTER 5 - CONSULTATION AND COORDINATION

Page 5-10, 3rd paragraph, last sentence: change to "The only route preference identified was an alternative that would traverse Dry Lake Valley from west to east (Link 671 to Link 673).".

CHAPTER 6 - PREPARERS AND CONTRIBUTORS

Page 6-4, under "Philip Zeig": add the title "Soil Conservationist".

Page 6-5, under "Mark A Pierce": add the title "Wildlife Conservationist".

Page 6-5, under "Melanie Mendenhall": add the title "Range Conservationist".

Page 6-5, under "F. Rex Rowley": add the title "Area Manager - House Range".

Page 6-5, under "Lynn T. Fergus": add the title "Outdoor Recreation Specialist".

Page 6-9, under "William J. Lindsey": change to "Supervisory Range Conservationist".

Page 6-9, under "Mark Henderson": change "13 years with BLM" to "seven years with the BIA and seven years with the BLM".

Page 6-13, first item under Name/Title: change "Hagerman Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Page 6-13, first item under Involvement, change "Hagerman Fossil Beds" to "Hagerman Fossil Beds National Monument"

REFERENCES

Add to list: Chadwick, D.H. 1989. Mission for the 90's: The Biodiversity Challenge. Defenders Magazine Special Report.

APPENDICES FOR THE SWIP DEIS/DPA

Appendix C

Page C-7, under "National Park Service", under "Idaho": delete "Fossil Beds National Monument - Twin Falls".

Appendix D

Page D-5, under "Subroute Set 22", last sentence: add "Link 680 would traverse 5.6 miles of Category I, 7.4 miles of Category II, and 5.6 miles of Unclassified desert tortoise habitat while Link 690 would traverse approximately 15.5 miles of Category I and 4.3 miles of Category III desert tortoise habitat".

Appendix F

Page F-5: the lists of microwave communication facility sites under the headings at the top of this page are transposed, they should read as follows. Also, Beaver Dam Mountain and Glendale should have been added.

Robinson Summit	**North Steptoe**
Path 1	Path 2
Hansen Butte	Hansen Butte
Cottonwood	Cottonwood
Ellen D (L&D)	Ellen D (L&D)
Six-Mile	Rocky Point
Rocky Peak	Proctor
Spruce Mountain	Bald Peak
Long Valley	Raiff
Copper	Squaw Peak
Cave Mountain	Cave Mountain
Mount Wilson	Mount Wilson
Highland Peak	Highland Peak
Beaver Dam Mountain	Beaver Dam Mountain
Glendale	Glendale

Table F-1, page 2 of 3, under "Location for the Six Mile site": change "E. of Oasis" to "W. of Oasis".

Table F-1, page 2 of 3, under "Jurisdiction for the Six Mile site": change "BLM" to "private".

Table F-4, page 2 of 2, under "SOILS, for Cave Mountain Site": change "Calcic" to "carbonatic" and delete "carbonic".

Appendix G

Page G-2, under "National Park Service": change "Fossil Bed National Monument" to "Hagerman Fossil Beds National Monument".

Appendix H

Page H-3, Additional Technical reports available for review at the following locations:

University of Nevada Las Vegas
James Dickenson Library
4505 S. Maryland Parkway
Las Vegas, NV 89154

Charleston Heights Library
800 Brush Street
Las Vegas, NV 89108

Henderson Library
55 Water Street
Henderson, NV 89105

Lincoln County Library
Pioche, NV 89043

Rainbow Library
6010 W. Cheyenne
Las Vegas, NV 89108

Clark County Library
1401 E. Flamingo Road
Las Vegas, NV 89109

Sunrise Public Library
100 N. Nellis Boulevard
Las Vegas, NV 89110

MAP VOLUME

Panel 2 - Alternative Routes Map: Route D was incorrectly labeled on this map. The map shows Route D following Links 250, 259, and 260. Route D should actually follow Links 241, 243, and 245. Figure 4-1 indicates the corrected labeling of the alternative routes.

Panel 3 - Alternative Routes Map: Route D was incorrectly labeled on this map. The map shows Route D following Links 250, 259, and 260. Route D should actually follow Links 241, 243, and 245. Figure 4-2 indicates the corrected labeling of the alternative routes.

Panel 4 - Alternative Routes Map: The labels for the "230kV Corridor Route" and "Cutoff Route" are transposed on this map. Figure 4-3 indicates the corrected labeling of these alternative routes.

Panel 2 - Land Use Resources: The Big Springs Ranch private grass airstrip is missing from this map. Figure 4-4 indicates the location of the airstrip.

Panel 3 - Land Use Resources: Marble Canyon WSA is not shown on this map. It is located on Link 267 and illustrated in Figure 4-5.

Panel 3 - Land Cover: Between miles 15 and 20 on Link 267, portions identified as playa are labeled incorrectly. The correct identification is sage scrub.

Panel 4 - Land Use Resources: - The label indicates this map to be "Panel 3 - Land Resources", it should read "Panel 4 - Land Resources".

Panel 4 - Map Index: correct the name "Wah Wah Mountains" to "Wah Wah Mountains North"

Panel 4 - Land Use Resources: The R-6405 Restricted Area is mapped incorrectly. Figure 4-6 shows the corrected boundary and labeling. The proposed Antelope Spring Trilobite Beds was not mapped. The location of the Antelope Spring Trilobite Beds is illustrated in Figure 4-7.

Panel 5 - Land Use Resources: Labels identifying MOAs operated by Nellis AFB are missing. Figures 4-8 and 4-9 illustrate the labels for these MOAs.

Panel 4 - Jurisdiction Map: This map is missing a small area of State land at T14S, R18W, Section 28, NW1/4, SW1/4 and a small area of private land of T14S, R18W, Section 28, NE1/4,SW1/4, S1/2SW1/4. Figure 4-10 indicates the locations of these parcels.

Panel 2 - Visual Resources: The BLM low visibility corridor around Interstate 80 did not appear on the map. The VRM Class II area is shown in Figure 4-11.

Panel 3 - All Maps: The boundary of the Humboldt National Forest South of Ely was left off of all the Panel 3 Maps. Figure 4-12 shows the approximate location of the boundary.

TECHNICAL REPORTS

Volume II - Natural Environment

Earth Resources

Table ER-4, under the heading "Site", the name "Ellen D" should be followed by "(L & D)"

Biological Resources

Figure BIO-1, Bureau of Land Management District Contacts for Biological Resources: add "Mark Barber" to Ely District.

Page 4-29, Wildlife Species of Concern in NV, Baking Powder Flat Blue Butterfly: change, "souls" to "soils".

Page 4-34, Birds, Long-Billed Curlew. The categorization has been changed from 2C to 3C. The status of this specie was changed on FWS Federal Register listing of 11/21/91.

Page 4-42: Add the desert dace to discussions of wildlife species of concern in Utah. The dace as well as the other three species, least chub, western spotted frog, and Great Basin silver-spot butterfly, are all federal candidate, Category 2, species for listing among the threatened or endangered wildlife of the United States.

Page 4-46, Sensitive Features: Floodplains, Riparian, and Wetlands: The reference is incorrect. Wetlands are defined by the Corps of Engineers (1987) as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." This definition will apply to areas that are included as riparian, and in some cases, shallow ground water.

Page 4-62, paragraph 3, replace the first sentence with: "Committed mitigation for sage grouse leks includes numbers 6 and 11 and for sage grouse wintering areas, 2, 4, 6, and 11".

Page 4-83, last line: add, "It is also found along the centerline of Links 451 and 462."

Page 4-84, "Cumulative Effects to Botanical Resources": insert:

"Cumulative effects to special status plant species would result from additional ground disturbance resulting in habitat destruction and, in the case of some species, increased public access. The effects of multiple adjacent transmission lines could result in additional habitat loss where the corridors occur, however this may leave areas where known populations occur undisturbed. Access roads would serve more than one line, reducing the need for additional road construction and increased public access. Where construction activities occur, these effects are

generally short-term and can be mitigated by saving top soil and seed bases to utilize in revegetating the area".

Table BIO-13: delete the Amargosa toad.

Table BIO-14: *Astragalus atratus* var. *inseptus* was included in the appendix of the Technical Report and should be added to Table BIO-14 and page 14.

Table BIO-17: Under Federal Codes: add "S = BLM Sensitive".

Under Authority Codes: add, "BLM-Las Vegas District Office".

"*Arctomecon californa*" should be "*Arctomecon californium*"

ADD:

"SPECIES	FED	STATE	AUTH
Astragalus gilmanii-Gilman Milk-vetch	S		BLM
Cympoterus ripleyi var. *saniculoides*-Sanicle biscuitroot	C2	W	NNHP, BLM
Epilobium nevadense- Nevada willowherb	C2	W	NNHP, BLM
Gymnosteris nudicaulis-large-flowered gymnosteris		S	BLM
Gymnosteris parvula-small-flowered gymnosteris		S	BLM
Jamesia tetrapetala-waxflower	C2		BLM
Petalonyx parryi-Parry's sandpaper plant	S		BLM
Phacelia palmeri-Palmer beardtongue	S		BLM
Tiquilia latior- no common name	C2		BLM"

DELETE:

"*Menzelia mollis*"

Table BIO-18, paragraph one: change the state of "Nevada" to "Utah". Also add "*Swertia gypsicola* and *Eriogonum natum*". Delete footnote.

Table BIO-20: add the following candidates for federal listing (Category 2) in the project area in Nevada. Four butterflies, the Baking Powder Flat blue butterfly (*Euphilotes battoides* spp.), Mattoni's blue butterfly (*E. pallescens mattoni*), White River wood nymph butterfly (*Cercyionsis pegala* spp.), and the Steptoe Valley crescent spot butterfly (*Phyciodes pascoensis*).

Table BIO-20: Change status to long-billed curlew from "C2" to "3C".

Volume IV - Cultural Environment

Page 9-37, 5th paragraph: replace last two sentences with, "A portion of southern Nevada was originally part of the Territory of New Mexico, and when the Arizona Territory was split off in 1863, the southern part of what is now Nevada became part of Pah-Ute County of the Arizona

Territory. In 1866 Congress passed an act transferring this land to the new State of Nevada, and it became part of Lincoln County".

Page 9-38, 1st paragraph, 3rd sentence: replace with, "Following the Virgin River, the party entered what is now Nevada near modern Bunkerville. Approximately five miles south of the confluence of the Virgin and Colorado rivers, they crossed to the east side of the Colorado River, which Smith called the Seedskeeder, and traveled south until reaching the vicinity of present day Needles. Here the party turned west and crossed the Colorado again. They traveled on to the Spanish missions in what is now southern California".

Page 9-73, 2nd through 5th paragraphs: replace with the following: "The 150-mile Nevada Northern Nevada Railroad was completed in 1906. It ceased regular commercial operations in 1983, and is no longer in use except for an historic train operated by the White Pine Historical Foundation as a tourist attraction along 17 miles of the railroad at the southern end of the line in the vicinity of Ely, from McGill Junction to Keystone Junction. The East Ely Depot, an historic property directly associated with the railroad, is listed on the National Register of Historic Places. Although trains currently do not operate along the railroad north of McGill Junction, the railroad has not been formally abandoned and, in fact, proposals to restore commercial operation have been made. The Los Angeles Department of Water and Power (LADWP) obtained control of the right-of-way in conjunction with their proposed White Pine Power Plant. The Magma Copper Company also has approached the BLM and the City of Ely with a proposal to restore commercial operation of the line for transporting crude oil and copper concentrate.

In 1989 the Interstate Commerce Commission consulted with the State Historic Preservation Officer when rights to operate the railroad were transferred from Kennecott Copper to the LADWP. These consultations resulted in the execution of a Memorandum of Agreement, which indicated that the SHPO and ICC agreed the entire 150-mile line was eligible for listing on the National Register of Historic Places under criteria A and C (Alice Baldrica, Nevada State Historic Preservation Officer, Personal communication, 1993). No survey was undertaken at that time to document the integrity of the entire line, but it is generally acknowledged that most of the alignment retains integrity although some sections may be compromised. Records donated by Kennecott to the railroad museum in Ely may contain information related to integrity issues, such as maintenance and repair records. Specific assessment of effects of the SWIP will require detailed engineering data regarding the distance to the line, and the types and visibility of towers, as well as information on integrity of the railroad.

For the purposes of the planning studies undertaken for this environmental impact analysis, the southern 17 miles of the Nevada Northern Railroad were assigned a high sensitivity rating. The remaining 133 miles were rated as having moderate-high sensitivity, one level lower. The site of the historic railroad town of Shafter, located adjacent to the railroad, was assigned a high sensitivity rating as well.

Several links parallel, within approximately one mile or closer, the segment of the Nevada Northern Railroad ranked as having moderate-high sensitivity. These include Links 212, 223, 230, 241, 242, 244, 270, and 291, which in the aggregate extend from approximately 4 miles south of Cobre, at the northern end, to approximately 20 miles north of McGill, for a total distance of approximately 102 miles (Table CR-11a). In addition, the 230kV alternative for the crosstie route crosses the highly ranked segment of the Nevada Northern Railroad approximately 2 miles south of McGill Junction (near the juncture of Links 352 and 270), and parallels this segment within a mile or less for approximately 5 miles".

Page 9-81, 2nd paragraph, to end of paragraph: add, "In addition, Route A closely parallels 51 miles (about 34 percent) of the Nevada Northern Railroad, which has been determined to be eligible for listing on the National Register of Historic Places".

Page 9-82, 4th paragraph, after 1st sentence: add, "In this area, Route B closely parallels 4 miles (about 3 percent) of the Nevada Northern Railroad, which has been determined to be eligible for listing on the National Register of Historic Places".

Page 9-82, 7th paragraph, to end of paragraph: add, "Route C would parallel about 51 miles (about 34 percent) of the Nevada Northern Railroad, which has been determined to be eligible for listing on the National Register of Historic Places".

Page 9-83, 1st paragraph, to end of paragraph: add, "Route D closely parallels approximately 35 miles (about 23 percent) of the Nevada Northern Railroad, which has been determined eligible for listing on the National Register of Historic Places".

Page 9-83, 4th paragraph, to end of paragraph: add, "Route E closely parallels 19 miles (about 12 percent) of the Nevada Northern Railroad, which has been determined eligible for listing on the National Register of Historic Places".

Page 9-83, 5th paragraph, to end of paragraph: add, "Route F closely parallels 51 miles (about 34 percent) of the Nevada Northern Railroad, which has been determined to be eligible for listing on the National Register of Historic Places".

Page 9-84, 2nd paragraph, to end of paragraph: add, "Route G closely parallels 66 miles (about 44 percent) of the Nevada Northern Railroad, which has been determined to be eligible for listing on the National Register of Historic Places".

Appendix CR-11

Add the following table:

Table CR-11a
Summary of Potential Visual Impacts to the Nevada Northern Railroad

		Alternative Routes							
Link	Length (miles)	Environmentally Preferred A	B	C	D	E	F	Utility Preferred G	Agency Preferred (mix of A & G)
Midpoint-Dry Lake									
212 *	16.2	16.2		16.2			16.2	16.2	16.2
223 *	13.2								
230 *	16.4	16.4		16.4	16.4		16.4	16.4	16.4
241 **	29.6								
242 *	1.0								
244 *	6.1								
270 *	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
291 *	14.4	14.4		14.4	14.4	14.4	14.4		14.4
Totals	101.1	51.2	4.2	51.2	35.0	18.6	51.2	65.5	79.9
% of NNRR		34%	3%	34%	23%	12%	34%	44%	53%
Crosstie		(Cutoff Route)						(230kV Route)	(230kV Route)
		no crossing***						crosses****	crosses****

* Nevada Northern Railroad parallels link within approximately one mile or less

** Nevada Northern Railroad parallels link within approximately one mile or less for all but about 8 miles of the link

*** assumes Northern Steptoe substation is selected; if Robinson Summit is selected, 230kV Route would cross historic tourist train as well

**** 230kV Route crosses section of Nevada Northern Railroad used as tourist historic train, and runs parallel within a mile for about 5 miles

Note: The total length of the Nevada Northern Railroad is approximately 150 miles. A historic train is operated as a tourism attraction for 17 miles at the southern end of the line from Ruth, through Ely, to McGill Junction. A commercial lease is held for the remaining trackage, but has not been used since 1983. The Nevada SHPO has indicated that the entire right-of-way is eligible for listing on the National Register of Historic Places.

DATA TABLES FOR NATURAL ENVIRONMENT

Biological Resources

Ground Disturbance Impacts to Sensitive Animal Species, page 74 of 79, Link 690, replace "Desert Tortoise Unclassified" to "Desert Tortoise Category III"

Ground Disturbance Impacts to Sensitive Animal Species, page 75 of 79, Link 720, replace "Desert Tortoise Category II" to "Desert Tortoise Category III"

DATA TABLES FOR HUMAN ENVIRONMENT - LAND USE RESOURCES

Impacts to Military Operating Areas

All references to "RESTRICTED AIR SPACE (R-6045)" should be changed to "RESTRICTED AIR SPACE (R-6405)".

Page 7 of 9, second "Link 620" should be "Link 630".

Change Link 630 Data to the following:

0.0 - 44.5	44.5	RESTRICTED AIR SPACE (R-6405)	4.	5.	3.
44.5 - 52.5	8.0	MOA - SEVIER A	2.	0.	2.
Link 640, change:		"RESTRICTED AIR SPACE (R-6045)	4.	5.	3."
to:		"MOA - SEVIER A	2.	0.	2."
Link 650, change:		"RESTRICTED AIR SPACE (R-6045)	4.	5.	3."
to:		"MOA - SEVIER A	2.	0.	2."

DATA TABLES FOR HUMAN ENVIRONMENT - VISUAL RESOURCES - VOLUME 2

Compliance with Agency Visual Management

Page 24 of 150 and 25 of 150, Link 170, miles 7.0 to 10.7, replace "CLASS IV" to "CLASS II".

Page 28 of 150, Link 180, miles 6.5 to 11.0, replace "CLASS IV" to "CLASS II".

Page 34 of 150, Link 211, miles 2.5 to 7.3, replace "CLASS IV" to "CLASS II".

Page 41 of 150, Link 223, miles 1.1 to 5.3, replace "CLASS IV" to "CLASS II".

Page 38 of 150, Link 222, miles 8.6 to 9.7, 9.8 to 9.9, 10.1 to 10.2 and 13.8 to 16.0, replace "CLASS IV" to "CLASS II".

COMMENT LETTERS AND RESPONSES FROM INDIVIDUALS

LETTER #A-1
COMMENTS



Myron Alexander, REALTOR

REALTOR

Post Office Box 912 Lone Pine, CA, 93545 September 3, 1992

Karl Simonson
BLM
Burley District Office
Route 3, Box 1
Burley, Idaho, 83318

Dear Mr. Simonson,

In response to the EIS issued for public comment regarding the construction of a high voltage power line to be constructed between Idaho and Las Vegas, Nevada, I would appreciate having the following points considered and addressed in the public response:

A (1) It seems to me that there is no compelling need for this project.

(2) The project could be completed by using existing and already built-upon right-of-ways.

B (3) The visual impact to now-open valleys will be immense. The BLM role if considering the traditional role of judging a project in terms of the greatest good for the most citizens and knowing it must act for them, should be defending the open public lands against any new, unnecessary encroachments.

(4) I do not think enough consideration has been given to the impact on desert tortoise, hawks, eagles and other wild species.

LETTER A-1

RESPONSES

A Please refer to Chapter 3 of this document for an expanded discussion of the purpose and need.

B The SWIP will require a new right-of-way specific for a 500kV transmission line. It is not possible to utilize existing rights-of-way that were granted for other uses These existing or designated corridors have other utilities in them and may be considered "already built upon rights-of way" The SWIP routing alternatives utilized designated or planning corridors whenever feasible in meeting the project needs

The SWIP would require a 200-foot wide right-of-way which may or may not overlay with other rights-of-ways that may be within a designated corridor (also refer to Chapter 1 of this document).

The BLM acknowledges that there will be impacts to the scenic quality of the region due to the development of the SWIP.

The consideration given to biological impacts is sufficient to make a decision on a proposed action (refer to Chapter 1 of this document). However, there will be additional work completed, including a Biological Opinion and Section 7 Consultation with the U.S. Fish and Wildlife Service (refer to Appendix A of this document), surveys, and mitigation prior to construction of the project.

Prior to any construction activities a pedestrian survey will be completed of all potentially disturbed areas to inventory all cultural and historic sites. Mitigation will be done to protect all resources

LETTER #A-1
COMMENTS

B (5) As many as 50 to 125 archaeological and/or historical resource sites (No inventory has been made!) are in the direct path of the powerlines and will be destroyed or at best disturbed.

C I wish to state that in my opinion the Environmental Impact Statement is weak and does not deal with specifics regarding the economic justification for the powerline AND/or demonstrate and substantiate any real need for this extra power carrying capacity.

SINCERELY.

Myron E. Alexander

RESPONSES

C Please refer to Chapter 3 of this document for an expanded discussion of the purpose and need.

LETTER #A-2
COMMENTS

8/21/92

Dear Mr Simonson

With regard to the Southwest Intertie Project Draft Environmental Impact Statement/Draft Plan Amendment, I am in favor of the perferred Alternate power line route. I have volunteered many hours with the BLM in the past few years.

Thank you for your attention in this matter,

Sincerely,

Ruth Ax

Ruth Ax
3606 Villa Knolls
Las Vegas, Nv 89120

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-2

LETTER #A-3
COMMENTS

RESPONSES

Box 163
Silver Creek Ranch
Baker, Nv. 89311
September 4, 1992

Dear Ms. Simonson,

We received your Draft EIS on the Southwest Intertie Project Thanks for designing it, so one found it readable.

My concern is having a 500 KV line through our property when we already have two 230 KV lines in place.

One can hear a noise from these lines at any given time not knowing what amount of leakage is let down or the type or kinds of damage

LETTER A-3

Your comments are noted and will be considered in the BLM's decision process. Also refer to Electric and Magnetic Fields on page 3-72 of the SWIP DEIS/DPA and Recent EMF Research Results in Chapter 3 of this document on page 3-19

LETTER #A-3
COMMENTS

RESPONSES

This may cause people, animals plants & soil, There is a concern for our families health and the health of those in the years to come.

With a wilderness to one side, a National Park on the other side of our home and where we make our Living. Why should we have to live and work with two 250 kV lines and one 500 kV.

This would not be done in a residential area.

Sincerely,

Sheridan Baker

LETTER #A-4
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

9 September 1992
2903 Valmere Drive
Malibu, Ca. 90265

Karl Simonson
BLM, Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

I'd like to request that you oppose the Southwest Intertie Project.

It seems to me that if the powerline is really needed, it should be built along the existing right-of-way in lines already strung between Utah and Las Vegas.

I visit the area around Pahranagat Valley and the Great Basin National Park area at least four times yearly and enjoy the scenic, uncluttered skyline. One can really feel away from the clutter of L.A. and civilization out there when I and my family visit this area on our vacations.

LETTER A-4

LETTER #A-4
COMMENTS

RESPONSES

It seems so unnecessary, that there's already so many reminders of the city, industry, etc. all over our open expanses already without impacting our wildlife (desert tortoise & raptors) and human visitors to these beautiful lands.

Thank You, Mr. Alterio Banks & Family

LETTER #A-5
COMMENTS

NEVADA LAND & CATTLE CO.
BIG SPRINGS RANCH
OASIS, NEVADA 89835

SEPTEMBER 18, 1992

MR. KARL SIMONSON
BUREAU OF LAND MANAGEMENT
BURLEY DISTRICT OFFICE
ROUTE 3 BOX 1
BURLEY, IDAHO 83318

DEAR MR. SIMONSON:

I AM WRITING TO ADDRESS OUR CONCERNS RELATIVE THE DRAFT ENVIRONMENTAL IMPACT STATEMENT/DRAFT PLAN AMENDMENT ON THE PROPOSED IDAHO POWER COMPANY 500 KV TRANSMISSION LINE, THE SOUTHWEST INTERTIE PROJECT.

WE ARE PRESENTLY THE LEASEHOLDER ON THE BIG SPRINGS RANCH WHICH IS OWNED BY CSY INC. THE HEADQUARTERS OF THE RANCH IS SITUATED JUST SOUTH OF OASIS, NEVADA IN THE IMMEDIATE PROXIMITY OF THE PREFERRED ALTERNATIVE ROUTE OF THE TRANSMISSION LINE. THE SEGMENTS OF ROUTE A THAT IMPACT OUR OPERATION ARE NUMBERED 200 AND 211 ON THE ALTERNATIVE ROUTES MAP.

LETTER A-5

A THE DRAFT EIS DOES NOT ADDRESS THE NEGATIVE IMPACT IT WOULD HAVE TO THE DEVELOPMENTS AND RESIDENTS OF THE WEST SIDE OF GOSHUTE VALLEY. IN FACT IT FAILS TO EVEN RECOGNIZE OUR EXISTENCE ACCORDING TO PAGE 8 AND 3-34 OF THE DRAFT. THE COMMUNITY OF OASIS SHOULD BE CONSIDERED AS MUCH AS, OR MORE OF, A POPULATION CENTER/RESIDENTIAL AREA AS CONTACT AND CURRIE.

RESPONSES

A The community of Oasis was inadvertently not listed on pages 8 and 3-34 of the SWIP DEIS/DPA. This error is corrected in the Errata in Chapter 4 of this document. Oasis was, however, considered in the impact assessment and is documented in the Volume III - Human Environment Technical Report and the SWIP DEIS/DPA Map Volume.

The development plans for Northern Holdings would have been included in the impact assessment had they been made public or been on file with the county. There was also no mention of these developments during the public scoping meetings held in March 1989, during the public planning workshop held on January 8, 1991 (attended by representatives of Big Springs Ranch), or in response to the numerous newsletters mailed to Big Springs Ranch throughout the over three-year EIS process. Future planned developments by Northern Holdings have been considered in the SWIP FEIS/PPA (refer to Impacts to the Oasis Area in Chapter 3 of this document).

LETTER #A-5
COMMENTS

B ALSO WE HAVE A PRIVATE AIRSTRIP JUST EAST OF THE RANCH HEADQUARTERS WHICH WAS NOT IDENTIFIED IN THE DRAFT AND IS SITUATED CLOSE TO THE PROPOSED ROUTE.

C THE CULTURAL VALUE OF THE IMMIGRANT TRAIL ROUTE THROUGH GOSHUTE VALLEY WAS NOT ADDRESSED IN THE PLAN. WHAT IS NOW THE BIG SPRINGS RANCH HEADQUARTERS WAS AN IMPORTANT STOPPING POINT FOR THE DONNER PARTY AS WELL AS MANY OTHER IMMIGRANT PARTIES, AND PUBLIC INTEREST IN THESE ROUTES IS CONSIDERABLE. WE HAVE HOSTED A NUMBER OF GROUPS THAT WERE FOLLOWING THESE VARIOUS IMMIGRANT TRAILS.

WE ARE OPPOSED TO SEGMENTS 200 AND 211 OF THE PREFERRED ALTERNATIVE-ROUTE A, FOR THE FOLLOWING REASONS:

D 1. THE NEGATIVE VISUAL IMPACT TO THE RANCH HEADQUARTERS WOULD BE SUBSTANTIAL. THE JUSTIFICATION YOU HAVE GIVEN US FOR PREFERRING THE ROUTE ON THE EAST SIDE OF THE VALLEY IS ONE OF VISUAL IMPACT TO I-80. THE LOCAL RESIDENTS WHO LIVE AND WORK IN THIS AREA SHOULD BE CONSIDERED MORE IMPORTANT THAN THE FREEWAY TRAFFIC.

E 2. THE FUTURE PLANS OF CSY INC. FOR THE DEVELOPMENT OF THEIR PRIVATE LAND IN GOSHUTE VALLEY WOULD BE HEAVILY IMPACTED. THE PROPOSED ROUTE CUTS RIGHT THROUGH THE CENTER OF THE MOST PRODUCTIVE PART OF THE VALLEY.

F 3. ALTHOUGH THERE SEEMS TO BE CONFLICTING RESEARCH RELATIVE THE HAZARDS OF THE ELECTRIC AND MAGNETIC FIELD EFFECTS OF TRANSMISSION LINES, WE WOULD PREFER NOT TO BE EXPOSED TO THE POTENTIAL HAZARDS THAT EXIST.

RESPONSES

B Please refer to Chapter 4, Figure 4-4 of this document for a map of this airstrip in relation to the alternative routes and a discussion of the potential impacts

C Historic data the BLM reviewed revealed that major historic immigrant wagon trails were networks of tracks with many minor variations and alternate routes--not simple two-track roads. Many of the details regarding the routes of the trails and their variations, as well as distinguishing subsequent uses of these transportation corridors, have yet to be documented. It is possible that what is now the Big Springs Ranch Headquarters may have been a stopping point on one of the variations of the Hastings Cutoff Trail; the historic data we reviewed indicate that this cutoff, which was followed by the Donner party, was located in the Shafter vicinity some five miles south of the Big Springs Ranch Headquarters.

D Visual impacts were assessed from Big Springs Ranch and all other residences along the alternative routes It is true that residences are more visually sensitive than travelers on Interstate 80, and this was part of the criteria used in assessing visual impacts. Table VR-7 of Volume III - Human Environment Technical Report documents that all residences were considered to have high visual sensitivity while travelers on Interstate 80 received a moderate visual sensitivity rating (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed)

E CSY Development's intent to develop within the valley was not disclosed to the BLM until the public meeting in Wells on August 4, 1992. Conceptual development plans have now been received from CSY Development and are incorporated into analysis (refer to Impacts in the Oasis Area on page 3-36 of this document)

F EMFs are an especially difficult issue and conclusive results may not be known for years. Refer to the EMF sections in Chapters 3 and 4 of the SWIP DEIS/DPA and Recent EMF Research section on page 3-19 of this document for more information.

LETTER #A-5
COMMENTS

RESPONSES

WE UNDERSTAND AND CONCUR WITH THE IMPORTANCE OF THE SWIP PROJECT. THE JUSTIFICATION FOR THE PREFERRED ROUTE IS NOT VALID HOWEVER AND WE ARE ANIMATELY OPPOSSED TO SEGMENTS 200 AND 211 OF ROUTE A. THERE IS A ROUTE THE LINE COULD FOLLOW THAT WOULD HAVE MUCH LESS IMPACT TO THE VALLEY AND WE HAVE SHOWN IT ON THE ENCLOSED MAP.

YOUR CONSIDERATION FOR OUR CONCERNS IN THIS MATTER ARE APPRECIATED.

SINCERELY YOURS,

BOB BARTON
NEVADA LAND & CATTLE CO.

LETTER A-5

LETTER #A-6
COMMENTS

September 8, 1992
236 B Frisbie St
Oakland, CA 94611

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, ID 83318

Dear Mr. Simonson,

This letter concerns the proposed 500 Volt powerline from Idaho to Las Vegas.

I am appalled at this proposal. Please select the "NO ACTION" alternative to safeguard the PUBLIC lands.

A No powerline should be built through the unspoiled desert valleys as proposed without dire need. The justification for this project is very weak. "Marketplace" power brokering does not create any new power. Moreover, in this market, existing power transfer capacity is already adequate.

If any new power transfer capacity is needed, it should be added to existing right of ways. Such an incremental change would have far less visual impact than the proposal in question. As a lover of the open spaces of Nevada, I can tell you that these undeveloped valleys are a national treasure. There's just no need to destroy them for higher profits for power companies.

Please protect the nearly pristine viewsheds of the region.

Sincerely,

Fred Beddall

Fred Beddall

LETTER A-6

RESPONSES

A As stated in the revised Purpose and Need (refer to Chapter 3 of this document), there is a need for greater power transfer capacity because the SWIP would provide the ability to better utilize power resources that are currently available and push into the future the need to construct new generation resources. Open access to the power market means that many utilities would be able to compete for energy supplies. This competition would create market forces that tend to hold down price increases. It would also make it difficult for any utility to "broker" power since all utilities would have more open access to the market.

LETTER #A-7
COMMENTS

KARL SIMONSON
BUREAU OF LAND MANAGEMENT
BURLEY DISTRICT OFFICE

SEPTEMBER 15, '92
GRANT J. BLOCHER
6603 WHITNEY ST.
OAKLAND, CA 94609

Dear Mr. Simonson,

I support the "NO ACTION" alternative to the proposed Southwest Intertie Project. The Environmental Impact Statement on the project does not justify the need for the line. In fact the existing line does not ~~not~~ operate at anything approaching capacity.

A

Needless to say we don't need any more power lines and towers marching across our dwindling open spaces. Besides this potential blight on the landscape there is a significant risk to the creatures that inhabit the area

LETTER A-7

RESPONSES

A Please refer to Purpose and Need in Chapter 1 of the SWIP DEIS/DPA and in Chapter 3 of this document. Also refer to page 2-31 of the SWIP DEIS/DPA for a discussion of how in early 1990 the IPCo discovered that the UNTP would be fully subscribed and would not have the capacity to fulfill the purpose and need of the SWIP. It was in July 1990 that the IPCo decided to expand the project south from the Ely area to Dry Lake.

Your other comments are noted and will be considered in the BLM's decision process.

of the proposed route — the desert Tortoise, Hawks, Eagles and other raptors, to name just a few. Endgh is enough!!

The favored route for the proposed power-line will pass within spitting distance of our new Great Basin National Park; and will have a potentially devastating impact on an estimated 200 to 400 archeological and historical sites! Please say NO to L.A. WATER & POWER! Thanks

Sincerely,
Ford J Clocker

LETTER #A-8
COMMENTS

September 18, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

I am presently leasing pasture from Nevada Land & Cattle Co. in Goshute Valley and live on the Big Springs Ranch. I would like to make the following comments on the SWIP line that is proposed to run right through the ranch.

The proposed transmission line goes right through the pasture that I lease for breeding my heifers. From the information I have read concerning the effects of electric and magnetic fields on livestock, I am very much opposed to the line in this area.

A The negative visual impacts to not only Big Springs Ranch, but to the whole western side of Goshute Valley would be devastating. In reading your draft EIS on the project it appears to me that you have not even considered the impacts to Big Springs or the people living in the Oasis area.

B The only live water in this whole valley lies right in proximity to the proposed line. Therefore there is always a concentration of livestock in this area. This would be a problem not only from the possible effects on the livestock, but also in the construction of the line.

LETTER A-8

RESPONSES

A As stated in the SWIP DEIS/DPA, there will be visual impacts as a result of constructing the SWIP. Visual impacts were assessed from Big Springs Ranch, Oasis, and all other residences along the alternative routes. The Visual Resources section in the Volume III - Human Environment Technical Report documents in more detail the potential visual impacts to this area (refer to Appendix H of the SWIP DEIS/DPA for the locations where these reports can be reviewed).

B Adverse effects to water resources in the area of the Big Springs Ranch are not expected. The IPCo would work with the Big Springs Ranch to mitigate any effects to the cattle in the area during construction. The transmission line will span about 1/4 mile between towers and would be designed to avoid impacts to water resources (e.g., wetlands, streams, and springs). Overland access to construction sites would be done in this area to avoid adverse impacts.

The effects of EMF are inconclusive. Refer to Electric and Magnetic Fields on page 3-72 of the SWIP DEIS/DPA and Recent EMF Research in Chapter 3 of this document.

LETTER #A-8
COMMENTS

C The historical value of the West side of Goshute Valley has not been addressed in the draft EIS. The statement on page 3-91 referring to a single ethnohistoric area near Oasis is incorrect inasmuch as the area has many ethnohistoric areas.

In conclusion I would like to thank you for the opportunity to comment on this project. I am very opposed to the preferred route however and would like to see it on the other side of the valley.

Sincerely yours,

Nancy Brackett

RESPONSES

C The referenced paragraph identifies only one ethnohistoric locality in the vicinity of Oasis, but it is quite large encompassing some 4,000 to 5,000 acres. The paragraph also mentions other archaeological and historic sites recorded in the vicinity. However, the existing site files indicate that relatively few cultural resources have been recorded in this area. As along many segments of the evaluated alternative routes, this may very well reflect the lack of prior survey rather than absence of cultural resources. The sensitivity model developed to deal with these data gaps did not project high sensitivity zones on the west side of Goshute Valley. There will be complete surveys for cultural resources along the selected alternative route prior to construction. All sites discovered during these surveys will be mitigated.

LETTER #A-9
COMMENTS

RESPONSES

BROOKE & SHAW
ATTORNEYS AT LAW

WILLIAM JAC SHAW
T. SCOTT BROOKE
KENNETH N. CALDWELL

POST OFFICE BOX 2860
1590 FOURTH STREET
MINDEN, NEVADA 89423

TELEPHONE
(702) 782-7711
FAX
(702) 782-3584

18 September 1992

CERTIFIED MAIL
P 431 617 672

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Carl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley ID 83318

RE: Southwest Inter-tie Project

Dear Mr. Simonson:

This firm represents Nevada Big Springs, Inc. which is the owner of the real property in the vicinity of the Goshute Valley, Nevada, comprising what is commonly known as the Big Springs Ranch. This letter will constitute additional comments to the Draft Environmental Impact Statements and Draft Plan Amendment (DEIS/DPA) issued under cover of June 12, 1992 regarding the Southwest Inter-tie Project (SWIP). Verbal comments were presented at the meeting in Wells, Nevada on 4 August 1992, and such comments are incorporated herein by reference. The property involved is located within the area depicted on Panel 2 of the maps, generally to the north and south of Oasis, which is between Wendover and Wells, Nevada, on Interstate Highway 80.

As you will note, the Big Springs Ranch consists of in excess of one hundred thousand (100,000) acres of alternating sections in the Goshute Range and Goshute Valley, both north and south of Interstate Highway 80, together with allotment rights to various of the interspersed and adjacent sections. The ranch has been historically and consistently used for agricultural purposes, which continue to date and are expected to continue. Additionally,

LETTER A-9

LETTER #A-9
COMMENTS

since its acquisition in 1989, the current landowner has expended significant resources in a land planning program which is designed to expand the variety of uses and add significant residential and recreational uses to the property.

As you will also note, various of the studied alternate routes and all preferred routes pass directly through and significantly affect the Big Springs Ranch. Accordingly, the landowner has commented, and will comment herein, on the appropriateness of the designation of the alternative routes for study and construction. The landowner's main concerns relate to the process for identifying and selecting alternate study routes, and selecting the preferred route.

1. No reasonable notice was provided.

As stated at the BLM Hearing in Wells on 4 August 1992, the landowner first received actual notice of this entire project only within two (2) weeks of that date from its new ranch tenant. No prior written, verbal or telephonic notice of this process, or the presumed intended condemnation of its land, and subsequent construction of this significant powerline across its land, was ever given. Accordingly, the opportunity for and actual input by this landowner was effectively denied, resulting in the premature and improper rejection of any participation by this landowner.

A The public notice which has been provided to date has clearly been inadequate in light of the lack of receipt of actual notice. Accordingly, it may be concluded that public notice provided was clearly not designed to and did not, give reasonable notice to this landowner of the activities undertaken and proposed.

It appears that the Big Springs Ranch constitutes the majority of the private land affected by this entire project. In light of the certain fact that the project manager or those involved with the project knew of the existence of this large landholding, and knew how actual notice could be given, and knew that no actual notice was given because of the lack of participation, one questions both the intent of effect of the notice procedures. As a result, this landowner has been denied the opportunity to participate and comment regarding selection of alternative study routes, and is relegated to commenting to previously dictated and adopted study routes and alternates.

RESPONSES

A We believe that the notification of the SWIP EIS process was adequate. A public scoping meeting was held in Wells in March 1989, a public planning workshop was held on January 8, 1991 (attended by representatives of Big Springs Ranch), and numerous newsletters were mailed to Big Springs Ranch throughout the over three-year EIS process. All the public meetings were announced in local newspapers and on posters (refer to Chapter 5 of the SWIP DEIS/DPA). There were also over 3,000 newsletters sent out announcing these meetings.

The SWIP DEIS/DPA states the preferred alternatives but does not presume to make a decision about condemnation of private lands at this point in the decision process. The landowners have clearly had an opportunity to attend the public meetings and to comment on the SWIP DEIS/DPA.

The public participation process was not designed to exclude participation by private landowners. In addition to the private land owners on the SWIP mailing list, the BLM also notified affected public land users. Private land owners in the area are generally also livestock permittees. By contacting the grazing permittees, many of the private land owners in the area are also contacted. Also, private land ownerships change with no notification to the BLM. The public planning workshop held in Wells on January 8, 1991 were attended by Mr. Bob Barton and Ms. Nancy Brackett of Big Springs Ranch. Numerous newsletters were mailed to Big Springs Ranch throughout the over three-year EIS process. Refer to Chapter 5 of the SWIP DEIS/DPA for a discussion of the public involvement process.

Your comment suggests that notification came from a new ranch tenant two weeks prior to the meeting in Wells on August 4, 1992. Mr. Bob Barton has leased the public lands since June 1, 1990. There is no information in the BLM's grazing case file to cause notification of anyone other than Mr. Barton of actions affecting the public lands within the allotment.

Refer to Chapter 2 of the SWIP DEIS/DPA for a discussion about the planning process to identify alternative routes. This planning process occurred over a several year period and numerous newsletters were sent to a mailing list of over 3,000 individuals, agencies, and organizations in order to gain public input, including input from the Big Springs Ranch. Alternative routes were discussed with the public during a series of public workshops in early 1991, as indicated above, and representatives of Big Springs Ranch did express concern for Link 211 at the Wells workshop on January 8, 1992.

LETTER #A-9
COMMENTS

A Due process requires more.

2. The selection of alternative routes was flawed.

In addition to the lack of notice which prevented participation in the selection of the study and alternate routes, it is clear that inadequate routing was studied regarding the Goshute Valley. Routes A, C, F and G all follow the same path, and will unnecessarily and improperly affect private property within the area, including the residents and landowners of Oasis, including this landowner, along its entire length. No satisfactory criteria or facts demonstrate the reasonableness of the selection of this route as the only study route through the Goshute Valley.

B As noted above, the Big Springs Ranch and the nearby community of Oasis comprise the overwhelming majority of the private land affected by the entire project. Common sense would dictate that private lands and populated areas and lands planned for future residential use would be avoided, and further, that a disruption of this magnitude would be limited to one side of the valley or the other. Instead, all studied routes seem specifically designed to impact as much private property and existing and future residential development as possible, while at the same time adversely impacting the scenic, visual and aesthetic resources of the valley, and all property within the valley by essentially bisecting the valley. The only apparent justification for this is that regarding a visual effect on motorists, but there is no distinction or justification made for creating this effect in the study routes, as opposed to any other potential areas.

Attached hereto as Exhibit 1 is a map showing the Big Springs Ranch holdings, and with an overlay indicating the preferred alternative route. As you will note by a review of the panel 2-jurisdiction map, in comparison with the map denoted panel 2-alternative routes, and by review of Exhibit 1 hereto, the preferred routes affect over fifteen (15) sections of land owned by this landowner. This route would require the condemnation in excess of fifteen (15) miles of private land owned by this landowner, and would also adversely affect the thousands of acres adjacent to this route owned by this landowner.

C These facts, opinions and effects are highlighted by the almost unanimous public comment received at the meeting in Wells on

LETTER A-9

RESPONSES

During the preparation of the SWIP DEIS/DPA there was no indication from Big Springs Ranch or Elko County that there were any development plans for this area. Link 211 was concluded to be the environmentally preferred route through this area. Conceptual development plans were received from CSY Development on October 7, 1992. The letter accompanying the concept plans stated a preference for Link 223 along the rail corridor and centered on the BLM's planning corridor. Links 221 and 223 now replace Link 211 in the Agency Preferred Alternative in this document (refer to Chapter 1 of this document).

B An extensive regional study was completed for this entire area and was coupled with the BLM's corridor studies completed during their Resource Management Plan process to plan a set of "reasonable and feasible" alternative routes. The regional study and alternative routes developed during this study were presented to the public during the scoping meetings in March 1989. Refer to Chapter 2 and Chapter 5 of the SWIP DEIS/DPA for a further discussion of the scoping process.

Private lands were not intentionally impacted by the routing alternatives. In fact, during the scoping process the public stated a preference for use of public lands over private lands for routing of alternatives. Private lands and environmental issues were both considered during development and refinement of the alternatives.

Visual impacts were adequately addressed and they do not overemphasize visual impacts of motorists using Interstate 80. Residences were considered the highest sensitivity viewpoints because of the long duration of views, while travelers on Interstate 80 received a moderate visual sensitivity rating. This was part of the criteria used in assessing visual impacts (refer to Table VR-7 of Volume III - Human Environment Technical Report). Refer to Appendix H of the SWIP DEIS/DPA for locations where the technical reports can be reviewed.

C Your comments are noted and will be considered in the BLM's decision process

LETTER #A-9
COMMENTS

7 August 1992, as well as the position taken by the Elko County Board of Supervisors at its meeting of 2 September, 1992. We trust that their written comments regarding this action have been duly received. C

The map attached hereto as Exhibit "1" designates two (2) additional alternative routes which the area landowners and the county seek to have reviewed and studied. Both would generally relocate the proposed preferred route to the easterly side of the Goshute Valley, and along the existing transportation corridor within which the Northern Nevada Railroad is located. Alternative 2 would head easterly at a more northerly point, and result in less impact to Big Springs Ranch land in the Squaw Creek area.

This landowner, as well as all landowners in the area and Elko County, urges that these alternative routes be studied, and if found to be equal or superior in minimizing adverse impact, that one be adopted as the preferred route in this area.

3. The preferred route does not adequately address future impacts.

Review of the DEIS/DPA clearly shows that the alternative routes were established based upon only existing land use, and that all design, study and review essentially ignored likely potential or future land uses. This is improper, since the overall use and value of the property owned by the landowner which will be affected by this project will be significantly reduced because of future impacts and the restriction on future use. D

While we recognize that the diminution in value is a part of the compensation which must be paid in the event of condemnation, this is a separate issue from the impropriety of ignoring future use and effects in evaluating alternative routes for study and alternative routes for preference.

4. Summary.

The landowner of the Big Springs Ranch, the landowners in the adjoining community of Oasis, and Elko County have all commented and requested that an additional alternate route study be undertaken in the area of the Big Springs Ranch and Oasis. This consists of virtually all parties in the area who have an interest.

RESPONSES

D Future land uses were considered in the planning process. The BLM was not aware of the planned development until the public meeting in Wells on August 7, 1992. The BLM would have included the development plans in the impact assessment had they been made public or been on file with Elko County. The BLM's data collection at Elko County and the BLM Elko District never turned up any evidence of this development.

The future planned developments by Northern Holdings and CSY Development have now been considered (refer to Impacts to the Oasis Area in Chapter 3 of this document).

It is requested that the BLM authorize proper and thorough review of one or both of the alternate routes depicted on Exhibit 1. In the event of the adoption of one of such routes as the preferred route in the area, Nevada Big Springs, Inc. would not oppose the construction of the project.

We hope that you will take these comments into account in reviewing the DEIS/DPA. In particular, we hope that you will see fit to include additional studies along one or both of the routes suggested in Exhibit A, as a substitute for the preferred routes through the Goshute Valley.

Sincerely,

BROOKE & SHAW

By T. Scott Brooke mcl
T. Scott Brocke

TSB:aj
Enclosure

LETTER #A-10
COMMENTS

Aug. 28, 1992

Dear Mr. Simonson:
Please act to prevent the "Southwest Intertie Project." No powerlines should be routed down our last disappearing natural valleys & there is no need-justification shown for such a line.

A Rather, already built upon right-of-ways should be utilized to meet any future or demonstrated need for additional power lines. The BLM should be defending our open public lands against new encroachments.

B The flora & fauna of the area in question, are in need of the protection for which BLM exists. In addition to the flora & fauna in the area, Great Basin Nat'l Park & the invaluable archaeological & historical sites in the direct pass of the proposed powerline would be would be negatively impacted.

LETTER A-10

RESPONSES

A The SWIP will require a new right-of-way specific to a 500kV transmission line. It is not possible to utilize existing rights-of-way that were granted for other uses. These existing or designated corridors have other utilities in them and may be considered "already built upon rights-of way". The SWIP routing alternatives utilized designated or planning corridors whenever feasible in meeting the project needs.

The SWIP would require a 200-foot wide right-of-way which may or may not overlay other rights-of-way that may be within a designated corridor (also refer to Right-of-Way on page 3-19 of this document).

B Your comments are noted and will be considered in the BLM's decision process.

LETTER #A-10
COMMENTS

RESPONSES

Again, I implore you To prevent this tragic loss of a valuable public trust in your hands.

Sincerely yours
Millie Buckner

Millie Buckner
2818 Truman Ave
Oakland Calif. 94605

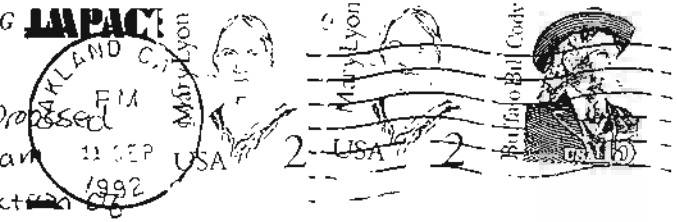
LETTER #A-11
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

9/9/92

AWARD WINNING IMPACT



Dear Mr. Simonson,
I recently learned about the proposed Southwest Intertie Project. I am strongly against the construction of such massive powerlines across the Nevada desert; the impacts on the wildlife, the historical & archaeological sites & the visual impacts far outweigh the justification of regional power transfers
I support the "No Action" alternative - Roslyn Bullas
1865 Alcatraz Ave - Berkeley CA 94703

Karl Simonson
BLM
Burley District Office
Route 3 Box 1
Burley, ID 83318

≈ 20¢ ORGAN PIPE CACTUS—ORGAN PIPE NATIONAL MONUMENT WAS ESTABLISHED IN 1937. ITS LARGE AREA IN SOUTHERN ARIZONA PROTECTS SOME OF THE MOST SPECTACULAR SONORAN DESERT SCENERY IN NORTH AMERICA
PHOTOGRAPHER—DAVID MUENCH

IMPACT ® ✱ LIFE LIKE PHOTO ART
PUBLISHED BY IMPACT
© IMPACT 1986

LETTER A-11

LETTER #A-12
COMMENTS

RESPONSES

959-B Noe St.
San Francisco, CA.
94114

Karl Simonson
BLM Burley Dist. Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

I am writing to express my opposition to the proposed Southwest Intertie powerline project. This project would create massive impacts on open valleys in eastern Nevada. The visual impact would be tremendous. There is also potential for significant impact on desert tortoise populations, especially in the Pahranagat NWR area, and on hawks, eagles and other raptors that would be killed by the power lines. Additional concerns are the proximity of the proposed route to the Great Basin National Park, as well as potential impacts on the many archeological and historic sites in the path of the powerlines.

A All of your concerns are addressed in the SWIP DEIS/DPA Your comments are noted and will be considered in the BLM's decision process One of the criteria used in the selection of the environmentally preferred route and the Agency Preferred Alternative was paralleling existing rights-of-way

LETTER A-12

LETTER #A-12
COMMENTS

RESPONSES

The No action alternative is the best. If the project must be built (I am not convinced that it is necessary), it would be better to follow existing right-of-ways which have already been built upon, rather than to spoil pristine open valleys.

Thank you for your attention. I would appreciate a response.

Sincerely,
David Bunch

LETTER #A-13
COMMENTS

September 12, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson,

A I am writing to support the "No Action" alternative to the proposed construction of a 500 Volt powerline from Idaho to Las Vegas. No powerline should be routed down our fast disappearing natural valleys, nor has any justification been presented in the EIS showing a compelling need for the line. In fact this is a redundant line competing with another Utah to Las Vegas powerline such that, with two, neither could run anywhere near capacty. When more capacity is really needed, it can readily be added to the existing routes in Utah, thus preserving our public open-valleys for our own and future generations' enjoyment. The impact on a new area is far greater than expanding an already built-upon right-of-way. The BLM should be defending open public lands rather than assisting in their destruction.

B The negative environmental, historical, and social consequences of this proposal are immense. To mention a few, the visual impact to now-open valleys would be disastrous. Ravens are attracted to perch on power lines and feed on young desert tortoise, thus adding to the precarious struggle of this already threatened species. The powerline runs the same north-south route taken by one of the largest hawk migrations in North America. Every year numbers of hawks and eagles are killed by high voltage

C power. The route runs over Sacramento Pass through Great Basin National Park, creating a huge visual disaster in this

D popular scenic area. Directly in the path of the powerlines are an estimated 200 to 400 archaeological and historical resource sites which will be destroyed.

LETTER A-13

RESPONSES

A Please refer to the expanded Purpose and Need on page 3-1 of this document.

B There would be impacts to desert tortoise, although mitigation measures applied during construction should be very effective in reducing or eliminating these adverse effects. The question of transmission line impacts on hatchling tortoises is a subject of ongoing study Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. The BLM believes it is unlikely that perch site availability is currently limiting the potential for raven predation in the project area.

Given the structural configuration of 500kV transmission lines, the BLM feels that the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission towers proposed for the SWIP will utilize V-guyed steel lattice towers, self-supporting steel lattice towers, and tubular steel H-frames. The spacing between conductors on these structures is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on the towers at approximately 23 to 32 feet apart Further, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (refer to pages 2-12 through 2-14 of the SWIP DEIS/DPA) Because of the distance between conductors and the towers, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower.

The BLM acknowledges that numbers of raptors are killed each year in the United States as a result of electrocution. Most such incidents occur, however, on lower voltage distribution lines.

Refer to Avian Collision Hazards on page 3-89 in this document.

C The SWIP would not pass through Great Basin National Park. It would pass approximately two miles north of Great Basin National Park. To further minimize visual impacts to travel routes leading into the park, several minor

LETTER #A-13
COMMENTS

E Clearly, there is no compelling need nor moral justification for the proposed powerline; and there are many very compelling reasons to take no action.

Sincerely,

Kate Caldwell

Kate Caldwell
408 North Street
Oakland, CA 94609

RESPONSES

reroutes through Sacramento Pass have been evaluated (refer to Sacramento Pass Mitigation Reroute on page 3-39 of this document)

No significant visual impacts to viewpoints in the Great Basin National Park would occur because of the distance of the alternative routes from these viewpoints. Non-specular conductors and steel H-frame towers across the highway would minimize other adverse visual effects of the SWIP.

D The SWIP DEIS/DPA indicates on page 4-86 that 200 to 400 archaeological and historical sites may be present along the selected route; it does not mean they will be destroyed. There is substantial flexibility in the design of transmission lines and associated access roads. If the project is approved, detailed surveys will be conducted to locate sites and assist project engineers to avoid and preserve most cultural resources in place. Measures to mitigate impacts on other sites will be developed in consultation with appropriate regulatory agencies.

E Please refer to the expanded Purpose and Need on page 3-1 of this document

LETTER #A-14
COMMENTS

Dear Karl Simonson,

This letter is regarding the powerlines that are to be put across untouched land in Nevada.

I don't think this has any purpose, since the only thing that can happen from it, is destruction. You can use the already built-upon right-of-ways rather than any designation of new right-of-ways. The impact on a new area is FAR greater than expanding an already built-upon right-of-way. When more capacity is really needed, let it be added to the existing routes in Utah.

The impact on wildlife would be outstanding. Powerlines are a favorite spot for ravens to perch while seeking out young desert tortoise as prey. They are an endangered species. Please don't make them become extinct. Also the impact on hawks and raptors. The powerline will run the same north-south route taken by one of the largest hawk migrations in North America. Every year numbers of hawks and eagles are killed by high voltage power.

A

RESPONSES

A There would be impacts to desert tortoise, although mitigation measures taken during construction should be very effective in reducing or eliminating these adverse effects. The question of transmission line impacts on hatchling tortoises is a subject of ongoing study. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations can not be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. The BLM believes it is unlikely that perch site availability is currently limiting the potential for raven predation in the project area.

Given the structural configuration of 500kV transmission lines, the BLM feels that the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission towers proposed for the SWIP will utilize V-guyed steel lattice, self-supporting steel lattice, and tubular steel H-frame towers. The spacing between conductors and towers is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on the towers at approximately 23 to 32 feet apart. Further, conductors are hung on insulating systems that would be 14 to 20 feet in length depending on tower design (refer to pages 2-12 through 2-14 of the SWIP DEIS/DPA) Because of the distance between conductors and towers, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower.

The BLM acknowledges that numbers of raptors are killed each year in the United States as a result of electrocution. However, most of these incidents occur on lower voltage distribution lines.

Refer to Avian Collision Hazards on page 3-89 of this document.

LETTER #A-14
COMMENTS

There is estimated 200 to 400 archaeological and historical resource sites in the direct path of the powerlines. An estimated 50 to 125 of these are expected to have "significant value". Please do not destroy our precious resources. Without them we cannot live. I think we need to preserve natural habitat, don't you?

I would love to go somewhere and not have to look at a huge, ugly metal thing, when I could be looking at beautiful mountains.

I support the "NO ACTION" alternative. No powerlines should be routed down our fast disappearing natural valleys. No justification is presented in the report which shows a compelling need for the line. In fact it is a redundant line to compete with another Utah to Las Vegas powerline.

B

Please understand what is going to happen if this powerline does. I love this land, and I hate to see man being so selfish with it. After all, we couldn't survive without it.

Sincerely,

Michelle Cafagna

RESPONSES

B Please refer to the expanded Purpose and Need section on page 3-1 of this document.

LETTER #A-15
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process

Brenda S. Constance
5817 Rae Dr.
Las Vegas, NV 89108

September 5, 1993

Earl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

Re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,
Brenda S. Constance

LETTER A-15

LETTER #A-16
COMMENTS

Joseph E. Constance, Jr.
5817 Rae Dr.
Las Vegas, NV 89108

September 3, 1992

Keri Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Joseph E. Constance Jr.

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process

LETTER A-16

LETTER #A-17
COMMENTS

Karl Simonson
Bureau of Land Management
Burley District Office

To Whom It May Concern:

A I am writing in regard to the Southwest Intertie Project. I urge you to support the "No Action" alternative to this project. No compelling economic justification was presented in the EIS to warrant such a huge powerline across such a vast expanse of wild lands. Nevada is one of the few states in the union that still has any wild, untouched valleys. It is crazy to route big (probably unnecessary) powerlines across our few remaining pristine valleys

B rather than having them parallel existing roads and powerlines. "Visual impact" guidelines should be applied at least as strictly to unspoiled areas as they are to truck routes! And it is a visual insult to run a huge power corridor in the immediate viewshed of Great Basin National Park.

RESPONSES

A Refer to the expanded Purpose and Need on page 3-1 of this document.

B Routing alternatives favored designated utility corridors where there were already utilities rather than favoring pristine valleys. In fact the impact models favor areas that have been previously disturbed (e.g., existing roads, transmission facilities)

Travel routes with a large percentage of truck traffic and origin-destination travel were considered moderate sensitivity viewpoints, while viewpoints such as residences, trails, and scenic routes were considered high sensitivity. The Great Basin National Park is considered nationally and regionally significant The potential impacts to viewpoints within the park and the highway approaches to the park have been considered in the impact assessment and comparison of alternative routes Several mitigation reroute alternatives were analyzed in the Sacramento Pass area (refer to page 3-39 of this document).

LETTER A-17

LETTER #A-17
COMMENTS

RESPONSES

The adverse environmental effects of these proposed powerlines is undisputable, particularly on the desert tortoise habitat in Pahranagat Wash and on the major raptor migration corridor in the Goshutes.

Sincerely,
Ingrid Corkmore (friend and frequent visitor of the Nevada wilderness)
1290 Hopkins #37
Berkeley, CA 94702

P.S. I find the involvement of the LADWP in this project highly suspicious!

LETTER #A-18
COMMENTS

RESPONSES

Kurt E. Criss
1722 Crestwood Dr.
Elko, Nevada 89801

September 18, 1992

Bureau of Land Management
US Department of the Interior
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Re: Comments on Draft EIS of the Southwest Intertie Project

Dear Gentlemen and Ladies:

After review of the Draft EIS on the proposed Southwest Intertie Project, I offer a few comments regarding its accuracy. My particular concern is the crosstie project's routing and potential impact to the Great Basin National Park (GBNP) and surrounding area.

A The agency and utility preferred crosstie routing, the 230kV Corridor Route, will undoubtedly visually impact sensitive existing and proposed viewpoints as it passes immediately north of the GBNP. Quantifying such an impact is difficult. In furnishing readers with information to make such a judgement, an EIS should provide accurate and thorough data for review. It does not appear that this draft EIS provides either.

B Photo simulations providing a basis for quantifying the project's visual impact to the GBNP when viewed from Highway 50 are taken from a vantage point which conveniently hides a very significant visual resource, Wheeler Peak. Had this photo been taken from a slightly different perspective, Bald Mountain and Buck Mountain would not have obstructed Wheeler Peak. This particular camera angle does not give a reader the true picture by which to judge the visual sensitivity of this resource.

LETTER A-18

A The SWIP DEIS/DPA adequately addresses the visual impacts to Great Basin National Park. The visual studies showed that from the viewpoints identified by the NPS (located outside the study corridors), impacts would be low and at extended viewing distances from the park viewpoints. The SWIP DEIS/DPA needs only to summarize the significant issues and impacts. A complete description of the visual analysis can be found in Volume III - Human Environment Technical Report (refer Appendix H of the SWIP DEIS/DPA for locations where this technical report can be reviewed).

B The photo simulations provided in the SWIP DEIS/DPA depict the alternative SWIP routes quite accurately. Simulation viewpoints were selected to show typical views. The Highway 6/50 simulation you refer to was selected because it is the approximate location for a proposed interpretive facility in Great Basin National Park's Draft General Management Plan. Additional simulations were prepared to analyze the Sacramento Pass Mitigation Reroute (refer to Figures 3-13 to 3-19 in Chapter 3 of this document).

LETTER #A-18
COMMENTS

RESPONSES

Further, no photos are included to simulate visual impacts to viewers within the GBNP looking north and northeast to gain an understanding of the basin and range terrain. It is my understanding that officials of the GBNP plan to develop northerly viewpoints and a new tourist center to educate visitors about this distinctive geology. Certainly a simulation or assessment should be included which depicts the impact of a power line that would span a viewers entire peripheral vision.

C

A simulation looking north or northeast from Great Basin National Park viewpoints was not completed because the towers generated by computer-generated perspectives were too small to be accurately painted into a simulation. Based on the modeling done for the simulation, the 230kV Corridor Route would have been barely perceptible, if seen at all. Concern for visual impacts to views from the park were primarily under specific lighting conditions where towers or conductors may cause sunlight to reflect. This could create visibility conditions greatly exaggerated over that of normal lighting conditions. To mitigate these special lighting effects the use of non-specular conductors has been specified.

I must close by pointing out that I am not opposed to projects of this type which benefit both the public and industry; however, I believe routing of the transmission line should not unduly impact a resource as significant as the Great Basin National Park. Selection of the proposed Cutoff Route would mitigate these visual impacts - it is the environmentally preferred routing.

Sincerely,

Kurt E. Criss

LETTER #A-19
COMMENTS

Sept 5, 1992

Dear Mr. Simonson,

I am writing with great concern regarding the Southwest Intertie Project. I want you to know that I support "NO ACTION" Alternative to the power line. Already existing right-of-ways are sufficient, I believe, to make unnecessary the designation of new right-of-ways. Considering A the large visual impact of (right-of-way) power lines through the valleys indicates the great loss to the beauty of the proposed "Non Built upon" valley right-of-ways. Wildlife experts have also suggested B the detrimental impact of these lines upon young tortoises (see Pahranagat wash area, for an example). Further C the lines are suspected of having a deleterious effect upon raptor migrations. As a camper/hiker, I shudder at the thought of encroachments upon the natural well-being of Great Basin Nat'l. park. D As an archaeologist, I KNOW that

1 of 2

LETTER A-19

RESPONSES

A The SWIP would require a new right-of-way specific for a 500kV transmission line. It is not possible to utilize existing rights-of-way that were granted for other uses. These existing or designated corridors have other utilities in them and may be considered "already built upon rights-of way". The SWIP routing alternatives utilized designated or planning corridors whenever feasible in meeting the project needs (refer to Chapter 1 of this document).

There would be visual impacts to the open valleys that the SWIP may cross. These impacts are disclosed and documented in the SWIP DEIS/DPA on pages 4-35 through 4-45.

B The question of transmission line impacts on hatchling tortoises is evolving. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure, and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers or raven predation. We believe it is unlikely that perch site availability is currently limiting the potential for raven predation in the project area.

C The potential deleterious effect of electrical transmission lines on raptor migration, suspected or otherwise, has never been documented in the scientific literature to the BLM's knowledge. There is no question that raptors occasionally collide with transmission lines. The reasoned opinions, however, suggest that raptors, as a group, are possessed of such keen eyesight and finely-tuned flying skills, that such collisions usually occur during the pursuit of aerial prey or in defense of territory. Collisions with man-made structures are a very minor aspect of raptor population mortality. Refer to Avian Collision Hazards on page 3-89 of this document

Raptors do not migrate at night (as do most songbirds), nor do they migrate in flocks (as do most shorebirds and waterfowl). Consequently, the BLM has difficulty envisioning a situation in which a large, highly visible electrical transmission system, occupying a very, very, small percentage of the total landscape could interfere with migration patterns of raptors.

LETTER #A-19
COMMENTS

D Construction of the lines could permanently destroy a significant number of archaeological sites. These are losses which could never be reversed!

It is my belief that the role of the BLM should be that of conservator of our nation's natural heritage. As such, I urge you to do all that is in your power to halt (support "No Action") on the proposed line. . . I would appreciate receiving information as to the position which your office is advocating on this matter.

Thank you. Sincerely,

Brandon Fine

Brandon Fine
1050 [redacted] Carolina Street
San Francisco, CA 94107

RESPONSES

D The SWIP DEIS/DPA acknowledges that a number of cultural resources are likely to be adversely affected by construction of the SWIP, but also documents that planning studies have considered and avoided the most significant known cultural resources in the region. A programmatic agreement (refer to Appendix CR-12 in the Volume IV - Cultural Environment Technical Report) has been executed to ensure that continued data collection and regulatory review result in appropriate avoidance and mitigation measures if the project is approved and detailed design work is undertaken. For example, after the centerline is surveyed, a cultural resource inventory along the right-of-way would be made and appropriate mitigation made prior to any ground disturbing activities. These procedures will minimize impacts and ensure that important archaeological data are retrieved prior to construction.

LETTER #A-20
COMMENTS

P.O. Bx 140
Baker, NV 89311
September 17, 1992

Karl Simonson, District Mgr.
Burley District Office, BLM
Route 3, Box 1
Burley, ID 83318

Re: Crosstie Route, SW Intertie Project

Dear Mr. Simonson,

I'm from Baker, Nevada. You don't have to be a prophet to know I'm going to object to your choice of the 230kV Corridor Route.

But I won't waste your time recapping the arguments against your route choice. You've probably heard them all. I'd just like to ask you a couple of questions.

Have you ever had to make decisions regarding the welfare of your kids or grandkids? Did you make a different decision than you might for yourself or another adult?

I suggest that's what we have here, and it's the only important reason for the Cutoff Route being a better choice than the Corridor Route. Expedient decisions work fine when you're thinking a year or two, not so fine when you're thinking a generation or two.

Hundreds of thousands of visitors over the next half dozen decades will see our Great Basin valley dissected by something that from the Snake Range will look like surgery staples, marching across the belly of the valley. Unlike surgery staples, these staples won't be coming out.

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-20

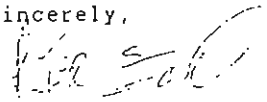
LETTER #A-20
COMMENTS

RESPONSES

Then there will be the kids that will live under this 500 kV line. There will be several hundred of them over the life of this line. Will these kids suffer biological ramifications? The jury's out, I know. I also know there would be no "jury" unless some fine professional scientists believed that the initial evidence indicates cause for alarm. Yet you are apparently willing to mortgage these kids future to save yourself some hassle.

My point is made, Mr. Simonson: you're choosing today at the expense of tomorrow. Detroit did that, as did the S & L's. Maybe you'll be luckier.

Sincerely,



Peter Ford

LETTER #A-21
COMMENTS

Ruth M. Fricker
905 West Middlefield #944
Mountain View, CA 94043

September 7, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson,

As a member of Desert Survivors I have been informed of the proposed construction of a 500 Volt powerline from Idaho to Las Vegas. Our group has reviewed the Environmental Impact Statement and was astounded at the HUGE impact. It appears to be unclear whether there is any real economic justification for this powerline. Issues that concern me are listed below:

A -Please support the NO ACTION Alternative. I understand there is already a Utah to Las Vegas powerline that would be redundant to this proposed line.

B -Support the use of existing already built-upon right-of-ways rather than any new right-of-ways. The impact is upon a new area is far greater than the impact created by expanding upon an already existing right-of-way.

-There would be an incredible visual impact to now open valleys. The BLM should be defending the open public lands against new encroachments, not assisting their destruction.

C -There would be a significant desert tortoise impact where power lines and highways compete for space with wildlife. Powerlines allow predators to perch and find young tortoises as prey.

D -There would be a significant hawk and raptor impact where power lines run along the migration route. Every year many raptors are killed by high voltage power.

LETTER A-21

RESPONSES

A Page 2-31 of the SWIP DEIS/DPA discusses the reason that the SWIP was expanded south of the Ely area to the Las Vegas area. It states that in early 1990, it was determined that the UNTP was fully subscribed and would not have the capacity to allow access to marketplace (the Las Vegas area) for the SWIP. In June 1990 the SWIP was expanded from the Ely area to Dry Lake.

The SWIP is not redundant to any other project. The existing line between Utah and Las Vegas, Sigurd to Harry Allen 345kV line, is limited to a maximum of 300 MW, significantly below the 1200 MW capability of SWIP.

B The SWIP will require a new right-of-way specific for a 500kV transmission line. It is not possible to utilize existing rights-of-way that were granted for other uses. These existing or designated corridors have other utilities in them and may be considered "already built upon rights-of way". The SWIP routing alternatives used designated or planning corridors whenever feasible in meeting the project needs.

The BLM agrees there would be significant visual impacts to some of the scenic areas of public lands.

C The BLM agrees that there would be impacts to desert tortoise, although mitigation measures taken during construction should be very effective in reducing or eliminating these adverse effects. The question of transmission line impacts on hatchling tortoises is a subject of ongoing study. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure, and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. The BLM believes it is unlikely that perch site availability is currently limiting the potential for raven predation in the project area.

D Given the structural configuration of 500kV electrical transmission lines, the BLM feels that the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission systems proposed for the SWIP will utilize tubular steel H-frame and/or steel lattice towers. Spacing of conductors on such structures is sufficient to prevent phase-to-phase or phase-to-ground

LETTER #A-21
COMMENTS

E -There would be an impact on the Great Basin National Park.

F -There are an estimated 200 to 400 archaeological and historical resource sites in the direct route of the powerlines.

As we humans over-populate the earth, let's try to leave some room for the other creatures.

Sincerely,

Ruth B. Tucker

RESPONSES

contact. In order to achieve this safety measure, conductors are hung on the supporting structure in such a manner that they are 23 to 32 feet apart. Moreover, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (See SWIP DEIS/DPA pp. 2-12 through 2-14). Because of the distance of conductors from the support structure, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower.

The BLM acknowledges that numbers of raptors are killed each year in the United States as a result of electrocution. Most of these incidents occur, however, on lower voltage distribution lines.

Refer to Avian Collision Hazard in the Biological Resources section of Chapter 3 of this document.

E The BLM agrees that there would be visual impacts to the routes leading to Great Basin National Park and to a lesser degree from some of the park's viewpoints. However, because of the distance of all of the alternative routes from the park and the commitment to utilize non-specular materials in the construction, visual impacts would not be significant.

F If one of the routes is approved by the BLM, there will be a cultural survey completed for any potentially disturbed areas (e.g., rights-of-way, access routes, assembly yards). Cultural resource impacts will be mitigated.

LETTER #A-22
COMMENTS

September 3, 1992

Karl Simonson
BLM, Burley District Office
Route 3 Box 1
Burley, ID 83318

Re: Comments on DEIS for SWIP

Dear Mr. Simonson:

Congratulations on a well-designed, readable and thorough Draft EIS on the Southwest Intertie Project.

In the matter of the Crosstie route, unfortunately, the document is seriously flawed. The choice by your agency and by LADWP of the 230kV Corridor Route, rather than the environmentally preferred Cutoff Route, is hard to understand and certainly unconscionable.

The overriding rationale cited for this choice is the FLPMA policy of consolidating corridors where possible. That is of course a correct policy, but the "where possible" provision surely is included for precisely the situation at hand. Surely any general policy must be applied only when it makes sense.

In this case consolidation of corridors does not compute. The environmental havoc created by a 500kV line is of an entirely different order of magnitude than the damage associated with the present 230kV installation.

A The 230kV lines were subject to a far less careful environmental scrutiny, and were built before the establishment of Great Basin National Park. The wooden poles are relatively inconspicuous, and from a great distance blend with the terrain in a way that would be totally impossible for the proposed steel towers.

In 1986, largely because of the relatively pristine nature of the Snake Range and its adjacent valleys, the decades-long effort to establish a national park in the Great Basin culminated in the choice of this site. The federal legislation establishing the Park specifies that both basin and range be embraced by the Park's interpretive and educational efforts.

B The viewshed from the Park is oriented to Snake Valley, and an integral part of the unique beauty of this place is just that prospect: a fifty-mile view to the east across the unspoiled basin to the mountain ranges beyond, and to the north from the valley depths to the 12,000' heights of Mt. Moriah.

LETTER A-22

RESPONSES

A The BLM believes that it does make sense to construct the SWIP within the existing corridor. The surface disturbance and potential environmental impacts of constructing and operating a 500kV transmission line are not significantly different from a 230kV system, with the exception of greater visual impacts.

The 230kV lines likely did undergo less public and agency scrutiny when they were permitted and constructed than they would if they were proposed today. However, given the connection points and purpose and need for the 230kV lines, their siting was proper. The 230kV system would likely have been permitted where it is even if the Great Basin National Park had existed at that time because the visual impacts to viewpoints within Great Basin National Park from these lines are almost imperceptible.

Generally, wood-pole structures tend to be more acceptable visually in the landscape, especially in near (foreground) views. However, steel lattice towers tend to blend in better at a distance, whereas, wood towers tend to be more visible from a greater distance.

B Because of the distance of the proposed transmission lines from the viewpoints in Great Basin National Park, the Ely to Delta segment built on the 230kV Corridor Route would not have significant visual impacts on views. There would, however, be visual impacts to traveler's views from the U.S. Highway 6/50 approaching the park. Several alternative crossings of U.S. Highway 6/50 have been evaluated to minimize visual impacts to highway travelers and to avoid private lands (refer to Saeramento Pass Mitigation Reroute on page 3-39 of this document).

There would also be visual impacts to views from dispersed areas within the Marble Canyon WSA and Mt. Moriah Wilderness area if the Cutoff Route is selected.

LETTER #A-22
COMMENTS

The steel towers of the proposed 500kV line would be clearly visible to every one of the 70,000 annual visitors, both from the Park and from their approach on highway 50 through the exquisite Sacramento Pass. The quality of the present experience would be fundamentally changed.

B

This concern would seem to be legitimated by the agency's own admission on page 2-48 relating to Marble Canyon and Mt. Moriah Wilderness areas: "BLM is concerned about the visual effects (of the Cutoff Route) from dispersed areas within both of these areas."

Furthermore, in Snake Valley the 230kV lines cross very near to several ranch homes where small children live, and each of these families wishes daily that the power lines were not so close. This is because of the physical discomfort experienced at close range, together with the unsettling scientific reports

C

of biological damage possibly caused by high voltage installations (as well as the considerable inconvenience of farming around the poles).

As you undoubtedly know, people in Nevada and Utah are not readily mollified by government and industry assurances that possible health risks from technology are "unproven". As your Draft EIS itself suggests, the jury is still out on this one.

Needless to say, the families already severely impacted by the present 230kV installation are unalterably opposed to the imposition of the proposed 500kV project. They take no comfort in an unintelligent adherence to FLPMA policy, which would disregard their rights on the basis that their homes are already somewhat spoiled.

Fortunately, in response to some of these considerations which were voiced during the scoping process, an alternative route for the Crosstie was worked out, and designated as the environmentally preferred Crosstie route. Not only does the Cutoff Route avoid major visual damage to the National Park; it is preferable for most other human and environmental reasons, too.

RESPONSES

C EMF is an especially difficult issue for which there may be no conclusive results for many years. Please refer to the EMF discussions in Chapters 3 and 4 of the SWIP DEIS/DPA and to Recent EMF Research in Chapter 3 of this document for more information.

It is true that the Ely to Delta segment would cause visual and land use impacts from its construction and operation. However, impacts to the agricultural lands along the existing 230kV lines in this area would be avoided by the 230kV Corridor Route (refer to Sacramento Pass Mitigation Reroute in Chapter 3 of this document).

LETTER #A-22
COMMENTS

In this regard specifically, the Draft EIS is self-contradictory:

D 1) The statement on page 2-56 that the LADWP preference for the 230kV Corridor Route "reflects LADWP's commitment to minimize environmental impacts whenever possible even at reasonable increased project costs" is pure doublespeak.

E 2) So also is the agency assertion on page 2-58 that the "230kV Corridor Route and the Cutoff Route have similar environmental impacts." The latter route affects neither the private landholders referred to above, nor the 70,000 National Park visitors.

Thanks again for a mostly admirable Draft EIS. I trust that the Final EIS will be amended to favor either the Cutoff Route or better yet, since no need for the Crosstie is demonstrated, no action at all. Obviously, any environmental degradation around Great Basin National Park can have real economic consequences for this whole geographic area.

Yours truly,

Jo Anne Garrett

Post Office Box 130
Baker, Nevada 89311

RESPONSES

D The LADWP's preference for the 230kV Corridor Route is largely because of their preference to interconnect at the Robinson Summit substation site and in response to FLPMA's mandate to consolidate utilities "In order to minimize adverse environmental impacts and the proliferation of separate rights-of-way..." Although, other routes (e.g., the Direct Route) are shorter and would be less costly, the LADWP would use the longer 230kV Corridor Route to avoid public environmental concerns (e.g., not impacting undisturbed valleys). Further, the 230kV Corridor Route would result in the least cumulative effects for connecting to the Robinson Summit substation site (refer to Scenario 3 on page 3-13 of Chapter 3 of this document).

E Although the specific impacts between the Cutoff Route and the 230kV Corridor Route are different, the impact comparisons and tradeoffs make these two alternative routes difficult to distinguish. In any environmental comparison it is necessary to compare impacts that are dissimilar. The BLM has provided an additional discussion of environmental preference under Cumulative Effects in Chapter 3 of this document. The future foreseeable utility "buildout" (i.e., cumulative effects) in the Ely area has helped distinguish an environmental preference between these two alternative routes.

LETTER A-22

LETTER #A-23
COMMENTS

RESPONSES

Damun Gracenin, Ph.D.

508 Clayton Street
San Francisco, CA 94117

A Your comments are noted and will be considered in the BLM's decision process. Refer to the expanded Purpose and Need section in Chapter 3 of this document.

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, ID 83318

September 14, 1992

re: Southwest Intertie Project EIS

Dear Sir:

Just say no to the powerline they want to route across some of my favorite parts of this earth. Please expand existing right-of-ways to carry power from Idaho to Las Vegas.

The new proposed corridor would uglify some very pretty country. You folks should be defending unspoiled land rather than assisting in its destruction.

Maybe you don't care about setting the young Desert Tortoise up for Ravens who like to perch on power lines, or about impeding the migration of large birds of prey. Perhaps it means little to you that the proposed power-line corridor will have a bad impact on 200 to 400 archeological and historical resource sites, or that it will disfigure Great Basin National Park. Maybe all you care about is money. There is no

LETTER A-23

economic justification for the powerline. Las Vegas does not, and will not, need that kind of extra power capacity in spite of rapid growth out towards its radio-active boundaries to the north and into the urban decay at its center.

I support the "No Action" alternative.

Thank you.

Sincerely,

Educational Consultant
415-431-2109

LETTER #A-24
COMMENTS

RESPONSES

253 Margarita Dr. A
Orinda Ca. 94563

Sept 8, 1992

BLM
Burley District Office
Burley Idaho 83318

Dear Mr Simonson;

I am writing to comment on the proposed powerline across eastern Nevada. I realize I am considered an interfering Californiane, but open BLM lands belong to us all, and this area across the mountain ranges and open valleys of Nevada that I love and consider as a precious last open unspoiled area of this vast country belongs to me as well as Nevada.

A I have not heard any reasond arguments why this powerline is justified. Why is it needed? Are we really running out of power, or or we

1 of 3

LETTER A-24

A The primary need for the SWIP is to postpone construction of additional generation facilities within the WSCC region by providing the capability to take advantage of seasonal diversity between regions and regional economy power sales. Please refer to the Purpose and Need for the SWIP in Chapter 1 of the SWIP DEIS/DPA and an expanded Purpose and Need section in Chapter 3 of this document.

LETTER #A-24
COMMENTS

A planning for some future population explosions in these areas (Las Vegas?).

If there is a need, then I strongly support the routing of the lines over existing right of ways or built-already areas. Let it be added to existing routes. Do not damage a pristine valley. These areas are homes and migration routes for many birds and tortoises and any disturbance to these fragile habitats can endanger their survival, as we are recently learning throughout the world.

B No lines should purposely be placed within the scenic outer regions of Great Basin National Park. Just because it's outside the Park boundary doesn't make it okay. Visually it is an "eyesore" inside the park as well.

RESPONSES

B The visual impacts to Great Basin National Park viewpoints, to the highway approaches to the park, and to proposed interpretive facilities outside the park boundaries are documented on page 4-45 of the SWIP DEIS/DPA and in the Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where these technical reports can be reviewed).

LETTER #A-24
COMMENTS

RESPONSES

Please justify the need, firstly, especially by such a suspicious and notorious agency as the Los Angeles Dept. of Water and Power, for this huge and damaging project.

Sincerely,

Susan F. Graf

LETTER #A-25
COMMENTS

Jeanette Guerin
953 Celebration Dr.
Las Vegas, NV 89123

September 5, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

Re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Jeanette Guerin

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-25

LETTER #A-26
COMMENTS

RESPONSES

2043 Berryman Street
Berkeley, CA 94709
September 12, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Rate 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

I have reviewed the draft EIS for the proposed Southwest Intertie Project, and while I generally support the project, I am strongly opposed to the proposed route...

No powerlines should be routed down our fast-disappearing natural valleys. Instead, existing built-upon power and road right-of-ways should be used. The visual and environmental impact on a new area is FAR greater in a new area than in an area that is

LETTER A-26

LETTER #A-26
COMMENTS

A already built-upon. The existing criteria for judging visual impact is skewed against preserving non-built upon areas. It is my opinion that the BLM should be defending public land against new encroachments, not assisting in their visual and environmental degradation.

Thank You For Considering My Views —

Sincerely,

David W. Halligan

RESPONSES

A Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although undisturbed natural landscapes of open desert valleys in Nevada and Utah possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landscape character. Open desert valley landscapes are characteristic and common to much of the project study area.

The BLM will consider public concerns for scenic quality in its decision process. The BLM uses the VRM System to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model, refer to the Methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where these technical reports can be reviewed).

LETTER #A-27
COMMENTS

Elly Sept 15 1992

Karl Simonson
BLM, Burley District Office
Route 3 Box 1
Burley, Idaho 83318

"Comments on DEIS for SWIP"

Dear Mr. Simonson:

After reading the draft EIS on the Southwest Intertie Project, I would like to make a few comments. First the choice by your agency and by IPADWP of the 230 KV Corridor Route rather than the environmentally preferred Cutoff Route is hard to understand and certainly without much concern for the people living near this line.

I have stated to you before that if you would bring this line across my property it would be total ruin for something that we have tried to build up for the past

RESPONSES

A In response to your and other comments about impacts to private lands in the area, several minor reroute alternatives were evaluated (refer to Sacramento Pass Mitigation Reroute in Chapter 3 of this document).

LETTER A-27

LETTER #A-27
COMMENTS

RESPONSES

20 years. There are now 2 major 230KV lines already on this 160 acre property and certainly a 500KV with Steel Towers is unthinkable going through also. Since my Son is raising his children on this farm and already has to work directly under the powerlines another line crossing over the field, will make it that much more hazardis and undissirable.

Do you love your Children and Grandchildren?

We had hoped to put a "Pivot" Irrigation System in to be more efficient and save manpower, but the already in Place 230 lines are making that task almost impossible, and a 500 KV line with Steel towers would make it totally impossible.

Also the cutoff Route would have much less effect on private Landowners and would minimize possible environmental impacts.

LETTER #A-27
COMMENTS

RESPONSES

In case it is not clear where this property is located it is on the Nevada, Utah Border located in Millard County. Thank you for letting me make these comments and I trust you'll make the right choice.

Sincerely

Mrs. Linda D. Hackethorn

Hackethorn
HC 33 Box 33405
Ely NV 89301

LETTER A-27

LETTER #A-28
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

September 3, 1992

Don Hendricks
609 N. Crestline Dr
Las Vegas, NV 89107

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Donald W Hendricks

LETTER A-28

[redacted]

LETTER #A-29
COMMENTS

1730 So Labrador
Las Vegas
Nevada
702-431-0052

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Alex Hewitt
Alex Hewitt

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-29

LETTER #A-30
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

Diana Hewitt
530 Delfern Lane
Las Vegas
Nevada 89109
702-731-4191

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Diana C Hewitt

LETTER A-30

LETTER #A-31
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

1730 LABRADOR
LAS VEGAS, NEVADA
89122

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

JOSEPH B HEWITT IV

LETTER A-31

LETTER #A-32
COMMENTS

MARK HUG
2120 GREENHOUSE CT
LV NEV 89134
ph 256-3151

September 3, 1992

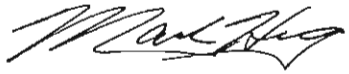
Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,



RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-32

LETTER #A-33
COMMENTS

September 7, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson,

A I am writing to express my concern regarding the proposed Southwest Intertie Project. This project appears to be only marginally (if at all) necessary and would greatly disrupt the character of the landscape in its path and surrounding areas. In fact, there is already a powerline running from Utah to Las Vegas making the proposed project at least somewhat redundant.

B Of primary concern is the disruption and negative visual impact to now remote and natural valleys which are PUBLIC LAND. These areas can be seen and experienced by individuals as they were a century ago but if disrupted can never be replaced. There are numerous archaeological and historical sites in the path of this powerline

C which would be greatly and permanently impacted. Further, bird migration and tortoise habitats would be disrupted by the construction of this proposed powerline.

D I am opposed to the construction of this powerline particularly over new right-of-ways. Even over existing right-of-ways, the economic justification for this project seems marginal at best given the lack of real need for the transfer of power and the significant cost associated with the construction.

Sincerely,

George Huxtable
158 Kellogg Way
Santa Clara, Ca. 95051

LETTER A-33

RESPONSES

A Please refer to the Purpose and Need section in Chapter 1 of the SWIP DEIS/DPA and in the expanded section in Chapter 3 of this document. Also refer to page 2-31 of the SWIP DEIS/DPA for a discussion of how in early 1990 the IPCo discovered that the UNTP would be fully subscribed and would not have the capacity to fulfill the purpose and need for the SWIP. It was in July 1990 that the IPCo decided to expand the project south from the Ely area to Dry Lake. The two major existing transmission lines between Utah and the Las Vegas area are the Sigurd-Allen 345kV and the IPP-McCulloch 500kV DC transmission lines. There is no available capacity on either of these lines.

B It is true that there could be visual impacts to valleys that are remote and largely undisturbed. Impacts in undisturbed landscapes that are not seen from sensitive viewpoints are documented as impacts to scenic quality in the SWIP DEIS/DPA and in Volume III - Human Environment Technical Report.

Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although the undisturbed natural landscapes of open desert valleys possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landseape character. Open desert valley landseapes are characteristic and common to the project study area. The BLM will consider public concerns for scenic quality in its decision process. The BLM uses the VRM System to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model refer to the methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where these technical reports can be reviewed).

C For most species of birds, migration occurs at night at altitudes well above the maximum height of the SWIP transmission line. For species that migrate during the daylight hours, most are characterized by keen eyesight, (e.g., swallows, swifts, and raptors) and are very unlikely to be deterred by the presence of an electrical transmission line. It is unlikely that the SWIP would have any effect on local or regional bird migration patterns.

LETTER #A-33
COMMENTS

RESPONSES

Construction of the SWIP north of Las Vegas, Nevada will have some impact on desert tortoise habitat. However, judicious planning and careful monitoring during the pre-construction and construction phases of this project are expected to reduce potential impacts to desert tortoise to indiscernible levels. Soil disturbances resulting from activities at tower sites and other construction areas may enhance growth of spring annuals and actually increase the forage base for desert tortoise in the area of construction.

D The SWIP will require a new right-of-way specific for a 500kV transmission line. It is not possible to utilize existing rights-of-way that were granted for other uses. These existing or designated corridors have other utilities in them and may be considered "already built upon rights-of way". The SWIP routing alternatives utilized designated or planning corridors whenever feasible in meeting the project needs (also refer to Chapter 1 of this document).

LETTER #A-34
COMMENTS

RESPONSES

Jeremy Kamil
2810 Fulcrester Dr.
LA, CA 90064

KARL SIMONSON
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318.

Memo: No
SoW. Intertie
Please,
- UGly, UNNECESSARY
INTRUSIVE & ecologically
DeCatenizing

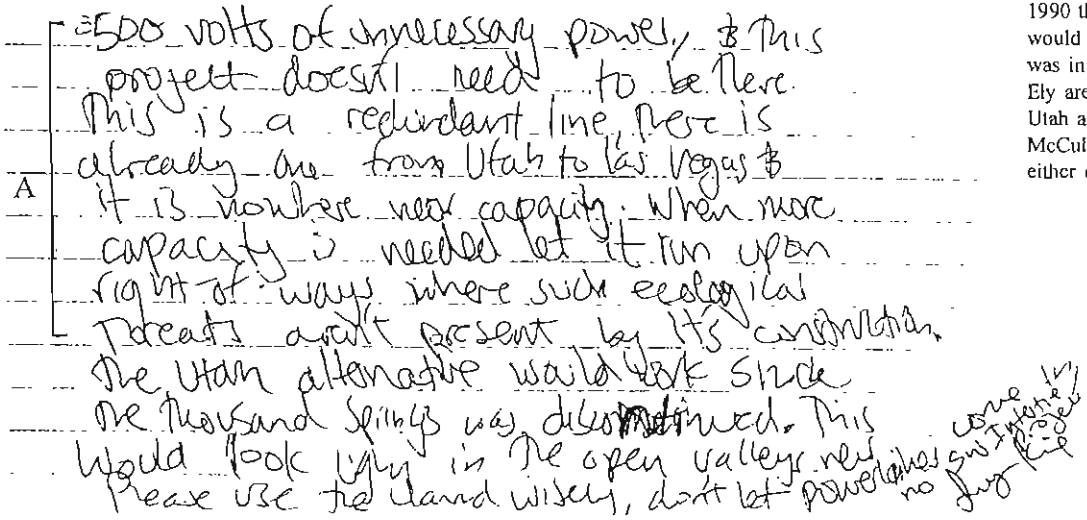
Dear Mr. Simonson,
I know that it is your job at the Bureau to oversee the use of public lands & make sure that they are being used wisely. The Southwest Intertie Project should look as bad to you as it does to me & many of my close friends & colleagues. It ashames me to know that the bureau is even considering such a project that would squander the beauty of untouched mountain ranges in [redacted] eastern Nevada's between 200-400 archaeological sites, [redacted] the integrity of the Great basin National park, the lives of poor hawks & [redacted] eagles that land innocently on the powerlines only to have their lives extinguished by.

1 of 2

LETTER A-34

[redacted]

LETTER #A-34
COMMENTS



A

RESPONSES

A Please refer to the Purpose and Need seetion in Chapter 1 of the SWIP DEIS/DPA and in the expanded section in Chapter 3 of this document. Also refer to page 2-31 of the SWIP DEIS/DPA for a discussion of how in early 1990 the IPCo discovered that the UNTP would be fully subscribed and would not have the capacity to fulfill the purpose and need for the SWIP. It was in July 1990 that the IPCo decided to expand the project south from the Ely area to Dry Lake. The two major existing transmission lines between Utah and the Las Vegas area are the Sigurd-Allen 345kV and the IPP-McCulloch 500kV DC transmission lines. There is no available capacity on either of these lines.

LETTER #A-35
COMMENTS

RESPONSES

Accuracy
Adequacy
Endangered Species.
Resources at Risk

Alfred King

Oasis is the only commercial development along I-80 between Wells and Wendover. It is also the only residential development in this area directly adjacent to the interstate. The proposed power line route is within one half mile of the Oasis commercial area and residence at Oasis. It is within a mile of the residences at the Oasis Mobile Home Park.

Oasis is a natural place for further development. It is at an intersection of a state highway (233) with Interstate 80. A commercial development already exists with services for the highway travelers: fuel, mechanical services, motel, convenience store, and cafe. There is a 48 unit mobile home park that serves as a residential area for the Oasis employees and people who work in Wendover. An electrical substation is located at Oasis and a substantial water system with fire fighting capabilities is in place.

Northern Holdings Incorporated acquired the two sections of property at Oasis in 1988 with the intention of pursuing both commercial and residential development there. The previous owner, Flying 'S' Land & Cattle Company, had demonstrated an intention of development by its activities from 1983 to 1988. These activities included a number of meetings with the Elko County Planning Commission, the Elko County Commissioners, and the BLM.

Northern Holding's plan of development for sections 2 & 3 includes both residential and commercial use under and near the proposed location of the power lines. The power line path runs directly through the middle of section 3, virtually destroying the possibility of development.

Section 3 is the most visually appealing part of the Oasis property. The property lies at the base of the Pequop Mountains, across the mouth of Payne Basis, a beautiful area with many recreational possibilities. Much of this visual beauty will be spoiled by the proposed 150 foot towers and power lines.

LETTER #A-35
COMMENTS

There are several ways that the power line will adversely affect
A the ability of Northern Holdings to develop its property. The first is the direct loss of property. If the easement is 1,000 wide for a mile that amounts to a direct loss of 121 acres. Since the line goes
B down the center of the section it severely restricts the ability to utilize the remaining portions of the section. The visual impact would further reduce the ability to utilized section 3 and would also make section 2 less desirable residentially. The concern about Electromagnetic Fields, real or imagined, would certainly reduce the number of potential residents of the Oasis area. Even if it turns
C out that there are no long term detrimental effects of living or working near powerful Electromagnetic Fields, many, if not most, people are not convinced of that today, and would not knowingly purchase or rent land near a large power line.

The visual impact and concern over EMF's would adversely affect the desireability of Oasis as a stop for the traveling public as well as the potential property owner or tenant.

Interest in Oasis as a residential community is increasing. The population at Oasis rose 24% in the past year: primarily from people who work in Wendover, but would rather live in a more rural setting. The growth has been in tenants at the mobile home park, but there have been inquiries about property in the area available for purchase. Currently, of course, there is none.

Pressure on Wendover housing is high, and with all the possible developments in the gaming and recreation industries, this pressure will likely increase, creating more interest in Oasis as a bedroom community. It is our clear intent to pursue development to satisfy the demand.

Northern Holdings would encourage the BLM to reconsider the placement of the SWIP power lines to a location east of Oasis, at least to the Nevada Northern railroad. Further east would be preferable.

RESPONSES

A The right-of-way requested for the SWIP is 200 feet wide or about 24.5 acres per mile.

B The BLM is unable to assess the specifie visual impacts to future residential areas of Seetion 3 because there are no specifie development plans for this land. Potential visual impacts to future land uses of mixed residential and commereial within Seetion 3 are addressed under "Impacts to the Oasis Area" in Chapter 3 of this document.

C The numerous studies that have been conducted on EMF demonstrate that we are all affected in everyday life. EMFs are generated by microwaves, fluoreseent lights, waterbed heaters, hair dryers, and any other device powered by electricity. The right-of-way width of 200 feet is intended to minimize these effects. Outside of the right-of-way, EMFs are expected to be no higher than those that normally occur in household appliances. Please refer to pages 3-72 through 3-82 of the SWIP DEIS/DPA and the Reeent EMF Research section on page 3-19 of this document for additional information on EMFs.

While various studies of property value impacts have been conducted in the U.S., there is no conclusive evidence to suggest that transmission lines reduce the value or interest of adjacent properties. Some studies have shown no substantial decrease in value, while others have indicated property valnes and interest to be depressed.

LETTER #A-36
COMMENTS

Northern Holdings, Inc.
Box 2124
Wells, NV 89835

September 16, 1992

Mr. Karl Simonson
BLM Project Manager
Burley District Office
Route 3, Box 1
Burley, ID 83318

Regarding: Comments on the EIS for the SWIP in Elko County, Nevada.

Dear Mr. Simonson:

This letter is a follow up to the presentation made by Northern Holding,s, Inc. (NHI) at the August public hearing on the Southwest Intertie Project in Wells, Nevada. At that time we were asked to comment on the adequacy of the EIS. We have also been requested to add any specific suggestions as to route alternatives.

A It is the contention of Northern Holdings that the EIS did not adequately address the adverse impact of the power line route on the private land owners whose properties are to be affected by the construction and continual presence of the power lines. In looking through the EIS it was difficult to find reference to Oasis and even more difficult to see that it had been considered any more than a reference point.

B Northern Holdings received a copy of the SWIP EIS in June 1992. We were surprised to see the projected path of the power lines running through the middle of NHI property at the Oasis interchange on I-80. This was quite a change from the utility corridor published in the 1985 Wells Record of Decision by the BLM.

C Northern Holdings acquired two sections of property at Oasis in October 1988 with the intention of pursuing both commercial and residential development on the property. The previous owner, Flying 'S' Land and Cattle company, had demonstrated an intention of development as documented by its activities from 1982 to 1988. These activities included a number of meetings with the Elko County Planning Commission, the Elko County Commissioners, and the BLM. (Please see Exhibit 'A': Chronicle of Planning Activities.) This chronicle also includes the fact that Northern Holdings has been before the Elko County Planning Commission requesting change to commercial zoning of a portion of the impacted property.

LETTER A-36

RESPONSES

A The development plans for Northern Holdings would have been included in the impact assessment had they been made public or been on file with Elko County. Further, there was no mention of these developments during the public scoping meetings held in March 1989, during the public planning workshop held January 8, 1991 (attended only by representatives of Big Springs Ranch), or in response to the numerous newsletters mailed out throughout the over three-year EIS process.

Future planned developments by Northern Holdings and CSY Development have been considered in the SWIP FEIS/PPA (refer to Impacts to the Oasis Area on page 3-36 of this document).

B The alternative routes evaluated in the SWIP DEIS/DPA in the Oasis area were identified during the regional environmental study (refer to Chapter 2 of the SWIP DEIS/DPA), were presented to the public during the scoping meetings in January 1989, and discussed in several of the newsletters. Some of the alternative routes do deviate from the BLM-designated or planning corridors established by the Wells Resource Management Plan (1985). Some of these deviations are due to environmental issues (e.g., cultural sites and the BLM low-visibility corridor along Interstate 80) along the established corridors and some are a result of project requirements. The SWIP DEIS/DPA contains a draft plan amendment that proposes to change the utility corridors to include these deviations along the selected alternative route. If an alternative route outside of the designated corridors within the Wells Resource Area is selected in the Record of Decision for the SWIP, this decision will serve as a plan amendment to the 1985 Wells RMP Record of Decision. Refer to Plan Amendment on page 1-32 of this document for more information.

C Research with BLM realty specialists and the Elko County planning department did not reveal any proposed developments in the Goshute Valley. Refer to response "A" above.

[redacted]

LETTER #A-36
COMMENTS

Oasis is the only commercial development along I-80 between Wells and Wendover. It is also the only residential development in this area directly adjacent to the interstate. The proposed power line route is within one half mile of the Oasis commercial area and residence at Oasis. It is within a mile of the residences at the Oasis Mobile Home Park.

Oasis is a natural place for further development. It is at the intersection of State Highway 233 and Interstate 80. A commercial development already exists with services for the highway travelers: fuel, mechanical services, motel, convenience store, and cafe. There is a 48 unit mobile home park that serves as a residential area for the Oasis employees and people who work in Wendover. An electrical substation is located at Oasis and a substantial water system with fire fighting capabilities is in place.

D In our discussions with representatives from the BLM, Dames & Moore, and Idaho Power, we were told that in the urban areas where the engineers live, power lines a mile away are not considered a problem. In rural areas, though, power lines of this size a mile away from people create a tremendous visual impact. This is the reason the BLM suggested moving the lines out of the utility corridor as mapped in the Wells Record of Decision (1985). If the power lines create a negative visual impact on the I-80 traveler, the impact must surely be greater on the residents of an area who have that visual impact every time they look out the window of their homes.

This became evident to Northern Holdings after the impressive turn out of Oasis residents at the public hearing. Their comments made it clear that the lines would have an even greater negative impact on the economic and development potential of the Oasis property than was previously anticipated. It was quite clear that the Oasis residents would like to see the power line as far away from Oasis as possible.

The development plan put together by Northern Holdings is phased. The early phases deal with development of the commercial area. Recently 38,000 gallons of underground fuel storage was installed. The next step is to build new fuel islands and extend a water line to connect the mobile home park water system with the water system at the commercial area. Residential subdivision is to follow the commercial area development or possibly proceed at the same time. The first area of subdivision will be in section 2 near the existing residential development at the mobile home park, within a mile of the proposed power line. Planing work has begun on this subdivision. Subdivision of section 3, the section currently proposed as the location of the power lines, would be farther down the road. There is no detailed subdivision plan of section three at the moment, but we are submitting a copy of the Oasis Master Plan that was submitted to the BLM in 1986 by Flying 'S' for the EIS on the Thousand Springs Power Project.

E The record clearly shows the prior intent of Flying 'S', and more recently Northern Holdings, to develop the two sections at Oasis. This development would be made impossible by the presence of the SWIP power lines on or directly adjacent to Northern Holdings property.

RESPONSES

D Visual impacts were assessed from all residences along the alternative routes. Residences were considered more visually sensitive than travelers on Interstate 80. This was part of the criteria used in assessing visual impacts. Table VR-7 of Volume III - Human Environment Technical Report documents that all residences were considered to have high visual sensitivity while travelers on Interstate 80 received a moderate visual sensitivity rating (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

E Future planned developments by Northern Holdings and CSY Development have been considered in the SWIP FEIS/PPA (refer to Impacts to the Oasis Area on page 3-36 of this document).

LETTER #A-36
COMMENTS

Northern Holdings would like to offer an alternative route to the one proposed in the EIS. Since the public hearing, it has become evident that the residents at Oasis feel their lives would be adversely impacted by the relative close proximity of these lines and they would like to see the lines located as far from Oasis as possible.

F The reason given by the BLM representatives for moving the lines out of the utility corridor and running them through the only developments in the valley was that they would be less visible to the highway travelers. With this in mind we would like to suggest that the lines be run along the foot of the hills on the east side of the valley instead of the west side. There they would be less visible than if they were in the center of the valley for both the valley residents and the highway travelers. This would place them much further away from the existing developments than if they were on the west side. There currently are no developments on the east side of the valley to affect.

I understand that this proposal will most likely require additional study. It is unfortunate that it was not considered before, but it wasn't and we need to proceed from where we are today. This version of the EIS is a draft, and it would be best if all the options were taken into consideration before the final proposal is made in the final version of the EIS.

If it is impossible to perform another study, and the lines must be placed within existing study areas, NHI would suggest that the utility corridor in the center of the valley be considered above siting the lines on NHI property. If this alternative is selected NHI would like to see the lines located as far east in the corridor as possible. This would put the lines further away from the developed and developable areas at Oasis.

G To be complete, the EIS must adequately address the adverse impact of the power lines on private property. In many areas the power lines may be entirely on public land. In the vicinity of Oasis, however, there is a great deal of private land and the criteria for evaluating private land should be quite different than that of evaluating public land.

In Summary: Northern Holdings Inc and the populace in and around Oasis strongly recommend that the SWIP lines be routed on the east side of the Goshute Valley, as shown on the enclosed map labeled Exhibit 'B.'

Sincerely

Alfred King

Alfred W. King II
for Northern Holdings Inc.

Enc. - 2
AK/dl

LETTER A-36

RESPONSES

F Acecording to a map of the conceptual development received from CSY Development on October 7, 1992, hunting club areas and reereational use areas are proposed on the east side of the valley and south of Interstate-80. The letter accompanying the concept plan stated a preference for the rail corridor which is also the BLM's planning corridor. This corridor appears to impact the least amount of CSY's property and the conceptual development area. Another reason an alternative was not routed along the east side of the valley is because of the proximity to Bluebell WSA and impacts to low-level military flight operations in the Lucin C Military Operating Area (MOA).

G An extensive regional study was completed for this entire area and was coupled with the BLM's corridor studies completed during their Resouree Management Plan process to plan a set of "reasonable and feasible" alternative routes. The regional study and alternative routes developed during this study were presented to the public during the scoping meetings in March 1989. Refer to Chapter 2 and Chapter 5 of the SWIP DEIS/DPA for a further discussion of the scoping process.

Private lands were not intentionally impacted by the routing alternatives. In fact, during the scoping process the public stated a preference for use of public lands over private lands for routing of alternatives. Private lands and environmental issues were both considered during development and refinement of the alternatives.

Visual impacts were adequately addressed and they do not overemphasize visual impacts of motorists using Interstate 80. Residences were considered the highest sensitivity viewpoints because of the long duration of views, while travelers on Interstate 80 received a moderate visual sensitivity rating. This was part of the criteria used in assessing visual impacts (refer to Table VR-7 of Volume III - Human Environment Technical Report). Refer to Appendix H of the SWIP DEIS/DPA for locations where the technical reports can be reviewed.

LETTER #A-36
COMMENTS

RESPONSES

EXHIBIT A: CHRONICLE OF PLANNING ACTIVITIES

Prior to 1981 Robert J. Beaumont, at that time the owner of Big Springs Ranch, had a preliminary plan drawn for a rest area on section 3.

On January 25, 1983, Flying 'S' Land and Cattle Company filed for "municipal" water rights for the Oasis area. These rights were granted on August 7, 1984. The rights have been maintained annually and are currently still in effect. The permit numbers are #46579, #46580 and #46581, for a combined duty of 1600 acre/feet per year.

An Oasis Master Plan was presented to the Elko County Planning Commission on October 23, 1985 by Flying 'S' as part of a request for a change in zoning and a conditional use permit for the Oasis Commercial Area. This and all other presentations to the planning commission can be verified in the planning commission meeting minutes. The Oasis master plan included additional sections other than sections 2 and 3 that are currently under consideration. The portions of section 3 under the proposed power lines are designated for Agricultural-Residential and Ag-Recreational zoning for housing.

In July of 1986 Flying 'S' and Oasis Energy Corporation presented a land use master plan to the Bureau of Land Management for use in preparing the Environmental Impact Study for the Thousand Springs Energy Project. The master plan included a proposal for residential development on section 3 on the present proposed SWIP route.

On October 22, 1986 Flying 'S' presented the master plan to the Elko planning commission requesting that the commission give an indication that they approved of the concept, that this might create a tool for attracting money for development. The planning commission seemed in favor of the idea and voiced no objections.

LETTER #A-36
COMMENTS

RESPONSES

On January 28, 1987 the planning commission unanimously approved the master plan as stated in the minutes of the meeting. A transparency of the map was left with the county engineer.

On February 18, 1987, the master plan was presented to the county commissioners. The commissioners directed the planning commission not to approve the master plan because it would be a promise of zoning.

On February 25, 1987 the planning commission under the direction of the county commissioners voted that the map was not a master plan, but only a proposal of development.

In the fall of 1987 Flying 'S' lost the title to Big Springs Ranch, retaining, however, sections 2 and 3. Alfred King was hired at that time as Oasis General Manager.

Northern Holdings acquired sections 2 and 3 from Flying 'S' on October 21, 1988. Alfred King was retained as General Manager, due partially to his experience in development planning for the Oasis properties.

On January 25, 1989 Northern Holdings, Inc. requested a change of zoning on sections 2 and 3, from Open Space to Commercial for 238 acres at a preliminary hearing before the planning commission. Steven Crane, an architect with Niels E. Valentinez and Assoc., represented Northern Holdings. The concept presented at that time included a large motel, casino and recreation complex.

The public hearing for change of zoning before the planning commission was held on March 22, 1989. The change of zoning was denied because the project was too ambitious.

LETTER #A-37
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

Dawn K. Lamb
5419 W. Tropicana #3112
Las Vegas, NV 89103

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Dawn K. Lamb

LETTER A-37

LETTER #A-38
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

CHERYL LESUE
6930 ATRIUM
LAS VEGAS, NV 89108

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Cheryl Lesue

LETTER A-38

LETTER #A-39
COMMENTS

JAMES E. LYTNER
359 E. Desert Inn
Las Vegas, NV 89109

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

James E. Lytner

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-39

LETTER #A-40
COMMENTS

4221 West Arby Avenue
Las Vegas, Nevada
89118-5107

September 17, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burly, Idaho 83318

Dear Sir:

I have reviewed the draft of the Southwest Intertie Project (SWIP) DEIS/DPA. I would offer some comments in addition to my oral testimony. I found the document to be a good piece of work. I am concerned with the generality of the alternatives. I would like to know which Wilderness Study Areas (WSA's) rather than the statement *that 57 miles of viewshed from WSA's will be affected.* I suspect that much of that detail was included in the technical reports. The only real complaint I have concerns the availability of the Technical Reports. The Technical Report appears to be the basis for all the substance of the SWIP DEIS/DPA document. A

This report was only accessible at one location in southern Nevada. There was only one copy in southern Nevada. The report was at the

LETTER A-40

RESPONSES

A The technical reports were prepared to document the detailed studies for the SWIP DEIS/DPA. Typically the studies are only documented in the project files and available for public review upon request. However, for a project the size of the SWIP it was considered important to publish a limited number of copies of these studies and make them reasonably accessible to the public.

Additional sets of technical reports have been sent to public libraries in several towns to make them more available for review. Refer to Appendix H in the SWIP DEIS/DPA and the Errata in Chapter 4 of this document for the locations where these technical reports can be reviewed.

LETTER #A-40
COMMENTS

RESPONSES

Las Vegas District Office of the Bureau of Land Management (BLM) and, while the person[1] in charge of these reports was most gracious and helpful, access was limited to normal working hours. I recognize that these *Technical Reports* are expensive to produce, however additional

B This is corrected in the Errata in Chapter 3 of this document.

[1] Her name is Jackie and I compliment her. Her name is not listed in Chapter 6 of the document

copies should have been available. I am sure that had there been more than one copy a person could arrange to borrow a copy for a weekend or such. I quickly skimmed the Volume IV of the Technical Reports and found some things I questioned. I was really surprised when I was told that copies were not available. I only had one additional opportunity to review these documents. I did return to the District Office and with limited time (about a half an hour) did again review parts of Volume IV of the Technical Report. The incomplete comments on the technical report reflect my lack of access to these documents.

I have attempted to comment on specific passages. Each passage is referenced by page and paragraph. This reference will be the page number of the initial sentence of the paragraph even though that paragraph may continue onto an additional page.

Comments on Technical Report

B Page 9-37 Southern Nevada was part of the New Mexico Territory in the 1850's. The Post Office name in 1857 for mailing to present

B day Las Vegas, Nevada was Bringhurst because of the confusion with the *other* Las Vegas, New Mexico. The southern portion of Nevada was never part of Nevada Territory. It was added to the State of Nevada in 1867 after the Territory of Arizona (1863) was created. The next to last sentence on this page needs to be modified to reflect that southern Nevada was part of New Mexico Territory until two years after Nevada Territory was created and then was *Pahute County, Arizona Territory* until January 1867 when it was added to Lincoln County, Nevada. A small point, but one caught quickly skimming the document and one that makes me suspect of the rest of the Technical Reports.

C Page 9-38 Paragraph 1 is erroneous. Jedediah Strong Smith did follow the Virgin River[2] and he did enter present day Nevada, then Mexican Territory at about the present day town of Bunkerville and did continue down the Virgin river until it merges with the Colorado River. This is where the error begins. Smith did not travel through Nevada to the Needles area. He did cross the Colorado into Arizona and traveled around the rugged Black Canyon area one valley west of the river. Again a small point but this was the second page I read[3] of the only Chapter is glanced at within the technical reports. Since there were at least four books of technical reports that concerned me, *(and additional books of data tables I found uninteresting)* and I had only read a page and a half, I was getting concerned.

D Page 9-38 Paragraph 4 could be improved. Antonio Armijo did follow the Nevada side of the Colorado from the Virgin River into present day Nevada. Unlike Jedediah Strong Smith, who crossed

RESPONSES

C This is corrected in the Errata in Chapter 3 of this document.

D The BLM report by Keith Myhrer and others (1990), which is cited in the technical report, reviews the ambiguities regarding Armijo's route. Any proposed connection between the Dry Lake and McCullough Substations (e.g. the Marketplace-Allen Transmission Project) will have to consider impacts on cultural resources, including any remnants of historic trails.

the Colorado there both times, Armijo and his caravan continued down the Nevada side of the Colorado until reaching the Las Vegas Wash. Armijo's group then headed westward into the Las Vegas Valley and on to California. There is some dispute on the route taken out of the Las Vegas Valley but the route into the Las Vegas Valley crosses the proposed route for the connection from Dry Lake Valley to the McCullough Substation. I suspect that connection is an essential link in this project even if not included in the DEIS/DPA. Armijo was here in January, while Yount and

D

[2]The proper name for this river should actually be the *Rio Sulfureo de Las Piramides* as named by the Dominquez-Escalante Expedition in 1776. Jedediah Strong Smith did name the Virgin river. I've been told it was named for one of his fellow trappers, and so the story goes, after the trapper was slain by the Mojaves near Needles, California. I've heard the story but cannot cite a source. If tbat story is true then the river was named in his honor sometime in 1828 or 1829.

[3]Southern Nevada history is an avocation of mine. I selected this because I am familiar with this subject and frankly was spot checking the accuracy of the technical reports.

crew did not show up until fall. Yount traveled the same route as Jedediah Strong Smith's previous two trapping expeditions. Since Yount was later and traveled mostly through Arizona, I suggest more emphasis on the Armijo Route.

I did not peruse paragraphs 2 and 3 because I am less familiar with Northern Nevada. I was really getting suspect about the Technical Report at this time. This elusive document which was sequestered in a limited amount of places, appears to need more public review.

LETTER #A-40
COMMENTS

E The thing that prompted me to return to the District Office to further review the Technical Document was was an apparent error I found on August 20, 1992 at the hearing. I thought I remembered reading about the native southern Nevada Nuwuvi[4] that implied that bear was an important food source and that there was a reliance on winter communal rabbit drives. I thought that the reference cited was Robert Lowie. There is no such reference in Appendix A of the DEIS/DPA. I glanced at this at the public hearing and could not relocate it that night, nor on my subsequent visit because I ran out of time before rereading that portion. I mention this because I would have liked to pursue this further.

I hope to have some, even if limited, future access to the Technical Reports. It goes without saying if an extra set of these Reports was available I would gladly accept them. I request a bibliography of citations in the technical reports on the assumption that those citations are different from the references cited in the SWIP DEIS/DPA Appendix A.

[4]The Nuwuvi are called Southern Paiute in the DEIS. Nuwuvi is to my mind the proper name for these indigenous peoples.

RESPONSES

E Isabel T. Kelly and Catherine S. Fowler report that the Southern Paiute hunted rabbits individually and in drives, and bear was not a significant game animal. ("Southern Paiute" in *Handbook of North American Indians, Volume 11: Great Basin*, Smithsonian Institution, Washington, D.C., 1986, page 370).

LETTER A-40

[redacted]

LETTER #A-40
COMMENTS

DEIS/DPA

F

Page 1-11 An *open marketplace* requires a connection with the McCullogh Substation. Since that connection must run through an Instant Study Area (ISA) that awaits Wilderness Legislation that may not occur this century and this Wilderness Study Area (WSA) blocks the connection. I suggest that the SWIP may be premature.

G

Page 2-5 Energy conservation has a direct impact on local requirements. Local requirements have a direct impact on regional requirements. I fail to see how energy conservation can be eliminated from further discussion simply because energy conservation cannot *alone* be the answer. Why isn't energy conservation and a scaled-down interconnect a viable alternative? I believe that energy conservation should be an integral part of every alternative.

Page 2-5 Alternative methods to generate electricity, especially those that do not consume fossil fuels, are important. Again, alternative methods of power generation may not *alone* be a solution but why isn't alternative power generation and a scaled-down interconnect a viable alternative?

Page 2-5 If energy conservation and alternative generation methods were incorporated then perhaps *"the need to transfer power across these paths"* would not exceed *"their capacities"*.

Page 2-7 If taken as a package unit which includes energy conservation, alternative methods of power generation, and an improvement of existing transmission systems, I question if this document can assert that interconnect access from the northwest would still be needed?

RESPONSES

F It is correct that a connection to the proposed marketplace substation near the McCullough Substation would require a transmission connection through the ISA. Other marketplace substations are planned along the path of the SWIP as outlined in the SWIP DEIS/DPA on page 2-14. In fact, the planned Dry Lake substation at the southern end of the SWIP will a be part of the open marketplace concept. Because planning, permitting, and engineering for projects the size of the SWIP take many years to complete, it is necessary to consider foreseeable future actions that may be related to the project.

G Conservation and demand-side management are an integral part of the resouree strategy of every utility considering partnership in the SWIP. Federal and state regulatory requirements dictate that supply-side and demand-side resource options be considered on an equal basis in a utility's plan to acquire lowest cost resources. Conservation and other demand side management programs are expected to reduce, but not to eliminate, the region's need for new generating resources.

Transmission facilities would contribute in several important ways to the task of the region's utilities to meeting future load growth in the most effieient manner possible and with the smallest amount of new generating capacity. First, it is important to recognize the available seasonal load diversity in the West (refer to Figure 3-1 in Chapter 3 of this document). Transmission facilities can allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (e.g., generation) can be redueed by using transmission. Then, when new regional generating resources are needed, transmission, such as the SWIP, would make more resource options available, and should help minimize costs and environmental impacts.

LETTER #A-40
COMMENTS

RESPONSES

G Page 2-7 If taken as a package unit which includes energy conservation, alternative methods of power generation, and an improvement of existing transmission systems, I question if this document can assert that interconnect access from the northwest *could not* be scaled-down. I beleive that this package along with a scaled-down interconnect would be a viable alternative?

H A single 765kV transmission line, by itself, would not have greater system capacity than the proposed 500kV transmission line. While the 765kV transmission line capability theoretically would be about two to three times greater than a 500kV transmission line, the system to which it is interconnected must be able to withstand its outage. For a transmission line of the length of the SWIP, it is this *system* capability that determines the line capacity. For the foreseeable future, the WSCC system would not be able to withstand the outage of a 765kV transmission line because it would be the WSCC's largest single hazard.

Perhaps in 50 to 100 years, the WSCC system may have developed a sufficient 765kV system to support a 765kV transmission line of the length and location of the SWIP.

H Page 2-7 This *significant additional transmission reinforcement* for voltages higher than 500kV suggests to me that as a member of the public I can have bigger, uglier, sturdier, transmission lines or accept the increased energy loss. Do higher voltage lines have less loss? If one 500kV line will handle the anticipated load then the 765kV voltage option does not need to considered *unless* there would be less energy loss with the transmission of higher voltages. The squandering of non-renewable resources should always be considered. Again, does higher voltage mean less loss, or just less amperage for the same wattage.

This project does not exist in a vacuum. The White Pine Power Project (WPPP) threatens to run three more of these lines to Dry Lake Valley. If we could reduce that number of transmission lines by running 765kV or higher voltages then *"the western system"* should consider using these higher voltages.

Could not a package which includes energy conservation, alternative methods of power generation, and an improvement of existing transmission systems reduce the 1200 megawatt objective.

I A DC transmission alternative for transmitting 1200 MW of power from the Midpoint Substation to the Dry Lake Area would cost about $488 million ($200M for line and $144M for each line DC substation terminal) compared to $356 million for the proposed AC transmission line. As pointed out in the SWIP DEIS/DPA, the ability to tap is considerably more difficult with a DC transmission alternative. The cost of each tap is an order of magnitude greater ($100+ million vs. $10 million) and is not included in the $488 million estimate for the basic transmission line.

The actual efficiency of a comparable DC alternative would depend upon the design of that system (i.e., voltage rating and conductor selection). For example, the Pacific DC Intertie transmission line has been uprated twice in its history, once to increase its voltage rating and the other to increase its capacity rating. The line was originally designed to operate at 1600 MW and +/- 400kV. A 1200 MW flow at +/- 400kV would have generated 8.6 percent loss. In the 1980s, the Pacific DC Intertie was uprated to +/- 500kV and is now capable of transferring 3100 MW. For a 1200 MW flow on the current DC system, the losses would be about 5.7 percent compared to 6 percent for the SWIP.

I Page 2-7,8 Does DC travel greater distances with less loss? If that is the case then the added expense must be weighed against the value by reducing the loss of energy. Since the increase in carbon dioxide

LETTER A-40

I (CO_2) by the rapid consumption of non-renewable fossil fuels may have climatic, environmental and political repercussions, I would hope that the use of Direct Current Transmission[5] would not be dismissed so quickly.

Page 2-9 I concur that the adverse effects do not outweigh the cost and adverse effects of digging up the desert to run power through it.

J Page 2-9 Could not the potential of new transmission methods be viable answers if we use energy conservation, alternative methods of power generation, and improve existing transmission systems. This would allow the postponement of this action until such technology[6] is commercially available.

[5]If indeed Direct Current Transmission has lower loss.

K Page 3-3 Why does Jarbidge rate above Great Basin National Park? Why does Jarbidge rate above the Ruby Mountain Wilderness Area? What specifically is a Prevention of Serious Deterioration (PSD) Class II area? How does a PSD Class II area differ from a PSD Class I area? Who ranks these areas? Why does our National Park get shorted? This paragraph raised many more questions than it answered as far as I am concerned.

L Page 3-5 Soils in *"true desert"* may erode easily and they may not. The composition of the soil determines that far more than the lack of moisture attributed to being a "true desert". Muck about with the surface of chaparral, sagebrush or pinion-juniper and if the base is silt it will erode once the protective vegetation is disturbed.

J The feasibility of superconducting transmission lines has not been demonstrated. For superconducting overhead transmission to be feasible in the future, the operative temperature would need to be ambient air temperature instead of the supercooled condition which is required under the current technology. Sub-ambient air temperature superconducting transmission would generally be installed underground with its associated costs and technical difficulties.

At the present time there is no scientific evidence supporting the hope that this transmission technology will be developed in the next 20 years. As a result, superconductivity is not believed to provide a basis for the delay of the SWIP.

K During preparation of the SWIP DEIS/DPA, an error was made with regard to the identification of Class I and Class II PSD areas near the study area. Jarbidge WSA is not the only Class I area. It is one of three. The other two Class I areas are the Great Basin National Park and the Mt. Moriah Wilderness Area.

The PSD classes and the regulations governing the classification of areas are described and corrected in the Errata in Chapter 4 of this document.

L True, all desert is not the same. The statement about desert soils in Lincoln, Nye, and Clark counties is general. The erosion hazard potentials vary as is indicated in the SWIP DEIS/DPA; Table ER-5 (Descriptive Summary of Soils by Corridor Link), Table ER-6 (General Soil Units in Project Area), and Table ER-7 (Summary of Soil Resource Inventory) in the *Volume II - Natural Environment Technical Report*; and the Ground Disturbance Impacts to Soils table in the *Data Tables for Natural Environment*. The construction methods, including rehabilitation of all disturbed areas, will be planned in detail during the development of the Construction, Operation, and Maintenance Plan (refer to page 1-34 of this document).

Muck around in desert with rocks in the soil and the first frost after a rain will repair the surface and erosion will not necessarily be a problem. If the desert is silt, fine sand, or whatever you have a problem. If it's coarse sand like decomposed granite you don't. All desert is not the same! Take that from a motorcycle racer who has twenty-five years experience in locating race courses where the longterm effects are negligible, and avoiding areas where the soil types invite erosion. There are portions of your proposed route that traverse sections[7] any responsible race promoter would avoid because they are so sensitive to surface disturbance. The dryness of the region does influence erosion. Flash flooding does L

[6]Transmission line loss over long distances has got to be a major waste of energy resources. Superconductors or some other future technology may well be the answer to such losses. If we can postpone construction until such technology is developed we may not need to further degrade our public lands

[7]Link Number 671 goes through such an area while the soil six miles west is much more stable. This is link number 671. I would have liked to see the route west of the dry lake north of US 93 followed but continuing north to intersect link 673.

cause erosion and disturbed soils do erode faster than undisturbed soils, however the soil type is the primary factor in determining the erosion potential.[8] All soils erode but some erode a lot more than others.

Page 3-34 This is where you discuss dispersed recreation activities. Power lines provide roads which allow access and on an individual basis allow access without significant further environmental impact. These roads might be welcome if they did increase the numbers of those seeking access. The cumulative effects of in- M

RESPONSES

M The Midpoint to Dry Lake segment of the SWIP would be operated and maintained by the IPCo. The IPCo proposes to request that the BLM assign the Ely to Delta segment right-of-way grant to the LADWP which would construct, operate, and maintain the transmission line on this segment of the SWIP. Both utilities are concerned about vandalism (e.g., shooting insulators, etc.) as well as the potential liability of sanctioning use of their rights-of-way for other uses (e.g., motorcycle races). However, the LADWP, the IPCo, and affected land management agencies will work with any organized group that has a legitimate reason to utilize their rights-of-way, if their liability concerns can be satisfied.

creased access may outweigh the positive effects that low impact access provide. The first goal of the Sierra Club was to *"explore, enjoy, and render accessible..."*[9] the wildness of the region. The enjoyment of these features, so long as that enjoyment does not significantly degrade the land, should be encouraged. Powerline access roads fill a valid role in the management of the public lands for the public.

This is one of those places that the SWIP DEIS/DPA fails. There may be no way to include these benefits to the public because these benefits do not depend on what is decided in this action but the *attitude* of the power company that maintains them. As a user of these lands openly question what kind of a neighbor we will get. Will it be Idaho Power or will they turn their line over to the Los Angeles Department of Water and Power? What kind of public responsibility can we expect? It has been my observation that those power companies that service the area where the transmission lines are located make good neighbors. The Lincoln County Power company (?) and Nevada Power Company have always been good neighbors. The California Power companies bring their 'Califphobias' across the border and often don't make good neighbors. What kind of a neighbor are we getting? Will this

M

[8] I ain't a geologist but I'll stake my poke that's true.

[9] The Sierra Club's first stated purpose was "to explore, enjoy, and render accessible the mountain regions of the Pacific Coast."

LETTER #A-40
COMMENTS

M neighbor make a concerted effort to discourage others from using his right-of-way? Can amicable relations be established? Can responsible individuals hunt without being accused of *"only shooting insulators"*? Can a motorcycle race be routed along an access road without unnecessary protestations from the power company? The point is one of attitude. The vast majority of land users are responsible. These users sympathize with utilities over such irresponsible actions. The attitude of the power company is much more important than requirements written into an Environmental Impact Statement (EIS).

N Page 3-65 The Pahrocs and parts of the Delmar Range also offer viewpoints that if known better would make your list. There is no reason to believe additional *special places* don't exist along the proposed corridor. These hidden treasures are important to those who do currently enjoy them. A transmission line is not a welcome addition to a pristine area. The routes selected show planning, an attempt to reduce or mitigate effects where possible, and they may indeed offer the less offending routes **BUT** they will still offend and they will still intrude on the wildness, wonder, and solitude of the land.

O Page 3-72,82 High voltage, the megawattage and extent of the effects of this megawattage are of concern to me. While I am pleased to see the extent of consideration developed in the DEIS/DPA, I still urge mitigation. Ground potential differences trouble me. I am not versed enough in such hazards to adequately comment. I urge those responsible to follow through on this assessment. The pile of evidence is mounting and it does not appear to be very good.

LETTER A-40

RESPONSES

N There may be special places along the alternative routes that may not have been considered as sensitive viewpoints. However, the BLM has considered all important viewpoints that we are aware of or were disclosed to us by other agencies, interested organizations, and the public during the several years of studies for the SWIP DEIS/DPA process.

O The known effects of EMF are disclosed in Chapters 3 and 4 of the SWIP DEIS/DPA. EMF is an especially difficult issue and conclusive results may not be known for years. Refer to the EMF sections in Chapters 3 and 4 of the SWIP DEIS/DPA and the Recent EMF Research section on Page 3-19 of this document for more information. Also, refer to the grounding standards that would be utilized for the SWIP on page 3-19 and the mitigation measures #11 and #16 in Table 1-6 in Chapter 1 of this document.

LETTER #A-40
COMMENTS

Page 4-69,75 Your document, my knowledge of existing regulations, and responsible public interest are sufficient to assure me that cultural resources will be adequately addressed.

Page 4-78 Utility corridors scare me. That damnable Kern River Pipeline is a utility. The wholesale destruction to habitat, the devastation of the land surface, and the longterm visual scar produced is appalling. Every action needs environmental review! Another pipeline fiasco cannot be allowed to happen. The concept of utility corridors scares me because they reduce the future responsibility of agencies to properly manage our public lands.

P Page 4-78 The WPPP and the Utah-Nevada Transmission Project (UNTP) cannot be divorced from the SWIP. There is a degree of co-dependency even if each project could stand alone. Together these projects exceed the sum of their separate analyses. The cumulative effects of these projects must be considered. The role of each project must be considered from the broader perspective of the overall developement of a western regional grid.
The connection between Dry Lake Substation and the McCullogh Substation is critical. This issue is not decided and the results of that decision are critical to any analysis of the SWIP.

Q Page 4-88 The Thousand Springs Debacle has been abandoned. This was a misconceived plan much better solved with energy conservation. The fact that this is listed makes me suspicious. So does the Thousand Spring Facility Siting Area. Can I expect to see an attempt to resurrect this threat[10] to the best air in the our nation?

R Page 4-89 That 'or' at the end of the fourth line is mighty scary. Does that imply that if the SWIP corridor is utilized that Clark County

RESPONSES

P The cumulative effects of the WPPP and the UNTP have been evaluated in the SWIP DEIS/DPA (refer to Chapter 4). The SWIP DEIS/DPA process does not attempt to be a programmatic EIS, as you suggest it should. It is instead a proposed project with a specific purpose and need that is in no way dependent on the success or failure of the WPPP or the UNTP. Refer to response G above, Chapters 2 and 4 of the SWIP DEIS/DPA, and the Marketplace-Allen Transmission Project section on page 3-14 of this document.

Q The SWIP is in no way tied to the Thousand Springs Power Project. However, NEPA requires that "foreseeable" future projects be addressed under cumulative effects. The Thousand Springs Power Project was a current proposal during the SWIP EIS process. It appears now that it has been withdrawn from further consideration.

R There is no intent to imply anything about the Clark County water project. However, it was necessary to address it under cumulative effects as a reasonably foreseeable future action.

R can construct a 36-inch pipeline without environmental review? After the Kern River Pipeline fiasco, such a possibility is not acceptable. I have seen what irresponsible pipeline construction can do to our public lands and it will not happen again!

S The suggested routing alternative would not respond to concerns of Nellis Air Force Base for potential conflicts with low-level flight operations. Further, impacts to the silty soils on the east side of Dry Lake Valley are more easily mitigated than are other potential impacts. The statement that there no routing preferences were recorded at the Las Vegas public workshop was an error that has been corrected in the Errata in Chapter 4 of this document.

Page 4-89 The Kern River Project was way too destructive. Federal and State biologists are not the only ones concerned about the effects of such an action on the land. Tortoise migration, habitat, and my visual sensibilities were offended by that project.

[10]The Thousand Springs Site was in the middle of the location of the least polluted air in the continental United States.

Page 4-90 I return to the world of energy conservation. I reject any alternative that does not include energy conservation as a integral part of the proposal.

Page 5-4 Distribute the technical report to those who express an interest.

Page 5-10 I attended the workshop in Las Vegas. I objected to the east side route because of the silty soil on the east side of that valley. I championed a corridor route that ran due south from about mile 3 of link 673 to mile 33 of link 671 and then down the west side of that valley to Link 690. I am saddened to see that my objections and preferences were not recorded. I am discouraged to see that they were not even considered. I resent the statement that *"no route preferences were recorded at this meeting"* because I indeed raised them at that workshop.

S

Conclusion

I expressed my concerns at the public meeting. I found the document to be done professionally and for the most part accurately. I do have general concerns about the following:

- Corridors should not automatically allow the construction of other utilities. This especially means pipelines and other surface threatening actions.
- Future utility use of these corridors should be subjected to the same judicious, environmental, cultural, aud economic review.
- Whatever can be done should be done to assure that the utility that has the final control over the transmission line acts like and is a good neighbor.
- Energy conservation should be included in all alternatives.
- The SWIP is a piece in a much larger puzzle. Environmental review of the total package should be included.
- Any option that would reduce or lessen the consumption of fossil fuels should be considered. The time to worry has past and the time to act is now. Global warming is a threat that must be taken seriously.
- The loss of energy through transmission line loss should be minimized. Any option that would accomplish that should be considered.

LETTER #A-40
COMMENTS

T The scoping process suggested benefits that I could not find in this document. Is there a potential to lose the benefits of renewable energy such as when water goes over a spillway during spring thaws? This concern was important to me. Could we bank additional energy in Lake Mead if this project was completed? Allowing this lake to rise in the spring protects the fry. What precautions will be utilized to protect U birds from high tension lines? Will anything be done to promote birds like eagles that could use these transmission towers for nesting sites? Did I miss this?

I thank you for your effort in this draft. I would like a copy of the first four volumes of the technical report. I do want a copy of the references cited in the technical report. I do wish to review the final EIS.

Sincerely,

Robert W. Maichle

RESPONSES

T Traditionally, the Northwest has not foregone energy production by spilling water past unloaded turbines because of a lack of regional transmission capacity. During the spring runoff period, thermal generation in the Northwest is either off-line for annual maintenance or at minimum operating levels allowing utilities to absorb most of the region's hydro generation. If hydro generation exceeds the Northwest's needs, additional energy may be delivered to the Southwest using the SWIP transmission line. This low cost hydro energy could displace higher cost resources in the Southwest.

U There are no plans to encourage species such as golden eagles to use the transmission line towers for nest sites. It is likely that eagles will utilize towers for nesting without nest-site enhancing structures being placed on the towers. Interestingly, the use of towers for nest or perch sites along some portions of the route, especially in northeastern Nevada, is considered to be a negative impact to sage grouse, which may be preyed upon by golden eagles.

Refer to Avian Collision Hazard on page 3-89 of this document.

LETTER A-40

LETTER #A-41
COMMENTS

RESPONSES

KEN MILLER
50 ALAMO
BERKELEY, CA 94708

A Your comments are noted and will be considered in the BLM's decision process.

Dear BLM 9/15/92

I am writing to condemn the proposed powerlines from Idaho to Las Vegas. There is no REAL need to violate the beauty of the landscape or endanger wildlife when existing right of ways would suffice - even if the energy were appropriate & necessary which is very controversial.

Please put your efforts into preserving the Lewis migration route, archaeological & historical sites, and scenic open valleys all of which would be detrimentally affected by these ugly, noisy, hazardous powerlines - and the work to build & maintain them.

LETTER A-41

LETTER #A-41
COMMENTS

RESPONSES

Thank you for your consideration of my comments

sincerely

Ken Miller

LETTER #A-42
COMMENTS

September 10, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, ID 83318

RE: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE SOUTHWEST INTERTIE PROJECT

Dear Sir:

A I am very concerned about the Crosstie route, and the choice by BLM and by LADWP of the 230KV Corridor Route. I feel it is the responsibility of land managing agencies to select the best alternative for the environment. It is hard for me to understand why BLM did not choose the environmentally preferred Cutoff Route.

Great Basin National Park and the Mount Moriah Wilderness Unit of the Forest Service are national treasures located in a rural area of Nevada. They should be held in trust for future generations without additional development that would degrade their values.

The environmental damage that would be created by a 500KV line is of a much greater magnitude than the damage associated with the present 230KV installation. New groundbreaking and associated clearing would remain in this area for probably centuries, and the 500KV line would be much better located away from our National Park. The old 230KV lines were not subject to as much environmental scrutiny as projects of today, so I would not think that consolidating corridors reasoning should be the reasoning that is considered for this project. Great Basin National Park had not been established, and the Mount Moriah Wilderness had not been

B designated at the time the 230KV line was installed. Those wooden poles are relatively inconspicuous, and from a distance they blend in with the terrain, BUT they are also not pleasing to see in this pristine setting. I would hope that the Bureau of Land Management would not select this route today for the 230KV lines, so the 500KV line, with its proposed steel towers should not be considered to add to this environmental damage.

RESPONSES

A The BLM used nine selection criteria as described on pages 2-56 and 2-57 of the SWIP DEIS/DPA. The selection of the 230kV Corridor Route as the Agency Preferred Route is explained on pages 2-57 and 2-58 of the SWIP DEIS/DPA. Also refer to the Cumulative Effects section on page 3-12 of this document.

B It is true that visual impacts will occur if this project is constructed. The visual impacts are disclosed and documented in the SWIP DEIS/DPA on pages 4-35 through 4-45. Wood pole H-frame towers do tend to be perceived as more acceptable, visually, in foreground views. However, it is also true that in most landscapes, steel lattice towers tend to be less visible at a distance than the wood pole H-frame towers, or in this case, corten tubular steel H-frame towers. Note that the corten tubular steel H-frames (visually similar to wood towers) have been used as visual mitigation in foreground views at the crossings of U.S. Highway 6/50 and may also be used in other areas.

LETTER #A-42
COMMENTS

The people of Nevada now have a National Park in the Snake Range after many years of work to create this through legislation. This site was chosen over seven other areas in Nevada and Utah, because the Snake Range showed both the basin and range in a relatively pristine condition. This provides interpretive and educational possibilities for all people, and powerlines would detract from that experience...OR the powerlines would provide the view that would show the land management to be insensitive, uncaring, or not responsive to the environment. I feel BLM should be above just taking the easy way, and consider the environment first in all selections. The view and quality of the present experience would be fundamentally changed and have a negative impact.

I feel the alternative route for the Crosstie that was worked out during the scoping process, and designated as the environmentally preferred Crosstie route is the best for all concerned, including the Bureau of **Land Management**. The Cutoff Route avoids major visual damage to Great Basin National Park and the Mount Moriah Wilderness, and is preferable for most other human and environmental reasons also. Your document reports to be committed to minimize environmental impacts whenever possible even at reasonable increased project costs. This commitment would be verified by placing the lines on the Cutoff Route. I feel the Cutoff Route has a much less environmental impact to the National Park and Wilderness and also to the people who live in this area.

C I would first recommend **NO ACTION**, since no need for the Crosstie was demonstrated. If any action is necessary, then I would strongly recommend the Cuttoff Route to protect Nevada's only National Park and surrounding wilderness areas from this significant environmental impact.

I appreciate you considering my comments when you make your decision. I hope your decision is based on what is best for the land on this earth, and especially ours here in Snake Valley.

Sincerely,

David E. Moore

David E. Moore
P. O. Box 91
Baker, Nevada 89311

RESPONSES

C The purpose and need for the Ely to Delta segment of the SWIP has been expanded in this document (refer to Chapter 3). Your comments will be considered during the BLM's decision process.

LETTER #A-43
COMMENTS

Mia Mia Palmeri
2235 Windsor Drive
Henderson Nv 89014

September 3, 1992

Kent Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment. I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Mia Mia Palmeri

LETTER A-43

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER #A-44
COMMENTS

RESPONSES

Stella R. Quinto
8085 Canto Ave
Las Vegas, NV 89117

September 5, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely, Stella R. Quinto

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-44

LETTER #A-45
COMMENTS

Comments on draft EIS — Southwest Intertie Project

To: Mr. Karl Simonson
Bureau of Land Management
Burley District Office

A This EIS goes into considerable detail describing the impacts the SWIP would have on the areas it might run through. The differences in various impacts along the different proposed routes are also laid out it detail. However little attention is given to mitigation of these impacts, except in a few specific cases such as through Pashranagat Wash. General mitigation measures, especially applying to construction activities, are described briefly in one table; but the benefits from these mitigation efforts are not evaluated with any care.

B The impact of the powerline, as described in the EIS, will clearly be quite significant; and evidently it will not or cannot be mitigated. Although the EIS makes a quick reference to the economic justification for this powerline, there is no credible attempt to balance the environmental impact against the alleged economic benefits. In fact, it appears that in one case where costs might be higher (the option of a route along existing corridors through Salt Lake City), that is the basic reason to exclude the route from further EIS consideration. Since arranging access rights along the route from other utilities and working out a suitable passage through Salt Lake City are hardly unsolvable problems, and since the

RESPONSES

A The impacts described in Chapter 4 of the SWIP DEIS/DPA are those remaining after applying the mitigation measures found in Tables 1-5 and 1-6 of this document. The process of considering mitigation for each specific impact location is described on page 4-2 of the SWIP DEIS/DPA. Additional information on the impact assessment/mitigation planning process is found in each of the technical reports (refer to Appendix H in the SWIP DEIS/DPA).

B Dropping the routing options through Salt Lake City from further consideration does not make the SWIP DEIS/DPA incomplete or flawed. On page 2-31 of the SWIP DEIS/DPA there is a discussion of the SWIP's need to be expanded from the Ely area to Dry Lake (northeast of Las Vegas). The first two paragraphs of page 2-10 of the SWIP DEIS/DPA discuss the elimination of the Salt Lake City alternate route. The additional length required by this route from Midpoint to Dry Lake has two effects: 1) the capacity drops significantly (to 600-800 MW) and 2) the cost increases proportionally. The result of these two effects makes the route uneconomical and unreasonable. There are also obvious impacts associated with routes through the Salt Lake City area (very significant land use and visual effects). Please refer to Chapter 1 of the SWIP DEIS/DPA and Chapter 3 of this document for more information on the Purpose and Need for the SWIP.

LETTER #A-45
COMMENTS

B excluded route would have better met various environmental goals stated at the beginning of the report, I feel its exclusion is symptomatic of ways in which this EIS is incomplete and flawed.

C The EIS claims that public policy should favor this project because it increases the opportunities for economic competition between utilities. Yet I should think the goal of an open marketplace in the grid system could be well achieved just by legally preventing other utilities from maintaining monopoly-like control over alternate routes. As it is, this project looks like a large contribution of public resources for the specific benefit of Idaho Power.

D Maintaining them as public lands has been one of the few forces preserving what few remaining open spaces remain in the US. Every effort should be made to leave our few remaining pristine desert valleys in their current state. Yet the EIS seems to presume that public policy is to do just the opposite. In many cases the powerline could be run through already impacted lands such as those used for ranching, mining, by the military, or that are privately owned. Yet the EIS explicitly prefers to bypass such impacted routes and instead to consume more of the pristine public lands that are a rapidly disappearing national resource. The EIS never attempts to justify this bias, not as a rational public planning decision, nor on environmental grounds.

RESPONSES

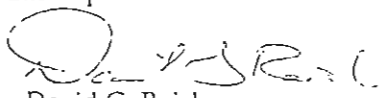
C The SWIP would not create a monopoly-like control in the utility industry. In fact, the converse is true. On page 1-11 of the SWIP DEIS/DPA it is stated that the SWIP is a "new concept where buyers, sellers, and wheeling utilities are part of a coordinated group that allows them to transaet business with each other without burdensome wheeling charges, access policies or other barriers to trade."

D On page 3-7 of the SWIP DEIS/DPA it is stated that during project scoping, the public voiced preference for alternative routes to cross public lands rather than private lands. Nevada is largely public lands managed by the BLM. The BLM attempted to avoid private lands where possible. However, for the most part, there was little choice but to cross either some public or private land on the various alternative routes. The impacted lands were not avoidable. In southern Idaho the alternative routes cross large parcels of private lands that are irrigated agricultural areas. In these areas the routes impact farming operations. Most of the alternative routes were routed along existing roads to minimize both ground disturbance and increased public access into remote areas. Many of the alternative routes also utilize designated utility corridors parallel to existing transmission lines (refer to the Land Use Map in the SWIP DEIS/DPA Map Volume).

LETTER #A-45
COMMENTS

E More pernicious yet, however, are the cases where a route is justified based on misplaced "environmental" criteria. This is most particularly the case where so-called "visual impact" is considered. The "visual impact" criteria show no respect whatsoever for preservation of intact open spaces. Instead, the impact is said to be greater when the powerline is visible from areas already impacted by human activities, and less when the powerline is routed through previously pristine remote desert valleys where it would totally devastate existing visual qualities. This turns the concept of environmental impact on its head! There are precious few places one can travel nowadays, whether by vehicle or foot, where human impacts are not terribly evident.

F Finally, note that all proposed routes threaten desert tortoise habitat north of Las Vegas. This is an area that was devoted to providing safe desert tortoise habitat, having been traded for other areas in the immediate Las Vegas vicinity to allow continued development there. Consequently it now deserves more stringent protection. While the EIS notes how the proposed powerline would further threaten tortoises, it offers no effective mitigation measures at all, and no route alternatives are proposed to avoid this impact.



David G. Raich
2463 Scenic Avenue
Oakland, CA 94602
3 September 1992

RESPONSES

E Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although undisturbed natural landscapes of open desert valleys possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landscape character. Open desert valley landscapes are characteristic and common to the project study area. The BLM will consider public concerns for scenic quality in its decision process. The BLM uses the VRM system to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model refer to the methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

F Construction of the SWIP north of Las Vegas, Nevada will have some impact on desert tortoise habitat. However, judicious planning and careful monitoring during the pre-construction and construction phases of this project are expected to reduce impacts to desert tortoise to indiscernible levels. Soil disturbances resulting from activities at tower sites and other construction areas may actually enhance growth of spring annuals and increase the forage base for tortoises in the area of construction.

LETTER #A-46
COMMENTS

August 7, 1992

Mr. Jim Jensen
Dames & Moore Project Manager
for Environmental Studies
PO Box 1601
Boise ID 83701

Dear Mr. Jensen:

Please limit the Swip Transmission to areas whose natural beauty & scenic value will not be compromised by it.

Thank you.

Sincerely,
John Savarese
74 Mobile Ave.
Staten Island
NY - 10306

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-46

LETTER #A-47
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

September 3, 1992

Terri Schilling
3412 Miramar Dr
LV. NV 89108

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Terri Schilling

LETTER A-47

LETTER #A-48
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

SEPTEMBER 6, 1992

KARL SIMONSON
BLM, BURLEY DISTRICT
RT. 3, BOX 1
BURLEY, ID 83318

SIR:

THERE ARE TOO MANY ADVERSE AND UNNECESSARY IMPACTS TO VIEWS, TORTOISES, RAPTORS AND THE GREAT BASIN NATIONAL PARK TO PERMIT ANOTHER UTILITY CORRIDOR OR POWERLINE FROM IDAHO TO LAS VEGAS VIA EASTERN NEVADA.

LETTER A-48

LETTER #A-48
COMMENTS

RESPONSES

"NO ACTION" IS THE RIGHT ALTERNATIVE REGARDING THIS PROJECT.

SINCERELY YOURS,

James E. Simmons

JAMES E. SIMMONS
5036 THATCHER DRIVE
MARTINEZ, CA 94553

LETTER #A-49
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Virginia Spencer
2235 Natalie Ave
Las Vegas Nv 89109
(702) 735-9217

LETTER A-49

[redacted]

LETTER #A-50
COMMENTS

850 E. Desert Inn #712
Las Vegas, NV 89109
September 17, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

Re: Southwest Intertie Project.

With regard to the Southwest Interie Project Draft Environmental Impact Statement/Draft Plan Amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely;

Bruce Steurer

Bruce Steurer

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-50

LETTER #A-51
COMMENTS

RESPONSES

850 E. Desert Inn #712
Las Vegas, NV 89109
September 17, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

Re: Southwest Intertie Project.

With regard to the Southwest Interie Project Draft Environmental Impact Statement/Draft Plan Amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely;

Jane Steurer

Jane Steurer

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-51

[redacted]

LETTER #A-52
COMMENTS

TO: MR. KARL SIMONSON
FROM: MARIS VALKASS
SUBJECT: POWER LINES ACROSS NEVADA
DATE: 9-16-92

GENTLEMEN:

IT IS MY UNDERSTANDING THAT THERE IS A PROPOSAL TO BUILD A NEW POWER LINE(S) FROM IDAHO TO LAS VEGAS, NV.

THE LINES WOULD BE BUILT IN AN UNSPOILED AREA.

IT SHOULD BE BLM'S POLICY TO RESTRICT OPENING OF NEW AREAS FOR ANY DEVELOPMENT IF IT IS AT ALL POSSIBLE TO USE EXISTING DEVELOPED AREAS OR RIGHTS OF WAY. ROUTES SHOULD BE CONSIDERED AFTER A COMPLETE ENVIRONMENTAL IMPACT HAS BEEN STUDIED, AND CONSIDERATION MUST PRIMARILY GIVEN TO ENVIRONMENTAL

LETTER A-52

RESPONSES

A The SWIP DEIS/DPA and this document address your concerns. Additional information on the Purpose and Need of the SWIP is on page 3-1 in Chapter 3 of this document. Your comments are noted and will be considered in the BLM's decision process.

LETTER #A-52
COMMENTS

RESPONSES

AND SCENIC CONCERNS AS OPPOSED TO ECONOMICS OR MONEY MAKING POSSIBILITIES.

AS I UNDERSTAND IT, THERE IS NO NEED FOR THIS NEW POWER LINE. ALL REQUIREMENTS CAN BE MET BY EXISTING FACILITIES. PLEASE, DO NOT APPROVE IT.

MARIS VALKASS
1728 VAN HORNE, W. REDONDO BEACH, CA 90278

LETTER #A-53
COMMENTS

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

September 3, 1992

Karl Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely,

Clara Watson
4202 Hallendale
L.V. N.V 89117

LETTER A-53

LETTER #A-54
COMMENTS

NORMAN WELLER
[illegible]
BISHOP, CALIF. 93514

Grace W. Enfield
262 Academy #A
Bishop, CA 93514

Sept.9,1992

Karl Simonson
BLM
Burley District Office
Route 3 Box 1
Burley, Idaho

Dear Mr, Simonson:

Was alertedto the Southwest Intertie Project and the EIS put out for it by your Office.
Comment time for it is short so will use the following printed statements. They are similar to those my Sister and I used for a proposed intertie corridor here in Owens Valley, handled by the Bishop Office of the BLM. As Avocational Archaeologists we deplore the opening up of large Archaeologically sensitive areas to Vandalism due to easy access from right-of-way maintenance roads. B

☛ Support the "NO ACTION" Alternative. No powerline should be routed down our fast disappearing natural valleys unless things are really desperate. No justification is presented in this report which shows a compelling need for the line. In fact it is a redundant line to compete with another Utah to Las Vegas powerline. Neither will run anywhere near capacity.

☛ Support the use of existing already built-upon right-of-ways rather than any designation of new right-of-ways. The impact on a new area is FAR greater than expanding an already built-upon right-of-way. When more capacity is really needed let it be added to the existing routes in Utah. The study dismissed the Utah alternative prematurely based in part upon the assumption that the now discontinued Thousand Springs plant would be built.

☛ Mention the immense visual impact to now-open valleys. The existing criteria for judging the visual impact of powerlines is skewed against preservation of NON-BUILT upon areas. Under the formula an unspoiled valley where few people go is considered less important than the valley which already has a main truck route through it. The BLM should be defending the open public lands against new encroachments, not assisting in their destruction. A

☛ Mention significant desert tortoise impact especially in the Pahranagat Wash area where power lines and highways compete for space with wildlife and wilderness study areas. Powerlines are favorite places for ravens to perch while seeking young tortoises as prey. B

LETTER A-54

RESPONSES

A There would be significant visual impacts to the scenic natural landscapes of public lands. Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although undisturbed natural landscapes of open desert valleys possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landseape character. Open desert valley landscapes are characteristic and common to the projcet study area. The BLM will consider public concerns for scenic quality in their decision process. The BLM uses the VRM System to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model refer to the methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

There would be impacts to desert tortoise, although mitigation measures taken during construction should be very effective in reducing or eliminating these adverse effects. The question of transmission line impacts on hatchling tortoises is a subject of ongoing study. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure, and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. It is unlikely that perch site availability is currently limiting the potential for raven predation in the project area. B

LETTER #A-54
COMMENTS

C ☛ Mention significant hawk and raptor impacts. This powerline runs the same north-south route taken by one of the largest hawk migrations in North America. The Goshute Range is a concentration point for the birds as they travel south from Canada and the northwest in the Fall. Every year numbers of hawks and eagles are killed by high voltage power.

D ☛ Mention impacts on Great Basin National Park. The favored route runs a powerline over Sacramento Pass just north of glaciated Wheeler Peak in the Snake Range.

E ☛ Mention the impact on an estimated 200 to 400 archaeological and historical resource sites in the direct path of the powerlines. An estimated 50 to 125 of these are expected to have "significant value", however NO consistant inventory has been made.

Please adopt the NO ACTION Alternative and put a stop to this destruction of Public Lands.

Very truly yours,

Jorunn Weller Grace Weller Enfield

RESPONSES

C Given the structural configuration of 500kV transmission lines, the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission line proposed for the SWIP would utilize V-guyed steel lattice, self-supporting steel lattice, and tubular steel H-frame towers. The spacing between conductors on towers is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on towers in such a manner that they are 23 to 32 feet apart. Further, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (refer to the SWIP DEIS/DPA pages 2-12 through 2-14). Because of the distance between conductors and the tower, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the tower.

The BLM acknowledges that numbers of raptors are killed each year in the United States as a result of electrocution. Most such incidents occur, however, on lower voltage distribution lines.

Refer to Avian Collision Hazard on page 3-89 of this document.

D The proposed 230kV Corridor Route is approximately 2 miles north of Great Basin National Park and 4-5 miles north of Wheeler Peak. To further minimize visual impacts to travel routes leading into the park, several mitigation reroutes through Sacramento Pass have been evaluated (refer to Sacramento Pass Mitigation Reroute on page 3-39 of this document).

No significant visual impacts to viewpoints in Great Basin National Park would occur because of the distance of the alternative routes from these viewpoints. Non-specular conductors and steel H-frame towers across the highway would minimize other adverse visual effects of the SWIP.

E If one of the routes is approved by the BLM, there will be a cultural survey completed for any potentially disturbed areas, (e.g., rights-of-way, access routes, assembly yards) prior to any ground disturbing activities. Refer to mitigation measure #9 in Table 1-6 of this document. All Cultural resource impacts will be mitigated.

LETTER #A-55
COMMENTS

RESPONSES

Sept 16, 1992

KARL Simonson
BLM Burley Dist Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson,

I am a Resident of Snake Valley Utah-Nevada area and also a Farmer there, I have just heard about a 500 kV power line to be built through this valley along side 2 already existing 230 kV lines and I am in direct Protest of this. I AM probably the most

A

A Refer to the Sacramento Pass Mitigation Reroute section on page 3-39 of this document for a comparison of the alternative that crosses your fields versus one that avoids your fields on the north side. The alternative route on the north side of your fields has been selected as the Agency Preferred Alternative (refer to page 1-9 of this document).

LETTER A-55

affected property owner in this area as there are at least 8 pole sites Right through my fields already and not any word from a responsible party that another is planned. A

Of all the room in this large Realitivitly un ~~Regulated~~ area I would even like to know why by changing a fraction of degree the direction of existing one-person property could not easily have been completely missed in the ~~Route~~. I have to work daily under these lines and it is not just the fact that I can't receive any Radio waves under them but health ~~issues~~

LETTER #A-55
COMMENTS

RESPONSES

Hazards may also be indicated. Also Aerial crop dusting for me is nearly impossible etc. etc.

I understand there is an alternative route meaning it is total unnessary to cross this area. Please use the alternative Route.

I don't know if this will reach you in time. I think some sort of notdication to people directly impacted by big business decisions in time to respond would be desirable.

Sincerely

Darwin C. Wheeler

P.C. Box 40 Garrison, Ut. 84725

Darwin C Wheeler

LETTER A-55

LETTER #A-56
COMMENTS *Howard James Whitaker*

7 September 1992

Mr. Karl Simonson
Burley District Office
Bureau of Land Management
Route 3, Box 1
Burley, ID 83318

Dear Mr. Simonson,

RE: Southwest Intertie Project EIS

I am opposed to the use of additional public land not now used as transmission corridor being used for subject project, particularly when the proposed right-of-way transits so close to Great Basin National Park and through so many other ecologically sensitive areas. To support my opposition, I would call your attention to the following:

A 1. The EIS fails to support the economic need for the powerline and therefore there is no justification for routing it through now-open Nevada valleys;

A 2. When the economic justification for new powerlines can be made, then construction of such should only be allowed within existing power-transmission corridors. Adversely impacting now-open valleys is indefensible, yet the EIS gives little weight to such;

B 3. Adverse desert tortise impact can be expected, as powerlines are used by ravens as perches while seeking young tortises as prey. Furthermore, powerlines bring roads, roads bring ORV's and smashed tortises are the result (I've seen plenty of it);

LETTER A-56

RESPONSES

A Refer to the expanded Purpose and Need section in Chapter 3 of this document. It is not possible to route the SWIP parallel to existing utilities for its entire length. The BLM has selected the alternative routes based on planning methodology to minimize impacts, and has subsequently studied the potential impacts of each route to select an alternative that minimizes impacts to the degree possible.

Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although undisturbed natural landscapes of open desert valleys possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landscape character. Open desert valley landscapes are characteristic and common to the project study area. The BLM will consider public concerns for scenic quality in its decision process. The BLM uses the VRM System to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model refer to the methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

B There would potentially be impacts to desert tortoise. However, the committed mitigation for desert tortoise will help to reduce adverse impacts.

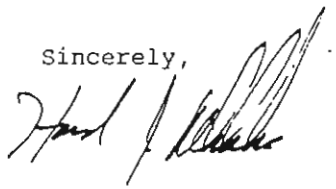
LETTER #A-56
COMMENTS

RESPONSES

C 4. Adverse raptor impact is inadequately addressed. The proposed route and area are both significant for migration and concentration.

I keep hoping and hoping that BLM will one day give wildlife, wilderness and preservation at least equal status with consumptive use of our public lands, but am continually disappointed. Is this going to be a repeat?

Sincerely,



C The entire SWIP route is not an area of known raptor concentration or migration. However, there are portions of the route where raptor populations are known to be of significance. The BLM has identified habitat and nesting areas of species such as ferruginous hawk, golden eagle, bald eagle, and peregrine falcon as areas of concern. The presence of these species has influenced the route selection process over the entire suite of alternative routes and links considered.

The introduction of the SWIP transmission line into the habitat of these species is not likely to significantly affect the continued existence of any of them. On the contrary, concern has been expressed for other species (e.g., sage grouse) because construction of the line would provide more nesting and hunting sites for some raptor species (e.g., golden eagle) with a resulting adverse impact on sage grouse.

2041 Campton Circle • Gold River, CA 95670-8301 • Home (916) 631-0565 • Pvt. Office Phone/Fax (916) 852-8990

LETTER #A-57
COMMENTS

Connie Wilcox
1612 Justin Pl.
Hend. Nv. 89015
(702) 566-6738

September 5, 1992

Kent Simonson
Bureau of Land Management
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

Re: Southwest Intertie Project

With regard to the Southwest Intertie Project Draft Enviromental Impact Statement/Draft Plan amendment, I would like to state that I am in favor of using a route away from Arrow Canyon. Arrow Canyon should be fully preserved for not only future generations but our generation as well.

Sincerely, Connie Wilcox

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-57

LETTER #A-58
COMMENTS

RESPONSES

DR. TERENCE PRESTON YORKS
45 East 500 North
Logan, Utah 84321
801-753-4647

AUG 5

29 July 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

The following comments apply to the Southwest Intertie Project (SWIP) Draft Environmental Impact Statement (DEIS), a copy of which you were kind enough recently to forward to me. My background for this response includes formal training in physics and systems engineering (at the master's and doctoral levels), as well as considerable professional experience in energy modeling and in other environmental quality areas.

While contemplating how to respond to this document, I encountered words from Mihaly Csikszentmihalyi which seemed particularly apropos, "The task is to learn how to enjoy everyday life without diminishing other people's chance to enjoy theirs". Unfortunately, philosophy at this level does not play much of a part in the current EIS process, despite how much better the public could be served thereby. The massive SWIP document set instead focuses on minutiae. With the exceptions noted below, it appears to deal with the finest details with authority.

LETTER A-58

LETTER #A-58
COMMENTS

However, the DEIS in its present form contains truly pivotal material that is grossly oversimplified in several very critical areas. The document is fatally flawed as a result. You will need, accordingly, to revise your time schedule for a final decision because of these sins of omission in the current publication. The situation regarding the SWIP is not merely a question (as it now presented) of *where* to build a transmission line, or of *how*, but also of *whether* this transmission project is justified at all.

A Nevertheless, as one aware of EIS projects' normal progress, let me begin with the technical issues that need more specific attention. Where the numbers to back up the contention (pages 2-7 and 8) that DC (instead of AC) transmission is "too expensive"? In asking this, I am haunted by a mailing that I received some years ago from an electric utility (in this region) which asked me to join with them, as a CO-OP user, in opposing "too expensive" pollution controls. That set of controls, if installed at that time, would have spared the atmosphere thousands of tons of sulfur dioxide annually. When I got past very similar rhetoric to that found in the present DEIS and to the actual calculations used at that time to define "too expensive", that actual cost amounted to less than one one-hundredth of a cent per kilowatt hour. Hence, especially given the high transmission losses involved in long-distance transport of electrical energy (as is the case with the proposed SWIP), reviewers need to see the hard numbers used to define the term "too expensive". Next, those calculations need to be explicitly compared within the EIS to the cost savings that would come from the greater efficiency inherent in DC transport of power. This comparison, to be fair, needs to be made at the marginal cost of producing the power that would be lost in the AC option -- including new, unsubsidized generation costs, and the associated pollution impacts -- over the full lifetime of the project.

B Related to that issue, why is the absolute magnitude of transmission losses never given within the DEIS? Over the distances described, and at the intensity specified, they are sure to be quite significant. Power lost

RESPONSES

A A DC transmission alternative for transmitting 1200 MW of power from the Midpoint Substation to the Dry Lake Area would cost about $488 million ($200M for line and $144M for each line DC substation terminal) compared to $356 million for the proposed AC transmission line. As pointed out in the SWIP DEIS/DPA, the ability to tap is considerably more difficult with a DC transmission alternative. The cost of each tap is an order of magnitude greater ($100+ million vs. $10 million) and is not included in the $488 million estimate for the basic transmission line.

The actual efficiency of a comparable DC alternative would depend upon the design of that system, (i.e., voltage rating and conductor selection). For example, the Pacific DC Intertie transmission line has been uprated twice in its history, once to increase its voltage rating and the other to increase its capacity rating. The line was originally designed to operate at 1600 MW at +/- 400kV. A 1200 MW flow at +/- 400kV would have generated 8.6 percent loss. In the 1980s, the Pacific DC Intertie was uprated to +/- 500kV and is now capable of transferring 3100 MW. For a 1200 MW flow on the current DC system, the losses would be about 5.7 percent compared to 6 percent for the SWIP.

DC and AC transmission lines cause similar environmental impacts. Although DC transmission line towers have two conductors as opposed to three for AC transmission lines, the towers for a DC transmission line would be similar in size because of increased clearance requirements for DC. Further, DC substations are larger and also require neutral ground mats that are quite large.

B The losses incurred on the SWIP would depend upon the loading at any given time. For a 1200 MW transfer, the losses would be about 6 percent. Below the 1200 MW level the percent losses would be reduced. For example, at 600 MW the losses would be about 3 percent.

LETTER #A-58
COMMENTS

B during transimission is also sure to require considerable additional generation capacity to replace, with all the ancillary environmental and economic costs that that entails. Transmission losses are not a factor that should be wholly ignored, as they now are.

C Further related to such losses is the specification on page 2-13 of aluminum as the conductor of choice. The use of copper could nearly halve transmission losses (and many of the problems associated with corona discharge that were discussed within the DEIS in some detail). Let's see, accordingly, a full cost/benefit comparison of a copper conductor alternative. That also needs a thorough inclusion of all related costs of transmission losses over the life of the project.

D Following the discussion of copper versus aluminum, the issue of an underground placement will need to be revisited, since lower losses mean less heat generation, thus possibly negating the central objection to the underground option.

E Shifting to the issues of soils and vegetation, on page 4-89 the similarity of SWIP and the Kern River Gas Pipeline is mentioned. Why are the notable failures in revegetation, and the exacerbated soils disturbances, beyond those anticipated in that specifically-called similar project's EIS <u>not</u> explicitly mentioned, instead of merely hinted at? Many of these failures are currently involved in serious litigation, since the damage was so obviously done. Why are additional restraints on construction techniques not accordingly added to this DEIS, and then underlined? The current throw-away line that desert soils are difficult to revegetate is hardly sufficient!

F Under visual impacts, on page 4-39 and in Tables 4-1 and 4-2, "dulled metal" is suggested to mitigate disturbance (where bothered with at all) by the proposed powerline to the visual environment. In the closely-related case of what are actually less visually disruptive gas and petroleum wells, terrain-appropriate painting is now required, since it is well-proven to

RESPONSES

C The equivalent electrical copper conductor size to the proposed 1590 kcmil aluminum conductor is 1000 kcmil. The weight of this size of copper conductor is 3.1 lb/ft. versus 1.8 lb/ft. for the aluminum conductor. The cost of aluminum conductor is quoted as $.80/lb and for copper conductors is $1.52/lb. Therefore, the copper conductor sells for $4.71 per foot versus $1.44 per foot for aluminum. Additionally, the copper conductor has a low strength to weight ratio which would necessitate additional and higher structures than would be required using the aluminum conductor. The project estimated conductor cost using aluminum is about $37.4 million versus $122.2 million for copper.

D The SWIP DEIS/DPA does not mention the most limiting technical restraint to transmitting AC power via underground cables. Voltage control along the cable can limit the distance AC power may be transmitted. The voltage control requirements of a 500kV underground cable are 20 times greater than a typical overhead line. For the SWIP project, this would require facilities spaced evenly (every 5 to 10 miles). The cost of the reactive facilities alone would exceed $220 million (15,000 Mvar). Also, copper is a component of most high voltage underground transmission cables which would further increase costs.

E If the SWIP is approved by the BLM, a specific revegetation and restoration plan will be developed as part of the Construction, Operation, and Maintenance (COM) Plan (refer to page 1-34 of this document). The reference on page 4-89 of the SWIP DEIS/DPA does not draw a similarity to the disturbances of the SWIP and the Kern River Gas Transmission Pipeline. It states instead that the Las Vegas Valley Water Development Project may cause similar disturbance to the Kern River Gas Transmission Pipeline. The discussion under Cumulative Effects in the SWIP DEIS/DPA refers to potential reasonably foreseeable future actions within southern Nevada. The ground disturbance caused by the SWIP would be much less significant than a pipeline project of this magnitude (also refer to Table 2-1 of the SWIP DEIS/DPA).

F "Terrain-appropriate painting" is not considered an appropriate mitigation for the treatment of transmission line towers in the landscapes that would be affected by the SWIP. First, painting towers would be very expensive and maintenance would be very labor-intensive. There are numerous examples of this type of tower painting in the West in a wide variety of landscapes. There

LETTER A-58

F dramatically reduce visual-line contrast. Why is a similar option of terrain-appropriate painting of transmission towers not discussed, and then, why is it not required as mitigation? It would seem feasible to satisfy the separate needs of the FAA and the on-ground-viewer by angle-specific tinting.

G Further, given the ubiquity of additional development activity over time, why is the "out-of-(current)-sight, out-of-mind" mentality preserved in this DEIS, and why are not all, rather than just some, towers required to be minimally intrusive in their visual design?

H Relatedly, and introduced on page 4-37, the various photo-simulations of visual impact do not take into consideration the contrast actually perceived by area users who wear contrast-enhancing glasses. This is not a trivial point, since in this bright desert, near-desert, and/or higher altitude environment, the use of dark glasses, including polarizing and similar filters (e.g., haze-cutters such as Corning's trade-marked 'Serengeti Drivers'), will be in fact more common than not. Therefore, in the photo-simulations, the towers need to be darkened by a factor of at least two, and their boundaries sharpened. The towers are virtually certain to be more noticeable visually than they have been represented in the figures presented (even if one cynically adds in the air-quality degradation that will result from the additional electrical energy use and generation that would be occasioned by this project, through its losses, and if the lower prices it promises come about).

I This brings us to the more general issues which have been avoided in the DEIS. Primary among these is the downward spiral in environmental quality that consistently has been brought on by lowering either economic or local environmental apparent energy costs to end-point users. In studies which seem to have been conveniently overlooked within this DEIS (as it now stands), immediately lower out-of-pocket cost are well proven to encourage additional electricity use, and to decrease attention to conservation or to real productivity. As population and other demands

are few cases that demonstrate that this technique would be more successful in mitigating visual impacts than dulled towers, especially considering the substantial cost and the potential for additional environmental impacts associated with frequent access to towers and spillage of paint, thinners, and other chemicals.

G The visual assessment does not use an "out-of-(current)-sight, out-of-mind mentality". First, we have considered future land uses wherever possible. Second, the visual model assesses impacts to the scenic quality of landscapes irrespective of how it is seen. For more information refer to Volume III - Human Environment Technical Report for the full methodology and results of the visual assessment (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

H It is unlikely that the majority of viewers would be wearing "Serengeti Drivers". The photo-simulations were prepared to depict typical viewing conditions without correcting for weather, atmospheric conditions, or other circumstances that might alter the perception of the landscapes viewed.

I The requirements for least cost resource acquisition by the utilities which become partners in the SWIP would insure that the SWIP would not be developed as an alternative to conservation. Rather, the SWIP would be evaluated by potential partners in the project as part of a strategy for meeting load growth at lowest cost using conservation programs and the sharing of existing regional resources. At some time in the future when new regional generating resources are needed, transmission systems, such as the SWIP, would make more resource options available, and should help minimize costs and environmental impacts.

Long-term costs, not immediate out-of-pocket costs, are used by utilities and regulatory agencies to measure the costs of alternative resource options. Participation in the SWIP would be evaluated on this basis by the utilities considering partnership in the project. Also refer to response J below.

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COMMENTS

grow, this strategy eventually and inevitably increases, rather than decreases, the kinds of problems that are listed as primary justification for the SWIP. I

This consideration, which is not covered within the DEIS, is especially important because long distance transmission of electricity is even explicitly noted to allow the related degradation that results from of local action to be transferred elsewhere. Similar past projects have already permitted Los Angeles and Las Vegas to ship pollution that they themselves could not allow to Arizona (e.g. the Page plant that is now being painfully at least partially housebroken), to New Mexico (at the Four Corners plant, whose airborne effluent was literally visible from the moon), and to Utah (the carefully hidden from the public Intermountain facility that is to be tied into SWIP). The second-to-the-last comment on page 2-11 in the DEIS seems the very essence of the underlying operating philosophy, which could be more simply expressed by an Anglo-Saxon containing analogy: my backyard, as a result of my activities, is getting stinky; therefore it's now time to start pissing over my neighbor's fence so that I can do even more of what created the waste in the first place, without bothering to consider its consequences. Accordingly, the opening quote of this letter needs explicit inclusion and discussion within the cumulative impacts section of the SWIP-EIS, since it is precisely SWIP's long-distance transmission ties that allow such placing of ones' electricity-use effluent in someone else's backyard. J

Somewhat less sarcastically, perhaps, but no less importantly, on page 2-2 and following, how can a complete document discuss the costs and potential of conservation without even mentioning the name of Amory Lovins, or quoting his group's, and so many others (including Southern California Edison's), <u>much</u> more encouraging figures? This omission is clear proof that considerably more work needs to be done before a fully-informed decision on SWIP's justification can be made. K

LETTER A-58

RESPONSES

J Conservation and demand-side management are integral parts of the resource strategy of every utility considering partnership in the SWIP. Federal and state regulatory requirements dictate that supply-side and demand-side resource options be considered on an equal basis in a utility's plan to acquire lowest cost resources. Conservation and other demand-side management programs are expected to reduce, but not to eliminate, the region's need for new generating resources.

Transmission facilities can contribute in several important ways to the task of the region's utilities to meet future load growth in the most efficient manner possible and with the smallest amount of new generating capacity. First, it is important to recognize the seasonal diversity of loads within the region. Transmission would allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (e.g., generation) can be redueed by using transmission. Then, when new regional generating resources are needed, transmission, such as the SWIP, would make more resource options available, and should help minimize costs and environmental impaets.

The SWIP partieipants are expected to include only utilities which have found through their least cost planning that the transmission capacity provided by the SWIP would be a eost effective strategy to acquire the new resources needed to serve load growth.

Also refer to expanded discussion of Purpose and Need in Chapter 3 of this document.

K Refer to Response J above.

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COMMENTS

As a sub-point here, on page 2-5 in the DEIS, how was the stated conclusion reached that conservation has only a local impact? As an unsupported opinion, as it now stands, it seems both specious and inadequate, especially when the basic decision of whether or not to build is so directly related to it, and so much literature exists to suggest quite the opposite conclusion. Another issue also should be included as a portion of these discussions. A primary form of increased productivity is increased efficiency, and the very definition of increased efficiency is the use of less energy. America's economic competitors, particularly in Europe and Japan, have learned this lesson well; why is this factor ignored here?

L Hence, why are the real costs and more complete benefits of conservation not more directly compared to those of the proposed project? (It is curious in this regard that even immediate economic cost of the SWIP is never mentioned.) This a special key to the overall point. Many of the utilities that are indicated to be partners in SWIP have explicit legal requirements to realize conservation alternatives as their <u>first</u> choice for action, not just, as stated in the DEIS, when they are the immediate lowest cost option. Why is this requirement not mentioned in the DEIS? What happens when these companies start to take their legal mandate more seriously? What happens if the rest start to take into more consideration the needs of the rest of planet, or if the rest of the planet starts to make them aware of that need? In direct counterpoint to the statement made on page 4-90, there is more solid evidence available that all conservation directly, absolutely, and repeatably reduces global warming. These are just two among many reasons for a more thorough re-evaluation of this alternative.

M Finally, why (on page 1-5) are utility projections of future demand presented as if they are gospel truth (to two significant figures, no less, and without indicating a margin of error!)? Should not the not-so-distant past failures of these same sources' real-world accuracy, and the massive financial results of those failures in prediction validity (e.g., the $5 billion lost with WPSS), be mentioned alongside the estimates now presented?

RESPONSES

L Refer to Response I above.

M Current utility forecasts of resource requirements recognize the fact that the future is uncertain and take steps to reduce the risks resulting from that uncertainty. For the same reasons that investors diversify investment portfolios to minimize the risks associated with individual stocks, utilities seek to diversify their system resources to minimize the risks associated with individual resource options. To reduce the risks associated with load growth uncertainty, utility planning favors resource options which can be developed in the shortest possible length of time. Reducing the "lead time" of resource options allows the actual commitment to construct a resource to be made at a point when forecasting uncertainty has been reduced as much as possible. By increasing the number of resource options available to a utility, the SWIP would serve as a tool for reducing the risk of over-building or under-building generating resources as a result of load and resource uncertainties.

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COMMENTS

RESPONSES

Relatedly, on page 1-7, is not California, especially Southern California, now experiencing a decline in population growth rates, which may soon turn into a net out-migration, rather than continued growth as indicated? Certainly, neighboring, and more distant, areas are reporting an influx of California businesses and their employees. Why is this possibility not mentioned, along with the very real possibility that neither electric demand nor immediate area population demand will occur as claimed, and why are not these points discussed in more detail?

M

It seems amazing, in conclusion, that the recent dismissal of the closely-related proposal for the Thousand Springs Project in Utah is mentioned just in passing in the SWIP DEIS, and quite inappropriately without examining the very valid reasons why that project was set aside. The SWIP project seems, by reflecting upon what it now leaves unsaid, to deserve a similar oblivion.

N

To achieve its rightful place, however, whatever that fate may be, the SWIP EIS needs a more complete document regarding its key environmental and economic relationships, rather than just concentrating on deep coverage of its ancillary details (no matter now important these may be). As it now stands, the SWIP DEIS reminds me of a dog that is designing a very carefully constructed and comfortable bed, but without noticing that he was doing so in the middle of a passing lane of a major highway.

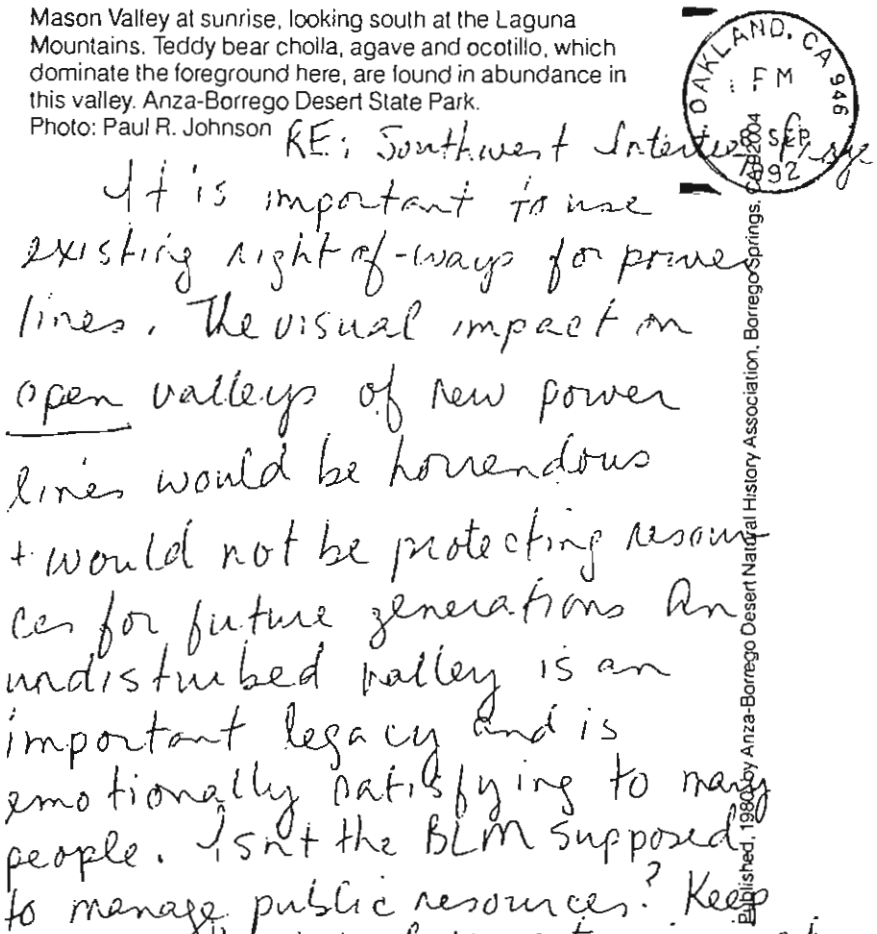
Yours sincerely,

Terence P. Yorks

Terence P. Yorks, Ph.D.

N The SWIP is in no way tied to the Thousand Springs Power Project. However, NEPA requires that "foreseeable" future projects be addressed under cumulative effects. The Thousand Springs Power Project was a current proposal during the SWIP EIS process. It appears now that it has been withdrawn from further consideration.

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COMMENTS



Mason Valley at sunrise, looking south at the Laguna Mountains. Teddy bear cholla, agave and ocotillo, which dominate the foreground here, are found in abundance in this valley. Anza-Borrego Desert State Park.
Photo: Paul R. Johnson

OAKLAND, CA 946
FM
SEP 2004
892

RE: Southwest Interconnect Project

It is important to use existing right-of-ways for power lines. The visual impact on open valleys of new power lines would be horrendous + would not be protecting resources for future generations An undisturbed valley is an important legacy and is emotionally satisfying to many people. Isn't the BLM supposed to manage public resources? Keep the visual impact minimized by protecting open valleys

Published, 1980 by Anza-Borrego Desert Natural History Association, Borrego Springs, CA

RESPONSES

A Your comments are noted and will be considered in the BLM's decision process.

LETTER A-59

COMMENT LETTERS AND RESPONSES FROM ORGANIZATIONS

LETTER #B-2
COMMENTS

RESPONSES



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September 10, 1992

Karl Simonson
U.S. Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

Greetings. Citizen Alert is a 2600-member statewide citizens organization founded in 1975. Our mission is to address significant environmental, nuclear and military issues from the perspective of how these impact the land, economy and people of the Great Basin. Following are our comments on the Southwest Intertie Project (SWIP) Draft Environmental Impact Statement (DEIS):

- As no need for the crosstie has been demonstrated, and the project will result in environmental degradation around Great Basin National Park, we urge the "no action" alternative.

- The environmentally preferred Cutoff Route, and NOT the Crosstie Route must be the preferred route should the project go ahead at all. To cite the FLPMA policy of consolidating corridors "where possible" as the reason for supporting the Cutoff Route is ludicrous and disingenuous in the extreme. The present 230 kV lines are invisible compared to the odious specter of massive steel towers and 500kV lines. What a wonderful first impression to give visitors to Great Basin National Park! BLM admits it is concerned about the visual effects of the Cutoff Route on page 2-48. Transfer this concern into action, and mandate the environmentally preferred route.

A

A

A The visual impacts of the 230kV Corridor Route, including those to Great Basin National Park viewpoints, are accurately described on page 4-45 of the SWIP DEIS/DPA. Refer to Table 2-5 for a summary of the environmental comparison and pages 2-57 and 2-58 for the reasons that the 230kV Corridor Route is the Agency Preferred route. Also refer to page 3-12 in this document for a description of cumulative effects. Your preference for the Cutoff Route is noted and will be considered in the BLM's decision process.

LETTER B-2

LETTER #B-2
COMMENTS

B

- The DEIS suggests potential human health risks exist from exposure to high voltage transmission lines. Unlike the Crosstie Route, the Cutoff Route avoids homes and farms, greatly reducing continual human exposure to electromagnetic radiation. As any expert in this field (who is not on the payroll of an electrical utility) will tell you, the Cutoff Route is clearly more acceptable from a public health perspective.

- The DEIS states the Corridor Route and the Cutoff Route have similar environmental impacts. This would be credible only if you did not consider visual pollution and continual human exposure to electromagnetic radiation, both of which are guaranteed by the Corridor Route and greatly minimized by the Cutoff Route.

Finally, if the Los Angeles Department of Water and Power and BLM were genuinely committed to minimizing environmental and human health impacts, there would be no question about which route to pursue. Thank you for considering our views.

Sincerely,

Bob Fulkerson

Bob Fulkerson
Executive Director

RESPONSES

B Please refer to Cumulative Effects on page 3-12 of this document for additional information regarding environmental comparisons of the Ely to Delta segment routing alternatives. Also refer to Electric and Magnetic Fields on page 3-72 of the SWIP DEIS/DPA and Recent EMF Research Results on page 3-19 of this document.

LETTER #B-3
COMMENTS

RESPONSES



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September 17,1992

Karl Simonson
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Re: ADDITIONAL COMMENTS on SWIP DEIS

Dear Mr Simonson,

Citizen Alert has submitted comments on the Draft Environmental Impact Statement (DEIS) for the Southwest Intertie Project (SWIP). The following additional comments are submitted by Citizen Alert's Southern Nevada Office in Las Vegas.

PURPOSE AND NEED: SWIP is a proposal by Idaho Power Company (IPC) 500 mile 500 kV powerline from Shoshone, Idaho to Dry Lake Valley near Las Vegas. The stated purpose is to allow for north-south power transfers.

The DEIS does not present adequate information to show a need for SWIP. A transmission line to a desert valley in southern Nevada does not satisfy the stated need for power transfers with the Southwest. Obviously. SWIP would be a component of a complex regional system, but this DEIS does not give enough information on this system to indicate the feasibility of either the regional system or the SWIP component. A

There is not enough information to support a choice of Dry Lake Valley aa terminus, nor is there sufficient indication of why substations need to be located at Thousand Springs, Ely, and possibly Delamar. One is left to infer that SWIP is dependant on plans to locate coal burning generators at these sites and that SWIP will encourage rather than defer new power projects. B

LETTER B-3

A Additional information is presented under Purpose and Need in Chapter 3 on page 3-1 of this document. The SWIP DEIS/DPA was not intended to evaluate the regional transmission system.

B Potential interconnections have been identified in the Wells and Ely areas which could provide significant load or interconnection service to the local utilities. The SWIP would require series compensation sites located along the line for voltage support. Due to the nature of series compensation stations, these sites would also be a good location for any interconnections that may be desired by other utilities. The SWIP would not be dependent upon any specific power plant integration. Refer to page 1-3 in Chapter 1 and the Marketplace-Allen Transmission Project under Cumulative Effects on page 3-14 of this document.

LETTER #B-3
COMMENTS

C The analyses of power demand in the Northwest and in the Southwest are not adequate to show need for SWIP. In fact it appears from the DEIS that the higher rate of load growth in the Southwest in winter makes SWIP less feasible. The "balanced demand peaks" in the IPC service area indicate a similar conclusion.. The coastal regions with the highest demand already have existing transfer systems as well as the new Third AC Intertie project.

"Reliability," which essentially means a proliferation of widely spaced powerlines redundantly connecting the same points is not sufficient justification for SWIP which represents a secondary, seasonal power source: the high environmental costs outweigh the meager benefit, "Enhancement of the electrical grid" is not sufficient justification for defacement of the Great Basin.

D The DEIS mentions few benefits to rural Nevadans from SWIP. Employment opportunities are limited and of short duration. If SWIP is intended to increase the availability of low cost power to rural areas in the state, this is not mentioned.

E This DEIS also applies to a proposed 200 mile "Crosstie" from Ely, Nevada to Delta Utah. An examination of the relationship of these two different projects is essential under cumulative impacts. However, the purpose and need for the two projects do not coincide, and the crosstie project should not be submitted for decision in this document. The argument that "Los Angeles Department of Water and Power, will probably reapply" for this transmission line is inadeguate to justify including the Crosstie in this DEIS, especially since the overwhelming public response to the scoping hearing in Delta, Utah was "no more transmission lines."

Citizen Alert urges the NO-ACTION ALTERNATIVE because of lack of sufficient need for SWIP.

F PROJECT ALTERNATIVES; While the EIS considers alternative routes it does not consider real alternatives to the project such as alternate energy sources,including energy efficiency. While the mention of some of the existing energy efficiency programs in the Northwest and Desert Southwest is a plus, there is inadeguate discussion about expanding these programs. The omission of Nevada is significant. The rapidly growing power demand of Nevada's urban centers is cited as justification for SWIP; the untapped opportunity for energy and water conservation in Nevada is not mentioned.

The Deis argues that SWIP's purpose is regional while conservation programs are local. Therefore the latter are not worthy of further consideration. This argument is absurd. It assumes that the final

RESPONSES

C The IPCo may have more of a balanced winter/summer peak demand, but the remainder of the Northwest does not. Please refer to page 1-10 of the SWIP DEIS/DPA for a discussion of 3000 MW of seasonal diversity and Chapter 3 of this document for the expanded Purpose and Need.

System reliability would be a major benefit or result of the integration of the SWIP into the WSCC system. System reliability is not a major part of the purpose and need for the SWIP.

D The SWIP is not intended to supply low cost power to rural Nevada.

E Refer to the Purpose and Need in Chapter 3 of this document for additional explanation of the relationship between the SWIP Midpoint to Dry Lake segment and the Ely to Delta segment.

F The statement that conservation affects energy use and system reliability on a local rather than a regional basis is meant simply to indicate that the conservation programs of individual utilities, like their generating resources, have a localized impact. Of course, conservation throughout the western region certainly will have an impact on overall future generating resource requirements in the region.

By reducing new regional generating requirements, however, conservation does not correspondingly reduce the value of regional transmission for minimizing resource costs. Even with reduced generating requirements, environmental and economic considerations may require siting new generation at substantial distances from population and load centers, thus requiring new transmission sueh as the SWIP. Also, because of the seasonal diversity whieh exists between Northwest and Southwest loads and resources, purchases and exchanges of power over the SWIP would be expected to help the entire region meet load growth by utilizing existing resources more efficiently. Finally, regional conservation potential may be developed more fully given the availability of adequate regional transmission to move it.

Without such transmission, the cost effectiveness of conservation programs must be determined on the basis of the avoidable generating resource costs of an individual utility. Utilities having a lower avoided cost will be able to develop conservation resources to a lesser degree than utilities with a higher avoided cost. Transmission can enable the development of conservation

LETTER #B-3
COMMENTS

F objective is to build a major project, forgetting that the true purpose is to serve costumers efficiently at the least monetary and environmental cost.

G ROUTE ALTERNATIVES: The DEIS considers seven alternative routes for SWIP. While northern route alternatives are based on extensive study, alternatives routes from Ely south have not been developed. The main considerations in the selection of the one proposed route appear to have been avoidance of Air Force training routes and consolidation of routes with other power lines, in particular the White Pine Power (WPPP) and Utah Nevada Transmission (UNTP) projects. Insufficient attention has been paid to avoidance of visual impacts near Hwy 93 and from other important view points in the area.

H The west slopes of the Highland and Bristol ranges are visited frequently by local residents and tourists. These are historical mining districts of great interest. The sites also provide locally famous vistas of unspoiled valleys and distant ranges. The intrusion of SWIP on this scene would be a significant defacement.

I Nevada's highways offer a unique experience to the traveler; our clear open spaces are visually and spiritually rewarding. Hwy 93, named by act of Congress the Great Basin Highway, offers some particularly fine views that will be permanently defaced by SWIP, WPPP and UNTP: in particular, the west escarpment of the Arrow Canyon Range with its strikingly banded limestones and the view of Comet Peak in the Highland Range (a national landmark) from Delamar Flat. The DEIS dismissal of Hwy 93 as a "moderate sensitivity viewpoint" is inadequate, as is the omission of other important viewpoints. .

Of the four alternative routes for the crosstie, Citizen Alert strongly urges the cutoff route as opposed to the "preferred alternative" through Sacramento Pass. The latter route would degrade the vistas of Mount Wheeler and the Snake Range from outside the Park and spoil views of the valleys from the Parks mountainsides. This defeats the Parks intended purpose of preserving a classic example of the Basin and Range Province of the western U.S.

J DESIGN: Because of Air Force concerns SWIP will employ towers less than 100 feet high in some areas. If IPC will consider lowering the towers sufficiently so that airplanes can fly over them, why not lower ALL the SWIP towers to mitigate visual impacts?

K SWIP requirement for 2,000 ft separation from other transmission lines appears excessive. The reliability argument is inadequate and not supported by data in the DEIS. There is no indication how wide a separation would satisfy the WSCC criteria and the 2,000

RESPONSES

throughout the region at a level determined by the highest avoidable generating costs in the region.

Also refer to the expanded Purpose and Need in Chapter 3 of this document.

G Refer to pages 2-31 through 2-32 of the SWIP DEIS/DPA for a discussion of the expansion of the project south of Ely to the Dry Lake area. The BLM believes that sufficient attention has been paid to visual impacts on the Ely to Dry Lake segment of the SWIP. All impact studies for all the alternative study corridors were completed to the same level of detail.

H Few historic mining sites have been formally recorded along Links 673, 674, and 675, but the historic mining town of Bristol Wells, dating from 1880, has been listed on the National Register of Historic Places (refer to Volume IV - Cultural Environment Technical Report, page 9-69). Link 674, which would have the most impact on this resource, was dropped from all alternative routes. The chosen alternative, Link 673, is more than three miles away and residual visual impacts are projected to be low (refer to Appendix H for the locations where the technical reports can be reviewed).

I The visual sensitivity rating for U.S. State Highway 93 is accurate. This highway has no formal designation as a scenic highway or byway, but it meets the use volume and user type criteria to be considered a moderate sensitivity viewpoint. No other important viewpoints were pointed out during the inventory or subsequent reviews of the documents.

J In fact, lowering towers would not decrease visual impacts, but would likely increase the significance of visual impacts because more towers would be required to maintain adequate clearance between the ground and conductors (per National Electric Safety Code standards). The average span of about 1/4 mile allows the best balance between height, number of towers, and economic costs.

K The 2,000-foot separation requested applies specifically to separating the SWIP and the UNTP. Each right-of-way evaluation or request within the WSCC system should consider the specific line combinations to determine whether a specific separation is required. The issue is the credibility of a

LETTER #B-3
COMMENTS

K apparently influenced Bureau of Land Management planning for utility corridors up to three miles wide in some districts. This represents an over commitment of public land for this use, and invites the proliferation rather than the reduction and consolidation of projects. Separation will likely increase the visual impacts and extend the area of environmental impacts related to surface disturbance. Cumulative impacts will multiply from over development of the SWIP route due to the over-wide corridor.

CUMULATIVE IMPACTS: This DEIS must go a lot further to present the impacts of SWIP in the context and in relation to the impacts of all other major utility projects existing or proposed in the region impacted. The DEIS should include information on regional planning to reduce the cumulative impacts of these projects. The analysis of likely cumulative impacts needs to be considerably expanded, for example,

L 1) If Coal burning generator plants are likely to be built at any of the substation points what would be the effects on air quality and visibility. Air emissions from the existing Moapa plant result in reduced visibility north of Caliente, as can be observed from the BLM fire lookout station at Ella Mt. What would be the effect of a plant at Dry Lake Valley on air quality in Moapa. Is the Delamar substation a possible generation site? If so what likely impacts would result?

M 2) Would the viability of SWIP likely depend on new power generating facilities being developed in Nevada? To what extent would the existence of SWIP as proposed increase the likelihood of that other projects with major environmental effects would be approved? These would include power generating plants, additional transmission lines, and water pipeline projects such as the Las Vegas Valley Water District's rural water importation plan.

Citizen Alert urges the No-Action Alternative for SWIP because of the extensive environmental impacts which would probably result from cumulative effects of this and other projects which the DEIS fails to adequately address.

Sincerely,

Louis Benezet

Louis Benezet

Southern Nevada Office

RESPONSES

simultaneous loss of the circuits involved. The WSCC Criteria says:

> "..., the credibility of loss of a particular set of lines will depend upon the total distance of common corridor shared by the lines and upon the vulnerability of the circuits over that distance to a common mode failure. Considerations for this vulnerability assessment will include line design; length; location, whether forested, agricultural, mountainous, etc.; outage history; operational guides; and separation. For example, some utilities use separation by more than the span length as adequate to designate the circuits as being in separate corridors."

This issue is not new. For example, the Third Pacific 500kV AC Intertie requested and received miles of separation between it and two existing 500kV interties in forested areas. This separation was required to allow adequate response time to adjust the system following the loss of the existing lines and a potential loss of the third 500kV line. Similar to the SWIP and the UNTP, the consequences of such an outage would be wide spread outages in the WSCC system. Without this separation, that project would probably not be feasible.

L There is no information to indicate that generation plants may be constructed at substation locations. A series compensation station is planned in the Delamar area (refer to Chapter 2 of the SWIP DEIS/DPA).

M The SWIP would not be dependent on the success or failure of any generation facilities proposed now or in the future (refer to Chapter 1 of the SWIP DEIS/DPA and the expanded Purpose and Need in Chapter 3 of this document). It is unknown what effect the SWIP would have on the likelihood of other projects being permitted. Chapter 1, Purpose and Need, in the SWIP DEIS/DPA states that the construction of the SWIP may defer the need for new generation. The Cumulative Effects section of Chapter 4 in the SWIP DEIS/DPA discusses reasonably foreseeable future actions, but they would not be dependent on the success or failure of the SWIP.

LETTER #B-4
COMMENTS

COMMITTEE FOR IDAHO'S
HIGH DESERT
P.O.BOX 2863 BOISE, IDAHO 83701
Phone 208-587-4326 * FAX 208-788-4259

RESPONSES

A The purpose and need has been expanded in this document (refer to Chapter 3).

September 17, 1992

Mr Karl Simonson
BLM Project Director
Burley District Office
Route 3, Box 1
Burley, ID 83318

RE: SIP DEIS

Dear Mr. Simonson:

The Committee for Idaho's High Desert (CIHD) is Idaho's largest desert conservation organization and was incorporated in 1981. Our members use the deserts of Idaho, Nevada, and Utah for educational, scientific, literary, social, recreational, artistic, and religious purposes.

CIHD, in this letter, is also providing comments for Idaho members of the Nevada Outdoor Recreation Association, Inc. (NORA). CIHD submits the following comments on the Southwest Intertie Project Draft Environmental Impact Statement:

A. INADEQUACIES UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT:

A 1. The Purpose and Need Statement is inadequate and presupposes the Preferred Alternative, in violation of the National Environmental Policy Act .

LETTER B-4

LETTER #B-4

COMMENTS

B **2. The range of alternatives is inadequate (consisting of one choice!) and presupposes the Preferred Alternative, in violation of the National Environmental Policy Act.**

C **3. The No Action Alternative is not adequately analyzed, in violation of the National Environmental Policy Act, and the EIS presuppose the Preferred Alternative. For example, the consequences of conservation are not adequately analyzed.**

D **4. Specific mitigation plans for effects on raptors, wildlife, and other resources are inadequate, in violation of National Environmental Policy Act regulations, and monitoring plans for foreseen and unforeseen effects on such resources as raptors are not present in the EIS.**

E **5. Cumulative impact studies for raptors, visual resources, and other resources are inadequate for National Environmental Policy Act compliance.**

B. SPECIFIC CONCERNS AND INADEQUACIES:

F **1. The maps in the EIS fail to adequately describe the land gradient from north to south along the project. Contours of the proposed rights-of-way for the project appear to follow water grade from the Snake River in Idaho to Las Vegas (and the nearby Colorado River), with existing or proposed substation located suspiciously near the several lift points.**

The maps should reveal the gradient for all alternatives.

G **2. The EIS should more clearly describe the business relationship between Idaho Power Company and Los Angeles Department of Water and Power for this project.**

H **3. The EIS should specifically list all undesignated, and reserved rights-of-way which are associated with this project.**

I **4. Any Congressional requirements regarding granting of rights-of-way for the project on Public Lands, military lands, or private lands should be explained in the EIS.**

RESPONSES

B The range of alternatives studied in the SWIP DEIS/DPA is adequate and meets NEPA requirements. Alternatives must be considered but can be eliminated from further consideration if they are not found to be "reasonable and feasible" in meeting the project's stated purpose and need, with the exception of the No-Action Alternative. Please refer to Chapter 2 of the SWIP DEIS/DPA for a discussion of the range of alternatives considered.

C The No-Action Alternative is adequately analyzed. Energy conservation and load management are addressed on page 2-2 of the SWIP DEIS/DPA and further discussed on page 3-16 of this document.

D The mitigation planning for this project has been adequate to assess alternatives and arrive at an environmentally preferred route. It would not be practical to prepare either specific mitigation plans or monitoring plans, for all the alternative routes. The number of iterations of mitigation and monitoring plans that would have to be prepared to incorporate all of the possible link combinations examined for the EIS would be enormous.

A Construction, Operation and Maintenance (COM) Plan for the project will be developed following a Record of Decision. The COM Plan will address such issues as biological and cultural resources clearances, specific mitigation planning, and monitoring (refer to page 1-34 of this document).

E The studies conducted for the SWIP DEIS/DPA are adequate for NEPA compliance.

F The gradient of the various routing alternatives is irrelevant. The alternative routes were in no way laid out to set up a water project as you suggest. Refer to page 2-9 under Routing Alternatives in the SWIP DEIS/DPA and the SWIP Regional Study (D&M, 1989).

G The relationship between the IPCo and the LADWP is described on page 2-17 of the DEIS/DPA and further explained in Chapter 1 of this document.

H Figure 1-1 in this document shows the designated utility corridors as well as the planning corridors. These utility corridors are described in the resource management plans (RMPs) or management framework plans (MFPs) of the

J 5. The EIS should explain the relationship of the proposed corridors to the raptors migration routes. The corridors appear to follow the principle raptor migration route for North America and cumulative impacts and mitigation for raptor electrocution, etc. must be specifically addressed.

C. OTHER CONCERNS:

CIHD specifically objects to, and will oppose, any intrusion, including visual intrusions, into any Wilderness Study Area.

Please notify CIHD of all actions regarding this matter.

Thank you for attention to our concerns.

Sincerely,

Randy Morris, Chairman

affected BLM districts and resource areas. There are no records of any undesignated or reserved rights-of-way in the project area.

The BLM does have numerous small rights-of-way for access roads, ditches, pipelines, buried fiber optic lines, and other uses throughout the SWIP corridors. The BLM will contact all holders of existing rights-of-way to notify them of the selected route and solicit their concerns.

I There are no Congressional authorizations needed to grant a right-of-way across public lands for the SWIP. The BLM and other federal land management agencies have the authority to grant rights-of-way on public lands. Rights-of-way across private lands would be negotiated between the project proponent and the private land owner.

J A specific raptor migration route has not been identified. It is well known that large numbers of migratory raptors are present in the Goshute Mountains during both spring and fall.

Given the structural configuration of 500kV transmission lines, the potential electrocution hazard to birds of prey is relatively minor. The SWIP 500kV transmission line would use V-guyed steel lattice, self-supporting steel lattice, and tubular steel H-frame towers. The spacing between conductors and towers is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on the supporting towers in such a manner that they are 23 to 32 feet apart (Olendorff, 1986, p. 13). Further, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (refer to pages 2-12 through 2-14 in the SWIP DEIS/DPA). Because of the distance between conductors and supporting towers, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower of a 500kV transmission line.

Also refer to Avian Collision Hazard on page 3-89 of this document.

LETTER #B-5
COMMENTS

RESPONSES

CONNECTING POINT
FOR
PUBLIC LANDS
POB 705 - Picabo
Idaho - 83348
208 788-2837

9/17/92

TO: Mr. Karl Simonson, project manager
SWIP DEIS
FROM: Janet OCrowley

Dear Sir: I do not see the NEED for another power transmission line through Nevada heading toward LasVegas.

A

If Intermountain Power Project could not find sufficient incentive in the demand market to complete its AC power line south through Delta and beyond – and if Idaho Power plans, or if UNTP plans, or if a consortium plans a cross-tie line from Delta - N. Ely, what conceivable reason could Idaho power have for building yet another line?

That may be a rhetorical question if it is true that Idaho Power has other objectives concealed within this proposal. What the nature of those other objectives need not be the concern of BLM, but BLM should take more seriously the need of the applicant to show NEED for the project - the stated project.

What I see here rather than need is opportunity. opportunity to reap a huge profit in the future water and power market. The cost will be born by owners jof the public lands in loss of amenities. I am very familiar with the Lincoln County-Clark County terrain, have lived there, having explored its byways and revelled in its open and unimpaired naturalness (except along highway right-of-ways). I cannot agree that any private company should be allowed to disfigure and clutter, to irretrievably and irreversibly disfigure our public lands in this manner when no need other than a corporation's desire to expland and to increase profits at the public expense.

A The IPCo has requested the right-of-way to construct the SWIP because of the reasons stated in the Purpose and Need statement in the SWIP DEIS/DPA and in the expanded discussion under Purpose and Need in Chapter 3 of this document. Also refer to the discussion of the Utah-Nevada Transmission Project which is fully described on page 2-37 of the SWIP DEIS/DPA.

LETTER #B-5
COMMENTS

B I should like also to comment on the DEIS itself as a document. Succinctly, my impression is of a great deal of data gathering and engineering study which will no doubt be utilized in construction design. That is a plus for the applicant. What I do not see in the discussion of Impacts is any concern for what those impacts mean to the public. They are simply stated and that is that. They do not enter into the decision of "whether or not to proceed" as the National Environmental Protection Act specifies. For example: p 4-11 pp2 *There is no way to mitigate predation of sage grouse...these impacts would remain high* ***even after mitigation*** *and would be long term and significant.* pp3 *These impacts (to curlews) would be adverse and long-term.* pp 4 *dThese impacts (to sage grouse* ***would be significant, adverse, and long-term.*** And on and on and on all through the wildlife section.

C We are referred to Table 2 for specific mitigation measures only to find no intention to repair, or offset these horrendous, permanent damages to our wildlfe populations. There are instead 12 design features listed such as non-shiney insulators and dulled-finish metal towers. There is a total absence of on-site or off-site mitigation which might include purchase of other roadless lands to be managed for sage grouse, or dedication of sandhill crane or curlew grassland.

Apparently what Idaho Power considers its sole responsibility in the way of making up to the public for what it wants to destroy **significantly, adversely and long-term** is a one-time expenditure of its structures and their emplacement (as by helicopters).

My reaction as a longsuffering, significantly, adversely affected public citizen is this plan cannot be approved. No way, until Idaho Power offers **significant, benign, longterm** measures to offset the impacts to the land and the wildlife.

D May I ask in all seriousness What does Idaho Power offer the public in return for the assets we are expected to give up? Perhaps a perpetual royalty percentage of the profits to be invested in a land-water-wildlife trust to be administered by a public citizen selected trust corporation? Or are we to expect a reduction of power rates so long as the adverse impacts continue? I expect this question to be ansered in the Final Impact Statement.

RESPONSES

B The intent of NEPA documents is disclosure of facts, without bias. The decision of whether or not to proceed must be based on many criteria, including environmental impacts (disclosed in the SWIP DEIS/DPA), project costs, and public input. The alternatives development, inventory, and impact assessment have been an environmental process. Some engineering input is necessary to determine routing feasibility and to understand what activities could result in impacts.

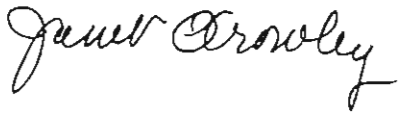
C There are a number of generic mitigation measures listed in Table 4-1 of the DEIS/DPA that would be applied throughout the project to minimize impacts. Specific mitigation, rehabilitation, and monitoring plans will be developed with the BLM during preparation of the Construction, Operation, and Maintenance Plan (also refer to page 1-34 of this document).

D The IPCo's mandate is to provide reliable, low-cost energy in the most efficient manner possible. Also, as explained in the Purpose and Need in the SWIP DEIS/DPA, the SWIP would reduce the need for the construction of new generation resources. It would also push out the need for rate inereases to customers. The regional economic benefits of the SWIP are deseribed on page 3-8 of this document. In addition, some of the direct benefits inelude annual right-of-way rental fees paid to the public land-administering agency and the tax benefits to the various counties that would be crossed (refer to the socioeconomic sections in Chapters 3 and 4 of the SWIP DEIS/DPA). Also, please refer to the expanded discussion of the purpose and need in this document, specifically the section on least-cost planning

LETTER #B-5
COMMENTS

E May I ask what is the Bureau of Land Management doing here to fulfill its duty of land manager? In what way is it fulfilling the FLPMA behest that "public lands remain under the stewardship of the Federal Government, unless disposal is in the national interest, and that their resources be managed under a multiple-use that will best meet future needs of the american people." Quote fromBLM *Wildlife on the Public Lands.*

I am enclosing an analysis I made of the corridor selection and a cover letter I have sent with it to prominent persons in Idaho. Will you please make it part of the record of public comment?



RESPONSES

E The BLM public lands policy is based on the principles of multiple use and sustained yield. Use of the public lands for rights-of-way is one of the multiple uses just as is the use of the public lands for recreation, wildlife habitat, livestock grazing, timber production, mineral production, and the protection of cultural and historical resources. All of these uses are considered by BLM managers in making a decision on any given land use proposal.

Use of public land for right-of-way purposes is not a disposal of the land. A right-of-way is an authorization to rent public land for a definite period of time and is subject to an annual rental payment, specific stipulations for the construction, operation, and maintenance of the facility, and is subject to regular compliance checks to assure compliance to the terms and conditions of the Right-of-Way Grant. Public land within a right-of-way, in most cases, is open to public use like any of the other public lands. The BLM can require joint occupancy of a right-of-way by other compatible facilities. BLM managers are managing the public lands for multiple uses and are taking into account the long-term needs of future generations for renewable and nonrenewable resources in their decisions.

LETTER #B-5
COMMENTS

CONNECTING POINT
FOR
PUBLIC LANDS
POB 705 - PICABO, ID 83348
(208) 788-2837

9/15/92
ANALYSIS OF IDAHO POWER'S SOUTHWEST INTERTIE PROPOSED ROUTING
Perhaps this SWIP acronym should more properly be spelled "SWIPE".
The informed opinion of a reliable observer has long held that the powerline routing here shown conceals within itself the lowest gradient course for conducting water from vicinity of Hagerman, Idaho to Las VEgas. NV.

Many seemingly unrelated details known to me strengthen this suspicion. Nothing in this analysis of route chosen by Dames and Moore for Idaho Power goes contrary to the hypothesis.

F Using only U.S. Geodetic Survey maps: Twin Falls, Wells, Ely, Lund I retraced the thrice-favored route shown in the Draft Environmental Statement of June 1992 " Southwest Intertie Project DEIS DPA" (available from Dames and Moore, POB 1601, Boise, ID 83701.) I transposed the route shown as "Environmentally, Utility and Agency Preferred route" shown in green, blue and red onto GS maps in the library. To the degree of accuracy possible to ascertain from the DEIS' obscured background, and considering the apparently much smoothed DEIS lines, I laid out the route on Geodetic Survey maps with 200' contours to discover that there are only three upgradient portions on the preferred route. One of these roughly coincident with a major generating station "Salmon Falls"; one is at the end of a major intertie line (from IPP's DElta substation in Utah); while the third route point where a major lift would be required is at Wilkins, NV, where a major generating plant was planned. This Thousand Springs plant was only scrubbed in 1989 when a consortium fell apart due to internal

RESPONSES

F The gradient of the various routing alternatives is irrelevant. The alternative routes were in no way laid out to set up a water project as you suggest. Refer to page 2-9 under Routing Alternatives in the SWIP DEIS/DPA and the SWIP Regional Study (D&M, 1989).

disagreement and the apparent involvement of crime family money. Major opposition on environmental grounds to the Thousand Springs plant was voiced in Utah, and Idaho, which caused Congressional delegates to publicly oppose the project.

Note: The Midpoint to Salmon Falls segment of the proposed power line is shown in the DEIS as an alternative eliminated, however this corridor is already heavily powerlined and could be added later if and as a water-transport corridor is requested. The lift required to raise water from the Snake River at Salmon Falls is the smallest at any point after the River leaves Milner Dam. The gradient UP the Salmon Falls Creek is relatively gentle, and could be powered from the Salmon Falls generating plant.

F

Note 2 The electrical energy necessary to lift water through the gap in the Egan Range north of Ely could well be supplied by 345 KV from the Intermountain Power Project at Delta, Utah, which the DEIS explains is not intetgral to Idaho Power's intertie Project, but is left in the DEIS as a favor to the IPP, and will be signed over to them after approval of the SWIP.

Note 3 Substations are conveniently situated to the necessary lift points: Thousand Springs, Goshute, North Steptoe, Robinson Summit. The three major lifts required appear to be 1) up the Salmon Falls Creek bed, 2) at Cobre 3) at Steptoe over Robinson Summit on Highway U.S. 6.

[redacted]

F

Points on the Utility Preferred Route with elevations in feet:

Hagerman Rim	3000	Townsend Well	7000
Salmon Falls Res.	5100	Jake's Wash	6300
Jackpot	5200	White River Vly	6000
Follow RR route to Wilkins Siding	6000	Preston	5400
Up Toano Draw	6000	Adams, McGill Lake (could stay higher)	5100
Cobre	5800	Pahroc	5400
RR route to Goshute	5600	Dry Lake Vly	4800
Currie	5700	Delamar Vly	4000
Warm Springs	5800	Maynard Lake	3200
Steptoe	6200	Down all the way to Dry Lake Subst.	
Cross Egan Range	7600		

Major lifts are: Hagerman Rim, Up Salmon Falls Crk to Jackpot, Up Toano Draw, and at Steptoe over the Egan Range. Proper engineering could doubtless follow contours to maintain elevation in many places, or the use of "siphons" would move water over descents without the need for power. It must be noted that the route highlighted in this DEIS for "powerline" follows many deviations from direct line, and all of these deviations appear to coincide with finding the lowest gradient route.

CONNECTING POINT
FOR
PUBLIC LANDS
POB 705 - Picabo
Idaho - 83348
208 788-2837

Letter to prominent persons in Idaho.

9/17/92

Dear ——

F Herewith is a short selection from my file on schemes to move massive quantities of water around in north America.

I believe you will be interested in the possibility that Idaho Power may be prepositioning itself to obtain an optimum gradient corridor for water transfer in the guise, or at the same time it becomes permitted for a power transmission corridor from the Snake River to the Las Vegas vicinity.

I do not have access to the sources that could add more details to this shadowy outline. We are all aware of Southern California's insatiable thirst, of its history in acquiring water from whatever source by any means. We also know of Clark County, Nevada's ongoing initiative to preempt all the water sources in its nearby defenseless sister counties.

LETTER #B-5
COMMENTS

RESPONSES

All I can claim is that the elements are here that allow Idaho Power to participate in this grandiose scheme. I present it for your information, in the hope that you will scrutinize these documents in the light of information you may have already. If the logic appears clear to you, that you would take steps to publicize and to thwart these designs on Idaho's water. F

If not you, then who?

Javer Crowley

LETTER #B-5
COMMENTS

RESPONSES

CONNECTING POINT
FOR
PUBLIC LANDS
POB 705 - Picabo
Idaho - 83348
208 788-2837

Next-day addendum to letter

9/18/92

Please bear with me. After mailing a letter to you yesterday concerning Idaho Power's Southwest Intertie Project that points out an arguable connection with the Los Angeles Water and Power Department's schemes to pipe Northwest water to the Southwest, then I discovered in the Draft Environmental Impact study this following paragraph. The evidence would not be comprehensive without it.

F

Here it is: page 4-89 "Future Projects"

- Las Vegas Valley Water Development Project - a proposed water development project is being planned by Clark County to increase the municipal and industrial water supply of the Las Vegas area. The pipeline planned to transport the water from north of Clark County will utilize utility corridors used by the SWIP or prepare a plan amendment. The pipeline could be in the range of 36 inches in diameter

Soils - Expected ground disturbance would be similar to the recently constructed Kern River Gas Transmission Pipeline. The disturbed area would be about 100

Please cosider this carefully

Cordially

LETTER B-5

LETTER #B-6
COMMENTS

RESPONSES

DESERT SURVIVORS
P.O. Box 20991
Oakland CA, 94620-0991

September 17, 1992

DESERT SURVIVORS

Karl Simsonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Comments on the Draft EIS for the
SOUTHWEST INTERTIE PROJECT

Dear Sir:

Thank you for this opportunity to address our concerns with this proposal. **Desert Survivors** is a cooperative non-profit desert conservation group. We have been working to protect arid lands in California and Nevada for many years. We sponsor numerous trips yearly introducing hundreds of people to desert areas in the Great Basin, Mojave, and other desert habitats. Our interests are most closely allied with preservation of the habitats of remote areas, wildernesses, wilderness study areas, and other roadless tracts. In recent years we have come to realize that these now identified islands of wilderness cannot be expected to sustain themselves for long without a regional approach to their management.

LETTER B-6

LETTER #B-6
COMMENTS

SUPPORT FOR THE NO ACTION ALTERNATIVE

A The EIS has identitifed fairly clearly the emormous impact upon the local environment that this proposed project would have. We feel that the EIS has not gone far enough in uncovering the whole impact.

B Here you have presented us with a project which has taken a regional approach to solving what seems to be largely a inter-state power-marketing problem but which ignores regional issues when assessing the impacts upon the environment. For example, much time has been spent looking at local powerline impacts but little at regional issues such as:

What is the effect on the huge raptor migration annually using the proposed project's north-south pathway for international flights?

C How many structure-free open space valleys will be left in this inter-state region if this project is completed?

D How do powerlines impede inter-region migration of animal life needed to preserve biological diversity?

E How much uncluttered open space should be available for urban people throughout the country to get a rightful sense of what remains of the "wide open spaces?"

We recognize that the answers to these questions are difficult to quantify but it is becoming clear that we as the public and you as the care-takers of our public lands must begin to grapple seriously with these issues. As the answers are not clear yet, only an over-whelming need for short term benefits should budge you from a staunch protective attitude toward these precious remaining open space lands.

Has an over-whelming need for short-term benefits been presented? Clearly not, the utilities are stumbling over themselves with vague partial justifications for this powerline. The main benefit will be the presence of a redundant powerline giving them competitive power marketing advantage.

RESPONSES

A The intent of NEPA documents is disclosure of facts without bias. The SWIP DEIS/DPA, Map Volume, Technical Reports, and Data Tables disclose the predicted impacts of the SWIP in great detail.

B A specific raptor migration route has not been identified. It is well known that large numbers of migratory raptors are present in the Goshute Mountains during both spring and fall.

Given the structural configuration of 500kV transmission lines, the potential electrocution hazard to birds of prey is relatively minor. The SWIP 500kV transmission line would use V-guyed steel lattice, self-supporting steel lattice, and tubular steel H-frame towers. The spacing between conductors and towers is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on the supporting towers in such a manner that they are 23 to 32 feet apart (Olendorff, 1986, p. 13). Further, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (refer to pages 2-12 through 2-14 in the SWIP DEIS/DPA). Because of the distance between conductors and supporting towers, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower of a 500kV transmission line.

Also refer to Avian Collision Hazard on page 3-89 of this document.

C The BLM does not have this information.

D The BLM is not aware of any scientific literature that suggests electrical transmission lines impede inter-regional migration of animal life. In a study of desert bighorn sheep in western Arizona, this was one of the focal questions. The study lasted for more than seven years and involved as many as 39 radio-collared bighorn. The study involved a 500kV transmission line and was divided into pre-construction, construction, and post-construction phases. The only significant difference between the pre-construction phase and the other phases of the study was that some radio-collared sheep spent more time within the transmission line corridor during construction than they did before or after construction. There was no statistical evidence to suggest that the presence of the energized transmission line kept sheep from moving within and among the mountain ranges of the study area.

LETTER #B-6
COMMENTS

We therefore advocate the **NO ACTION ALTERNATIVE.**

Please STOP this project as it is currently proposed.

We feel it would significantly erode existing natural values across the entire eastern portion of the State of Nevada and only return questionable short-term benefits. Your role as administrator and protector of the Public Lands in the United States should allow you to see clearly that projects of this massive scale can no longer be routinely justified in our rapidly vanishing western open space lands. We are disappointed that your participation in this proposal seems to take only the most narrow viewpoint.

PROJECT JUSTIFICATION UNFOCUSED

F
Is this a project for inter-regional power transfer?
Is this a project for market place power brokering?
Is this a redundant powerline in case something happens to existing lines?
Is this a project to connect power sources which might or might not be built?
Is this a project to have in place in case energy conservation becomes unfashionable?
Is this a project which got started for different reasons not now valid but no one wants to kill?

To one extent or another all of these reasons are present or implied in the EIS. It seems clear that the construction of this powerline will create a large excess of power-carrying capacity which may be used only in emergencies for the foreseeable future.

The main short-term purpose seems to be to pit this new unused capacity against current powerline owners so that the sponsoring utility companies can obtain favorable powerline usage rates. This may be a benefit to some but cannot be seriously weighed against the immense impact this project will make upon currently unbuilt upon open spaces across eastern Nevada and Utah.

LETTER B-6

RESPONSES

E The BLM agrees that it is important to retain uncluttered open space wherever possible. This is one of the primary reasons why the Agency Preferred Alternative would use the 230kV Corridor Route.

F The SWIP is proposed to facilitate inter-regional power transfer. Many sections of the SWIP DEIS/DPA describe the purpose of the SWIP as providing additional transmission capacity between the northwest and the southwest transmission systems (i.e., inter-regional power transfers).

The capacity of the SWIP would provide the ability to better utilize power resources that are available and push into the future the need for the construction of new generation resources. Open access to the power market means that many entities will be able to compete for energy supplies which will create market forces that tend to hold down price increases. This creates a situation that will make it difficult to "broker" power since all entities will have their own access to the market. Refer to page 1-11 of the SWIP DEIS/DPA and page 3-8 of this document.

No, the SWIP is not redundant to any other project. However, the SWIP will provide support to other power lines, like all other AC power lines in the WSCC region.

The SWIP's primary function would be to provide inter-regional power transfers. To the extent capacity is available and reliability is maintained, future interconnections with the SWIP will be allowed.

No, the SWIP would not replace conservation. Conservation and demand-side management are an integral part of the resource strategy of every utility considering partnership in the SWIP. Federal and state regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest cost resources. Conservation and other demand-side management programs are expected to reduce, but not to eliminate, the region's need for new generating resources.

Transmission facilities will contribute in several important ways to the task of the region's utilities to meeting future load growth in the most efficient manner possible and with the smallest amount of new generating capacity. First, it is important to recognize the seasonal load diversity within the region.

LETTER #B-6
COMMENTS

RESPONSES

REDUNDANT CAPACITY FOR ARTIFICIAL COMPETITIVE REASONS

A major impetus for this powerline project is the concept of a Marketplace and power brokering. This is a totally artificial reason for spending huge sums of money and making huge impacts on formerly unspoiled Western Public Lands. The powerline gets put in not because we need added capacity but to force parallel powerline owners to reduce transmission rates or provide access. This is what happened to railroads in the Robber Baron Era of the late 19th century. Boom and bust rate wars and monopoly pricing freeze-outs kept western farmers in turmoil for decades until some measure of government regulation somewhat leveled the table in the public interest. Unfortunately similar situations of monopoly capitalism are still going on today. The tragic thing here is that its being done on PUBLIC LAND right-of-way.

The hodge-podge of conflicting state and federal regulations and low cost public right-of-way is allowing these large utility companies to monopolize their grants to existing powerline right-of-ways. This forces competing utility companies to demand more parallel redundant public rights of way to get their power product to market.

A perfect example of this is proposed for California commercial gas customers in the Bay Area. The utility company PG&E provides gas to residential and commercial users and is regulated by the California State Public Utilities Commission. A utility company with rights to an interstate gas line right-of-way (a few miles into the Arizona border) wants to construct a new gas line to the Bay Area from Southern California. There is no need for extra capacity for gas transmission to the Bay Area. They only want to sell to current PG&E commercial customers at a lower rate than PG&E. If the project is approved, the impact of an added gas pipe line on the land will occur with no public good other than raising residential rates and lowering commercial rates.

This abuse of public lands for artificial competitive purposes must be stopped. Especially where the values of untouched lands are so high and the remaining stock of untouched land is rapidly shrinking. Say NO to this type of project!

Transmission would allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (i.e., generation) can be reduced by using transmission. Then, when new regional generating resources are needed, transmission, such as the SWIP, would make more resource options available, and should help minimize costs and environmental impacts.

No, the purpose and need of this project has not changed. Refer to the expanded discussion of purpose and need in Chapter 3 of this document.

LETTER #B-6

FLAWED PROCESS - WRONGLY ELIMINATED ALTERNATIVES

We are greatly concerned that attention is being focussed upon the wrong area for this powerline. The original study contained alternatives which included the present-day rights of way which allow power to be moved from Las Vegas to Idaho via Salt Lake. The project eliminated them from consideration in 1989, three years ago, with the comment that it had to go through the ELY area and that land use conflicts were difficult in the Salt Lake area. (p 2-10). No further explanation of this is made in the EIS. What is the compelling reason for going through ELY? There is now no Thousand Springs Power plant. If the approved White Pine plant is built near Ely two already approved powerline right-of-ways exist for that. For the stated purpose of inter-regional power transfer upgrading the Salt Lake corridor would be an adequate alternative. Expansion of an existing built-upon right-of-way is preferable to the initial can't-turn-back damage of the first construction in an unbuilt open space. No information is provided in the EIS about the extent of "land-use conflicts" in Salt Lake.

In any project when basic purposes and assumptions change in the review process, any previously eliminated alternatives should be put back on the table for re-review under current requirements. The refusal to reconsider this alternative is a major flaw in this EIS.

NEED FOR BASIN CONSERVATION/PRESERVATION

Basin Conservation, the need to identify and conserve the BASIN habitat in the Great Basin area of the West. Numerous studies have identified roadless areas, wilderness areas and wilderness study areas. Most are now undergoing some phase of evaluation for preservation or management. However when you look at these areas collectively, almost all involve mountainous terrain, almost all have had the flat or basin portions carved away or not recommended. Very few Basins in the Basin and Range provence have been studied or identified.

We are only now beginning to realize difficulties of long term habitat management when only isolated islands of habitat are kept. Regional ecosystems need all

RESPONSES

G There is the distinct possibility of a 230kV interconnection in the Ely area as well as possible interconnection with the future White Pine Power Project (WPPP). There are no existing rights-of-way for the future WPPP although there was a favorable Record of Decision in 1985 to grant these rights-of-way. If the WPPP is constructed, the SWIP would likely interconnect with it.

The Salt Lake City alternative was eliminated from further consideration, not only because of the land use conflicts, but also because it would not meet the purpose and need. In 1989, it was determined that the UNTP would not have available capacity for the SWIP at which point the project description was revised (refer to page 2-25 of the SWIP DEIS/DPA). The SWIP Regional Study (D&M, 1989) documents the potential impacts of the regional routing alternatives including the Salt Lake City alternative.

H The SWIP would result in very little long-term destruction of habitat. Overland construction has been recommended in sensitive habitat areas to minimize the area of disturbance and eliminate the long-term disturbance associated with new access roads. There is no evidence that the SWIP would result in habitat fragmentation or impair the movement of any wildlife species.

LETTER B-6

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COMMENTS

RESPONSES

elements managed and considered in long term habitat plans. Range islands without basins cannot long endure. Nevada is lucky to have a number of basins which are in fairly good shape or can be recovered with good management. A project like the
H SOUTHWEST INTERTIE, if approved, will cut away at the number of basins available. No regional inventory of these basins has been made, much less taken into consideration for this project. Since the benefits of the project are generally of regional impact, the regional impact of the vanishing basin habitats should be considered.

INTERNATIONAL RAPTOR MIGRATION IMPACT SLIGHTED

The Goshute Mountains are a concentration point for one of the few major annual hawk migrations in North America. Thousands of hawks of numerous species from large areas of the Northwest and Canada funnel down through the Goshute corridor on their way South for the winter. The world famous raptor monitoring station on Goshute Mountain logs and bands hundreds of hawks per day in peak migration periods. These hawks are under pressure at both ends of their annual flights as habitat shrinks in Canada, the U.S., and Mexico. The migratory bird act does not allow for the purposeful destruction of any of these birds by new projects. The entire
I 500 mile Southwest Intertie follows the highly used raptor corridor. The EIS mentions that powerlines do kill some birds. There is no quantitative estimates of annual dead hawks per mile of powerline. A recent EIS in California estimated perhaps 20 raptor deaths per year for a 50 mile powerline not in a major hawk corridor. If we double the number of deaths per fifty miles due to the higher density of birds and multiply by 10 to allow for 500 miles of new powerline we get an estimate of 400 dead raptors per year.

400 Dead Hawks per year is a large toll. No information is presented about the regional impact of an annual raptor kill of this magnitude.

I The BLM is aware of the migratory hawk banding station in the Goshute Mountains, and of the impressive numbers of hawks that have been captured and banded there by Hawkwatch International and its cooperators. The BLM is not, however, aware of documentation of a clearly defined migratory corridor that is coincident in location with the preferred SWIP corridor.

The BLM has not attempted to estimate the number of raptors that might be killed each year as a result of collisions with the SWIP transmission line. To generate such an estimate in the absence of any real data on the numbers of hawks, resident and migratory, that occur in the vicinity of the transmission line on an annual basis would be highly speculative. Additionally, the BLM would need to know the average altitude at which all species migrate through the area. The Goshute banding station, for example, is several thousand feet higher in elevation than the SWIP (i.e., 9,500 feet versus about 5,500 feet). The BLM sees no reasonable possibility of the project affecting birds at that elevation.

It is interesting that an EIS in California estimated 20 cases of raptor mortality per year for a 50-mile transmission line. Olendorff and Lehman (1986, "Raptor Collisions with Utility Lines: An Analysis Using Subjective Field Observations", Pacific Gas and Electric Co., San Ramon, CA.) issued a worldwide call for information on raptor mortality from collisions with utility lines. They received a total of 121 responses to their request for information. Of this number, only 88 could be analyzed due to inadequacy of information. Their conclusion: "Collision with utility lines apparently is a random, low level, and inconsequential mortality factor in raptor populations." It is the BLM's opinion that your estimate of 400 dead raptors per year is a very significant over-statement of real probabilities.

Also refer to the discussion of Avian Collision Hazard on page 3-89 of this document.

NEED FOR OPEN SPACE

People need open space. We can't all live in open space areas. Most of us have to live in crowded cities. Most of us however can get away for various lengths of time to be in less crowded lands. One of the major aspects of the Wilderness Act is the opportunity for solitude that wilderness areas afford people who enter these areas. What is that solitude? Part of it is a separation from other people. Part of it is a separation from other people's impact on the natural environment. Part of it is a feeling of attachment to a natural environment. How does this differ in a wilderness area (Range) and in an open space valley (Basin). In an open Nevada valley even when in a car driving on a dirt road, the feeling of expansiveness and freedom is quite tangible. You can see from ridgeline to ridgeline across wide valleys; now little impedes your feeling of solitude. An occasional structure, corral, cabin, side road, does not greatly impact that experience.

But a large powerline does. It divides the valley into segments, it breaks the expanse, it intrudes the presence of people into your consciousness and that feeling of solitude is dashed. This may seem to be a purely aesthetic argument. You may say that it applies only to a few people. Well we don't think so. Those of us in the city are oppressed in many ways and as a release need open space areas, even if we can only drive through occasionally. When we do it should be an atmosphere as free as possible from urban care. We need the relief the country can bring us. Those living in the open west already well know the feelings I'm talking about, that's a reason they like it there. However we, the public, haven't well defined our need for this "aesthetic" requirement. Well we're putting it forth and think more and more of us will be demanding it as a consideration in regional planning.

No inventory of open space valleys exists as yet. Lets start one. As an agency required to take the long view, keep this issue in mind, you will be hearing more of it. Meanwhile don't give away open areas easily. Hold onto them fast until we can make better regional assessments which give proper weight to long range needs such as this.

LETTER #B-6
COMMENTS

RESPONSES

VISUAL IMPACT CRITERIA MISWEIGHTED

J

We have a large problem with the general method used to evaluate visual impacts in projects such as these. You give lip service to the idea that the impact of the first powerline is greater than an additional one, but seem to evaluate impacts based upon a persons viewing per day scale. This means that where this powerline will cross a main highway which already has another powerline in the same corridor, a high visual impact rating is accrued because a lot of people per day see the new added powerline. When a new powerline is built across a now clear valley with only a few dirt road travellers per day, a lower impact rating results.

This is wrong. It fails to weight the initial impact of the first intrusion. The first built powerline changes the open space character of the valley enormously. Any first powerline should be rated as having high visual impact on every currently open space valley it proposes to cross.

J Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM system tends to focus on impacts to sensitive viewpoints. Although undisturbed natural landscapes of open desert valleys in Nevada and Utah possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM system. Scenic quality classes are determined in context with the regional landscape character. Open desert valley landscapes are characteristic and common to much of the project study area.

The BLM will consider public concerns for scenic quality in their decision process. The BLM uses the VRM system to manage the visual resources of public lands. For a detailed explanation of the VRM system and the visual impact assessment model refer to the Methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

Most of the roads and highways within the study area were considered a moderate visual sensitivity. For example, roads leading to WSAs and Wilderness areas were considered high sensitivity while Interstate 80 was considered of moderate sensitivity. Only roads designated as scenic highways or byways were considered high sensitivity viewpoints. Residences were all considered a high sensitivity viewpoint regardless of the number of persons in residence.

ARCHEOLOGICAL IMPACT SIGNIFICANT

The EIS does make a stab at quantitative impacts upon unstudied archeological sites in the path of the powerline. The estimated number of significant sites is stunning. This should put you on guard as caretakers of our Public Lands. These sites can't be replaced. When they are disturbed they become like Humpty Dumpty, they don't go back together again. You have chosen a natural north-south corridor for the proposed powerline. We have found over and over again that choices we make for routes of travel are the same that other people going before us have chosen. People and animal travel patterns will naturally congregate in these natural corridors. So, naturally, will the sites and evidence of stone age man in the Great Basin.

K

Your estimates of site concentration may be accurate but they may also represent a concentration of the total sites in the larger region of the Great Basin, especially along valley margins when the climate allowed damper conditions. There is no regional study placing these estimated sites in a larger context of possible total sites for the

K Because cultural resources in the project area are largely unknown, it cannot be demonstrated that "a larger than acceptable slice of a certain type of site" will not be lost. However, the regional study used in determining the alternatives for detailed consideration ensured that the vast majority of the most significant known cultural resources were avoided (refer to pages 3-88 and 3-89 of the SWIP DEIS/DPA). The discussion of cumulative impacts (refer to pages 4-85 and 4-86 of the SWIP DEIS/DPA) indicate that the project is likely to result in only a minor incremental loss of the regional resource base. Detailed inventories, evaluations of significance, and development of avoidance or mitigation measures will be carried out in consultation with regulatory agencies if the project is approved for construction.

K region. Are we losing a larger than acceptable slice of a certain type of site? How can we know this without the broader look being taken. Another reason for you the Public Lands caretaker to pause and stand on the side of conservation.

SUMMARY

Thanks again for the opportunity to comment. We have reviewed the EIS and discussed it in our Study Group. We have alerted other concerned people regarding the impact of this project and hope that you will strongly consider our arguments.

In summary:

The EIS has identified the huge adverse local impact of this project.

The EIS has not done an adequate job of evaluating regional impacts.

The EIS has wrongly discarded possible alternatives routes with existing powerlines.

The EIS has not presented a compelling benefit to justify even the impact identified.

For these reasons you should:

SELECT THE NO ACTION ALTERNATIVE

If you have any questions regarding these comments please contact us as noted below.

Yours truly,

Steve Tabor - President
510 357-[redacted]6585

Bob Ellis - Communications Director
510 482-0466

LETTER #B-7
COMMENTS



Fraternity Of The Desert Bighorn

Box 27494 Las Vegas, Nevada 89126-1494

September 16, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

The Fraternity of the Desert Bighorn is pleased to provide this input to the Southwest Intertie Project (SWIP) Draft Environmental Impact Statement (EIS). Our comments are limited to Link 720 that crosses the southern portion of the Arrow Canyon Range.

A On page 4-14, second paragraph, the EIS mentions two bighorn sheep water developments in the southern end of the Arrow Canyon Range, and that the BLM has recommended no new access within two miles of water and no winter construction. For your information the two water developments are three miles apart and Link 720 is planned to go between them. The EIS does not assess any impact on these critical water sources. How do you plan to avoid sheep watering developments by two miles when they are only three miles apart?

RESPONSES

A Your concern for the impact of the road through the Arrow Canyon Range, and the impact of increased public access on desert bighorn sheep is understandable. However, it is not necessary to re-route this transmission alternative to accommodate this concern. The most appropriate means of reducing impact to bighorn sheep would be to re-contour and rehabilitate the road (refer to mitigation measure #4 in Table 1-6). Limiting construction to winter months (mitigation measure #4) would further reduce the impact to bighorn sheep populations.

Minimizing or eliminating impacts to these water sources will be fully addressed in the Construction, Operation, and Management (COM) Plan for the project. Possible scenarios that will be explored include seasonal construction limitations, no new road construction, re-contouring and closing the existing road, and fencing or obstructing public access to the area. Refer to page 1-34 of this document for more information regarding the COM Plan.

LETTER B-7

LETTER #B-7
COMMENTS

B The road that splits the two developments has never had an environmental assessment. It was constructed illegally for an off-road race after the two water developments were constructed. The Stateline Resource Area Manager did not approve the road for racing because local television networks became aware of the illegalities. Any construction or commercial access along this road is probably illegal and subject to protest without a proper environmental impact statement.

Thank you for the opportunity to comment on the SWIP EIS.

Sincerely,

Derril W. Wenzel

Derril W. Wenzel
President

" A MEMBERSHIP UNSELFISHLY DEDICATED TO THE UTILIZATION, CONSERVATION AND WELFARE OF THE DESERT BIGHORN SHEEP"

RESPONSES

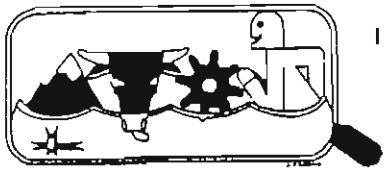
B It is not expected that the proposed access road construction will have a significant impact to the surrounding area. Any increase of access to public lands for this project will follow federal road management policies outlined in management guidelines or EISs. It is possible that new roads or roads with controversial uses can be locked.

There is an existing dirt road approximately 3/4 mile from the most southerly water development. This existing road runs for 2 1/4 miles and dead-ends. This road was located on our October 11, 1976 aerial photography, and was present when the second water development was constructed. This second catchment to the south of the existing road was constructed after the road was built. In the mid-1980s an extension of this road was illegally bladed for a distance of approximately 1/2 mile. However, it was not used as part of the Mint 400 ORV race course in 1985, or in any other event. The road does not tie into other roadways and the road is not held by a right-of-way.

The road is not new, and it may be used for construction access before being closed and rehabilitated. An alternate route around the southern tip of the Arrow Canyon Range may also be considered. Construction of the SWIP during the critical periods for bighorn sheep can be avoided.

The purpose of the SWIP DEIS/DPA was to assess the potential impacts of the construction, operation, and maintenance of a 500kV transmission line, not the potential impacts of an existing road that is located near bighorn sheep water developments.

LETTER #B-8
COMMENTS



INTERMOUNTAIN WATER ALLIANCE

721 Second Avenue
Salt Lake City
Utah 84103

September 10, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr Simonson:

Concerning the Southwest Intertie Project Draft Environmental Impact Statement and Draft Plan Amendment:

After I read the Draft Statement, I wondered how many more interties will be built across the western United States. Will each power company build north-south interties to take advantage of seasonal use of electricity and water? Will each power company build east-west interties to take advantage of coal supply in Montana, Wyoming, Utah and Colorado and Hydropower in California? And it became apparent that each intertie has to have its own corridor. And each proposal will no doubt utilize public lands because they are cheap.

A There does seem to be an assumption that the White Pine Power Project will be constructed and hence the Southwest Intertie route runs throught Steptoe basin. What is the status of this Power Project? With all the surplus potential (Intermountain Power Project with plans for a unconstructed 1500 megawatts, for instance) within the west due to poor projections of need of electricity, perhaps all reference to both the White Pine Power Project and the Thousand Springs Power Project should be eliminated and the routing and corridor re-examined. (See Page 1-4)

B When one looks at projections of energy demand (Page 1-5) from 1990 to the year 2000, perhaps one should also look at the same projections from the same region from the same North American Electric Reliability Council from the years 1980 to 1990 in which all the surplus capacity in Arizona, New Mexico, Utah, and other western states was constructed based on similar projections. Past projections have been a financial disaster for

LETTER B-8

RESPONSES

A It is appropriate to address both the White Pine Power Project (WPPP) and the Thousand Springs Power Project (TSPP) in the SWIP DEIS/DPA. These projects are considered "reasonably foreseeable" future actions that NEPA guidelines direct to be addressed. The WPPP, although no construction dates have been scheduled, is an option in future resource planning for the LADWP and other participants. Although the TSPP has been canceled, the region where the TSPP was proposed is a proposed series compensation station for the SWIP and the likely future location for possible interconnections with the SWIP in northeastern Nevada.

The LADWP, as have many utilities throughout the country, has implemented conservation, load management, and customer energy efficiency programs. The LADWP has projected a deferment of 600MW of supply-side resource requirements by the year 2000 as a result of implementing demand-side management programs. When these programs are combined with this proposed transmission system that will provide access to the surplus generation in the Northwest and Intermountain regions of the country, the LADWP could defer the need for major new generating plants during the next ten years.

Because of the financial risk associated with the large capital expenditures required to build new generating facilities, utilities are reluctant to commit to large new projects. The cost of the transmission system, when associated with generation projects, is a relatively small percentage (10 to 15 percent) of the total project costs. Getting these projects on-line is often delayed while the transmission system is permitted and constructed. Permitting of major projects must start many years before they are to be brought on-line. Therefore, the LADWP believes that it is prudent to have transmission lines permitted or actually in place before making the financial commitment to construct a generating plant.

B Current utility forecasts of resource requirements recognize the fact that the future is uncertain and take steps to reduce the risks resulting from that uncertainty. For the same reasons that investors diversify investment portfolios to minimize the risks associated with individual stocks, utilities seek to diversify their system resources to minimize the risks associated with individual resource options. To reduce the risks associated with load growth uncertainty, utility planning favors resource options which can be developed in the shortest possible length of time. Reducing the "lead time" of resource

LETTER #B-8
COMMENTS

B utilities and regional economies in the late 1980's and the present time. The Nevada projections (Page 1-7) suggest that gold mining will continue indefinitely and this industry consumes somewhere near 50% of Sierra Pacific production of electricity (It should be noted that the gold prices have been declining as gold production throughout the world surged in recent years and continued decline of gold prices will bring about mine closures.) The extensive expansion of the gambling industry may be at the expense of others as each new expansion obtains clientele from the previous expansion suggesting that bankruptcy may be the new industry in Las Vegas.

C ON Page 1-12, it is stated that "access to surplus northwest hydropower may reduce the risk of uncertain future oil and gas prices for southwest generation". Perhaps there will be no surplus northwest hydropower if the threatened and endangered salmons are given their fair share of water. Perhaps the intertie as proposed will be only one direction: from the excessive capacity of the New Mexico and Arizona utilities to the northwest.

D Through the report there is mention of the Powerplant and Industrial Fuel Use Act (PIFUA) of 1978 which discourages the use of fuel oil and natural gas for generating electricity (see Page 1-12). Is this Act still applicable? It seems that many utilities in the west are again utilizing fuel oil and natural gas. Further the Department of Energy is proposing multi-fuel plants that burn coal, fuel oil and natural gas. I propose here that throughout the report where PIFUA is used, it is used as a un-necessary justification of the Intertie Project.

Although Idaho Power has an excellent conservation program, its continued support of all-electric homes suggest that some of the conservation programs are self-serving. Certainly natural gas is cheaper and cleaner for heating . And the change from mercury vapor to high pressure sodium light may cause more light pollution. Page 2-2).

E Is Idaho Power the sole owner and operator of the Jim Bridger plant (see Page 2-3) as is suggested in the text?

F Page 2-5: "Through energy conservation and load management can somewhat reduce energy consumption, they affect energy use and system reliability on a local rather than a regional basis". What is the basis of this statement? It seems that if every utility as such a program it would affect energy use and system reliability on a regional basis.

G Page 2-6. Reference is made to 362 MW of transmission capacity between the Northwest and UP&L system. What capacity is between UP&L system and the south west (four corners region). Is there any plans by Pacific Power to upgrade this entire system in which the proposed Southwest Intertie would become obsolete? Does Californais have access to Arizona and New Mexico surplus electricity (i.e., is there an east-west intertie in the southern tier of states)?

RESPONSES

options allows the actual commitment to construct a resource to be made when forecasting uncertainty has been reduced as much as possible. By increasing the number of resource options available to a utility, the SWIP will serve as a tool for reducing the risk of overbuilding or underbuilding generating resources as a result of load and resource uncertainties.

C Because weather conditions are not predictable, hydropower is a variable resource for utilities. There are many proposals now being considered to determine how the federal dams on the Columbia River system will be operated. It is unknown how the Columbia River operations and the salmon recovery plan will affect Northwest-Southwest power exchanges at this time.

D That is correct. PIFUA is no longer applicable, and it is an inappropriate justification for the SWIP. It has been removed in this document (refer to the Errata in Chapter 4 of this document).

E PacifiCorp and the IPCo jointly own the Jim Bridger Power Plant. PacifiCorp is the operator of the facility.

F The statement that conservation affects energy use and system reliability on a local rather than a regional basis is meant simply to indicate that the conservation programs of individual utilities, like their generating resources, have a localized impact. Of course, conservation throughout the western region certainly will have an impact on overall future generating resource requirements in the region.

By reducing new regional generating requirements, however, conservation does not correspondingly reduce the value of regional transmission for minimizing resource costs. Even with reduced generating requirements, environmental and economic considerations may require the placement of new generation at substantial distances from population and load centers, thus requiring new transmission such as the SWIP. Also, because of the seasonal diversity which exists between Northwest and Southwest loads and resources, purchases and exchanges of power over the SWIP are expected to help the entire region meet load growth by utilizing existing resources more efficiently. Finally, regional conservation potential may be developed more fully given the availability of adequate regional transmission. Without such transmission, the cost effectiveness of conservation programs must be determined on the basis of the avoidable generating resource costs of an individual utility.

LETTER #B-8
COMMENTS

H Page 2-10. It seems that the corridor along the Wasatch Front is eliminated because of realestate costs,and that some power would flow to other lines, and the lack of connection with Ely. These excuses are rather shallow since the same problems would occur in some areas between Ely and the southern routing due to narrowness of the corridor. Routing to Ely is comparable to routing from Ely to Intermountain Power Project and considered as a separate project within this environmental statement. Certainly the higher realestate costs compensate for the lack of environmental problems associated with the existing corridor.

I Page 2-11 again brings up PIFUA. Although it is true that oil and gas are more expensive for baseload generation, seasonal use and peaking power use of these energy sources are economically justified in every region of the country. The Southwest Intertie proposal is one alternative to the use of seasonal and peaking use of energy. Oil and gas energy in peaking facilities is an equivalent use and should not be summarily dismissed. And what is the status of PIFUA, 1978? See above comment?

J What is not discussed in this Environmental Impact Statement is that all these Intertie Proposals can bring both regional stability of electrical use and regional instability of electrical use. The report only mentions the first first use. The best Utility will operate the best at local situations where it has first hand information. Once a utility is connected to interties and computers, it no longer can control local effects of electrical storms, fires, earthquakes as these effects will now affect the entire region and these effects can reduce reliability at the local utility. These are the trade-offs. Should events in Las Vegas and Los Angeles affect the people of Idaho?

Thus these criticisms are directed at the project purpose and planning. I have seen similar projects proposed in the passed with all their internal justification.and these projects were not needed and they cost the ratepayers much money and only promoted the utility administration. After reading the Environmental Impact Statement on the Southwest Intertie Project, I sense a very similar self-justification as the recent Thousand Springs Power Project proponents used. Hence I suggest a ten year delay in the construction of the Southwest Intertie project.

RESPONSES

Utilities having a lower avoided cost will be able to develop conservation resources to a lesser degree than utilities with a higher avoided cost. Transmission can enable the development of conservation throughout the region at a level determined by the highest avoidable generating costs in the region.

Conservation and demand-side management are integral parts of the resource strategy of every utility considering partnership in the SWIP. Federal and state regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest cost resources. Conservation and other demand-side management programs are expected to reduce, but not to eliminate, the region's need for new generating resources.

Transmission facilities would contribute in several important ways to the task of the region's utilities to meet future load growth in the most efficient manner possible and with the smallest amount of new generating capacity. First, it is important to recognize the seasonal load diversity within the region. Transmission will allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (i.e., generation) can be reduced by using transmission. When new regional generating resources are needed, transmission, such as the SWIP, would make more resource options available, and would help minimize costs and environmental impacts.

Because of the seasonal diversity that exists between the Pacific Northwest and the Desert Southwest, loads and resources, purchases and exchanges over the SWIP would be expected to help the entire WSCC region meet load growth by utilizing existing resources more efficiently. Regional conservation potential may be developed more fully given the availability of adequate regional transmission.

Also refer to the expanded discussion of purpose and need in Chapter 3 of this document.

G The Western Systems Coordinating Council (WSCC) reports the non-simultaneous transfer capability between Utah and Arizona at 550-590 MW.

LETTER #B-8
COMMENTS

The second aspect of the EIS is the selection of the alternative routings through and among some very sensitive ecological habitats. In this respect, the EIS did a good job in the description of the environments and route selection (even though the necessity of the project is questionable!).

Sincerely,

Peter Hovingh

Trustee,

Intermountain Water Alliance

RESPONSES

PacifiCorp has requested 240 MW of capacity on the SWIP. This interest expresses their desire to utilize the SWIP to help serve their increasing regional transmission needs.

California is heavily interconnected with the Southwest. The WSCC reports the non-simultaneous transfer capability in an east to west direction at 5700 MW. However, most of the firm capacity is committed to moving existing resources to California. A proposed transmission line from southern California to southern Nevada could increase the available capacity for east-west transfers.

H When the SWIP was originally proposed to terminate in the Delta, Utah area, alternative routes through the Salt Lake City area were possible, at least from a system connection standpoint. Several facts changed after the routes through the Salt Lake City area were first considered. First, the Utah-Nevada Transmission Project (UNTP), of which the SWIP was intended to interconnect near Delta, was found to be fully subscribed (i.e., did not have the capacity for the SWIP). This made a termination of the SWIP in Delta infeasible. The project description was then changed to extend the project from the Ely area to the Las Vegas area. Las Vegas is the termination of the UNTP and is considered "marketplace". One of the SWIP's goals was also to reach "marketplace". Second, the Ely area was also seen as a potential marketplace. For example, an interconnection with the existing 230kV system is viewed as a possibility. And finally, land use conflicts in the Salt Lake City area would have been very difficult to overcome.

I The cost effectiveness of a gas- and oil-fired generating resource for peaking applications cannot only be maintained, but can be enhanced, by transmission which would allow the resource to serve peaking loads in one part of the region during one season and peaking loads in another part of the region during another season. The SWIP would affect regional resource construction and operation only to the extent that it would provide resource alternatives which would be superior to existing alternatives.

PIFUA is no longer applicable and it is an inappropriate justification for the SWIP. It has been removed in this document (refer to Errata in Chapter 4 of this document).

A benefit of the SWIP is to postpone the requirement of utilities in the WSCC

region to construct additional generation facilities. The discussion on 2-11 of the SWIP DEIS/DPA focuses on cost differential between fuels. The fuel costs associated with these generation facilities represent about one third of the total production costs. While fuel costs are significant and represent a major economic savings for short-term transactions, long-term reductions in generating capacity are more significant.

J The IPCo system has been interconnected with other utilities in the WSCC region since the 1940s. The events in the Las Vegas and Los Angeles areas already impact the IPCo system. The main reason for interconnecting different regions is to improve the reliability of each system. An interconnected system provides for a more robust and stronger electrical system allowing the regions to help each other during a disturbance. One of the main functions of the WSCC is to evaluate system reliability and minimize the effect of disturbances on other utility systems. The addition of the SWIP could significantly improve system reliability in the WSCC region, including the IPCo system.

LETTER #B-9
COMMENTS

RUSSELL D. BUTCHER
Southwest-&-California Representative

August 12, 1992

RE: DRAFT SOUTHWEST INTERTIE
PROJECT EIS & DRAFT PLAN
AMENDMENT DEIS/DPA

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

National Parks and Conservation Association, a 300,000-member nonprofit organization, founded in 1919 to promote the protection, enhancement, and public understanding of the National Park System and related public lands, appreciates this opportunity to respond to the BLM's draft Southwest Intertie Project environmental impact statement and draft Plan Amendment DEIS/DPA. We are focusing our comments exclusively on the "Crosstie Alternatives," as follows:

A (1) We urge that it is appropriate for the public to sincerely challenge the basic justification for the "Crosstie" line from eastern Nevada (where the Southwest Intertie line is to be located) into western Utah. As we understand this proposal, it was not originally part of the Southwest Intertie Project, but was subsequently added to it. Therefore, it gives the appearance of not being an integral or essential component of the Project. To drop out this controversial Crosstie line would consequently seem to have no detrimental impact upon the Intertie Project. Given the fact that much environmental or other controversy revolves around the Crosstie, we strongly

LETTER B-9

RESPONSES

A The Ely to Delta segment of the SWIP has been a part of the SWIP from the beginning. The portion from Ely to Dry Lake was added later in the EIS process. The reason the Ely to Delta segment was maintained in the SWIP DEIS/DPA document is explained on pages 2-31 and 2-32 of the SWIP DEIS/DPA. The Ely to Delta segment was originally a joint SWIP and Utah-Nevada Transmission Project (UNTP) transmission line segment. When the SWIP was amended in June 1990, the IPCo's need for the Ely to Delta segment changed. However, this segment remains an important link to the UNTP and the need for it remains unchanged.

When the SWIP was originally proposed to terminate in the Delta, Utah area, alternative routes through the Salt Lake City area were possible, at least from a system connection standpoint. Several facts changed after the routes through the Salt Lake City area were first considered. First, the UNTP, of which the SWIP was intended to interconnect near Delta, was found to be fully subscribed (i.e., did not have the capacity for the SWIP). This made a termination of the SWIP in Delta infeasible. The project description was then changed to extend the project from the Ely area to the Las Vegas area. Las Vegas is the termination of the UNTP and is considered "marketplace". One of the SWIP's goals was also to reach "marketplace". Second, the Ely area was also seen as a potential marketplace. For example, an interconnection with the existing 230kV system is viewed as a possibility. And finally, land use conflicts in the Salt Lake City area would have been very difficult.

LETTER #B-9
COMMENTS

RESPONSES

A recommend that it be deleted from further planning...at least unless or until far greater justification for investing in this line can be provided in the future.

(2) Regarding the Crosstie Alternatives, we very emphatically oppose the Agency (BLM) Preferred Alternative between Ely, NV, and Delta, UT. While National Parks and Conservation Association has usually supported and even at times encouraged BLM's policy of placing new transmission lines within existing corridors, there are several reasons why we oppose doing so in this instance:

(a) Had the existing 230kV line (through Sacramento Pass at the north end of the South Snake Range) been subjected to the present-day standards of NEPA-mandated environmental impact studies and had Great Basin National Park already been established, we are confident routing would then have been selected, thereby leaving this scenically spectacular route free of the visual impacts of the 230kV line and free, as well, from the threat of transmission line expansion, like the proposed 500kV facility.

(b) We oppose the large-scale 500kV transmission line--even with visually mitigating design and color of the towers and the use of non-specular cable--because of the significant visual prominence the line would have, both from within many key parts of the national park and from stretches of the highway that offer motorists with grand, unobstructed views of the park and its magnificent mountains.

(c) The existing 230kV corridor is a round-about routing for the proposed 500kV Crosstie; and given (a) and (b), above, if any line is built, we strongly prefer a more direct corridor: either the Direct Route, which is clearly the shortest and therefore, we assume, the least costly option; or the Cutoff Route, which would utilize an existing 230kV corridor for about half its length--and which the document characterizes as the environmentally preferable alternative.

While we understand BLM's reluctance to push a new powerline through largely undisturbed landscapes, as would occur along the Direct Route and along about 50 percent of the Cutoff Route, we urge that environmental impacts of the 230kV Corridor Route would be even greater--particularly in relation to one of America's magnificent units of the National Park System. Nor should we ignore the likelihood that sometime in the future, a second and

LETTER #B-9
COMMENTS

even a third 500kV transmission line will be proposed to expand the capacity of the Crosstie (again assuming that the Crosstie can be justified in the first place).

B Regarding the Leland Harris Spring complex, would it not be reasonable, as frequently occurs along other powerline and pipeline projects, to simply shift the alignment far enough from such sensitive resources as to avoid the concern? We doubt seriously that the presence of this spring and other wetland habitat is reason enough to argue against the Direct Route.

C Regarding the argument concerning low military training flights, it seems unreasonable to conclude that the Department of Defense would be unwilling to make some adjustments in its flight patterns, should either the Direct Route or Cutoff Route be determined to be in the best public interest.

In summary, we very strongly urge a thorough re-evaluation of a NO-ACTION Alternative for the Crosstie proposal. Of the suggested alternative corridors, we very strongly oppose utilizing the existing 230kV corridor--because it shouldn't have been selected as a transmission corridor in the first place; because of the visual impacts upon adjacent Great Basin National Park; and because shorter and presumably less costly alternatives exist under the Direct Route and Cutoff Route alternatives. Rather than adding transmission lines to the 230kV Corridor Route and thereby increasing the visual impacts of that route, we would like to hold out the hope that the existing 230kV line may ultimately be removed in the future, so that this scenically outstanding area could be restored to a natural condition. This "window of opportunity" is before us now. Were one or more 500kV lines added, that window would be closed virtually forever. We hope you will seize the moment on this worthy opportunity...before it is too late.

Sincerely,

Russell D. Butcher
Pacific Southwest Regional Director

RDB/prb
cc: Sup't Al Henderson,
Great Basin Nat'l Park
NPCA headquarters

LETTER B-9

RESPONSES

B The Leland Harris Spring complex encompasses an area that is actually larger than it seems. The complex stretches for many miles in either direction from the alignment of the Direct Route. Throughout the Snake Valley occur many natural springs and wetland habitat for certain species of fish, frogs, and butterflies which are dependent on the springs for their survival. To simply shift the alignment of the transmission line would not be enough and it could add another ten to twenty miles to the corridor. The species within these springs [Category II and Endangered (one species)] have also not been mapped because of wetland soils and the possibility of underwater tributaries which would make this area even more sensitive. The presence of the Leland Harris Spring complex is certainly not the only impact along this route. The impacts to flight operations in the R-6504 Restricted Area, visual impacts, cultural resources, and other biological concerns all combine to present problems with this route.

C Regarding the Direct Route and the R-6504 Restricted Area, the Department of Defense has stated in correspondence that building any towers over 30 feet in height is unacceptable due to constant use of the area by military missions and exercises as part of the Utah Testing and Training Reserve (UTTR). The UTTR is one of the largest training areas in the West still operable and able to maintain a large variety of missions. Also as more bases are being closed by Congress, it is very unlikely the Department of Defense will easily relinquish alterations to its Restricted Area. It is incorrect to state that the military is unwilling to negotiate on the routes through the Military Operating Areas (MOAs) on the other Ely to Delta segment routes. There is agreement where towers would be kept to 105 feet or less through specified areas to minimize impacts to low-level flying operations.

LETTER #B-10
COMMENTS

RESPONSES

NEVADA OUTDOOR RECREATION ASSOCIATION, INC.
NATIONAL PUBLIC LANDS TASK FORCE
SOUTHWEST WILDLANDS EDUCATIONAL INSTITUTE (NORA)
NORTHERN ROCKIES BLM TASK FORCE (NORA)

HONORS
1974 Hilliard Memorial Award - RENO, NEV.
1981 Desert Wilderness Conference Award
1987 Desert Protective Council Award
1989 Chevron Conservation Award

Founded 1958

HONORARY LIFE MEMBERS

Charles S. Watson, Jr.
Carson City, Nevada

Alvin M. Lane
Reno, Nevada

Darwin Lambert
Luray, Virginia

Prof. Ross Smith
U.N.R., Reno, Nevada

Jeff Van Ee
Las Vegas, Nevada

Howard Booth
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C. Clifford Young
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Richard Pough
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Michael Fromme
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Grace Burkowski
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John B. Anmar
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Clifton R. Merritt
Denver, Colorado

Kirk A. Peterson
Reno, Nevada

Dr. Richard Barzen
Gabbs, Nevada

William Meyers
Boise, Idaho

September 3, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley Idaho 83318

Re: Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA) on the proposed Idaho Power Company 500kV Transmission Line (Southwest Intertie Project).

Dear Mr. Simonson,

Please accept these comments on the above referenced DEIS/DPA on behalf of the Nevada Outdoor Recreation Association and Paul C. Clifford, Jr. both jointly and severally. Please send each of us a copy of the Final Environmental Impact Statement/Proposed Plan Amendment (FEIS/PPA) and Record of Decision at our addresses listed below.

The Bureau of Land Management and Dames and Moore are to be congratulated on producing a document reflecting remarkable consensus in an exceedingly difficult endeavor, namely the siting of a major electric power transmission facility. WE SUPPORT THE AGENCY PREFERRED ROUTE FOR BOTH THE SWIP AND CROSS-TIE. From our point of view there is only one major difficulty regarding routing alternatives - the choice of the Cut-off route as the environmentally favored alternative for the Cross-tie, which will be addressed below. However, certain other questions also remain.

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LETTER #B-10
COMMENTS

RESPONSES

Amy Mazza
Reno, Nevada
Robert Pound
Sea Ranch, California
Roger Scholl
Reno, Nevada
Drummond Pike
San Francisco, California
Charles H. Callison
Denver, Colorado
Charles H. Stoddard
Shinons, Wisconsin
Paul Gerhard
Cleveland Heights, Ohio
Harriet Allen
San Diego, California

Unfortunately, a number of proposed activities by various public and private entities including, but certainly not limited to, land transfers between the public and private sectors (particularly for utility rights of way), transfer of water from one basin to another within Nevada and interstate or international transfers of water by pipeline and/or agueduct through eastern Nevada, have forced the citizens of eastern Nevada to be very wary of all large scale projects such as the SWIP. As a result, can you answer for us some basic questions which do not seem to be directly or adequately addressed in the DEIS? A

ISSUE 1) The SWIP as documented in the DEIS is really two distinct projects: Midpoint to Dry Lake (what is now referred to as SWIP) and the Cross-tie (Ely to Delta). The bulk of the SWIP (however defined) is situated in Nevada. Both SWIP and the Cross-tie have major impacts in the Ely BLM District. Idaho Power Company will not be responsible for the Cross-tie in any way. They have agreed to transfer their rights to any Cross-tie transmission right of way to the Los Angeles Department of Water and Power.

A QUESTION 1) Why was this project permitted to so change its character that the areas with the greatest impacts were left with no control over the development, management, and determination of alternatives, unless this is a callous, calculated maneuver to limit the adverse reaction anticipated from those excluded from the management loop?

B QUESTION 1A) Why is the "Cross-tie" not a separate issue, under the jurisdiction of either Utah or Nevada BLM? This project does not enter Idaho at all. The entity which is to actually use the right of way is from California, not Idaho. What is the rational for Idaho BLM to be the lead Agency? Most of the controversy about the Cross-tie concerns lands in the Ely BLM District. Will the ELY BLM District be essentially granted the lead role in determining the suitability of the several Cross-tie routes through its District for the Final Record of Decision? B C

C QUESTION 1B) Will this DEIS/DPA set a precedent for starting a relatively limited project in an area where favorable administrative review might be anticipated, and then gradually changing and expanding the program into areas

The Ely to Delta segment of the SWIP has been a part of the SWIP from the beginning. The portion from Ely to Dry Lake was added later in the EIS process. The reason the Ely to Delta segment was maintained in the SWIP DEIS/DPA document is explained on pages 2-31 and 2-32 of the SWIP DEIS/DPA. The Ely to Delta segment was originally a joint SWIP and Utah-Nevada Transmission Project (UNTP) transmission line segment. When the SWIP was amended in June 1990, the IPCo's need for the Ely to Delta segment changed. However, this segment remains an important link to the UNTP and the need for it remains unehanged.

When the SWIP was originally proposed to terminate in the Delta, Utah area, alternative routes through the Salt Lake City area were possible, at least from a system connection standpoint. Several facts changed after the routes through the Salt Lake City area were first considered. First, the UNTP, of which the SWIP was intended to interconnect near Delta, was found to be fully subscribed (did not have the capacity for the SWIP). This made a termination of the SWIP in Delta infeasible. The project description was then changed to extend the project from the Ely area to the Las Vegas area. Las Vegas is the termination of the UNTP and is considered marketplace. One of the SWIP's goals was also to reach marketplace. Second, the Ely area was also seen as a potential marketplace. For example, an interconnection with the existing 230kV system is viewed as a possibility. And finally, land use conflicts in the Salt Lake City area would have been very difficult.

Also refer to the expanded discussion of Purpose and Need in Chapter 3 of this document.

The BLM is the designated Lead Federal Agency. The BLM Director assigned Idaho as the lead state for meeting BLM NEPA responsibilities on this project on October 31, 1988. It has remained so during the various changes in the project. This is explained in Chapter 2 of the SWIP DEIS/DPA. The Ely District of the BLM will be involved in the decision process. The Idaho BLM lead for the projeet by no means restricts Ely's input.

No. Please refer to page 2-31 of the SWIP DEIS/DPA for an explanation of why the SWIP was expanded from the Ely area south to the Las Vegas area. Also refer to the response to comment "A" above.

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COMMENTS

C where less favorable review or more controversial issues might be anticipated, even including changes of beneficial ownership of rights to the permitted activity (IPC to LADWP)?

D QUESTION 1C) Where is the limit between reasonable convenience to the petitioner versus the need for real power in oversight and management of the permitting process by those potentially adversely affected? Why is it not reasonable to expect LADWP to deal with the ELY BLM District directly with regard to the Cross-tie? Why are mitigation measures of import to the Ely BLM District being determined by two surrogates, Idaho BLM and Idaho Power rather than those directly affected, Ely BLM and LADWP?

ISSUE 2) This DEIS/DPA is written in such a summary form that it is very difficult if not impossible to make any definitive decision or comment based on technical data. Such data are crucial to informed comment and are the heart of the requirements of NEPA, which mandates this DEIS/DPA. A very limited number of technical reports and data tables were printed and distributed to public agencies but not to individuals. NEPA also requires that all persons wishing to comment be heard. Those of us who have legitimate interests in the project, but who do not live conveniently close to a "file" copy are effectively excluded from informed comment. If expense is the issue, such expenses should be bourn by the petitioner and be a routine expense of the permit process. The respondent has no control over the magnitude of the project and hence the amount of technical data required to support the decision. NEPA requires that this data be available to all respondents.

E QUESTION 2) Why were the technical reports and data tables not made available to ALL interested parties?

F QUESTION 2A) There have been numerous mailings associated with this project. A form for requesting the technical reports and data tables could have been included in each of the last four mailings. Why was this not done?

G QUESTION 2B) Since the technical reports and data tables were not made routinely available to individual respondents, which severely limits their ability to make informed comment, is this in fact a valid DEIS/DPA? Will the FEIS and Record of

RESPONSES

D Please refer to Response B above. The IPCo is the project proponent for the Ely to Delta segment because of the original right-of-way application. The LADWP has been involved in all aspects of the SWIP EIS process because of the IPCo's intent to request the BLM to transfer the right-of-way grant for this segment, if granted, to the LADWP. Again, the BLM in Ely has also been involved 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 for the Ely to Delta segment is granted, the BLM in Ely will be directly involved with in the development of the Construction, Operation, and Maintenance Plans, as well as the actual construction, operation, and maintenance of the project. Refer to page 1-34 of this document for more information regarding the Construction, Operation, and Maintenance Plan.

E The technical reports and data tables were made available to all interested parties to review, as explained in Appendix H of the SWIP DEIS/DPA. Only a limited number of technical reports were printed because of the costs of printing and mailing the nine document sets. The alternative to making these limited number of documents available for public review would have been to restrict public review to the project files. The technical reports were produced to facilitate public review of all of the detailed studies without having to travel to Idaho. Additional sets of these documents were sent to the local libraries indicated on page 4-17 of this document.

F Refer to Response E above.

G Refer to Response E above.

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LETTER #B-10
COMMENTS

G Decision be delayed until this deficiency is met by determining if anyone wishes to receive these documents and is given a reasonable and customary time to either enter a comment or amend comments already submitted?

ISSUE 3) The Federal Lands Policy and Management Act explicitly requires that existing designated utility corridors be used whenever possible when siting new transmission facilities. This portion of the law appears to have been totally ignored in formulating alternatives in this DEIS/DPA, even after citing this fact! Each of the BLM Districts traversed has an in place land use plan, which in effect constitutes a form of internal zoning. These plans delineate a number of utility corridors requested by the various utility companies. The DEIS/DPA contains no map of ANY existing designated utility corridors (utilized or empty). Existing long distance power transmission lines are shown only where they interact or enter the proposed right of way.

H QUESTION 3) Where are the currently existing designated utility corridors which are germane to this project (contained within the five map sheets)?

H QUESTION 3A) Where are the proposed or existing utility corridors for the proposed White Pine Power Project (WPPP)?

H QUESTION 3B) What relationship, if any, exists between the WPPP proposed or existing utility corridors and the proposed SWIP corridor?

ISSUE 4) Utility corridors are designated in the normal planning process within each agency's land use planning process, most particularly in Master Framework Plans (MFP) or Range Management Plans (RMP) for each BLM District. The SWIP has been in the making for many years.

I QUESTION 4) Why are segments now proposed (such as the Cut-off route) which lie outside any designated utility corridor, particularly when existing designated corridors fill the same transmission needs?

J QUESTION 4A) Of what use is the planning process if major modifications, such as totally new utility corridors, can be introduced outside the scope of the general planning process?

RESPONSES

H Please refer to Chapter 1 of this document for this discussion and for maps (Figure 1-1 and 1-2) of the designated and planning corridors.

I The NEPA process mandates evaluating "reasonable and feasible" alternatives which in this case include routing alternatives which lie outside of designated utility corridors. The Record of Decision for the SWIP may amend Management Framework Plans and Resource Management Plans for the BLM if appropriate. This is why the EIS process is combined with a plan amendment process.

The Federal land management agency will retain ownership of the land within the right-of-way. For private lands, an easement would be purchased from the land owner, but the private land owner would still own the land unless a fee purchase was made by the utility company.

J A planning process must be dynamic to respond to changes. When land use plans are completed, the plans are responsive to the resource issues at that point in time. A land use plan must have the flexibility to be responsive to changing situations or new information. That is the reason why the BLM regulations allow for plan amendments. Like any new land use plan, land use plan amendments also require public input and allow for public comment.

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COMMENTS

ISSUE 5) Land ownership and control of use of the right of way is also a concern.

K QUESTION 5) Who will own the land contained within the right of way?

L QUESTION 5A) Who will control additional or ancillary uses of the utility corridor/right of way for uses other than the direct construction, maintenance, and utilization of the right of way for SWIP or the Cross-tie? What environmental safeguards will remain? Will additional uses require a formal EIS?

M QUESTION 5B) Will creation of these utility corridors (assuming they are not already designated) facilitate their use by the current petitioners (IPC and LADWP) or others for the inter-basin transfer of water, interstate transport of water, or international transport of water through eastern Nevada by pipeline, aqueduct or any other means?

ISSUE 6) There are at least two major components of visual values and hence visual impacts. All other things being equal, the fewer people offended, the better. More fundamentally, there is the issue of introduced visual characteristics, i.e. what will be fundamentally changed. Throughout the DEIS/DPA this second component is totally ignored even though this is recognized as a legitimate issue, especially if the area is remote. This seems to be an acute problem wherever the environmentally preferred route is different than the Agency or utility preferred routes. However, since these are the only places that one can observe the independent interplay of issues in selecting a given route/alternative, one is left with little confidence that this criterion received more than passing lip service in any route determination.

N QUESTION 6) Will the visual impacts of the project be re-thought in the FEIS and ROD to include the critical visual impact component of fundamental changes in the character of the viewshed and its surrounding area?

ISSUE 7) The choice of the Cut-off route as the environmentally preferred alternative for the Cross-tie project is most unfortunate, and we believe, does not withstand reasonable scrutiny. For the purposes of these comments, when we refer to the Cut-off route we are speaking only of links 262, 265, 266, 267, 268, a total distance of about 79 miles. The remainder of the route is coincident with the 230kV corridor

RESPONSES

K The land management agency or private land owner will retain ownership of the right-of-way.

L The land management agency will control the right-of-way for the uses designated in the right-of-way grant or special use permit. The National Environmental Policy Act will apply to any revisions of the operations other than what is stated as the permitted uses.

M Establishing utility corridors means potential use by other linear facilities. However, a right-of-way grant would be needed before any other project could be constructed. This would require complying with the National Environmental Policy Act.

N Impacts to the scenic quality of the landscape were assessed consistently for each of the alternative routes. Please refer to Volume III - Human Environment Technical Report for a complete discussion of the methods. Appendix H of the SWIP DEIS/DPA explains where the Technical Reports can be reviewed. Also refer to Appendix H in the Errata of Chapter 4 for locations where additional copies of the Technical Reports can be reviewed.

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COMMENTS

of which we approve. The Cut-off alternative was added relatively late in the decision making process to allay concerns raised by the Great Basin National Park concerning degradation of the ambiance and viewshed to the north of the Park. We are unaware of any instance in which the implementation of a transmission line enhanced the visual, aesthetic, or environmental quality of the corridor along its route. There is no "good" place to put a transmission line, only "less bad" locations. Certainly, the Cut-off route is among the worst that could be rationally proposed when judged from an environmental point of view. Perhaps this is the result of not developing all of the criteria for this route to the same degree as for other parts of the project such as the main SWIP alternatives - there is much white unassigned value along this route on the cultural and biological impact maps and much misinformation on the visual and land cover maps. All noted errors and omissions appear to undermine or under value the ecological integrity found along this route. In terms of data collection and evaluation, this route appears to be an afterthought. Whatever the reasons, the designation of this route as the best environmental alternative is totally unacceptable.

O QUESTION 7) Since the Cut-off route does not comply with the existing Schell Resource Area RMP which contains no provision for a utility corridor with this alignment and is in apparent conflict with FLPMA which provides that, where possible, future transmission lines should be sited in existing corridors and there being an existing corridor to achieve the same transmission goal, i.e. the 230kV Corridor, is the Cut-off alternative legally viable? Will the FEIS and Record of Decision be in accordance with the Schell RA RMP and FLPMA and/or delete the Cut-off Alternative?

P QUESTION 7A) With regard to the biological resources present along the Cut-off corridor, are you aware that there is CRUCIAL YEAR LONG and KIDDING GROUND use by antelope along essentially all of links 266 and 267? In fact, this area is sufficiently important that it was designated as the Antelope Game Refuge in the early 1920's by the State of Nevada. This refuge extended from the northern limit of the Mt. Moriah Unit of the Humboldt National Forest northward to the Elko/White Pine County Line and 15 to 17 miles westward from the Nevada/Utah State Line. This refuge was in existence until the mid to late 'Forties. During this time all big game was in real danger of extirpation in Nevada.

RESPONSES

O Yes. The SWIP process may amend existing Resource Management Plans or other land use planning documents; a decision by the BLM to establish a route would also establish a utility corridor.

P Major portions of Links 266 and 267 were identified as pronghorn antelope habitat, including pronghorn winter range. However, no crucial yearling or kidding ground designations were indicated to the document preparers for these links during the inventory. Similarly, the preparers were never informed of the antelope refuge.

LETTER #B-10

COMMENTS

P Were the existence of the refuge and both the biological and cultural/historical significance of this area known to the evaluators? Will these factors be considered in the FEIS and Record of Decision?

Q QUESTION 7B) A statement is made in the DEIS (page 3-18, Wildlife, wild horses and burros) that "none occur within the study corridors". In point of fact the Cut-off corridor crosses at least two herd areas in Nevada, the Antelope Herd Management Area and the Mt. Moriah Herd Management Area. Both of these HMA's have very real horses in them! Are the preparers of the DEIS aware of these HMA'S? Why are they not considered at all? Will the FEIS and Record of Decision reflect their existence?

R QUESTION 7C) Virtually the entirety of the Cut-off route in Nevada is in prime Ferruginous Hawk habitat. While buried in the text, why is this not depicted on the Biological Resources Map #3 & #4? The open sage to scattered pinion/juniper stands of the adjacent mountains are the ideal habitat for this species. Will their presence along this corridor be recognized and given weight in the FEIS and Record of Decision?

S QUESTION 7D) At least link 267 crosses an unusual succulent transition zone giving rise to most peculiar appearing cacti. This statement is based on observations made by Alvin McLane of the Desert Institute at the University of Nevada-Reno. Why is this area not given consideration in the DEIS? Will the FEIS and Record of Decision reflect the existence of this transition zone?

T QUESTION 7E) Why is there a large (presumably barren) playa area on link 267 between miles 15 and 20? There are no playas at this location. The playas are about 3-4 miles west. What does occur are fairly large stands of winterfat on a gently rolling terrane with a general westward slope of perhaps 5%, which might give similar reflectance from satellite imagery. On the ground no one should make this mistake! It is in part this large percentage of winterfat that makes this excellent winter range for antelope and other big game species, such as elk which are moving into the area from both north and south. Will someone actually go out and properly evaluate the environmental suitability of this route on the ground before the FEIS and Record of Decision? Will the FEIS and ROD reflect the actual facts as they are on the ground and

RESPONSES

Q This has been corrected in the Errata in Chapter 4 of this document. Refer to page 3-35 under Herd Management Areas.

R One of objectives in mapping resources was to illustrate the occurrence of discrete, relatively sensitive biological features. Where ferruginous hawk habitat was represented by discrete units within a link, it was mapped. Where it occurred essentially throughout a link, the BLM did not map it. The same is true of pronghorn habitat. The BLM mapped discrete elements of pronghorn natural history (e.g., crucial wintering grounds), but did not attempt to map all pronghorn habitat in the study area. The presence of ferruginous hawks throughout this part of Nevada has been considered and will be further addressed during the development of the Construction, Operations, and Maintenance Plan (refer to page 1-34 of this document).

S The BLM was unaware of this transition zone until receipt of your letter. Kim Otero contacted Alvin McLean at the Desert Institute. He had no recollection of the "unusual succulent transition zone" referred to in this comment. Surveys for sensitive plants will be conducted along the right-of-way and access roads of the selected route (refer to the Construction, Operation, and Maintenance Plan on page 1-34 of this document).

T The areas labeled as playa on Link 267 between miles 15 and 20 (Cutoff Route) have been incorrectly identified. The correct landcover is sage scrub. The 230kV Corridor Route is the environmentally preferred route with consideration of cumulative effects (refer to Chapter 3 of this document).

LETTER #B-10

COMMENTS

T rescind the designation of this corridor as the environmentally preferred route?

U QUESTION 7F) Link 266 appears to go out of its way to take dead aim on the Red Hills and run along the entire length of the top of this topographic feature. There is no road on this ridge top and the slopes are significant. Construction costs must be higher in this constrained environment unless grievous damage is to be done to the ridge top. Erosion will be generally more severe for both the short and long term than the short stretches indicated on the Earth Resources Map #3. Why does the route go the length of these hills instead of at their base? If this route is chosen for construction, will the actual alignment be changed to avoid the ridge of the Red Hills?

V QUESTION 7G) The Visual Resources Map #3 and #4 depict the entire Cut-off route as having minimal visual impact over its entire length except the short link 262. Nothing could be farther from the truth. This entire route is in fact noteworthy for the absence of visual impacts due to human activity. We believe that the Ely District now classifies much of this area ("Mike Springs Pass") as Visual Resource Class II. Except where the corridor crosses the relatively low voltage rural electrical distribution lines at the road on the west side of North Spring Valley, at Tippitt Pass, and at the road on the west side of Snake Valley, there is essentially nothing man-made higher or more intrusive than an occasional fence over a corridor distance of about 75 miles (links 263, 265, 266, 267, 268)! No houses, barns, silos, industry, smokestacks, chimneys, or poles. Even for rural Nevada, this area is remote! The introduction of a 500kV powerline with four-legged lattice towers at least 130 feet tall, especially running the Red Hills ridgeline and "Mike Springs Pass", would be a massive change in the visual character not only of the corridor, but the entire area. The viewsheds of the Mt. Moriah Wilderness Area, the Blue Mass Scenic Area and the Gandy Area of Critical Environmental Concern are all severely adversely impacted by this corridor. Why is this massive visual impact ignored in the DEIS? Will the FEIS and ROD take this massive visual impact into account and upgrade the visual impact from minimal to high. If not, why not?

W QUESTION 7H) The National Park Service is the only serious "Agency" opponent of the 230kV Corridor route. They are

RESPONSES

U Link 266 does not traverse the ridge of the Red Hills.

V Neither the Direct Route or Cutoff Route corridors would cross VRM Class II areas in the Ely District. According to the Schell Resource Area, Ely District, most of the area is Class III and Class IV. These routes would pass near VRM Class II areas around the Blue Mass Scenic Area, the Gandy ACEC, and Marble Canyon WSA. Both routes would pass near the Mt. Moriah Wilderness, which is VRM Class I. All other areas that would be crossed are Class III and Class IV.

Visual impacts to the Mt. Moriah Wilderness, the Blue Mass Scenic Area, the Gandy ACEC and the Marble Canyon WSA were evaluated in the SWIP DEIS/DPA (refer to Volume III - Human Environment Technical Report). Because views from dispersed recreation can occur from virtually anywhere within their boundaries, the effects of the SWIP alternative routes were characterized in somewhat general terms (refer to page 3-26 of this document).

Mitigation has been recommended to minimize the potential adverse effects of alternative routes on views from dispersed recreation viewpoints. Recommended mitigation measures consist of using non-specular (non-reflective) conductors and dulled structures in sensitive areas where the visual contrast would be strong.

W Public Law 102-328, enacted August 3, 1992, designates both the California National Historic Trail and the Pony Express National Historic Trail as components of the National Trail System. This designation did not exist at the time the SWIP DEIS/DPA was released, although both routes were considered and all crossings were identified. Both trails would be crossed by the SWIP in northern Nevada.

It is incorrect to say that the recent act, amending the National Trail System Act, "puts the trail under their (NPS) care and safekeeping." Similarly, the new law does not mandate NPS acquisition or corridor management. While the NPS serves in an advisory capacity and conducts studies relative to national trails, the National Trail System Act states, in Section 7(a)(1)(A), that: "Nothing contained in this Act shall be deemed to transfer among Federal agencies any management responsibilities established under any other law for federally administered lands which are components of the National

W apparently willing to sacrifice other major ecological values to preserve their own viewshed at Great Basin National Park. However, they may wish to re-think their support for the Cut-off route. A recent law has been enacted which puts the Pony Express Trail under their care and safekeeping. The Law mandates that NPS acquire and/or manage the corridor of the Pony Express Trail to preserve its character and integrity. Cut-off link 265, the north end of link 266 in the vicinity of Tippitt Pass, and probably link 262 would have major visual intrusions and totally change the historically accurate ambiance of this 20 mile segment of the Trail. Given this new mandate, will the NPS now oppose the intrusion of the Cut-off into the viewshed and ambiance of the Pony Express Trail?

X QUESTION 7I) Given the genuine and valid concern of NPS for the viewshed of Great Basin National Park, is not the incremental impact of a third transmission line north of the Park in the established 230kV Corridor less of a total impact than almost 80 miles of new transmission line in a pristine area where none currently exists?

Y QUESTION 7J) If the Park indeed must place its information kiosks within the immediate viewshed of the new transmission line, why not make the object lesson that the viewer, 90% of whom come from major metropolitan areas, have only themselves to blame for this visual intrusion, since it is to support their demand for more electricity that the line was built?

Z QUESTION 7K) The LADWP insists that it will only consider the most visually intrusive four-legged lattice towers for the Cross-tie because this is the only style of tower in which they purport to have confidence, despite contrary experience elsewhere in the country. Would not the NPS have greater ability to insist that less intrusive towers be used in areas impacting their viewshed?

AA QUESTION 7L) LADWP has indicated that they will only consider four-legged lattice towers on the Cross-tie route. These are the most visually intrusive towers possible. If the Cut-off alternative is selected for implementation, will the visual intrusion be mitigated over approximately 80 miles of corridor by the use of less visually intrusive guyed tower designs? Will both towers and wires be covered with a non-reflective coating to reduce visual impact? If not, why not? Will the utility be permitted to dictate its preference to

Trail System." The federal lands involved at the crossings of these two trail components and the SWIP are currently administered by the BLM. This management does not change as a result of P.L. 102-328. The above notwithstanding, the National Park Service agrees that these two trails are significant cultural resources which merit protection. The BLM also believes that the recent designation of the California Trail and Pony Express routes as National Historic Trails heightens even further the level of protection that should be afforded.

X The impact comparison between these two routes is discussed on pages 2-53 through 2-54 and summarized in Table 2-4 of the SWIP DEIS/DPA (also refer to Table 1-2 in this document). There is also additional documentation of these impacts in this document in Chapter 3.

Y Your comment is noted and will be considered in the BLM's decision process.

Z This has been done. Corten-steel H-frame towers will be used as mitigation at the proposed road crossings which lead to Great Basin National Park. The H-frame poles may be used elsewhere as neeessary to mitigate visual impacts. Refer to Table 4-2 #5 in the SWIP DEIS/DPA.

AA The guyed tower is not being considered as visual mitigation for the Ely to Delta segment. Yes, there are locations along all alternative routes, including the Cutoff Route, where non-specular conductor and dulled towers are specified to mitigate visual impacts. The utilities have already negotiated the mitigation measures with the BLM and have agreed to all of the mitigation measures that were recommended in the SWIP DEIS/DPA.

From the Selectively Committed Mitigation Measures listed in Table 4-2 of the SWIP DEIS/DPA, the LADWP has committed to the use of measure numbers 5, 7, and 10 in conjunction with the self-supporting (four-legged) steel-lattice towers on the Ely to Delta segment routes. Steel-lattice towers tend to be less visually evident in distant views than steel pole towers. The LADWP has strong internal policy reasons for not using the guyed tower design. The LADWP has developed current designs for transmission line towers based on its many years of experience in construction and maintaining high voltage transmission lines. The LADWP's experience includes the construction of 1838 guyed towers in 1969 and maintaining them for 23 years.

LETTER #B-10
COMMENTS

AA

the BLM? How can less visually intrusive guyed tower designs be acceptable to IPC for the SWIP corridor but be unacceptable designs for LADWP for the Cross-tie covering essentially similar terrane?

BB

QUESTION 7M) On July 30, 1991, at about 9:55 P.M. an F-16 flying out of Hill AFB crashed in "Mike Springs Pass" while on a low level training mission. The plane dug a furrow in the ground about three-quarters of a mile long a few miles south of Mike Springs, essentially along the proposed centerline of the Cut-off corridor. Hundreds of missions are flown through this pass every year. the planes are often so low (several hundred feet or less) that they are blocked from view by the slightest clump of bushes or rise of ground. The planes are often banking sharply to stay within the envelope of the UTTR as defined by the navigation beacon on Kern Mtn. A picket fence of high tension lines and 130 foot high pylons is about the last things these pilots need to distract them!!! Assuming that the Air Force will continue to train for low level missions over this area, will the FEIS and ROD recognize the extreme danger to human life that this segment of corridor presents to military pilots? The 230kV Corridor also crosses military air space, but not so near the UTTR itself, and there are existing towers and lines in this right of way. Why not keep the hazard concentrated where it currently exists?

CC

QUESTION 7N) The Cultural Resources Map #3 shows major un-evaluated areas along the Cut-off route. The DEIS makes the implication that statistically, these areas will have about the same importance as most of the rest of eastern Nevada. We believe that this may not be so. The Kern Mtns. have an unusual, more east-westerly trend than the typical basin and range mountains. This gives rise to a very high percentage of northern and especially southern facing micro environments well suited for large and small game, pinion nuts, and edible grasses such as Great Basin Rye. The Kerns are also unusually well watered with numerous well dispersed springs. There is only about 20 miles between these mountains and the North Spring Valley marshes, now often dry playas due to use of water for irrigation. In former times these marshes would have been a major food and fiber resource locality. Archaeological investigations, as noted in the DEIS, indicate that the general area has been occupied for about 12,000 years. Unlike most subsistence hunter/gatherers, the local inhabitants would only require

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When compared to free standing towers, the LADWP feels that guyed towers have the following advantages and disadvantages:

Advantages

- lower initial costs
- less visual impact

Disadvantages

- not as capable to handle broken wire conditions, resulting in increased probability of tower failure and, in particular, the cascading failure of many towers at one time
- vandalism/sabotage leading to tower failure easier to accomplish by cutting guy wires
- corrosive action on guy anchors can lead to releasing the guy wires and tower failures far easier than the same corrosive action on footings of a free standing tower
- anchors and guy wires easily damaged by vehicle traffic with increased chances of liability lawsuits resulting from public use of access roads.
- guy wires require frequent monitoring for proper tensions
- costs incurred for additional line outages required for maintenance
- transmission line reliability reduced

The LADWP is willing to incur the additional initial costs because they consider the disadvantages of a guyed tower to be a major concern.

Except for areas where the United States Air Force requires the structures to be more visually apparent, the mitigation measure to use dulled towers and non-specular conductor will be implemented in the recommended locations.

It is the LADWP's policy to work with the land management agencies to develop mitigation measures for specific environmental impacts that occur along the selected route. The environmental process does not allow a utility to dictate its preference.

BB All of the alternative Ely to Delta segment routes would cross through the Utah Testing and Training Range (UTTR) operated by Hill Air Force Base. The Direct Route is the only route that would cross through a significant

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CC

an annual trek of 40 miles rather than the more usual several hundred miles to get all necessary resources. Even obsidian, chert, and hornfels for making implements is relatively close at hand. The area has always been on or near significant cultural boundaries for as long as these can be differentiated. This compression of activity into such a relatively small area should significantly increase the density and scientific importance of pre-historic and ethno-historic sites exactly along the proposed corridor. Will the FEIS and ROD recognize the likelihood of a unique area of cultural resource concern along the Cut-off route?

ISSUE 8) The Las Vegas District of the BLM is currently involved in the updating/renewal of its existing RMP. Our support for the southern portion of SWIP in Clark County is predicated on SWIP remaining in utility corridors as currently defined, especially outside but adjacent to the Delamar Mts. WSA, Coyote Valley, Aerojet Corridor, Arrow Canyon WSA, and other WSA's west of US Highway 93.

DD

QUESTION 8) Will the SWIP transmission facility be confined to existing utility corridors, as currently defined, within Clark County? Despite industry preferences, will stacking of multiple lines on a single set of towers be utilized before expanding the corridor into WSA's, ISA's, and ACEC's? If not, why not?

ISSUE 9) There is currently a plethora of utility corridors, in various states of designation and approval and utilization in and around Las Vegas. Not even the Nevada State BLM can definitively state what is authorized to be where and when.

EE

QUESTION 9) Will there be a cumulative Environmental Impact Study of utility corridors of all types within Clark County for ALL utility users including power transmission, water transfers, communications, etc. especially as to how they relate to Sunrise Mountain Instant Study Area, Rainbow Gardens Area of Environmental Concern, and private property, WSA's, ISA's, and ACEC's generally, before ANY additional corridor designations or modifications or utility construction takes place?

portion of the R-6405 Restricted Area. The Cutoff Route also passes through a corner of this restricted area. The BLM has recognized the danger to human life. The impacts to the UTTR are found in the land use section of the SWIP DEIS/DPA and are documented in the Map Volume accompanying the DEIS/DPA and the technical reports (refer to Appendix H in the DEIS/DPA for the locations where the technical reports can be reviewed). The BLM will consider your comments when it makes its decision.

CC This is an interesting hypothesis that could be investigated in the course of intensive surveys and any data recovery studies if the Cutoff Route were selected for construction.

DD There are no designated utility corridors in Clark County except through the Acrojet lands, the Apex area, and across the Moapa River Indian Reservation. The SWIP, if approved, will pass through the Aerojet corridor. Since the SWIP's southern terminus is Dry Lake it would not pass through the Apex corridor. The current Resource Management Plan (RMP) process for the Stateline Resource Area will designate utility corridors. However, no decision has yet been made on the RMP. The utilities have agreed to double circuit towers in the Pahranagat Wash area because of the confinement created by WSAs in this area.

It is not possible to answer at this time how the utility corridor south of Dry Lake will be configured. Please refer to pages 2-52 and 4-81 in the SWIP DEIS/DPA and page 3-14 of this document for a discussion of the Marketplace-Allen Transmission Project proposed by the Nevada Power Company. Rights-of-way cannot be authorized in WSAs or ISAs, since the Federal Land Policy and Management Act of 1976 and the BLM's Interim Management Policy disallow them. A right-of-way can be authorized in an ACEC.

The preferenee of utilities not to stack multiple lines on a single set of towers is based on reliability (e.g., if a failure occurs all the multiple circuits would typically malfunction). However, typically if a single circuit line fails, only that line is affected.

EE Except for establishing corridors in the Stateline Resource Management Plan, a cumulative EIS of utility corridors within Clark County is not

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COMMENTS

Thank you for considering our concerns. Please send a copy of your response to the above questions and concerns to each of us. Please keep each of us informed of any further developments. If you desire any further information or clarification, please feel free to call or write at the phone numbers and addresses below.

Sincerely,

Paul C. Clifford, Jr.
National Field Representative
Nevada Outdoor Recreation Assoc.
2955 Berkshire
Cleveland Heights, Ohio 44118
Phone: (216) 231-4600

Charles S. Watson, Jr.
Director & Co-founder
Nevada Outdoor Recreation Assoc.
P.O. Box 1245
Carson City, Nevada 89702
Phone: (702) 883-1169

cc: Mr. Billy Templeton
Nevada State BLM Director

Mr. Kenneth Walker
Ely District BLM Manager

RESPONSES

planned. The RMP will analyze the impacts of the location of the corridor, not the speeific facilities within that corridor. In accordance with NEPA, each EIS for a proposed facility will analyze the cumulative impacts.

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COMMENTS

RESPONSES

OREGON - CALIFORNIA TRAILS ASSOCIATION
OFFICE OF NATIONAL HISTORIC TRAILS PRESERVATION
950 OLD TRACE ROAD • PALO ALTO, CALIFORNIA 94306 • (415) 941-0815

September 1, 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

RE: COMMENTS ON SOUTHWEST INTERTIE PROJECT DEIS/DPA

I am in receipt of the June, 1992 Southwest Intertie Project DEIS/DPA, and I wish to place the following comments on the official record on behalf of the Oregon-California Trails Association.

Our primary concern in the matter is the effect which the proposed Intertie routing would have on the California Trail corridor in northeastern Nevada. As you know, this historic overland emigrant route comes into Nevada at the very northeast corner of the state, proceeds up Goose Creek, crosses over to and down the Rock Spring Creek drainage, then up the Thousand Springs Creek drainage to Thousand Springs, over the Windemere Hills via Brush Creek, and then splits--one branch going through Bishop Creek Canyon and the other down the Town Creek drainage to the present town of Wells, Nevada, where it swings southwestward down the Humboldt River.

All of the proposed routes would at some point cross over and have an impact upon the California Trail. Our concern is see to it that this impact is as little as possible, and my comments are framed with this goal in mind. This concern has to do with physical impacts and, perhaps even more importantly, with the inevitable visual impacts upon this most important historic trail corridor.

It should be noted before presenting our comments on the specific routes proposed for the Intertie that there are several new developments which should affect thinking on the routing of the Intertie. The first is that the present road from Highway 93 over to Thousand Springs Ranch, down Thousand Springs Valley, up Rock Springs Creek Valley and back over to Highway 93 to a point just south of

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COMMENTS

Jackpot has now been officially designated and established as a BLM Scenic Byway. There are proposals to extend this scenic byway on to Goose Creek and over to City of Rocks National Reserve. In addition, the entire California Trail complex, including this most important section of the California Trail through northeast Nevada has now been placed under the provisions of the National Trails Act by act of Congress. This legislation was passed by Congress and signed by the President only a few weeks ago. This action gives the California Trail significant additional historic standing and protection.

The portion of historic trail which would be impacted by the Intertie is in Panel 2. and the following comments refer to that panel of maps in the DEIS.

Both the Environmentally Preferred Route (Routes A,D,E) and the Utility and Agency Preferred Route (G) would cross Thousand Springs Valley and would do extreme damage to the visual integrity of the historic trail corridor. Thousand Springs itself was one of the most important stops for emigrants traveling the overland trail. Almost without exception, every emigrant wagon party stopped and camped at the hot springs, and a power line through this broad, open valley would be a most unwelcome and disturbing intrusion.

A Alternative Routes B,C,F would be somewhat of an improvement over the Environmentally Preferred and Utility and Agency Preferred Routes in that the line would cross the trail in a less open landscape, but the route would then parallel the trail within sight for many miles to the south of the crossing. This would also be a most unwelcome intrusion within the viewshed of the trail corridor.

Of all the Alternatives, Route D, would be perhaps the least visually-intrusive because it would be basically following the Highway 93 alignment in which there are already the highway, the old railroad bed, and an existing powerline. Route D would cross both branches of the trail, however, and these crossings would be in wide-open places.

B OCTA would, of course, strongly prefer that the proposed Intertie be located further to the east and out of the historic viewshed of the California Trail entirely--located in such a way that there would be only a right-angle crossing of the trail to ensure the least visual impact. If Routes B,C,F were moved eastward in the lower Thousand Springs drainage and then connected with the indicated Rocky Point-Six Mile-Spruce Mountain alignment, that would certainly answer our objections to the greatest degree possible.

C Barring such an eventuality, of all the alternative routings cited, in the DEIS, the unnamed alignment which is shown to the west of Route D would be the one which would answer most of our objections. There is an existing powerline already in place along this alignment, and

RESPONSES

A Your preferences are noted and will be considered in the BLM's decision process.

B Your preference for the connection to the Rocky Point-Six Mile-Spruce Mountain alignment is not possible. This is the path for the microwave signals from one mountain top location to another, not a potential transmission line route. The microwave path would establish a communicatioo link for operation of the transmission line and substations.

C All the routes would cross the California Trail, either at a right angle or parallel to it, for several miles. Links 150 and 151 were selected as the least disturbing, both to highway travelers and persons experiencing the California Trail in the Winecup area. The visual disturbances associated with the ranching operations at the Winecup Ranch would tend to de-sensitize persons on the trail to the presence of the power line. Your preference is, the BLM believes, for Link 170 through Wells. This link was analyzed and was found least preferable environmentally (refer to the discussion on Link 170 in Appendix D in the Appendices for the SWIP DEIS/DPA). However, your preference for Link 170 is noted and will be considered in the BLM's decision process.

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C our position is that any additional powerline should simply be placed in this already existing corridor. We can see no reason to destroy the existing visual integrity of the California Trail corridor further when the Intertie could be routed right along a powerline which is in place and which already constitutes a major visual intrusion.

Our recommendation is that this unnamed alignment be reconsidered and chosen as the Southwest Intertie alignment if it is not possible to route the alignment out of sight of the trail corridor entirely as recommended above.

We appreciate this opportunity to comment on the Southwest Intertie Project DEIS/DPA. We hope that our comments will have some bearing on a decision which will have a major effect on the preservation of a most vital part of our American heritage.

Sincerely,

Thomas H. Hunt

Thomas H. Hunt
National Trails Preservation
Officer

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[redacted]

LETTER #B-12
COMMENTS



SIERRA CLUB

Toiyabe Chapter — Nevada and Eastern California
P.O. Box 8096, Reno, Nevada 89507

September 12, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

The Toiyabe Chapter of the Sierra Club has reviewed the draft Environmental Impact Statement (EIS) on the proposed Southwest Intertie Project (SWIP). A brief oral statement was made at the hearing in Las Vegas on August 20, 1992 by Dave Brickey, Conservation Chair, Southern Nevada Group. Our comments today are in more detail and represent concerns that we have with the entire project. Our comments focus on the EIS and analysis of alternatives, proposed mitigation for environmental impacts, and relationship of this EIS to other EISs. Detailed comments are provided, whenever possible, on the proposed routes for the line.

Purpose and Need

A The Toiyabe Chapter appreciates the arguments made in the EIS that transmission lines interlinking major power facilities with major load centers can lead to more efficient, reliable operation of power plants and power systems. An argument is made in the EIS that excess capacities in the Southwest and Northwest at certain times of the year can be conveyed to areas in need through the construction of the SWIP and that the need for additional power plants may

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RESPONSES

A The SWIP is not dependent on the electrical resources of any specific generation source. A major part of its purpose and need is to provide for regional transfers of bulk power (e.g., seasonal exchanges). The SWIP DEIS/DPA considered an adequate range of alternatives to the electrical connection proposed by the SWIP. Please refer to pages 2-1 through 2-10 of the SWIP DEIS/DPA for a discussion of alternatives considered but eliminated.

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COMMENTS

A be reduced. Most of the EIS is then devoted to an analysis of the impacts of the SWIP on the environment with several possible routes considered. Relatively little space is devoted to an analysis of alternatives to the project as a whole.

B The Toiyabe Chapter believes insufficient data has been presented in the EIS to support the arguments for the SWIP. No data are presented on the costs of building and operating the transmission line, and no data are presented on the amount of power that will be wheeled on the SWIP at various times of the year. Thus, it is impossible to evaluate whether the proposed SWIP is, in fact, the least-cost-alternative to providing reliable electrical energy to the areas it is supposed to serve.

C The service area for the SWIP has not been sufficiently identified in the EIS. As presented, the backbone of the line runs from Midpoint, Idaho to a dry lake at Apex, Nevada. These nodes, by themselves, are not major load centers. If much of the electrical power is intended for Las Vegas, Los Angeles, Portland, Boise, Seattle, and Salt Lake City at certain times of the year, then other transmission lines will be required to convey the power from Midpoint Idaho and Apex, Nevada. Unfortunately, the environmental impacts of conveying power from Apex, Nevada to Los Angeles are considered by the Club to be substantial because the likely route for the necessary transmission lines will be through the Bureau of Land Management's (BLM) Sunrise Mountain Wilderness Study Area. (This area is being recommended by the BLM as an Area of Critical Environmental Concern, in part, because of the world-class geology.) Thus, if the power conveyed by SWIP is needed to increase reliability and efficiency of the power distribution system in the West, the EIS for SWIP needs to view the proposed project as part of a larger system. The relationship of SWIP to the larger system has not been sufficiently developed in the EIS to consider the cumulative costs and impacts of this proposed project.

D Utilities that might be served by the SWIP are covered by state regulatory agencies. Virtually all of the utilities have various demand side management programs with various goals and timetables. Little discussion has been provided in the EIS on the status of the applications to the state regulatory agencies for approval to build the SWIP and to recover costs. Little discussion has been provided of the interrelationship between the various demand side management programs and the projected requirement for new power plants that will feed into the SWIP.

E Increasing pressure is developing on a world-wide scale to limit emissions of green house gases to reduce the chances of significant global warming. A target is CO_2 emissions from fossil fueled power plants. Increasing emphasis is being devoted to energy efficiency. If energy

RESPONSES

B Please refer to the expanded Purpose and Need section in Chapter 3 of this document (specifically the section about least-cost planning of page 3-4) and the Purpose and Need statement in the SWIP DEIS/DPA.

C There is no service area per se for the SWIP. Please refer to the Purpose and Need for the SWIP in the SWIP DEIS/DPA and the expanded discussion in Chapter 3 of this document. Also refer to discussions of the proposed Marketplace-Allen Transmission Project (MAT) on pages 1-11, 2-52, and 4-81 of the SWIP DEIS/DPA and page 3-14 of this document.

D Conservation and demand-side management are an integral part of the resource strategy of every utility considering partnership in the SWIP. Federal and state regulatory requirements dictate that supply-side and demand-side resource options be considered on an equal basis in a utility's plan to acquire lowest cost resources. Conservation and other demand-side management programs are expected to reduce, but not to eliminate, the region's need for new generating resources.

Transmission facilities will contribute in several important ways to the task of the region's utilities to meet future load growth in the most effieient manner possible and with the smallest amount of new generating capacity. First, it is important to recognize the seasonal load diversity within the region. Transmission will allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (i.e., generation) ean be reduced by using transmission. Then, when new regional generating resources are needed, transmission, such as the SWIP, will make more resource options available, and should help minimize costs and environmental impacts.

Refer to the expanded discussion of purpose and need in Chapter 3 of this document.

E As described in response to previous comments, the SWIP is intended to operate as an integral part of least-cost resource strategies of the participating utilities. The anticipated need for the SWIP, measured by statements of interest in participation in the project, exists in the current regulatory environment which recognizes the resource value of conservation and

efficiency becomes more widely implemented on a global, national, and regional scale, then the future needs for new, costly power projects, such as the SWIP, may become significantly reduced. Amory Lovins of the Rocky Mountain Institute has made these arguments on a number of occasions. The discussion in the SWIP EIS on the impact of demand side management in all of areas served by the SWIP is incomplete and needs to be dramatically expanded from the simple discussion of Idaho Power Company's demand-side management program.

encourages the development of all cost effective conservation programs. The SWIP would complement rather than compete with conservation in least-cost planning to meet future load requirements of the region.

Refer to Chapter 3 of this document for the expanded discussion of purpose and need.

If the primary purpose of SWIP were to increase reliability of the power system in the West and increase the efficiency at which energy from existing power plants is used, why is the SWIP an AC line rather than a DC line to exchange energy between major load and power producing centers? What significant source of energy, or significant load, exists at Thousand Springs, Nevada? What significant source of energy, or significant load, exists at Ely, Nevada? The answer to the last two questions is presently "none"; therefore, the arguments being made in the EIS that DC power lines are only cost-effective when long distances are considered would appear to lend weight to a DC line being used to wheel power from the powerplant in Utah to the major substations at Apex, Nevada and Midpoint, Idaho. The inference drawn from the arguments made in the EIS for an AC line and substations at Thousand Springs, Ely, and Apex is that major proposed powerplants at these sites are still being seriously contemplated. If not, the type of DC transmission line depicted in Figure 1-1 from Utah to Los Angeles would be proposed for the SWIP to efficiently convey power between major power facilities and loads. If the project proponents are seriously considering future power plants which would not be possible without SWIP, then the EIS for SWIP should consider the cumulative, future impacts of this major transmission line with additional coal-fired power plants in Nevada. Can the SWIP be justified without these power plants? Can a DC powerline be rejected if no major power facilities will be constructed at the proposed substations for the proposed AC line?

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Potential interconnections have been identified in the Wells and Ely areas which could provide significant load or interconnection service to the local utilities. The SWIP requires series compensation sites located at quarter points along the line for voltage support. Due to the nature of series compensation stations, these sites would also be a good location for interconnections that may be desired by other utilities. The SWIP is not dependent upon any specific power plant integration.

A DC transmission alternative for transmitting 1200 MW of power between from Midpoint to the Dry Lake Area would cost about $488 million ($200 million for line and $144 million for each line terminal) compared to $356 million for the proposed AC project. As pointed out in the SWIP DEIS/DPA, additional load taps are not nearly as feasible with a DC alternative. The cost of each site is an order of magnitude greater ($100+ million v. $10 million) and are not included in the $488 million estimate for the basic line.

The actual efficiency of a comparable DC alternative would depend upon the design of that system (i.e., voltage rating and conductor selection). For example, the Pacific DC Intertie line has been uprated twice in its history, once to increase its voltage rating and the other to increase its capacity rating. The line was originally designed to operate at 1600 MW and +/- 400kV. A 1200 MW flow at +/- 400kV would have generated 8.6 percent loss. In the 1980s, the Pacific DC Line was uprated to +/- 500kV and is now capable of 3100 MW. For a 1200 MW flow on the current DC system, the losses are currently about 5.7 percent compared to 6 percent for the SWIP.

The No Action Alternative

The rejection of the no action alternative in the EIS, and short summary of arguments presented, leads the Club to conclude that the draft EIS is inadequate. The stated objective that the SWIP would "increase the reliability and capacity of the transmission system in the western U.S." (p. 2, EIS) is presented without supporting data to show that the historical use and present operation of today's grid has been unreliable and prone to catastrophic failures and power interruption. "There is a gap in this system through the inland West (p. 1, EIS)"; yet, the arguments presented for plugging this hole are not well supported with facts or by the growing realization within the power industry that there are alternatives to transmission lines that can lead to lower costs, more

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The BLM believes that an adequate range of alternatives to the SWIP was evaluated and that the SWIP DEIS/DPA discussion of the no-action alternative is adequate. The no-action alternative would result in other actions being taken, which is discussed in the SWIP DEIS/DPA on pages 2-10 and 2-11.

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G efficient use of existing power sources, and lead to reduced environmental impacts. A small sampling of statements from a small number of documents that have been made available to the Sierra Club leads the Club to conclude that the BLM has not done their homework in evaluating alternatives to the proposed SWIP.

H "According to a 1990 report by EPRI [The Electric Power Research Institute], it is technically feasible to save from 24 to 44 percent of U.S. electricity by 2000 - some of it rather expensively - in addition to the 9 percent already included in utility forecasts. . . . Rocky Mountain Institute estimates long-term potential to save about 75 percent of electricity at an average cost of .6 cent per kilowatt-hour - several times lower than just the cost of fuel for a coal or nuclear plant."[1] This article and supporting documentation lead the Club to question the supposition in the EIS that the proposed powerline is the least-cost option (environmentally and economically).

I The stated need for the SWIP to "furnish access to the economy energy market" (p. 2, EIS) does not appear to be supported by the present grid of powerlines in the west. Power is presently being wheeled throughout the West even though a "hole" presently exists in Nevada according to project proponents. Power in the southern western states is presently being shared by powerlines that extend at least as far from Nevada as New Mexico and central Utah. Power in the northwest is presently being shared with southern California through a large array of existing power lines and across the Cascade Range through another major set of existing powerlines. North-south powerlines in Utah and Colorado interconnect major power plants with transmission line substations and population centers.

J Excerpts from the testimony of Amory Lovins of the Rocky Mountain Institute on a proposed powerline through a sensitive area of New Mexico (the OLE project) is presented because Mr. Lovins address issues such as: "gaps" in transmission line networks, demand side management as an alternative to transmission lines, and least-cost analyses of energy production and distribution systems. These issues are relevant to SWIP; however, the Club finds the discussion

[1] "Efficient Use of Electricity", A.P. Fickett, C.W. Gellings, & A. B. Lovins, Scientific American, September 1990.

The no-action alternative could lead to construction of new generation resources in various parts of the West because existing electrical resources would not be able to utilize the SWIP for regional exchanges. Environmental impacts associated with generation (e.g., air quality) and transmission (e.g., similar types of impacts to the SWIP) would occur if generation is constructed.

A second possible result of the no-action is that electrical rates in various parts of the West may be impacted if the SWIP is not constructed and more expensive generation options are exercised. Finally, the stability and reliability of the electrical system in the West would not be enhanced without the SWIP.

The BLM believes that the SWIP is a desirable action for the utility industry to most efficiently utilize electrical conservation and availability and minimize environmental impacts in the western United States.

Please refer to Chapter 3 of this document for an expanded discussion about the purpose and need for the SWIP.

The SWIP DEIS/DPA Purpose and Need Statement does not contend that the existing electrieal system in the western U.S. is unreliable or prone to catastrophic failures. Reliability of the existing system is adequate. The SWIP will provide additional capacity for seasonal exchanges and other commereial transactions. The seasonal load and resource diversity between electric systems in the North versus those in the South may allow power exchange contracts to replace or defer new resouree construction. The additional capaeity provided by the SWIP would allow utilities to take advantage of this regional diversity and would promote the efficient utilization of existing power resourees. The purpose of the Western System Coordinating Council is to promote reliability of the electrical system in the western U.S. through efficient design and operation as well as to provide mechanisms to insure the future system continues to be reliable and effieient. Reliability is not the sole purpose of the SWIP but is a direct benefit to the western electrical system.

The SWIP is intended to operate as an integral part of the least-cost resource strategies of the participating utilities. The public and regulatory agencies have mandated that the region's utilities recognize the resource value of conservation. Regional utilities have expressed interest in participating in the

of these issues in the EIS for SWIP to be inadequate in that none of the analyses and facts presented by Mr. Lovins are presented in the EIS in the discussion of the "no-action" alternative.

> . . . utilities in the Puget Sound area, for example, are engaged in a Bonneville-led collaborative process . . . to find cheaper alternatives to a third transmission line across the Cascades. Many such alternatives, chiefly in end-use efficiency, have been emerging. Resolving the "Puget doughnut" transmission bottleneck is the main motivation for such efforts as Bonneville's recent reexamination, and major enlargement, of industrial electricity-saving potential.
>
> Pacific Gas and Electric Company (PG&E) has been evaluating similar, though smaller-scale, opportunities to displace transmission expansions, as have New England Electric System, Central Maine Power, and probably other utilities. The Wisconsin Public Service Commission's least-cost planning process rejected a major power line (WISINTOBA) after [Amory Lovins] showed that demand-size alternatives would cost less and provide other benefits.
>
> Even at the distribution level, PG&E has pioneered, and many other utilities are becoming very interested in . . . "precision-guided programs.: PG&E produces loadshape graphs for heavily loaded substations and feeders, showing the contribution to their peak demand from each major end-use - and then targets [demand-side-management (DSM) programs] directly on those end-uses . . . . The utility designs its DSM programs like a rifle instead of a shotgun, and so specifically addresses the opportunities that will defer distribution investments often costing upwards of $300/kW. This saving along more than pays for the DSM programs, so the accompanying benefits in generation, fuel savings, and avoided pollution are free.
>
> Many utilities also count grid benefits from DSM programs. For example, a 1984 study by Houston Lighting & Power Co.'s staff noted that the 60-108 MW_p initially achieved by rebates for more efficient household air-conditioners had more benefits than displacing generating capacity and purchasing power: "The 40,000 existing-home participants have provided capacity for over 10,000 new residential customers with no additional

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project because they recognize the benefits of the SWIP to their least-cost planning process. Transmission facilities will contribute in several important ways to the region's task of meeting future load growth in the most efficient manner possible and with the smallest amount of new generating capacity. First, it is important to recognize the seasonal load diversity within the region. Transmission will allow existing resources to be used to serve seasonal load requirements in one part of the region while also meeting new load growth requirements in another part of the region. Therefore, total regional resource requirements (i.e., generation) can be reduced by using transmission. Then, when new regional generating resources are needed, transmission, such as the SWIP, will make more resource options available, and should help minimize costs and environmental impacts.

Refer to the expanded discussion of purpose and need in Chapter 3 of this document.

H Refer to Response E above.

I Please refer to discussion of the existing system on page 1-3 of the SWIP DEIS/DPA.

J The BLM agrees that non-cost effective transmission projects should not be built. The utility partners in the SWIP project are expected to include only utilities which, having considered all options, have found the transmission capacity provided by the SWIP to be part of a cost effective strategy to acquire the new resources needed to serve load growth.

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J demand on our system." "Capacity" includes grid capacity: the study cited, for example, "reduced transformer loads which result in extended transformer life" and hence "more reliable service" spilling over to 200,000 additional customers.[2]

Compliance with NEPA

[2] "Direct Testimony of Amory Lovins," New Mexico Public Service Commission, Case #2382 (OLE powerline)

Relationship to other EISs

K The National Environmental Policy Act allows for the tiering of EISs on interrelated, complex, long-term projects. The EIS for the SWIP was required because the application for the right-of-way did not fall within the normal planning process of the BLM in developing their Resource Management Plans (RMPs) and EISs for the BLM lands. Regrettably, we believe the SWIP EIS has not sufficiently referenced other applicable and relevant EISs to better portray the cumulative effects of this transmission line. What is needed is a regional, programmatic EIS for power lines and power facilities in the West rather than the individual EISs that are being prepared for powerplants and power lines. The RMP EIS being developed for the Las Vegas District of the BLM is considering utility corridors - some of which could provide alternative routes for interconnection of the present coal-fired power plants in Utah with major load centers. Since the EIS process for SWIP is separated administratively from the EIS process for the Las Vegas District and other BLM districts and further isolated from the other EISs by a lack of cross-referencing, it is very difficult to analyze the cumulative impacts of the interrelated energy projects to ensure that the least cost, least damaging alternative is chosen. We recommend the BLM consider restructuring their EIS process to allow greater tiering of the pertinent EISs.

L A great concern of the Club is the impact of the SWIP on wilderness study areas (WSAs). The BLM has evaluated a great many WSAs for their uniqueness, scenic qualities, opportunities for solitude and relative nonimpairment by man. Recommendations have been provided for designation of some of the WSAs as wilderness, but Congress has not yet taken the required action. The BLM must, in the interim, manage all the areas to ensure that none of the WSAs are further impaired to the point where Congress is precluded from considering an area as

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K Cumulative effects have been analyzed in the SWIP DEIS/DPA. The BLM agrees that no programmatic EIS has ever evaluated power system needs and corridors for the West. Individual land use plans for the BLM typically do evaluate utility needs and identify utility corridors. The efforts to establish these corridors are usually based on projected needs by regional utilities. For example, the Western Regional Corridor Study by the Western Utility Group is now being updated to aid both utilities and agencies in planning and establishing corridors.

L None of the centerline alternatives would cross wilderness study areas (WSAs), wilderness areas, or semi-primitive areas. The Wilderness Act of 1964, and subsequent legal decisions, led to the BLM Handbook, H-8560-1, Management of Designated Wilderness Areas, where Chapter I, Section A.1.b, states that "Wilderness must be viewed in context with other public lands, recognizing that no buffer zones will be created. Construction of high standard roads, recreation facilities or other developments adjacent to a wilderness should consider the effect they will have on the wilderness." It further states that non-wilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area. The Interim Management Policy (IMP) for the BLM does not apply to activities (e.g., transmission lines) outside of the boundaries because the IMP applies only to actions within the WSA.

Since the BLM manages WSAs as potential wilderness areas the impacts to these areas have been analyzed and appropriate mitigation has been recommended to minimize the potential effects of the alternative routes.

The potential effects of the SWIP to WSAs and the status of wilderness recommendations are addressed on page 3-26 of this document. Tables 3-2 and 3-3 list the number of miles of each alternative route near WSAs. The locations of WSAs are indicated on the Land Use maps in the Map Volume accompanying the SWIP DEIS/DPA (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

wilderness. The EIS process by the BLM for considering an area as wilderness was completed prior to the proposed location of SWIP near many WSAs. The Sierra Club is concerned that the proposed siting of SWIP may be used in the future to argue against the designation of adjacent WSAs as wilderness.

L The draft EIS for SWIP evaluated, to some extent, the impact of SWIP on WSAs. Tables are presented that highlight the number of miles the transmission line comes within varying distances of a number of WSAs. Three-mile and 1/4-mile distances from WSA boundaries are several of the criteria used to list the number of miles a particular route may impact WSAs. The Club finds this type of analysis and presentation of the impacts of the transmission line on WSAs to be unsatisfactory. The Club believes a better approach would be to identify specific WSAs that might be impacted by the SWIP and to highlight in narrative form the type of visual impacts that might be experienced by a person standing within the WSA boundary.

Some WSAs stand a high chance of being designated as wilderness and some do not. The final EIS should highlight those areas being recommended for wilderness by the BLM, or outside parties, and evaluate in some detail the impact of the transmission line on those areas. Better maps in which WSAs are clearly delineated would be useful in evaluating the impacts of various routes on WSAs.

M A number of EISs have been prepared over the years for major energy projects in the west. EISs were prepared for the Harry Allen power plant, White Pine power plant, Thousand Springs power plant, and for, we have been told, another major interconnecting powerline between the Northwest and the Southwest. We have been told that these EISs carried with them authority for powerline right-of-ways, e.g. through the Rainbow Gardens area outside of Las Vegas. No comprehensive discussion has been provided on whether the SWIP would supersede these previous commitments so that fewer additional powerlines would be provided in the West to interconnect major power projects and load centers.

Qualification of Preparers

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N Our concern that insufficient analysis has been given to alternatives in the SWIP EIS may be associated with the background of the staff who helped prepare the EIS. Virtually all of the people have backgrounds in natural resource issues and geographical information systems. The Club believes an economist and an energy consultant would be a natural addition to a team that evaluates a project of this scale. More pages were devoted in the EIS to the health and

M The White Pine Power Project 1985 Record of Decision did not grant rights-of-way. A Final EIS was never released on the Thousand Springs Power Project and a Record of Decision was never issued. The Utah-Nevada Transmission Project does have a right-of-way grant through the Sunrise Mountain ISA although The BLM has not allowed the construction to proceed. Nevada Power Company is considering the Marketplace-Allen Transmission Project, which in theory may limit the number of lines through the Sunrise area. The SWIP will not supersede any of the other decisions for previous projects, although if a right-of-way is granted for the SWIP south of Ely the White Pine Power Project Record of Decision would be amended to follow the same route.

N The project proponent is capable of supplying all of the necessary information and data for the BLM and the public to adequately evaluate the purpose and need. The BLM and the IPCo have received numerous letters from other utilities that support the IPCo's conclusions about the need for the project. For example, BLM received a letter from Sierra Pacific on January 15, 1993 stating that they will be short of power in the Ely area. The BLM also received a letter from Deseret Generation & Transmission Co-op on January 17, 1993 stating that they are unable to meet their load growth.

The purpose and need statement has been expanded in this document with information supplied by the utility. Please refer to Purpose and Need in Chapter 3 of this document.

N ecological effects of AC transmission lines than were devoted to an evaluation of demand side management, the economic feasibility of the proposed project, and the no action alternative; this is not surprising because there was, on the team, a consultant on the electromagnetic aspects of powerlines. Had there been an economist and energy consultant, whose mission were to evaluate in more detail the need for the project, the Club expects that there would have been more details provided on the basic need for the project. We recommend the addition of this expertise to the EIS team.

Circulation of Draft to Interested Parties

O The Club is concerned with the circulation of the EIS to potentially interested parties. Despite formal comments being provided by Dave Brickey of the Southern Nevada Group of the Sierra Club, the Southern Nevada Group did not receive a copy of the draft EIS. The Club wonders whether other potentially affected groups and individuals received a copy of the draft EIS.

Corridor Siting Considerations - Great Basin National Park

P Our substantive objections dealing with the need for the Proposed Southwest Intertie itself, notwithstanding, we especially object to the crosstie addition, Ely to Delta, to the main intertie proposal. Specifically, 1) the Club finds the argument advanced in the DEIS/DPA for any powerline linkage from eastern Nevada to western Utah to be unconvincing. 2) Further, we are absolutely opposed to the BLM's preferred alternative route selection of Sacramento pass along U.S. 50 immediately north of Great Basin National Park.

1. BLM Must Remove Crosstie From DEIS/DAP

Q The justification [1-5] for the crosstie between Ely and Delta (hereafter referred to simply as crosstie) is purported to "[increase] the electrical strength and capacity of the system" and "[reduce] the potential for and the severity of the electrical disturbances ... ." The Club believes this crosstie argument is clearly supplemental to the primary purpose of the DEIS/DAP and is, overall, so unsupported and unjustified as a necessary part of the SWIP in the DEIS/DAP that it must be removed entirely as a part of this document.

R Should the original (and main) Intertie Proposal ever receive approval in some form, then consideration of this large, add-on project could be considered by the agency. The crosstie stands out as an entirely separate proposal and must receive the detailed justification and scrutiny

O For over four years many newsletters have been circulated to keep the public involved in the progress of preparing the SWIP DEIS/DPA. This list grew to over 3,000 during this period. Public workshops were held before the release of the SWIP DEIS/DPA in addition to the many scoping meetings. In nearly every newsletter the public was asked to send back an enclosed comment sheet requesting a copy of the SWIP DEIS/DPA. If comments were returned without having requested a copy of the SWIP DEIS/DPA, none was sent. There were roughly 600 copies of the SWIP DEIS/DPA distributed. Copies were sent to each person requesting a copy (refer to Appendix G of the SWIP DEIS/DPA). Dave Brickey of the Southern Nevada Group of the Sierra Club has been sent a copy of the SWIP DEIS/DPA.

P Please refer to the expanded discussion of Purpose and Need in Chapter 3 of this document. Your comments regarding the selection of the 230kV Corridor Route past Great Basin National Park will be considered during the BLM's decision process. Also refer to page 3-12 of this document for a discussion of cumulative effects.

Q The Ely to Delta segment of the SWIP has been a part of the SWIP from the beginning. The portion from Ely to Dry Lake was added. The reason the Ely to Delta segment was maintained in the SWIP DEIS/DPA document is explained on pages 2-31 and 2-32 of the SWIP DEIS/DPA. The Ely to Delta segment was originally a joint SWIP and UNTP transmission line segment. When the SWIP was amended in June 1990, the IPCo's need for the Ely to Delta segment changed. However, this segment remains an important link to the UNTP and the need for it remains unchanged.

R Refer to the response to comment "Q" above.

The SWIP DEIS/DPA described the purpose and need for each portion of the project (i.e., Midpoint to Dry Lake segment and Ely to Delta segment) in an attempt to clearly describe each segment. The SWIP and the UNTP remain integral in that each would mutually enhance the reliability of the other. Further, separate impact assessments and comparisons of alternatives were conducted for the SWIP DEIS/DPA. Also refer to the expanded discussion of Purpose and Need in Chapter 3 of this document.

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of its own DEIS/DAP. By making the crosstie merely an appendage of the major 500-mile electrical transmission line, the important issues related to detailed study of need, efficiency, and cost are lost as noise in the context of the larger proposal. The Intertie proposers appear to have successfully "piggy backed" a second major (but smaller) project on top of a large, major project to improve chances that deficiencies in one, the other, or both will be less noticeable and the responding public more likely to focus on just one aspect. R

To summarize this point, we believe we are fully justified in requesting of the BLM that the entire crosstie proposal be stricken from the DEIS/DAP and the document reissued considering only the 500 mile intertie proposal as a single, major project. The crosstie must be considered its own major project with a separate DEIS/DAP. (This EIS may be tiered with the EIS for the SWIP.)

2. BLM Preferred Alternative for Crosstie between Ely, Nevada and Delta, Utah Strongly Opposed

The Club strongly opposes the agency preferred alternative in the DEIS/DAP for the crosstie electrical transmission corridor. We do not believe that any additional transmission corridors should be allowed to impact the Great Basin National Park (GBNP). Following are our specific reasons for opposing the preferred alternative for the crosstie.

a) Park vistas from many points include views of Sacramento pass and even with the best construction techniques, the line will be a major feature on the landscape unlikely to be missed. Alternate entrances, campgrounds, interpretive sites, and highway pull outs will undoubtedly be desirably located at some future time near to this easy access portion of the GBNP, USFS and BLM scenic lands. A powerline, like that proposed, is such a intrusion it will likely have the undesirable effect of reducing or preventing potential and current recreational/interpretive uses of the Sacramento Pass area. The loss of these public benefits were not considered in the BLM decision process. S

b) GBNP has been proposed by many to include lands up to US 50 on the north. In fact, during legislative debate park boundaries in one bill did include all lands of the South Snake Range within the USFS boundary. Park expansion to include this scenic corridor is foreseeable. Approval of this powerline corridor forecloses on many desirable benefits to the public to enhance enjoyment and understanding of the Great Basin by expanding the GBNP itself. The inability of the GBNP to meet future needs were not considered in the BLM decision process. T

S All existing and proposed sites within the Great Basin National Park were evaluated for visual impacts, including the proposed interpretive facilities outside of the park. The BLM agrees that there will be visual impacts to some of these sites, although none of the sites within the park would be significantly impacted. The visual impacts of future recreation site developments on BLM-administered lands and national forests were considered. Please refer to Volume III - Human Environment Technical Report for a complete discussion of the visual impact methodology and results (refer to Appendix H in the DEIS/DPA for the locations where the technical reports can be reviewed). Also refer to Sacramento Pass Mitigation Reroute on page 3-39 of this document.

T The 230kV Corridor Route parallels the two existing 230kV transmission lines on their north side and should not further impact park expansion. Your comments will be considered in the BLM's decision process.

U It is speculative to believe that the two existing 230kV lines would not be placed in their present route had Great Basin National Park been in place twenty years ago. It appears, based on the end points to which these lines are connected, that they were routed reasonably. This route is a designated BLM corridor.

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U c) The existing 230kv powerline over Sacramento pass should not be considered as justification for placing one (or more) new powerlines through the area. We believe that the current line could never be built adjacent to the GBNP if it were subject to the NEPA EIS process. The BLM inappropriately depends on the existing line to support its preferred alternative.

V The BLM is not aware of routing opportunities through this area which would result in lower environmental impacts. Also, the Cutoff Route would not be an appropriate routing for the 230kV transmission lines. The SWIP regional study evaluated all potential routing opportunities in the region, and all reasonable and feasible routing opportunities are being considered in this EIS process.

V d) While the Club believes that existing powerline corridors should be used when new lines are needed, this general policy assumes that the corridor in use is a reasonable and justifiable one. In the case of the existing 230kv line, we would be strongly in favor of removing this line for the reasons given above regarding the proposed crosstie. The BLM inappropriately fails to consider eventual removal and rerouting of the existing 230kv line over Sacramento pass and restoring the areas full scenic, recreational, and interpretive potential.

W The BLM cannot consider terminating a right-of-way grant and have the existing 230kV transmission lines removed to a different location. This would be considered only after the right-of-way expired or possibly in cases of extreme non-compliance. The earliest expiration date of the right-of-way grant on these lines is the year 2020. Use of the 230kV Corridor Route for the "Crosstie" is in compliance with the BLM policy to consolidate power lines. Section 503 of the Federal Land Policy and Management Act requires, to the extent praetical, the utilization of rights-of-way in common.

W e) Powerline consolidation in other corridors is not considered by the BLM. For example, removal of the 230kv line, included with one of the other (non-Sacramento pass) routes to reduce the overall impact of powerlines on this remote region of clear air and huge vistas. At a minimum, the BLM should consider such alternatives which would decrease the impact of powerlines.

X Establishing a utility corridor means that other linear features would be consolidated parallel to existing linear features to the degree possible. This would hold true for water, gas, communication, etc. However, an important distinction is that any new project that is proposed must have a right-of-way grant and is subject to compliance with the National Environmental Policy Act.

In conclusion, we urge the BLM to select the "no action" alternative regarding the crosstie portion of the DEIS/DAP because it is a major project in its own right being "piggy backed" on an even larger power corridor and the preferred crosstie route has high environmental impacts (actually compounding existing negative impacts) which precludes many future and existing public benefits.

Mitigation Measures

X The Club is interested in knowing whether the corridor for SWIP will be available for use by other utilities. In particular, will the corridor be available for water, gas, and communication lines? If so, will environmental assessments be required for additional activities in the corridor? Powerline access roads, adjacent to WSAs may impact the potential of the WSA for being recommended as wilderness particularly if the access road is used for competitive off-road races. If underground utilities are allowed in the corridor, experience with present corridors in Nevada (e.g., Kern County gas transmission line) indicates that the loss of vegetation and scaring can be dramatic and potentially long lasting. The Club desires answers to these questions.

X The BLM will determine which access routes will be closed and restored following construction. The construction for a transmission line would not disturb a broad corridor similar to a pipeline , There is typically continuous construction access between tower sites except where there are sensitive resources (e.g., wetlands, live streams, etc.).

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Visual Impairment Analysis

Y

The Club finds the classification criteria for evaluation of visual impacts of the SWIP to be unsatisfactory. Classifications criteria based on "high, medium and low" appear to be subjective and insufficient information has been provided to allow an independent analysis of the visual impacts in some particularly troublesome areas. Members of the Club have reviewed EISs for powerlines in which photographs from key viewpoints are altered to provide a representation of what the powerline may look like in the future. Why hasn't this type of analysis been provided particularly for WSAs and the Great Basin National Park?

Y

Please refer to Volume III - Human Environment Technical Report for a complete methodology for the visual analysis (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed). Photo simulations have been provided for Great Basin National Park (GBNP) and are found in the Map Volume accompanying the DEIS/DPA. Two in particular are the Lake Valley Summit simulation which looks from a proposed interpretive site for GBNP on Utah State Highway 21 and the Sacramento Pass simulation which looks at towers against Wheeler Peak from U.S. Highway 6/50. Also refer to Figures 3-13 through 3-19 for simulations of the alternative highway crossing studied in the Sacramento Pass Mitigation Reroute (refer to page 3-39 of this document).

In addition, there was also a computer terrain perspective prepared for a view from one of the proposed viewpoints within the park, a routine first step in preparing photo simulations. Because of the distance to the 230kV Corridor Route and the perceived size of the line at that distance, it was not possible to accurately depict the barely perceptible transmission line in a photo simulation.

You are correct that no photo simulations were prepared from viewpoints within WSAs because there are no specific management plans for and no specific viewpoints within these areas. The BLM was unable to find any designated viewpoints. The BLM did assume worst case for visual impacts, that views from within the WSA could occur from any location. Therefore, mitigation was applied universally for any alternative crossing near the boundary of a WSA (refer to page 3-26 of this document). In addition, the BLM also considered all access roads leading to a WSA to be a high sensitivity viewpoint.

Conclusion

The Sierra Club looks forward to the response to our comments. We believe our statement indicates major deficiencies in the EIS from the analysis of alternatives to the proposed project to the analysis of proposed routes. Critical data are missing for a thorough analysis of not only the need for the project as well as the visual impacts of the line on environmentally-sensitive areas, e.g. wilderness areas. New, different expertise needs to be devoted to an analysis of the environmental impacts. Interrelationships with other EISs and power projects throughout the west need to be examined and presented in order for anyone to understand the need, timing, and cumulative impacts of this proposed project. Secondary impacts, such as the possible construction of new powerplants to tie into the SWIP, are often ignored even though those impacts may be major. The economic and environmental costs associated with the construction of a powerline from a substation at Midpoint, Idaho to a substation at Apex, Nevada extend well beyond those relatively isolated points. Increased energy efficiency implemented by utilities throughout the region, the "no action alternative", offers the potential to increase our supply of energy for new uses at relatively low cost with increased reliability.

Sincerely,

Dennis Ghiglieri
Conservation Chairman, Toiyabe Chapter

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COMMENTS

THE WILDERNESS SOCIETY

CALIFORNIA/NEVADA REGIONAL OFFICE

September 18, 1992

Karl Simonson
BLM, Burley District Office
Route 3 Box 1
Burley, ID 83318

re: Comments on DEIS for Southwest Intertie Project

Dear Mr. Simonson;

Thank you for the opportunity to comment on the Southwest Intertie Project DEIS.

The Wilderness Society is supportive of the "No Action" alternative for the following reasons:

A * The DEIS does not satisfactorily justify the need for the proposed construction of a 500kV power line.

B * The proposed 500kV power line structures threaten the visual quality of open valleys that have not yet been spoiled by construction.

C * The proposed power line will contribute to the decline in the population of desert tortoise as power lines are used by ravens to perch while seeking young tortoises as prey. The power lines will also compete for space with desert tortoise habitat.

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A Additional information on the purpose and need for the project is found in Chapter 3 of this document.

B The BLM agrees that there will be impacts from the construction, operation, and maintenance of the SWIP. The BLM acknowledges that much of the mileage of the proposed action is through relatively undisturbed landscape.

C The BLM agrees that there would be impacts to desert tortoise, although mitigation measures taken during construction should be very effective in reducing or eliminating these adverse effects. The question of transmission line impacts on hatchling tortoises is a subject of ongoing study. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure, and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. The BLM believes it is unlikely that perch site availability is currently limiting the potential for raven predation in the project area.

LETTER #B-13
COMMENTS

D * The proposed power line will run the same north-south route taken by one of the largest hawk migrations in North America. Considering that high voltage power is responsible for a large number of hawk and eagle deaths, the power line would pose a threat to these migrating birds.

E * There will be significant degradation to the visual quality of Great Basin National Park if the favored route for the power line is approved. The experience of 70,000 annual visitors to the National Park will be effected by the power line route that cuts over the Sacramento Pass just north of the glaciated Wheeler Peak in the Snake Range. Furthermore, the preferred route would use an existing 250kV route which was installed before the National Park was designated and was subject to far less environmental scrutiny. It is irresponsible to assume this route would be appropriate for the proposed 500kV based on its prior use.

F * Proposing to route the powerline adjacent to the borders of several WSAs is wholly inappropriate as the presence of the power line will degrade values of the wilderness study areas. For example, the power lines and towers will provide ravens and other predators roosts from which they may hurt tortoises and other animals within the WSAs. These indirect impacts of the powerline are not acceptable.

In summary, both the visual and the environmental quality of public resources will be subject to significant impacts if the 500kV line is constructed.

Thank you for considering our comments. Please keep us on your mailing list and continue to keep us informed.

Sincerely,

Norbert Riedy

Norbert Riedy
Senior Policy Analyst

RESPONSES

D A specific raptor migration route has not been identified. It is well known that large numbers of migratory raptors are present in the Goshute Mountains during both spring and fall.

Given the structural configuration of 500kV transmission lines, the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission systems proposed for the SWIP would use V-guyed steel lattice, self-supporting steel lattice tubular, and steel H-frame towers. The spacing between conductors and towers is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on the supporting structure in such a manner that they are 23 to 32 feet apart. Further, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (refer to pages 2-12 through 2-14 of the DEIS/DPA). Because of the distance between conductors and towers, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the supporting tower.

Refer to the discussion of Avian Collision Hazards on page 3-89 of this document.

E There would not be significant visual impacts to visitors at Great Basin National Park. The assumed centerline of the SWIP Ely to Delta segment (230kV Corridor Route) is approximately seven miles north of Wheeler Peak, the casual observer would likely not notice the SWIP or the existing 230kV lines from any of the viewpoints within the park. The BLM agrees that there will be significant visual effects to park visitors driving on the travel routes approaching the park (e.g., U.S. Highway 6/50) and that there will be visual impacts to some of the proposed interpretive facilities outside of the park boundaries. These impacts are all documented in the DEIS/DPA and in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

It is true that the existing 230kV lines were constructed prior to establishment of Great Basin National Park. The BLM will consider your comments during its decision process.

F The BLM agrees that routing of the transmission line near WSAs would cause some visual impacts. These impacts are further discussed on page 3-26 of this

document. However, the Wilderness Act specifically states that the designation of Wilderness shall not preclude land uses from occurring adjacent to the boundary. The Wilderness Act of 1964, and subsequent legal decisions, led to the BLM Handbook, H-8560-1, Management of Designated Wilderness Areas, where Chapter I, Section A.1.b, states that "Wilderness must be viewed in context with other public lands, recognizing that no buffer zones will be created. Construction of high standard roads, recreation facilities or other developments adjacent to a wilderness should consider the effect they will have on the wilderness." It further states that non-wilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area. The Interim Management Policy (IMP) for the BLM does not apply to activities (e.g., transmission lines) outside of the boundaries because the IMP applies only to actions within the WSA. However, since WSAs are being managed during the period until designation or release, visual impacts were also considered from these areas.

The question of transmission line impacts on hatchling tortoises is evolving. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure, and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. The BLM believes it is unlikely that perch site availability is currently limiting the potential for raven predation in the project area. Also, the impact of predatory ravens on hatchling desert tortoises appears to be a local problem; it has not been documented as occurring region wide.

[redacted]

COMMENT LETTERS AND RESPONSES FROM AGENCIES

LETTER #C-1
COMMENTS

RESPONSES

United States Department of the Interior

BUREAU OF MINES
WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202-1413

SEP 8 9 49 AM '92

TAKE PRIDE IN AMERICA

September 1, 1992

Memorandum

To: Karl Simonson, Bureau of Land Management, Burley District Office, Burley, Idaho

From: Supervisor, Environmental and Regulatory Analysis Section

Subject: Southwest Intertie Project Draft Environmental Impact Statement/Draft Plan Amendment

A For a project of this size, the Draft Environmental Impact Statement (DEIS) provided a reasonably good inventory of areas where potential conflicts with current and future mineral resource development could occur. This inventory was acknowledged by our reviewers at both Intermountain Field Operations Center (IFOC) and Western Field Operations Center (WFOC). However, the document failed to take the next and most important step--assessing the likelihood that a significant conflict requiring mitigation will occur at any of these identified areas. It is difficult to understand why this was not done, particularly when statements were made such as, "issues of concern regarding the location of the proposed transmission line include . . . , conflicts with potential mineral development," and "specific resource features that were identified on maps include . . . areas with potential mineral resources" (p. 3-4, DEIS). We could not find any identification of potential conflict areas with mineral resources, including on the maps, for the miles of mining claims traversed by the proposed transmission line rights-of-way. This mineral resource potential should be given for specific areas and should not only identify the likely commodity but also its potential to be discovered and developed in the foreseeable future.

B We object to two statements presented in the document. The first, on page 5-39 of Technical Report Volume III, states that "Potential impacts to mining claims were not assessed because the BLM has the authority to grant rights-of-way across mineral claims." If a right-of-way can only be granted across a claim if it does not interrupt the mineral development of the claim (p. 5-39,

LETTER C-1

A Mining claims crossed were not incorporated in the map volume. The mileage that each alternative would cross was recorded in Table 2-4 and 2-5 of the SWIP DEIS/DPA under the Land Use Category. Also available are some of the land owners and/or names of the claims that can be cross referenced once a final right-of-way is determined.

Project maps with known mineral resources are available in the project files. Table ER-3 (Mineral Resources Inventory), Table ER-4 (Microwave Facilities - Earth Resources Inventory), and Table ER-1 (Substation and Series Compensation Station Siting Area Inventory) of the Technical Report, Volume II - Natural Environment identify locations of known mineral resources by commodity or the potential of mineral resources at a site. This information was used as a part of the assessment. Mineral resources are included in the overall route assessment as shown in Tables 2-4 and 2-5 (Route Comparison tables) in the SWIP DEIS/DPA. Mitigation by avoidance is expected to result in no adverse impacts to mineral resources. It is beyond the scope of this EIS process to evaluate the potential of a commodity to be discovered and developed in the foreseeable future. Also refer to Appendix H in the DEIS/DPA for the locations where the technical reports can be reviewed.

B Mineral potential is documented in Table ER-3, Volume II of the Technical Report.

LETTER #C-1
COMMENTS

Technical Report Vol. III), then mineral resource potential must be determined before the right-of-way can be granted. This DEIS, however, chooses corridors for the transmission lines without the benefit of a mineral resource potential assessment of claims crossed. Therefore, as impacts to mining claims might occur, an attempt to identify this impact should be made.

B

The other statement we disagree with is, "if a mining claim predates the right-of-way grant for the transmission line, and the claimant wants to reach what is believed to be a rich ore deposit, the right-of-way holder (the utility) would have to move the transmission line or negotiate an acceptable monetary payment for the mineral rights" (p. 4-29, DEIS). We do not support "payment for the mineral rights" as an acceptable mitigation alternative to poorly chosen rights-of-way. Purchase of mineral rights precludes adding the resource to our domestic mineral supply and prevents the boost to our economy that its development would generate. We prefer that Mitigation Measure 6, from table 4-2, be strictly adhered to and applied to areas of known mineral resources with foreseeable development potential as well as to areas of active mining. This form of mitigation would virtually eliminate the costly relocation of a poorly located transmission line.

C

If you have questions pertaining to these comments, please contact Michael Dunn at (509) 353-2664. Thank you.

Burton B. Gosling

RESPONSES

C The BLM agrees that monetary payment for mineral rights within a right-of-way is a less acceptable form of mitigation, not only for the reasons you stated, but also because it would be very expensive. This transmission line would have an average span of about 1/4 mile between towers and would effectively span quite large areas. Mitigation 6, as noted on Table 4-2 would be the preferred mitigation.

LETTER #C-2
COMMENTS

Clark County

DISTRICT OFFICE
BURLEY, IDAHO
AUG 21 3 51 PM '92

Department of Comprehensive Planning

RICHARD B. HOLMES
DIRECTOR

RICHARD T. BERFAS
ASSISTANT DIRECTOR

CLARK COUNTY BRIDGER BUILDING
225 BRIDGER AVENUE, SEVENTH FLOOR
LAS VEGAS, NEVADA 89155
(702) 455-4181

August 18, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley ID 83318

COMMENTS ON THE DEIS/DPA FOR THE SOUTHWEST INTERTIE PROJECT

Dear Mr. Simonson:

Thank you for sending us a copy of the DEIS/DPA for the Southwest Intertie Project. After reviewing the documentation for this transmission line project, the Clark County Department of Comprehensive Planning has the following comments:

1. The DEIS/DPA does not indicate what will happen to the power once it gets to the Dry Lake substation. This raises the following questions:

A [• Will the Dry Lake substation be connected to existing transmission lines within Clark County?

B [• Will the Dry Lake substation be connected to the local grid? If this is the case, has this project been incorporated into Nevada Power Company's Resource Plan?

C [• Will the Dry Lake substation be connected to another new project, requiring construction of additional transmission lines, substations and microwave communication sites within Clark County? If so, the

LETTER C-2

RESPONSES

A Although the future plans of the connections in the Dry Lake and McCullough areas are still in the planning stages, the SWIP will interconnect with existing lines in the county.

B Yes, the Dry Lake Substation will be connected to the local grid. The BLM anticipates that Nevada Power will incorporate this into their 1993 Resource Plan.

C Yes. The BLM anticipates that the SWIP will interconnect with the Marketplace-Allen Transmission Project. The cumulative effects of this project are discussed in Chapters 2 and 4 of the SWIP DEIS/DPA.

LETTER #C-2
COMMENTS

C DEIS/DPA should cover the cumulative impact of the entire project rather than just this segment.

D
- Are there any commitments between Idaho Power Company and Nevada Power Company to connect the substation to the proposed Marketplace Allen Transmission Project mentioned on page 4-81?

E 2. The DEIS/DPA identifies numerous areas of the country where power is in short supply, but does not list any sources which would supply surplus power to the system. Is this project dependent solely on the season demand of different regions of the country for its power supplies?

F 3. The DEIS/DPA should include more details relating to reclamation of the affected areas not used for the ongoing operations or maintenance of the project. This is of special concern because of the unique climatic conditions found in southern Nevada. The arid climate is not conducive to the natural re-establishment of native vegetation for the following reasons:

- Clark County generally receives about three to four inches of precipitation per year.
- Weed species tend to invade disturbed areas, competing with native plants.
- Windy conditions are common in the desert. This causes the surface disturbed soils to shift or blow away, further inhibiting the ability of vegetation to thrive.

These conditions will discourage the re-establishment of disturbed areas even if they are re-vegetated with native plant species.

G 4. The DEIS/DPA does not address the cumulative impacts to Clark County's population if the transmission line is connected to the local grid. The increased power supply could promote unexpected population growth pressure in the area, causing additional problems with other types of environmental or service supply factors within the County.

RESPONSES

D Yes.

E The SWIP is not solely dependent on seasonal demand from different regions of the West. Please refer to pages 1-5 through 1-13 of the SWIP DEIS/DPA for additional information about the transfer capabilities of the SWIP and to the expanded discussion of purpose and need in Chapter 3 of this document.

Sources of surplus power would also be available when utility systems connected to the SWIP would be operated in "off-peak" conditions. Further, in good water years, the hydroelectric systems of the Northwest could have substantial surplus power.

F The BLM agrees that more is needed. The SWIP EIS process is intended to make decisions on whether or not the project should be built, and if so, which route will be selected. Additional work will need to be done during the Construction, Operation, and Maintenance Plan phase to detail the rehabilitation methods and other aspects of the project (refer to page 1-34 of this document).

G It is unlikely that the addition of a transmission line to the local grid would increase the population within Clark County. The SWIP is intended to transport bulk power between regions of the West. Because it will terminate in the Las Vegas area means that the local grid could be interconnected to it. AC transmission systems in the West are typically connected to local grids via substation interconnections.

LETTER #C-2
COMMENTS

H 5. Table 3-8 notes the population for the City of Las Vegas, yet does not reference any of the unincorporated towns/areas within the Las Vegas Valley which represent about two-thirds of the Valley's population.

These comments are based on the information the Clark County Department of Comprehensive Planning has received to date. At the present time there is not sufficient mitigative information available to fully review the overall environmental impacts associated with this project. Any additional information or understanding of this project may require further analysis and comment. If you have any questions, please contact Ron Gregory of my staff at (702) 455-4181.

Sincerely,

Richard B. Holmes

RICHARD B. HOLMES
DIRECTOR

RBH:RG:bh
L227

RESPONSES

H Most cities for this table include incorporated cities or unincorporated cites through which the transmission line directly passes. Cities that were less distinct or outside of the three mile corridor were not listed in the inventory and/or table.

LETTER C-2

LETTER #C-3
COMMENTS

RESPONSES

COMMISSIONERS
ERNIE HALL
DALE PORTER
NORMAN THOMPSON
GEORGE R.E. BOUCHER
COUNTY MANAGER
(702) 738-5398

Board of County Commissioners
ELKO COUNTY COURTHOUSE
ELKO, NEVADA 89801

September 10, 1992

U.S. Dept. of the Interior
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

ATTN: Mr. Karl Simonson

RE: SOUTHWEST INTERTIE PROJECT
DEIS/DPA

Dear Mr. Simonson:

The Board of County Commissioners have been advised and oriented on the SWIP as it relates to Elko County, Nevada. Specific response and concern has been received by the Board relating to Link 211 as it relates to the community area of Oasis and the Big Springs Ranch that is headquartered at Johnson Springs.

With regard to Link 211, the preferred alternate is to shift the route to the East side of the Goshute Valley using Link 221 and a portion of Link 222 to gain a easterly bearing before going South.

An acceptable alternate route to Link 211 is to use Link 221 and 223 that will somewhat alleviate the encroachment and invasion that was believed present with Link 211 as proposed.

A The Agency Preferred Alternative proposes to use Links 221 and 223 (refer to Impacts in the Oasis Area in Chapter 3 of this document). Your comments are noted and will be considered in the BLM's decision process.

LETTER C-3

LETTER #C-4
COMMENTS

RESPONSES

A The purpose of the Summary is to provide the reader with a relatively brief and eursory understanding of major components of the studies conducted. The BLM agrees that the Summary should also identify the major issues and concerns of the public and the agencies for the project. Refer to revised Summary on page 1 of this document.

United States Department of the Interior

NATIONAL PARK SERVICE
P.O. BOX 37127
WASHINGTON, D.C. 20013-7127

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

L7617 (774)
DES-92/0023

9 OCT 1992

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

The National Park Service (NPS) has actively participated as a cooperating agency in the development of the draft Environmental Impact Statement (DEIS)/Draft Plan Amendment for the Southwest Intertie. Since the beginning of our involvement, we have consistently identified concerns regarding the potential effects that the proposal could have on Great Basin National Park. In addition, based upon the information we have received, we believe that other alternatives, including the Direct Route and the Cutoff Route, would be preferable to the 230 kV Corridor Route. We underscore our concerns as follows.

A 1. Summary: We are very concerned that, as required by 40 CFR 1502.12, major areas of controversy, including issues raised by the agencies and the public, are not identified. Additionally, as further stated in the regulation, issues to be resolved, including the choice among alternatives, also need to be clearly stated. We have consistently taken issue with the establishment of the transmission corridor within easy view of Great Basin National Park and have urged the choice of more preferable alternatives.

LETTER #C-4
COMMENTS

2. Purpose and Need: As currently written, this section does not describe the Federal action that has lead to this preparation of this DEIS. Moreover, it does not identify the Bureau of Land Management (BLM) plan that may be potentially amended. An explanation of the BLM right-of-way policies in this circumstance should be added.

3. Planning Requirements, Environmental Review and Licensing: We are concerned with the identification of a potential need for a right-of-way listed for Lake Mead National Recreation Area (NRA) (1 of 1, Table 1-1). While the proposed Dry Lake substation is close to the park's boundary, it has been our understanding that nothing in the proposal would affect Lake Mead NRA. We reviewed both the proposal and the environmental consequences for a reference, but could find none. Since the document does not contain the requisite appendix, we may have missed the reference. If a transmission line right-of-way across Lake Mead National Recreation Area is contemplated, it should be noted that the NPS would be required to conduct a separate environmental impact statement process funded by the applicant. There would also have to be a demonstration of the lack of reasonable alternatives and non derogation to any of the values protected by this unit of the National Park System before a permit could be issued.

In addition, any rights-of-way involving lands acquired or developed with funds from the Land and Water Conservation Fund Act (L&WCF) will require compliance with Section 6(f) of that Act. Perhaps such review was intended to be identified on page 2 or 8, Table 1-1, but as currently stated it is unclear.

4. Preferred Route Selection, Page 13, paragraph 2: The choice of an alternate sub-station site does not change the determination concerning the environmentally preferred route. The Cutoff Route is environmentally preferred, and can be served by a sub-station north of the Robinson Summit site. This reference should be corrected.

This same conclusion is made in the sentence beginning at the bottom of page 2-53 and extending to page 2-54.

5. Alternatives Studied in Detail, No Action, page 2-11: At the bottom of the page, disadvantages of the no-action alternative are listed. The second identified disadvantage is misleading. While an adverse impact may result from compensating actions taken to produce energy, it is also possible that compensating actions taken may result in fewer adverse impacts than those associated with the Southwest Intertie Project (SWIP). Without knowing what those compensating actions might be, it is not

RESPONSES

B Refer to the expanded Purpose and Need on page 3-1 of this document.

C The SWIP proposes to terminate at a proposed substation in Dry Lake located northeast of Las Vegas. The project does not propose a right-of-way that would affect the Lake Mead National Recreation Area. The reference in Table 1-1 and has been correeted in the Errata in Chapter 4 of this document.

D While it is true that the Cutoff Route could be served by a substation at the Robinson Summit site, the environmental effects of a transmission line from the North Steptoe area to the Robinson Summit substation site would have to be added to the Cutoff Route. By using the North Steptoe substation site, the Cutoff Route would be shorter and would result in slightly fewer adverse effects than the 230kV Corridor Route. If the Cutoff Route were to use the Robinson Summit substation site, it would likely not be the environmentally preferred route because of the additional transmission segments between North Steptoe and Robinson Summit.

If the Cutoff Route connected to Robinson Summit the environmental preference for the Ely to Delta segment would likely change to the 230kV Corridor Route. Refer to Cumulative Effects on page 3-12 of this document for the future buildout seenarios and an explanation of the route and substation site preferences as well as the effects of the preferred alternatives.

E It is not possible to state with any degree of certainty what the compensating action may be if the SWIP is not constructed. You are correct that it would be difficult to prove whether compensating actions would be more or less adverse than the SWIP. However, it is not difficult to surmise that the effects would have adverse environmental consequences. This is what is stated.

possible to know if they would be adverse or beneficial. The additional actions being referenced should be clearly identified.

E

Similarly, the third listed disadvantage assumes that any locally generated power in urban areas would adversely impact clean air. Without knowing how that power would be generated, and to what extent, it is not possible to know if relying on locally generated power would create a greater or lesser impact than that created by SWIP. More specific analyses should be included.

6. Environmentally Preferred Alternatives, Ely to Delta, page 2-53: The first paragraph indicates that the "major concern" for the Direct Route has been expressed by Hill Air Force Base (AFB). They oppose construction of structures exceeding 35 feet high on lands under their restricted air space (a height of 30 feet is cited on page 2-56, paragraph 2, and the incorrect figure should be changed). Also the statement indicates that "serious concern for protecting the undisturbed landscape through which the route passes", has been expressed by the public and BLM. However, it should be noted that the area is currently impacted by noise from low-level military training flights.

F

In the narrative, it should be noted that no agreement exists between the Air Force and the BLM that limits BLM's actions regarding approval of transmission line with towers higher than 35 feet. Without this clarification, the environmental analysis of the Direct Route is not complete because it does nor evaluate the impacts of placing the line under the military operating area.

The first paragraph states that concerns for the "not understood resources" of the Leland Harris Spring complex contribute to making the Direct Route "less preferred environmentally than the Cutoff Route." There is no indication of whether or not it is less environmentally preferred than the 230 kV Corridor Route. Many questions are left unanswered concerning the significance of the Leland Harris Spring Complex. Appropriate information needs to be incorporated into the DEIS in order to have a complete, comparative picture of environmental impacts across alternatives. The statement that the resources are "not understood" would seem to indicate that no conclusions can be drawn regarding environmental impacts.

G

The purpose of the environmental analysis is to gain the information needed to properly choose between alternatives. The reference to the "potentially unknown" cultural sites mentioned in the first paragraph is

H

RESPONSES

F Hill Air Force Base is opposed to towers over 30 feet high within the R-6405 Restricted Area. The Delta Direct Route would cross 55.1 miles of this Restricted Area. You are correct that the area currently is impacted by low-level flying operations. However, it is not possible to state that impacts from low-level flying would be noticeably different if the Ely to Delta segment were constructed on the Delta Direct Route. Refer to Military Air Space on page 3-22 of this document which addresses the military concerns and the concerns of neighboring land-administrating agencies

G Refer to page 3-91 of this document for further information on the Leland-Harris Springs Complex. The BLM agrees that there are few impacts to sensitive resources at the Leland-Harris Spring Complex which cannot be effectively mitigated. One notable exception is the distinct possibility of impacting wetlands with at least one tower site. This would likely result in the need for a 404 Permit and 401 Certification under the Clean Water Act.

H You are correct that the reference to "potentially unknown" cultural sites is true on every alternative route and should not be justification for eliminating an alternative route. Refer to the Errata in Chapter 4 of this document for the correction.

LETTER #C-4
COMMENTS

H similarly problematic. The same possibility for presently unknown cultural sites to be discovered exists on every alternative route. If the Direct Route is eliminated from further consideration for this reason, every other alternative route should be similarly eliminated.

I The second paragraph refers to the Cutoff Route. The last two sentences of the paragraph indicate that Hill AFB has requested a maximum tower height of 105 feet above ground level. Their request appears to have been honored in the Cutoff Route, although it would also impact the other crosstie routes. It is misleading to emphasize the potential requirement for additional towers on the Cutoff Route while only stating, in reference to the 230 kV Corridor Route, that "this route also crosses through the military operating area (MOA) and the Utah Training and Testing Range (UTTR) of Hill AFB." The reader is unable to distinguish the potential difference between the two routes and may, in fact, be led to believe that one has a greater impact than the other when that actually may not be the case. This section of the document needs further clarification and analysis on this point.

J We also think that all requests made by cooperating agencies relative to their mandates for modifications should be listed, analyzed and justification given as to why they have or have not been included as mitigation in the proposal or other alternatives.

K The third paragraph on page 2-53, as well as throughout the document, mentions that "the 230 kV Corridor Route best satisfies the Federal Land Policy Management Act of 1976 (FLPMA) mandate to 'consolidate corridors' where possible." The designation of the 230 kV utility corridor in the Scheil Resource Area Land Use Plan was done without prior review in accordance with the provisions of the National Environmental Policy Act (NEPA). Two transmission lines currently exist within the corridor, each of which underwent NEPA compliance review. However, the corridor was simply placed over the existing lines.

It is questionable to assume that the compliance completed for the existing lines would be identical to the compliance required to establish a corridor. Many more variables, including cumulative effects, typically would be analyzed in corridor establishment. When viewed from the perspective of the best location for a utility corridor, it is entirely possible that the existing lines were placed in the wrong location and it is conceivable that placing SWIP alongside the two existing power lines compounds an error. The conclusion that the 230 kV Corridor Route best satisfies the FLPMA mandate to consolidate corridors is unsubstantiated.

RESPONSES

I In reference to the areas where 105-feet tower requirements on the Ely to Delta routes, a narrative description has been provided on page 3-22 to clarify where and for how many miles the 105-foot towers would be required for each of the alternative routes (see also Figure 3-5).

J Clarification of this comment would be helpful. The BLM believes that the NPS comment relates to the concern/mandate to protect the viewshed outside of the boundary of the park vis-a-vis the legislation that established the park. The SWIP EIS process did respond to this concern by developing alternatives outside of this viewshed (i.e., the Cutoff and Direct Routes). This is discussed on page 2-30 of the SWIP DEIS/DPA. The BLM is not aware that mitigation requested by a cooperating agency was not considered or included for any of the alternatives.

K The BLM is in compliance with Section 503 of FLPMA with its designation of the utility corridor where the existing 230kV lines are located. Given the termination points for these existing 230kV lines, the BLM feels their present location is proper, and environmental impacts are minimal. The environmental preference for the Cutoff Route has been further evaluated under Cumulative Effects on page 3-12 of this document to consider the future possible utility "buildout" in the Ely area.

LETTER #C-4

COMMENTS

K The present review of SWIP found the Cutoff Route to be Environmentally Preferred, not the 230 kV Corridor.

7. Environmental Consequences, Direct Route, page 4-22: The lack of information about the resources at the Leland Harris Spring complex is confusing and contradictory. Discrepancies exist between the information presented on pages 4-22 and 4-51 of the DEIS, and Volume II of the Technical Report. It is stated on pages 4-22 and 4-51 of the DEIS that there are four federal candidate species (least chub, spotted frog, desert dace, and Great Basin silver-spot butterfly) known to occur at Leland Harris Spring. Pages 4-42 and 4-43, Volume II of the Technical Report indicate that three of the four are classified as Category 2 species by the U.S. Fish and Wildlife Service. The desert dace is not mentioned in the section titled "Wildlife Species of Concern in Utah." Either the DEIS or the Technical Report needs to be corrected.

The second paragraph on page 4-22 (DEIS) also states that "high residual impacts from increased public access to the Leland-Harris Spring Complex would remain, due to the potential long-term and cumulative effects of repeated public entry to this sensitive area." The summary of impacts to wildlife in Utah due to increased public access, which appears on page 4-83, Volume II of the Technical Report, states: "Although a number of federal candidate species, such as the least chub and spotted frog occupy springs and salt marshes of Snake Valley, these habitats are very localized and potential impacts to these areas should be easily mitigated (avoidance and restricted access)." These conclusions are in conflict. L

In addition, the Technical Report listing, on pages 4-80 and 4-82, of species which would encounter residual high impacts following mitigation, indicates that none of the four species of concern falls within this category. In fact, only two of the species (least chub and spotted frog) are identified as being subject to high initial impacts before mitigation.

The analysis lacks consideration of the "avoidance and restricted access" opportunities. No information is made available concerning the distribution of the sensitive species at Leland Harris Spring. If the species are confined to a very limited area, the possibility of a minor relocation of the transmission line should be carefully examined. Perhaps the sensitive species could be completely avoided, with no increase in public access to the site. If the species are widespread throughout the wetlands found in the portion of Snake Valley that would be traversed by the Direct Route, the effect of the power line would be less significant due to the wide dispersal of the species. The DEIS does not provide enough information to draw either conclusion. It simply dismisses the

RESPONSES

L There was an inadvertent omission of the desert dace from the technical report discussions of wildlife species of concern in Utah. The dace as well as the other three species, least chub, western spotted frog, and Great Basin silver-spot butterfly, are all federal candidate, Category 2, species for listing among the threatened or endangered wildlife of the United States.

The conflicting conclusions between the technical report and the SWIP DEIS/DPA regarding the Leland-Harris Spring Complex should have been corrected prior to release of the SWIP DEIS/DPA. The conflict results from a problem with timing of events. The technical reports and maps of sensitive species distributions had been completed before Leland-Harris became an issue with the Direct Route. It was the BLM's belief at the time the technical report was prepared that the distribution of springs and wetlands in the Leland-Harris Spring Complex was sufficiently localized that the Direct Route could be constructed with minimal negative short- or long-term impacts to the resources. The BLM's position is that if the Direct Route is chosen they will request an emergency listing from the Fish and Wildlife Service for the least chub, desert dace, spotted frog, and/or Great Basin silver-spot butterfly. It was the BLM's contention at the time that construction could not occur in the area without significant deleterious impacts and that increased public access would represent long-term negative impacts. The BLM's position is represented in the SWIP DEIS/DPA. Dames & Moore's initial position, as the third-party contractor for the EIS studies, is represented in the technical report.

This scenario is also reflected in the impact analysis in the technical report. Actually, the least chub, spotted frog, and desert dace are all listed as species with initial high impacts before mitigation. The Great Basin silver-spot butterfly was not included in this category for two reasons: 1) no life history information on this species was available other than the fact that it occupies wet springs and meadows where violets are present and, 2) it was assumed that with "red-flagging" the frog and two fish species, the essential habitat requirements of the butterfly (which appear to be poorly known at this time) would also be covered.

Little information on the distribution of the four Category 2 species within the Leland-Harris spring complex has been provided. The BLM has recently obtained some information on the least chub, but nothing specific on the dace, frog, or butterfly is available. The BLM agrees that it seems possible to construct on the Direct Route utilizing avoidance and restricted access

LETTER #C-4

COMMENTS

route as less environmentally preferred, even though the Technical Report notes that potential impacts "should be easily mitigated."

Table BIO-21, entitled "Wildlife Species of Concern in Utah", at the end of Volume II of the Technical Report, lists only two of the four species earlier identified as being of concern at Leland Harris Spring. The desert dace (whose status is unclear, see above) and the Great Basin silver-spot butterfly, are not listed.

L

The third paragraph on page 4-22 states that "Residual impacts to sage grouse would be adverse, long term, and significant despite mitigative measures." As with the discussion on the Leland Harris Spring sensitive species, this conclusion is not supported by the information in the Technical Report, Volume II, page 4-73.

M

8. Hagerman Fossil Beds National Monument: References to this unit of the National Park System are inconsistent throughout the document. The proper name should be used throughout.

M

9. Antelope Springs Trilobite Beds: In chapter three, the Affected Environment, the description of the Cutoff Route should reference Antelope Springs Trilobite Beds as a potential National Natural Landmark. We have attached a map that shows its location.

N

As a cooperating agency, the National Park Service continues to have disagreements with the information and conclusions drawn in this complex document. The BLM proposal that would select the 230 kV route is relatively unsupported. We strongly urge the BLM to reconsider the feasibility of the Direct Route and the selection of a more environmentally desirable alternative.

Please contact Kheryn Klubnikin, Environmental Quality Division, at (202) 208-5126 if you have any questions regarding these comments. We appreciate the opportunity to comment.

Sincerely,

Denis P. Galvin
Associate Director
Planning and Development

Enclosure

RESPONSES

mitigation strategies. The BLM also agrees that if the species in question are distributed more or less throughout wetlands in the Snake Valley that the effects of the transmission line would be less significant.

When Table BIO-21 was prepared, information that the desert dace and Great Basin silver-spot butterfly were species of concern was not available.

Conflicts between the SWIP DEIS/DPA and the technical report are corrected in the Errata in Chapter 4 of this document. Also refer to page 3-91 of this document for further information on the Leland-Harris spring complex.

M Refer to the Errata in Chapter 4 of this document for the appropriate corrections for Hagerman Fossil Beds National Monument.

N Refer to page 3-38 for a description of the Antelope Spring Trilobite Beds.

LETTER #C-5
COMMENTS

RESPONSES

STATE OF NEVADA

DEPARTMENT OF ADMINISTRATION
Capitol Complex
Carson City, Nevada 89710
Fax (702) 687-3983
(702) 687-4065

September 22, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Re: SAI NV # 93300030 Project: EIS, Southwest Intertie Project, Nevada

Dear Mr. Simonson:

Attached are addtional State comments to those received from the Nevada Department of Wildlife concerning the above referenced project. These comments constitute the State Clearinghouse review of this proposal as per Executive Order 12372. Please address these comments or concerns in your final decision.

Sincerely,

Ron Sparks II
State Clearinghouse Coordinator

LETTER C-5

LETTER #C-5
COMMENTS

RESPONSES

BOB MILLER
Governor

STATE OF NEVAOA
PUBLIC SERVICE COMMISSION OF NEVADA
REGULATORY OPERATIONS STAFF
Capitol Complex
727 Fairview Drive
Carson City, Nevada 89710
(702) 687-6001

TERRY PAGE
Director of Regulatory Operations

KELLY JACKSON
Staff Counsel

10 September 1992

Ron Sparks
Nevada State Clearinghouse
Department of Administration
Budget Division
Blasdel Building, Room 204
Carson City, Nevada 89710

Ref: EIS, Southwest Intertie Project, SAI # 93300030

Dear Mr. Sparks:

Table 1-1, Chapter 1 of the Draft Environmental Impact Statement/Draft Plan Amendment for the Southwest Intertie Project, properly identifies the Public Service Commission of Nevada as one agency which must issue approval before commencing construction. The Utility Environmental Protection Act (NRS 704.820-900) requires an approval from the Commission for transmission lines and substations of 200 kilovolts or more.

LETTER #C-5
COMMENTS

RESPONSES

In addition, two Nevada electric utilities, Nevada Power Company and Sierra Pacific Power Company, are subject to the provisions of NRS 704.741-751, which pertain to resource plan approval by the Commission. Participation by either of these utilities in this project would be subject to Commission review and approval of the triennial resource plans, or amendments thereto.

Sincerely,

Thomas H. Henderson
Senior Analyst

RECEIVED
OCD 1 1 1997
DEPT. OF ADMINISTRATION
DIRECTOR'S OFFICE

CONSUMER DIVISION*
Carson City/Reno—687-6000 • Las Vegas—486-6550 • Other Areas—800-992-0900. Ext 87-6000

LETTER C-5

LETTER #C-5
COMMENTS

RESPONSES

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
1263 S Stewart Street
Carson City, Nevada 89712

BOB MILLER, *Governor*

GARTH F. DULL, *Director*

September 2, 1992

In Reply Refer to:

PSD 7.02

Ron Sparks, Coordinator
Nevada State Clearinghouse
Department of Administration
Budget Division
Blasdel Building, Room 204
Carson City, Nevada 89710

Dear Mr. ~~Sparks~~ Ron:

The Nevada Department of Transportation has reviewed the project titled EIS, Southwest Intertie Project, Nevada SAI #93300030.

Based on the information submitted we have the following comments on the proposed project.

Permits will be required for crossing NDOT Right-of-Way.

Thank you for the opportunity to review this project.

Sincerely,

D. Keith Maki
Assistant Director
Planning

DKM:JD:dg

LETTER #C-5
COMMENTS

RESPONSES

BOB MILLER
Governor

STATE OF NEVADA

PETER G. MORROS
Director

RONALD M. JAMES
State Historic Preservation Officer

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF HISTORIC PRESERVATION AND ARCHEOLOGY
123 W. Nye Lane, Room 208
Capitol Complex
Carson City, Nevada 89710
(702) 687-5138

September 10, 1992

M E M O R A N D U M

TO: Nevada State Clearinghouse

FROM: Eugene M. Hattori, Archaeologist EMH

SUBJECT: EIS, Southwest Intertie Project, Nevada.

DUE DATE: September 18, 1992

NEVADA SAI: #93300030

The Nevada Division of Historic Preservation and Archeology has reviewed the subject document and supporting technical reports. The Division supports the EIS as written and notes that the discussions regarding cultural resources for Nevada are comprehensive. We do have some minor comments concerning the technical supporting documentation:

A 1). The predicted sensitivity zone model may be biased against early-Holocene sites associated with dry lake basins and upland areas (eg. quarries) occupied prior to the invasion of pinyon during the mid-Holocene.

LETTER C-5

A Predicting the locations and types of archaeological and historical sites is an extremely complex challenge, and a relatively undeveloped science. The sensitivity model developed for the purposes of this EIS is based on environmental variables, but is quite simplistic and intended to provide only the grossest indications of major variations in the density of archaeological and historical sites as a tool for evaluating competing alternatives. If the project is approved for construction, intensive inventory data will be collected along the selected route. The State Historic Preservation Office will be consulted regarding inventory strategies, resource evaluations, and development of avoidance or mitigation measures as the design of the project proceeds. Consideration of how climatic changes affected human societies living in the region can be pursued as an aspect of any follow-up studies.

LETTER #C-5
COMMENTS

A Past climatic changes and historic invasion of pinyon into sagebrush-grasslands are also factors ignored by the model. These are by no means fatal flaws, but are unaddressed problems.

B 2). Cultural resource agency contacts (SHPO, BLM, and Forest Service) for Nevada are dated and should be corrected. For example, Roland Westergard retired as Nevada SHPO in 1990. Ronald James - SHPO, Alice Baldrica-deputy SHPO, Eugene Hattori - archaeologist.

C 3). Nevada does have a state historic preservation plan with a number of completed elements.

RESPONSES

B Collection of data on which the regional study was based began in 1987. Thus the planning for this project has been a very long-term undertaking. There has been substantial turnover of personnel in many of the involved agencies. The contaets indicated in the Cultural Environment Technical Report were left as they were when that aspect of the study was undertaken. If the projeet is approved for construction, agency contact lists will be updated in conjunction with follow-up studies.

C State Historic Preservation Plans will provide a primary basis for evaluating the signifieance of cultural resources that may be diseovered if the project is approved for construction. In aceordance with the programmatie agreement (appended to the Cultural Environment Technical Report), the State Historic Preservation Officers will be consulted in the course of follow-up studies for the latest information regarding preservation plans.

LETTER #C-6
COMMENTS

RESPONSES

A No response is necessary.

STATE OF NEVADA
BOB MILLER
Governor

PETER G. MORROS
Director

L. H. DODGION
Administrator

Administration	(702) 687-4670	Chemical Hazards Management	687-5872
Air Quality	687-5065	Water Pollution Control	687-4670
Mining Regulation and Reclamation	687-4670	Water Quality Planning	687-4670
Waste Management	687-5872	FAX	885-0868
Federal Facilities	687-3880		

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
333 W. Nye Lane
Carson City, Nevada 89710

July 15, 1992

CLEARINGHOUSE COMMENTS

DUE DATE: September 18, 1992

TITLE: DEIS/DPA - Southwest Intertie Project

The Division of Environmental Protection has reviewed the subject Clearinghouse and has no comments at this time.

dl

LETTER C-6

LETTER #C-7
COMMENTS

RESPONSES

STATE OF NEVADA

DEPARTMENT OF ADMINISTRATION
Capitol Complex
Carson City, Nevada 89710
Fax (702) 687-3983
(702) 687-4065

September 22, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

Re: SAI NV # 93300030 Project: EIS, Southwest Intertie Project, Nevada

Dear Mr. Simonson:

Attached are the comments from the Nevada Department of Wildlife concerning the above referenced project.

These comments constitute the State Clearinghouse review of this proposal as per Executive Order 12372. We are requesting that you address the comments either by direct contact with NDOW or through this office.

If I can be of further assistance do not hesitate to contact me at (702) 687-6367.

Sincerely,

Ron Sparks II
State Clearinghouse Coordinator

LETTER C-7

cc: Mike Wickersham, NDOW
Enclosure

[redacted]

LETTER #C-7
COMMENTS

RESPONSES

STATE OF NEVADA
DEPARTMENT OF WILDLIFE
1100 Valley Road
P.O. Box 10678
Reno, Nevada 89520-0022
(702) 688-1500
Fax (702) 688-1595

BOB MILLER
Governor

WILLIAM A. MOLINI
Director

Region III III-93-054
State Mailroom Complex
Las Vegas, Nevada 89158
September 18, 1992

Mr. Ron Sparks, Coordinator
Nevada State Clearinghouse
Department of Administration
Division of State Planning
Blasdel Building, Room 204
Carson City, NV 89710

RE: SAI NV#93300030

Dear Ron:

The Southwest Intertie Project (SWIP) Draft Environmental Impact Statement and Draft Plan Amendment has been reviewed by Habitat and Game personnel in Las Vegas and Elko. The Draft Environmental Impact Statement (DEIS) seems to support the analysis of most environmental variables in the mid-to-northern portions of the project route considered in that the most environmentally conscious route was proposed.

The preferred route of the project has been identified with several alternatives proposed to address anticipated impacts along the route. Late in the planning process for SWIP (1990), the original route was found to be flawed and unable to transmit the desired amount of power beyond Delta, Utah. As a result, the preferred route was altered to parallel the course of the

LETTER #C-7

COMMENTS

transmission lines of the White Pine Power Project (WPPP) extending from Ely, Nevada to Dry Lake, Nevada. The WPPP route has been previously identified in an EIS and a Record of Decision (ROD) was made in 1985. While the WPPP power plant and transmission lines have not been constructed, it was felt that the SWIP project could "piggyback" its impacts on the WPPP route which is also the preferred path for designation as a utility corridor in the BLM's Draft Stateline Resource Management Plan (RMP).

A This DEIS is lacking in addressing the full range of impacts to wildlife and wildlife habitats south of Ely. Updates have been entered to cover the listing of the Mojave population of the desert tortoise and other subjects. The DEIS assumes that all other concerns and factors are unchanged since the WPPP EIS, however, the affected environment has not been static. The impacts of explosive growth in the Las Vegas Valley have extended beyond its geographic limits, with impacts to wildlife and associated habitat noted throughout Southern Nevada. The alternatives given in the SWIP DEIS do not address current concerns nor propose alternatives to address these concerns. In this document, only the preferred routes are addressed, leaving no room for a reevaluation of the routes or addition of any new alternatives such as a "No Action" Alternative.

B The preferred Route A contains the least adverse impacts to wildlife in Lincoln County. The route that follows Link 673 would be preferred since a key deer winter area in the Bailey Spring area would be missed and it would be just west of the West Range. Link 690 is preferred over Link 680 in this area due to high wildlife values in the Kane Springs Wash area.

C The Southern Route of the Crosstie, from Jakes Valley, south of Connors Pass and through South Spring and Hamlin Valley into Utah is the least preferred route. It traverses important sage grouse, ferruginous hawk and mule deer summer habitats and key antelope ranges and kidding grounds in Units 221, 222, and 115.

D The DEIS provides inadequate analysis of and consideration for biological resources as a whole, but particularly that portion illustrated by Panel 5 of the Map Volume, the more southerly portions of project route. Evidence for this is partly exhibited by the lack of inclusion of photo simulations found in the Map Volume of the DEIS. While the preparers recognized the obvious utility of the simulations for assessing visual impacts, there was no study on their use for assessing biological impacts in the

LETTER C-7

RESPONSES

A The resource investigations and impact assessment/mitigation planning were completed to an identical level of detail for all of the SWIP alternatives, including those from Ely to Dry Lake. We did not rely on the White Pine Power Project (WPPP) EIS data. Please note in Chapter 2 of the SWIP DEIS/DPA that several new alternatives were added because of sensitive resources discovered since the WPPP Record of Decision (1985). Also refer to page 2-31 of the SWIP DEIS/DPA for a discussion about how the studies for the SWIP expansion south of Ely were done to the "same level of detail" as the previous studies.

B The Agency Preferred Alternative includes Links 673 and 690.

C The least impact Ely to Delta segment route is the Cutoff Route, followed by the 230kV Corridor Route. However, with consideration of reasonably foreseeable future utility projects in the Ely area, the 230kV Corridor Route is environmentally preferred (refer to page 3-12 in this document for a discussion of cumulative effects).

D The analysis of biological resources in the SWIP DEIS/DPA is adequate and was conducted in accordance with NEPA guidelines for the purposes of selecting an alternative route. Detailed mitigation planning would occur during the development of the Construction, Operations, and Maintenance (COM) Plan. Photosimulations would be of particular value in the assessment of biological impacts in the more southerly corridors, or any of the other corridors. The biological resources sections for Affected Environment and Environmental Consequences have been clarified and expanded, and are reprinted in Chapter 3 of this document.

LETTER #C-7
COMMENTS

D southern reaches of the proposed project route. This is particularly relevant to desert tortoise and bighorn sheep habitat.

E Several of the routes have significant impacts not identified. Preferred Route 672 crosses the Murphy Meadows south of the Kirch WMA. The area is a seasonally wet meadow which has high value to wildlife. Conflicts with bald eagle use of the area is minimally noted. Peregrine falcons, ospreys, ferruginous hawks, golden eagles, northern goshawks and 15 other raptor species recorded nearby on the Kirch Wildlife Management Area are not mentioned.

F Of equal or greater concern is the impact on waterfowl and shorebirds. Significant numbers of migratory birds are killed each year from collisions with towers and power lines. The preferred route would bisect the meadow, posing an unnecessary hazard to the thousands of birds attracted to Kirch WMA annually. There is no mention of whether a maintenance road will be constructed across the seasonal wetland area or if a crossing will be avoided. Either a bisecting road or a parallel road would greatly increase human intrusion on the area. In this instance, the southern fork (Link 671) would be environmentally preferred. While birds will likely have fatal collisions with lines and towers on this alternative, the impacts should be significantly less due to the crossing below the high use areas.

G Route 680 is an alternative which extends south-southeast from Delamar Valley, traversing the Delamar Mountains between Kane Springs and Boulder Canyon. This route is invasive to the Delamar Mountains and should receive no further consideration.

H Route 730 is an alternate which runs north of the Arrow Canyon Range and provides access to other alternatives north of Dry Lake Valley. This line crosses Arrow Canyon near the site of a proposed cultural and scenic Area of Critical Environmental Concern (ACEC). This area was proposed for a state park or similar recreational facility. With these types of resource values, little consideration should be given to this alternative.

I Route 750 is an alternative branch off of Route 730. It poses problems, for as it skirts the Moapa Indian Reservation and its designated utility corridor, and it makes intrusions onto large portions of desert bighorn sheep habitat. From the Arrow Canyon crossing, this route extends south-southwest through the eastern foothills of the Arrow Canyon Range (Dry Lake Hills). From there it proceeds into the mouth of Ute Canyon and up the south fork into

RESPONSES

E The Murphy Meadows have been included in a revised SWIP FEIS/PPA. Conflicts between raptors and the SWIP have also been discussed in Chapter 3 of the SWIP FEIS/PPA. During inventory work for this project, no agency personnel expressed concern over Murphy Meadows or the Kirch WMA. The preferred link (Link 672) passes to the south of the southern boundary of the Wayne Kirch WMA. Table BIO-14 (Volume II - Natural Environment Technical Report) lists 17 species of raptors that are likely to occur within the SWIP corridors (refer to Appendix H of the DEIS/DPA for locations where the technical reports can be reviewed).

F A discussion of avian mortality associated with high voltage transmission lines is included in Chapter 3 of the SWIP FEIS/PPA. Scientific literature does not support the statement that a high voltage transmission line poses a significant hazard to migratory birds. While thousands of migratory birds die each year as a result of collisions with man-made structures, high voltage transmission lines are not one of the significant sources of such mortality. The BLM will further examine placement of the preferred route with respect to the Kirch WMA and Murphy Meadows. The BLM appreciates your concern for this area and has attempted to minimize or avoid impacts in the area by placing alternatives outside the Kirch WMA. Adequate precautions will be taken to close access roads not required for maintenance or to leave them open as the BLM or the land manager/owner wish. The impacts of access disturbance are accounted for in the SWIP DEIS/DPA, including the visual impacts of the scars. Overland construction, ripping and supplemental seeding may be required for adequate road closure and rehabilitation. This detailed mitigation planning would be developed with the Construction, Operation, and Maintenance (COM) Plan.

G The BLM agrees that this route is less preferable environmentally and is not being considered in any of the routes compared in the SWIP DEIS/DPA or the SWIP FEIS/PPA.

H The BLM agrees. Link 730 was not considered further in any of the routes compared in the SWIP DEIS/DPA or the SWIP FEIS/PPA.

I The BLM agrees. Link 750 was not considered further in any of the routes compared in the SWIP DEIS/DPA or the SWIP FEIS/PPA.

COMMENTS

RESPONSES

I prime bighorn habitat. The line would cross a ridge into a canyon known locally as Island Canyon. Following the east fork, the route would cross the south ridge down precipitous cliff and into the third canyon, within one half mile of the Arrows #1 Water Development. From this point the line would head southeast into the Dry Lake substation across the bajada. The amount of desert bighorn habitat invaded is significant.

J The preferred route 720 parallels U.S. 93 to the east, crossing the Gunsight Pass area and veering southeast through a gap in the Arrow Canyon Range before running directly to the Dry Lake substation site. There are several problems with this route. First, there is a proposal for a 2,000 foot separation requested between the SWIP line and an existing UNTP line. While safety and reliability guidelines are cited for this separation, it is requested later that these lines form the outer boundaries of an identified utility corridor. The Nevada Department of Wildlife suggests a separation of no greater than 500 feet. The line could be located within 200 to 250 feet of U.S. 93 without unnecessarily extending human disturbance in desert tortoise habitat.

K Along a similar line, the narrow area, or "pinch-point" between Delamar Dry Lake and Pahranagat Wash the UNTP and SWIP lines will be placed on double-circuit towers. These towers are able to hold two separate transmission systems. The proposal is to construct two double circuit systems through the area, allowing the possible WPPP to hang its transmission lines to the "inside" of each tower at a later date. As noted previously, the WPPP is not a sure thing and in the interest of reducing impacts through this area of desert tortoise, chuckwalla and bighorn sheep migration, a single tower system of double circuit units should be able to transport both UNTP and SWIP lines through this area. In light of the listing of the desert tortoise, a system of double circuit towers (carrying UNTP and SWIP lines) should be considered through the length of tortoise habitat to minimize impacts.

L In the southern Arrow Canyon Range, Route 720 proposes to pass through a gap while maintaining the most direct route to the Dry Lake substation. When field work was done and the WPPP document submitted for public comment there was one bighorn water development north of the gap and there was no road bisecting the gap. There are now two bighorn sheep water developments which straddle the Arrow Canyon gap. The sites were selected for their location in excellent desert bighorn habitat, relationship to other bighorn habitat, accessibility for existent project designs and

J The 2000-foot separation between the SWIP and the UNTP rights-of-way requested by the IPCo is to meet reliability criteria established by the Western States Coordinating Council (WSCC), as explained on page 2-17 of the SWIP DEIS/DPA. Each right-of-way evaluation or request within the WSCC system should consider the specific line combinations to determine whether a specific separation is required. The issue is the credibility of a simultaneous loss of the circuits involved. The WSCC criteria say:

> "..., the credibility of loss of a particular set of lines will depend upon the total distance of common corridor shared by the lines and upon the vulnerability of the circuits over that distance to a common mode failure. Considerations for this vulnerability assessment will include line design; length; location, whether forested, agricultural, mountainous, etc.; outage history; operational guides; and separation. For example, some utilities use separation by more than the span length as adequate to designate the circuits as being in separate corridors."

This issue is not new. For example, the Third Pacific 500kV AC Intertie requested and received miles of separation between it and the existing two 500kV interties in forested areas. This separation was required to allow adequate response time to adjust the system following the loss of the existing lines and a potential loss of the third 500kV line. Similar to the SWIP and the UNTP, the consequences of such an outage would be wide-spread outages in the WSCC system.

It is true that separation exceptions do exist in urban areas. If there is an outage, the disturbance is localized and does not have the system impact that requires the separation of lines. The reason for separating the SWIP and the UNTP lines is to meet the WSCC reliability criteria for regional transmission facilities. Placing these lines closer together could result in a considerably lower capacity rating that would render the project economically infeasible.

K The BLM believes that the desert tonoise can be protected through appropriate mitigation measures and still maintain the reliability criteria needed by the WSCC to make the SWIP viable (refer to Appendix C of this document for a copy of the Biological Opinion).

The capacity rating of the SWIP line would not be permitted if the IPCo does not comply with the WSCC separation requirement. Using double-circuit

LETTER #C-7

COMMENTS

construction techniques, and a low level of human disturbance. The developments have allowed bighorn sheep to expand summer use areas in the Arrow Canyon Range. Currently, bighorn use continues to
L increase, while human impacts remain relatively low. This bighorn critical summer use area was identified in the SWIP DEIS, but nowhere were adequate impacts and alternatives to invasion of this habitat discussed.

The "existing" road through the gap was constructed in late March of 1985, after submission of the WPPP EIS, under suspicious circumstances. Within a week of its appearance, the road was marked for inclusion as part of the Mint 400 ORV race course. On current U.S. Geological survey maps the road is shown to dead-end at the ridge line. The Department maintains that this road is not a legal road or trail and as such, should not be considered as a viable maintenance route for SWIP. Even a dead-end maintenance
M road would be a problem. There will be increased traffic into the area, with a chance for significant impact on bighorns during the critical summer period. Therefore, it is recommended that this route be eliminated from consideration as a route to the Dry Lake substation. It is suggested that a route be considered around the southern tip of the Arrow Canyon Range. The route could follow the UNTP line on the east side of U.S. 93 to the point where the highway turns southeast toward I-15. Some of the obvious concerns are a longer transit through Category 1 desert tortoise habitat and an extension of the route by 10 to 12 miles. The use of double-circuit towers would probably be necessary just south of the divergence from the existing route.

It is further recommended that any part of the route in desert
N tortoise habitat be restricted from competitive ORV events. It should be of primary importance to keep non-maintenance traffic to a minimum.

Other comments include:

No reference was made to the Bureau of Land Management (BLM) Las Vegas District's Clark County Management Framework Plan (MFP) or Caliente Resource Management Plan (RMP). Even though personal communication was made with staff of the Las Vegas District, there
O was no apparent direct use of the Clark County MFP, Caliente RMP, or supporting documents relative to land-use considerations, decisions, or guidance in Southern Nevada. Even though the Stateline RMP in draft form, includes the SWIP route proposal, and will eventually replace the Clark County MFP, the Clark County MFP,

RESPONSES

towers (through desert tortoise habitat for 53.2 miles) would render the SWIP economically infeasible because the WSCC would require a considerably reduced capacity rating.

At the "pinch points" (e.g., Pahranagat Wash), the transmission towers would have to be designed with a safety factor that is several times more redundant than would otherwise be necessary. The IPCo hopes that the WSCC will be willing to allow the 1200 MW rating with these design concessions for a short distance.

L See Response M below

M There is an existing dirt road approximately 3/4 mile from the most southerly water development. This existing road runs for approximately 2 1/4 miles and dead-ends. This road was located on BLM's October 11, 1976 aerial photography, and was present when the second water development was constructed. This second catchment to the south of the existing road was constructed after the road was built. In the mid-1980s an extension of this road was illegally bladed for a distance of approximately 1/2 mile. However, it was not used as part of the Mint 400 ORV race course in 1985 or in any other event. The road does not tie into other roadways and the road is not held by a right-of-way.

The road is not new, and it may be used for construction access before being closed and rehabilitated. Construction of the SWIP line during the critical periods for bighorn sheep can be avoided.

The BLM understands your concern for the impact of the road through the Arrow Canyon Range, and the impact of increased public access on desert bighorn sheep. However, the BLM does not agree that the transmission should be re-routed to accommodate this concern. The most appropriate means of reducing impact to bighorn sheep is to re-contour the road and eliminate public access after construction. Limiting construction to winter months would further reduce the impact to bighorn populations.

N The BLM agrees that the road, if used for construction of the SWIP, will be closed and rehabilitated.

LETTER #C-7
COMMENTS

RESPONSES

O is the current land use plan in effect. As a result, information applicable to the DEIS was omitted.

P Other documents important regarding information for the desert tortoise and which affect the SWIP proposal relative to restrictive or mitigative measures include the: Short-term Habitat Conservation Plan for the Desert Tortoise in Las Vegas Valley, Clark County, Nevada (RECON 1991) and the supporting Implementation Agreement; and, Compensation for the Desert Tortoise (Desert Tortoise Management Oversight Group 1991).

Q The gila monster, Heloderma suspectum, has been classified since 1978 as a State protected reptile and provided additional status as rare (Nevada Administrative Code 503.080). Also, the gila monster is a BLM designated sensitive species. Gila monsters and their habitat occur throughout the area illustrated in Panel 5 of the Map Volume for the DEIS, yet mention or consideration of this rare lizard is completely lacking in the DEIS.

R Substantially more attention should be given to Special Status Species of wildlife identified on pages 3-24 through 3-26. Suggested species to include which are at least Federal Category 2 candidates (Federal Register, 21 November 1991, Vol. 56, No. 225, pages 58804-58835) for listing under the Endangered Species Act of 1973, as amended, include:

Pahranagat Valley Montane Vole
Spotted Frog
all invertebrates found in the study area

S There is a need to provide more effective mitigation measures to control raven populations. Currently little is done to manage and control populations of this species. The SWIP should be designed to allow minimal perches. Additional raven access would allow perpetuation of scavenging of other passerine nests and predation upon desert tortoises. In addition, there is no mention of other state sensitive species, including the sandhill crane and golden eagle. Addressing the issue of predation upon several species of wildlife within the area should be of higher priority. The use of towers by various raptors and ravens has been shown to have significant impact upon several species of wildlife, particularly sage grouse and desert tortoise.

O The BLM agrees that the Stateline RMP will replace the existing MFP for the Las Vegas District of the BLM. Page 2-28 of the SWIP DEIS/DPA lists the Management Framework Plan as the plan that was considered. The Caliente RMP was inadvertently left off of this list but is corrected in the Errata in Chapter 4 of this document.

The SWIP EIS process will also be a plan amendment to the current land use plans. The two pertinent land use plans for the Las Vegas District are the Clark County MFP, which encompasses the area in the Stateline Resource Area for Clark County, and the Caliente MFP, which encompasses the area in the Caliente Resource Area for Lincoln County. Clarification of other land use plans is in Chapter 1 of this document.

P The BLM is aware of these documents and will consult them for assistance in the preparation of a formal Section 7 Biological Assessment that will focus strongly on tortoises and mitigation of impact to tortoises.

Q The BLM acknowledges this inadvertent omission. A discussion of *Heloderma suspectum* has been included in Chapter 3 of this document.

R Approximately 16 pages in the Technical Report (Volume II) were devoted to special status species. The SWIP DEIS/DPA is intended to be a brief summary of information, not an exhaustive analysis. The information included in Volume II of the Technical Report includes a discussion of the spotted frog (*Rana pretiosa*) and several species of invertebrates. A discussion of all invertebrates found in the study area seems inappropriate. In discussions and requests for data from land and wildlife management agency biologists in the study area, the Pahranagat Valley Montane Vole was not mentioned. The BLM acknowledges its presence on the Animal Species Review list published by the USDI Fish and Wildlife Service in November, 1991. This species will be considered for additional analysis in relation to preparation of the COM Plan for the project (refer to page 1-34 in this document). Also refer to Appendix H of the DEIS/DPA for locations where the technical reports can be reviewed.

S Control of raven populations does not fall under the purview of the project sponsors. Further, The BLM seriously doubts that available/suitable perch sites within the Great Basin and northern Mojave Desert represent limiting

LETTER C-7

LETTER #C-7
COMMENTS

RESPONSES

Mitigation measures which may be instituted and which are deemed appropriate should be considered during the analysis of the project are listed as follows:

T 1. In addition to anticipated desert tortoise or other species of special status protocols, biologists will monitor and document site localities of wildlife observed along the affected project route. Site locality descriptions would include at least conditions under which wildlife were observed, habitat description, elevation, legal description of locality, date, and full name of observer(s). This information would be provided to all appropriate agencies and interests.

U 2. Rehabilitation of disturbed sites, including ripping and revegetating of temporary roads, at a level of intensity to avoid after-project conditions which leave significant scars upon the desert landscape.

Additional editorial and nomenclature comments include:

V 1. An illustration of Alternate Routes A through G as treated in the text throughout the DEIS should be included. Further, there is no reference to these routes in the Map Volume for the DEIS. If the legs of the routes (e.g. 690, 730, 820, etc.) represented these, it was not obvious.

W 2. Summary, page 8, 3rd paragraph; change last line to use more correct nomenclature and be consistent with that used later in chapter 3 (e.g. on page 3-24) or elsewhere:

change ....(antelope, mule deer, bighorn sheep). to read,
.....(pronghorn, mule deer, bighorn sheep, and elk).

X 3. Make sure all scientific nomenclature is current and correctly spelled. For example, on page 3-15 in the "Grassland" section, use of, "thistle (Salsola iberica)", is incorrect. The passage should read, "Russian thistle (Salsola kali)".

Y 4. On page 3-24, technical reports are referred to and specifically in reference to Tables BIO-19 and BIO-20. Neither the technical reports nor the BIO Tables could be found in the DEIS package provided.

factors to raven populations (i.e., more perch sites do not necessarily mean more ravens). The SWIP DEIS/DPA and Volume II - Natural Environment Technical Report devotes considerable attention to the issue of providing hunting perches for avian predators. Several links within the study area were eliminated from serious consideration in the route selection process because they were in locations that would provide new hunting perches for eagles and other raptors in sage grouse areas.

The impact of predatory ravens on hatchling desert tortoises appears to be a local problem. It has not been documented as occurring region wide.

T The BLM will address the issue of preconstruction clearance surveys for a number of species of sensitive plants and wildlife in the COM Plan for the project (refer to page 1-34 in this document). The BLM assumes your discussion of biological monitoring and documentation of site localities and site locality descriptions relate to the construction phase of the project. It is unclear, however, if your recommendation relates to all species of wildlife at all sites along the affected route.

U The BLM agrees that the construction of the SWIP will leave scars to the landscape. The rehabilitation plan that will be developed with the COM Plan is intended to heal those scars over time (refer to page 1-34 in this document). Adequate precautions will be taken to close access roads not required for maintenance or that the BLM or the land manager/owner wish to have closed. The impacts of access disturbance is accounted for in the SWIP DEIS/DPA, including the visual impacts of the scars. For overland construction ripping and supplemental seeding may be required for adequate road closure and rehabilitation.

V The Alternative Routes map in the SWIP DEIS/DPA Map Volume indicated all routes, including Routes A through G. Routes A through G shared a number of common links. For example, all of Routes A through G used Link 720. None of the alternative routes used Links 730, 740, 750, 760, 770, 780, or 790. The environmental planning process eliminated links with the highest environmental impacts from further consideration as the alternative routes were assembled (from the links) for comparison in the SWIP DEIS/DPA (also refer to Appendix D of the SWIP DEIS/DPA for additional information on the subroute comparison). A complete link list for each of the alternative routes compared is found on pages 2-37, 2-38, and 2-47 of the SWIP DEIS/DPA.

LETTER #C-7
COMMENTS

In summary, the Department finds the SWIP EIS lacking in adequate environmental analysis concerning the proposed transmission routes south of Ely. It is recommended that further analysis of impacts to wildlife habitat be done on this route with adequate alternatives and mitigative measures to address wildlife concerns.

Thank you for the opportunity to comment upon this proposed action on the public lands of Nevada. If you have any questions or require additional input, please advise.

Sincerely,

Mike Wickersham

Mike Wickersham
Manager, Region III

COP:jln

cc: Habitat Division Chief
Game - Las Vegas, Nongame, Herpetology, Panaca
Region II - Habitat

RESPONSES

W Your comment is noted.

X The BLM has made every effort to assure that scientific nomenclature is current and correct. The BLM agrees that "thistle" is incorrect and should be "Russian thistle". However, the BLM has deferred to a recent publication by J.H. Lehr for the specific epithet *iberica* instead of *kali* (Lehr provides *Salsola kali* as a synonym for *Salsola iberica*).

Y Technical reports were prepared as backup documents for the biological resource portions of the SWIP DEIS/DPA. Appendix H of the SWIP DEIS/DPA explains where the Technical Reports can be reviewed. Refer to Appendix H in the Errata of Chapter 4 for locations of where additional copies of the Technical Reports can be reviewed.

LETTER C-7

LETTER #C-8
COMMENTS

Department of Community & Economic Development
Division of State History
Utah State Historical Society

Norman H. Bangerter
Governor
Max J. Evans
Director

300 Rio Grande
Salt Lake City Utah 84101-1182
(801) 533-5755
FAX: (801) 364-6436

June 22, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

RE: Southwest Intertie Project DEIS/DPA

In Reply Please Refer to Case No. L037

Dear Mr. Simonson:

The Utah State Historic Preservation Office received the above referenced DEIS/DPA on June 12, 1992. After review of the draft statement, the Utah Preservation Office offers the following technical comments for consideration.

A 1. On 3-82,83 the references on these two pages cover the federal law thoroughly. Although this is a federal process and document, the appropriate antiquities' laws of each of the three states would be of use in this section.

B 2. On 3-86 it appears that the separation of ethnohistoric sites and numic sites overlap. Is there a need for a ethnohistoric category in this section?

C 3. On 3-87,88 when categories of classification are first mentioned, they need to be defined, what criterion was used to set up avoidance level one and two for example?

D 4. On 3-89 the five sensitivity categories need to be defined also when first mentioned.

E 5. The Utah Preservation Office would like to request a copy of the technical report, (Rogge and Wood, 1992).

LETTER C-8

RESPONSES

A If the project is approved for construction, subsequent cultural resource studies will be pursued in consultation with State Historic Preservation Officers. This will be an opportunity to review the requirements of state antiquities laws to ensure that state requirements are met in any situations where they might apply rather than federal law.

B How far ethnohistoric data can be extended back into prehistory is, of course, an active area for research, particularly with regard to the antiquity of Numic speaking groups in the region. The distinction between prehistory and ethnohistory is somewhat arbitrary. Separate categories were used in recognition of the different types of data (historical documents) available to reconstruct the cultural history of the ethnohistorie era. Ethnohistoric resources often have special values for contemporary Native American groups.

C Page 2-26 of the SWIP DEIS/DPA defines these planning criteria. This has been corrected in the Errata in Chapter 4 of this document.

D The types of cultural resources assigned to the five defined sensitivity categories are listed on pages 3-89 and 3-90 of the SWIP DEIS/DPA. The sensitivity classifications are further discussed on pages 9-74 through 9-76 of the Volume IV - Cultural Environment Technical Report. Refer to Appendix H of the DEIS/DPA for locations where the technical reports can be reviewed.

E This has been corrected in the Errata in Chapter 4 of this document.

LETTER #C-8
COMMENTS

F 6. Graphics or tables would have been of use when explaining the models used for the site prediction models and effect. They would help in following how each was constructed.

G 7. One key item is the review of the results of the models and their representation on the cultural resource maps with the DEIS. In Utah, Panel 4 used site information to outline impact levels, known resources and predicted sensitive zones. In discussion with the State Archaeologist, the model does not outline what would be several high sensitive zones. One example is where lines cross to the northeast of Sevier Lake; an area containing very complex sites with little known about what information they contain. These are only models and as stated are intended to provide some assistance in picking alternatives. The models on Panel 4, however, appear not to provide a good prediction of sensitive zones. Models could use more environmental data to develop better predictions.

This information is provided on request to assist the Bureau of Land Management with its Section 106 responsibilities as specified in 36CFR800. If you have questions or need additional assistance, please contact me at (801) 533-7039.

Sincerely,

James L. Dykman
Regulation Assistance Coordinator

JLD:L037 BLM/EIS

RESPONSES

F Graphics and tables are used in the Cultural Environment Technical Report to describe the sensitivity and impact models.

G The areas north and east of Sevier Lake are projected to have several segments of moderate impact and do stand in contrast to most of the other alternative segments in Utah where only low impacts or no impacts are projected. Predicting the locations and types of archaeological and historical sites is an extremely complex challenge. The sensitivity model developed for the purposes of this EIS is quite simplistic and is intended to provide only indications of major variations in the density and complexity of archaeological and historical sites as a tool for evaluating alternative routes. If the project is approved for construction, intensive inventory data will be collected along the selected route. The State Historic Preservation Office will be consulted regarding inventory strategies, resource evaluations, and development of avoidance or mitigation measures as the design of the project proceeds.

LETTER #C-9
COMMENTS

OFFICE OF PLANNING AND BUDGET
Resource Development Coordinating Committee

Charles E. Johnson, CPA
Office Director
Brad T. Barber
Office Deputy Director
Rod D. Millar
Committee Chairman
John A. Harja
Executive Director

116 State Capitol
Salt Lake City Utah 84114
(801) 538-1027

September 23, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, Idaho 83318

SUBJECT: Southwest Intertie Project DEIS
State Identifier Number: UT920615-020

Dear Mr. Simonson:

The Resource Development Coordinating Committee, representing the State of Utah, has reviewed this proposal. The Division of Wildlife Resources comments:

A The line corridors could impact raptors migrating along the Deep Creek Range and south during the fall and spring. We would like to see this mentioned in the EIS. We discussed this with the BLM on August 6, 1992, at a meeting in Delta. Because these birds normally migrate at high elevation, the 230 kV line may not pose much of a threat. However, corridors such as the 230 kV route that follow existing lines and go through canyon bottoms (such as near Great Basin National Park) should create the least hazard. There should be some discussion of this point in the EIS.

RESPONSES

A Refer to the discussion under Avian Collision Hazard in the re-printed Biological Resources section in Chapter 3 of this document.

LETTER C-9

LETTER #C-9
COMMENTS

RESPONSES

The agency-preferred route for the Ely to Delta portion of the SWIP is the 230 kV corridor route. We strongly support this approach. Following existing corridors does not open up any new areas to impacts associated with the corridor route itself, or the associated roaded access it would create.

We support the following statements indicating the BLM's stance in the EIS: "Because the 230 kV corridor route parallels two existing 230 kV transmission lines for its entire length, this route best meets the agency criteria and Section 503 of FLPMA of utilizing existing utility corridors to the degree possible" (Page 2-57). Further, the EIS states on page 2-25, "The BLM favors the placement of new lines in existing utility corridors to minimize adverse impacts and to maintain open space values in previously undeveloped areas."

We strongly support the 230 kV corridor alternative. The following is a ranking of our support for the alternative routes in the Ely to Delta route in descending order (1 most support) and a comment on potential impacts.

(1) 230 kV Corridor - Some pronghorn antelope and mule deer winter range impacts. Least impacts to migrating raptors.

(2) Cutoff Route - Similar impacts to the 230 kV route, but with added impacts of opening new habitats and added vehicle/human disturbance from newly created access along the "cutoff" section.

(3) Direct Route - Pronghorn antelope and mule deer winter range impacts. Mostly newly created corridor with associated impacts. Additional impacts to Leland-Harris Spring Complex--wetlands.

(4) Southern Route - Potentially the most damaging to pronghorn antelope habitat, mule deer winter range, ferruginous hawk nests and other raptor nesting. This route is the longest and would be expected to create the largest amount of disturbance to all of the above habitats.

LETTER #C-9
COMMENTS

RESPONSES

The Committee appreciates the opportunity to review this proposal. Please direct any other written questions regarding this correspondence to the Utah State Clearinghouse at the above address or call Carolyn Wright at (801) 538-1535 or John Harja at (801) 538-1559.

Sincerely,

Brad T. Barber
State Planning Coordinator

BTB/rpj

LETTER C-9

LETTER #C-10
COMMENTS

RESPONSES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

September 16, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3 Box 1
Burley, ID 83318

Dear Mr. Simonson:

The U.S. Environmental Protection Agency (EPA) has reviewed the Southwest Intertie Project Draft Environmental Impact Statement/Draft Plan Amendment (DEIS), Idaho, Nevada, and Utah. Our comments on this DEIS are provided pursuant to the National Environmental Policy Act (NEPA) and EPA's authorities under §309 of the Clean Air Act.

The DEIS evaluates alternatives for granting a right-of-way for a 500kV transmission line through Southern Idaho, Nevada, and western Utah. The project would include new substations, series compensation stations, and microwave facilities.

We have rated this DEIS as EC-2 -- Environmental Concerns-Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Actions"). Our EC rating reflects our concerns regarding the project's potential impacts to water quality, wetlands, and biodiversity. Our 2 rating reflects the need for additional information in the Final Environmental Impact Statement (FEIS) regarding minimization, mitigation, and monitoring of impacts to these resources. Our specific comments are enclosed.

LETTER C-10

LETTER #C-10
COMMENTS

RESPONSES

We appreciate the opportunity to review this DEIS. Please send a copy of the FEIS to this office at the same time it is officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 744-1015 or Jeanne Dunn Geselbracht at (415) 744-1576.

Sincerely,

Deanna M. Wieman, Director
Office of External Affairs

LETTER #C-10
COMMENTS

RESPONSES

Water Quality

A 1. In May, 1991, EPA published the Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters ("Guidance") pursuant to Section 6217(g) of the Coastal Zone Reauthorization Amendments of 1990. Although the Southwest Intertie Project (SWIP) is not in the coastal zone, the best management practices discussed in the Guidance are equally applicable to nonpoint source pollution control of inland waters as well. We recommend that the project sponsors consider this Guidance during construction and operation/maintenance of the SWIP. For your information, EPA expects to publish a final guidance for nonpoint source pollution in October, 1992. You may wish to contact Jovita Pajarillo of EPA Region 9's Water Quality Branch at (415) 744-2011 to obtain a copy of the guidance at that time.

A Your suggestion is noted and the BLM will consider these guidelines during the preparation of the Construction, Operation, and Maintenance (COM) Plan. For more information regarding the COM Plan refer to page 1-34 of this document.

B 2. According to the DEIS, batch plants would be located every 20 to 30 miles along the right-of-way (ROW). The FEIS should ensure that batch plants would not be sited near streams, springs, or other sensitive areas, whether on public or private land. Best management practices (BMPs) for operations at batch plants should be provided in the FEIS.

B The BLM agrees that a list of Best Management Practices is a good idea for the batch plants. This will be done once the specific needs are better defined in the COM Plan. The construction methods will be evaluated in the COM Plan (refer to page 1-34 of this document).

C 3. Material stockpiles, borrow areas, access roads, and other land-disturbing activities should be located away from critical areas such as steep slopes, highly erodible soils, and areas that drain directly into water bodies. Siting criteria for stockpiles should be included in the FEIS.

C The BLM agrees that material stockpiles and other disturbed areas be located away from sensitive resources. When the engineering design is in progress (during the COM Plan) the specific needs of the project will become more clear and the construction methods will be addressed. The siting criteria will be outlined in this document.

D 4. The FEIS should discuss requirements for stream crossings by transmission lines. For example, is there a minimum setback objective for tower placement near streams?

D The BLM agrees that the SWIP FEIS/PPA should describe a minimum distance for a tower site from a stream crossing. The minimum distance is 200 feet. This correction to Table 4-1 (of the SWIP DEIS/DPA) is corrected in the Errata in Chapter 4 of this document.

Wetlands

E It appears that the SWIP would require the discharge of fill material into waters of the United States. This discharge would require the issuance of a Clean Water Act §404 permit and compliance with EPA's §404(b)(1) Guidelines ("Guidelines") (40 CFR 230). It is unclear from the DEIS whether the SWIP would fully comply with these regulations.

E Since the SWIP would be capable of spanning 1/4 mile between tower sites, the BLM does not believe that any wetlands would be impacted on the Agency Preferred Alternative. The SWIP, if approved, will fully comply with the Section 404(b)(1) Guidelines (40 CFR 230) of the Clean Water Act as indicated in Table 1-1 of the SWIP DEIS/DPA.

F 1. The goal of the Clean Water Act is to maintain and restore the physical, chemical, and biological integrity of the nation's

F The BLM agrees that the preferred SWIP alternative would be the least environmentally damaging practicable alternative available to achieve the project purpose and need. The BLM anticipates that no acres of wetlands or other waters of the U.S. will be filled as a result of the SWIP. Existing roads will be used to the degree possible for construction access. No roads will be permitted to cross riparian areas, live streams, or wetlands unless there is absolutely no good alternative, and a 404 Permit is obtained.

LETTER C-10

LETTER #C-10
COMMENTS

F waters. This goal is implemented by requiring that any permitted discharge into waters of the U.S. be the least environmentally damaging practicable alternative available to achieve the project purpose. In determining whether or not an alternative is practicable, the Guidelines view the project "in light of overall project purposes" which include consideration of cost, logistics, and technical feasibility. The DEIS does not present adequate information to determine whether the preferred alternative meets this objective as required by the Guidelines [40 CFR 230.12(a)(3)(iv)]. According to the DEIS, SWIP transmission lines and access roads would cross numerous perennial streams and washes. The FEIS should indicate how many acres of wetlands and other waters of the U.S. would be filled as a result of the SWIP.

G 2. The Guidelines prohibit the placement of fill unless appropriate steps have been taken to minimize potential adverse impacts on the aquatic ecosystem. Mitigation is required to offset any unavoidable losses. The FEIS should include the wetland mitigation plan, which demonstrates how wetland acreages, functions, and values would be fully replaced, and include specific commitments by the project applicant to carry out the mitigation. The FEIS should specify: (a) the exact location and size of mitigation areas; (b) sources, needed quantities, and distribution methods for water to maintain the mitigation areas, (c) revegetation plans, (d) maintenance and monitoring for mitigation areas, including criteria by which to measure mitigation success; and (e) contingency plans should the mitigation efforts fail.

H 3. The Guidelines require that cumulative effects (impacts that are attributable to the collective effect of a number of individual discharges of dredge or fill material) be predicted to the extent reasonable and practical. The DEIS briefly discusses other projects in the vicinities of the SWIP, but does not mention their cumulative effects on wetlands. The FEIS should specifically address this issue.

I 4. The Guidelines require that the proposed project not violate State water quality standards. Under the Clean Water Act, any federal agency applying for a §404 permit must receive §401 certification from the State.

RESPONSES

G Again, the BLM does not anticipate any filling in wetlands, riparian areas, or waters of the U.S. If any wetlands are encountered and unavoidable during construction, the project would pursue 401 and/or 404 permitting. The SWIP would have the capability of spanning these features. Access routes and ancillary facilities will also not be permitted within these areas.

H The BLM does not anticipate any cumulative impacts to wetlands.

I The BLM understands that 401 Certification must also be complied with if a 404 Permit is needed. The BLM does not anticipate this, however, if the detailed planning does reveal such impacts, these regulations will be complied with

LETTER #C-10
COMMENTS

Vegetation and Biodiversity

J 1. The FEIS should indicate how many acres of riparian vegetation would be permanently and temporarily lost as a result of the SWIP and discuss mitigation requirements for these losses. The FEIS should discuss the revegetation procedures required in areas temporarily disturbed during construction. For riparian habitat permanently lost, we recommend full in-kind replacement of habitat.

K 2. We recommend that additional measures to ensure protection of existing sensitive vegetation and/or habitats be required during construction, such as fencing and tree armoring.

Since topsoil is essential to establish new vegetation, it should be stockpiled and then reapplied to the site for revegetation where possible. Stockpiles should be stabilized to prevent water and wind erosion. Although topsoil salvaged from the existing site can often be used, it must meet certain standards and topsoil may need to be brought onto the site if the existing topsoil is not adequate for establishing new vegetation.

L 3. Mitigation measure #4 in Table 4-1 provides for reseeding if required. Under what conditions would reseeding not be required? Would reseeding be required on all public lands temporarily disturbed by the project? The FEIS should include detailed procedures for revegetation as well as the monitoring plan and success criteria that would be used to ensure successful revegetation of all land temporarily disturbed by the project. The FEIS should indicate who would be responsible for such monitoring and any necessary subsequent mitigation.

M 4. The FEIS should discuss how hardpan soils, desert pavement, and other soils that are habitat for specialized plant species would be excavated and reclaimed. Avoidance, minimization, and/or mitigation of impacts to these communities should be addressed.

N 5. The DEIS indicates that public use of access roads could adversely affect sensitive biological resources. The FEIS should provide for mitigation of these impacts by restricting public access where necessary to protect sensitive populations and watersheds and highly erodible soils.

LETTER C-10

RESPONSES

J The BLM does not anticipate any loss of riparian vegetation or habitat as a result of the construction or operation of the SWIP.

K The BLM agrees that more is needed. The SWIP EIS process is intended to facilitate decision making on whether or not the project should be built, and if so, which route will be selected. Additional work will need to be done during the COM Plan to detail the rehabilitation methods and many other aspects of the project (refer to page 1-34 of this document). In all cases the BLM will monitor the success of the restoration efforts.

L In some cases in desert restoration the natural seed sources within the stockpiled topsoil provide the necessary revegetation. Additional seeding will likely be required by the BLM in all cases except where there is no vegetation currently (e.g., playa areas). Refer to Response K above.

M The BLM agrees that additional work would need to be done for the specific methods to construct, operate, and maintain the SWIP. Along with rare plant surveys, cultural clearance, etc. that will be done following selection of the final route, the rehabilitation plans will be detailed and specific. The engineering of a final centerline will continue to have some siting flexibility, as stated in the SWIP DEIS/DPA. This detailed engineering will be done in conjunction with the surveys mentioned above in order to minimize disturbance to resources (e.g., wetlands, riparian areas, live streams, cultural resources, rare plant populations, etc.).

N This has been recommended as mitigation and will be done (refer to Table 4-2, #4 of the SWIP DEIS/DPA).

[redacted]

LETTER #C-10
COMMENTS

Jurisdiction

O It is unclear whether each affected federal agency jurisdiction would assign an environmental inspector to oversee construction and maintenance of the proposed project. The FEIS should identify which federal agency and jurisdiction thereof would be responsible for ensuring resource protection by performing such tasks as carrying out plans, monitoring and enforcing best management practices, and monitoring environmental impacts of the SWIP.

Hazardous Materials

P The FEIS should identify enforcement mechanisms for prevention of hazardous materials spills (e.g., bonding) as well as the agency or person responsible for enforcement. The FEIS should also identify the types and amounts of hazardous materials that would likely be used in the ROWs and staging areas.

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommend for referral to the Council on Environmental Quality (CEQ).

RESPONSES

O The BLM will monitor the construction, operation and maintenance of the SWIP. The BLM performs periodic compliance checks after the lines are 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 (refer to page 1-34 of this document). A COM plan will be developed as a condition of the Right-of-Way Grant prior to any Notice to Proceed with construction (refer to page 1-34 of this document). This plan will lay out specific stipulations, including management of any hazardous materials, and responsibilities of the BLM, utility companies, and contractors.

The above information will be included in the Construction discussion found in Chapter 1 in this document.

P The COM Plan will detail how hazardous substances will be handled, treated, disposed of, etc. The purpose of the NEPA document was not specifically for the method of construction. The specifics will be laid out in the COM Plan (refer to page 1-34 of this document).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

LETTER #C-11
COMMENTS

RESPONSES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

TAKE PRIDE IN AMERICA

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

In Reply Refer To:
FWS/DHC/BFA EC 92/0050

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

The Fish and Wildlife Service (Service) has reviewed the Bureau of Land Management (Bureau) Draft Environmental Impact Statement and Draft Plan Amendment (DEIS) for the Southwest Intertie Project.

Specific technical comments on the DEIS have been prepared to assist preparation of the final document (Enclosure A). In general, we have concluded that additional information should be provided to adequately address threatened and endangered species, wetlands, and riparian areas. Areas of shallow ground water need to be identified to determine whether they are wetlands subject to Clean Water Act jurisdiction. Mitigation measures should adequately protect wetland resources and ensure adequate restoration of disturbed areas. Additional endangered and threatened species issues, including surveys along the proposed route, should be addressed through the consultation process pursuant to section 7 of the Endangered Species Act of 1973, as amended.

We have also identified discrepancies among information provided in the DEIS, Technical Reports, and Data Tables. Further clarification is needed on why some sections of the Bureau's environmentally preferred alternative are less damaging than equivalent sections of other alternatives.

Based on the above concerns, the Service recommends that a revised DEIS be prepared, and circulated for agency review.

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The opportunity to provide these comments on the DEIS is appreciated.

Sincerely,

Richard M. Smith

DIRECTOR

SPECIFIC COMMENTS ON SOUTHWEST INTERTIE PROJECT

A Page 2-18, Right-of-Way Acquisition: Right-of-Way Separation: This section and other sections on pages 1-2 and 1-9 discuss the 2000-foot separation between the SWIP and adjacent high capacity lines to comply with the Western System Coordinating Council reliability and outage criteria. However, a separation of less than 1000 feet is proposed in isolated areas along the route due to terrain or land use conflicts, and reliability would be maintained in these areas by using a higher safety factor on tower design. The Service recommends including a discussion on an alternative of a lesser separation between lines using upgraded facilities to minimize environmental impacts from habitat fragmentation.

B Page 2-22, Construction: Hazardous Materials Within Corridor: This section states that petroleum products would be present in the transmission line corridor from the fueling, lubricating, and cleaning of vehicles and equipment. It further states that hazardous materials would not be drained onto the ground or into streams or drainage areas, and this is listed as a generic mitigation measure. However, we recommend the mitigation measure be expanded to eliminate storing of hazardous materials in designated flood zone areas as suggested in the mitigation section on page 3-33 (Volume II of the Technical Report on Natural Environment).

C Page 2-23, Construction: Site Reclamation: The DEIS states that all practical measures would be taken to increase the chances of vegetation reestablishment in disturbed areas. Other sections of the document refer to reseeding of disturbed areas if required by the managing agency. The Construction, Operation, and Maintenance Plan, which would be prepared during the engineering and preconstruction phase of the project, would address site reclamation. Adequate assurance should be provided that reclamation measures would restore plant communities or reduce ground disturbance impacts to insignificant levels as described in many sections of Chapter 4, Environmental

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A This alternative is not considered reasonable since the WSCC would not give the rating for the line that is necessary for the SWIP to be viable if there are long distances with no separation. Even the short distances where there is no alternative but to have the lines closer together is of great concern for the 1200 MW rating.

A discussion about the feasibility of upgrading all facilities to meet WSCC reliability and outage criteria in an effort to reduce the need for a 2,000-foot separation is included in the Errata of Chapter 4 in this document.

The 2,000-foot separation request was specifically between the SWIP and the UNTP. Each right-of-way evaluation or request within the WSCC system should consider the specific line combinations and their outage histories to determine whether a specific separation is required. The issue is the credibility of a simultaneous loss of the circuits involved. The WSCC Criteria say:

> "..., the credibility of loss of a particular set of lines will depend upon the total distance of common corridor shared by the lines and upon the vulnerability of the circuits over that distance to a common mode failure. Considerations for this vulnerability assessment will include line design; length; location, whether forested, agricultural, mountainous, etc.; outage history; operational guides; and separation. For example, some utilities use separation by more than the span length as adequate to designate the circuits as being in separate corridors."

This issue is not new. For example, the Third Pacific 500kV AC Intertie requested and received miles of separation between it and the existing two 500kV interties in forested areas. This separation was required to allow adequate response time to adjust the system following the loss of the existing lines and a potential loss of the third 500kV line. Similar to the SWIP and the UNTP, the consequences of such an outage would be wide spread outages in the WSCC system. Without this separation, that project probably would not have been feasible.

It is true that separation exceptions do exist in urban areas. If there is an outage, the disturbance is localized and does not have the system impact that requires the separation of lines.

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Consequences. At a minimum, we recommend that standards for reclamation success be established and that native plants indigenous to the area and local seed collection be used in the restoration plan.

C The Service recommends measures to reduce vegetation disturbance such as crushing of vegetation to leave root systems in place, rather than bulldozing, be incorporated into the reclamation proposal. Also, livestock grazing and off-highway vehicle use on disturbed areas along the rights-of-way and ancillary facility sites during the revegetation period should be minimized. The DEIS should include habitat restoration goals and objectives as part of Table OBI-5, Generic Mitigation Measures Included in the Project Description, Volume I: Objectives, Procedures, and Results.

D Page 2-44, Substation and Series Compensation Sites: The first paragraph of this section states that the Thousand Springs Power Project was canceled in 1991. However, the Sierra Pacific Power Company has expressed interest in a transmission interconnection at this site. This interest may influence alternatives selection. The rationale for including the interconnection at Thousand Springs, even though the power project was cancelled, should be discussed.

E Pages 2-50 to 2-52, Identification of Preferred Alternatives. Environmentally Preferred Alternatives: Midpoint to Dry Lake: The Service analyzed subsections of the preferred routes for potential impacts to biological resources using the data available in the DEIS. However, the document contains inadequate information for the Service to recommend a route. Route A (Environmentally Preferred Alternative)-- Links 250, 259, 260, and 261-- appears to have more miles of high impacts to biological resources (10.7 miles) than its alternative, Route G-- links 241, 242, and 244 (5.3 miles). Route A has more miles of potential impacts to areas with high wind and water erosion potential, to ferruginous hawks, and to the endangered bald eagle. Route G, however, has more miles of potential impact to areas with shallow ground water, pronghorn antelope, sage grouse leks, long-billed curlew, and sandhill crane. Route A has a slightly lower number of miles of potential impacts to areas with shallow ground water than Route G. Some areas with shallow ground water may qualify as wetlands (see comments below). Further analysis of areas of shallow ground water that may be wetlands, and their values to wildlife, may be important in determining which route is preferable from a biological standpoint. This information should be provided in the final document.

F Alternative routes A (environmentally preferred route), G (utility preferred route), and the agency preferred route are identical through Idaho, and seem to pose few impacts to wildlife in Idaho. However, Alternative Route F and link number 81 through Idaho run through numerous springs and streams, and

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B The BLM agrees that hazardous materials should not be stored in designated flood zone areas. Please refer to Errata in Chapter 4 of this document.

C The BLM agrees with all of your suggestions for rehabilitation. These suggestions, including goals for habitat restoration, will be completed as part of the Construction, Operation, and Maintenance Plan (COM) Plan (refer to page 1-34 in this document).

D Potential interconnections have been identified in the Wells and Ely areas which could provide significant load or interconnection service to the local utilities. The SWIP requires series compensation sites located at quarter points along the line for voltage support. Due to the nature of series compensation stations, these sites would also be a good location for intereonnections that may be desired by other utilities. The SWIP is not dependent upon any specific power plant integration. Also refer to Purpose and Need in Chapter 3 in this document.

E The Environmentally Preferred Alternative is not necessarily the alternative with the least potential impact to biological resources. It is very common in the transmission line planning/siting process for the "biologically preferred alternative" to be different from the Environmentally Preferred Alternative. Links 250, 259, 260, and 261, for example, have a total of 33.6 miles of increased public access in the 0-20% range. This represents 82% of the total length of these links. Links 241, 242, and 244 have 17.1 miles in the 0-20% range or 48% of the total length. Clearly, from the standpoint of public access, Links 250, 259, 260, and 261 are preferable, despite 5.4 miles of higher impact to biological resources. Other factors including visual resources, cultural resources, land use, and socioeconomics enter into the selection of the Environmentally Preferred Alternative. Biological resources is only one factor, albeit an important one, that contributes to the selection of the preferred alternative.

F Your prefereoces are noted and will be considered in the BLM's decision process.

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F would have high impacts to biological resources, primarily sage grouse leks. The Service recommends that those impacts be avoided.

G We also note that Route A (Environmentally Preferable Alternative), Links 291 and 293, appears to have more miles of potentially high impacts to biological resources (7 miles) than its alternative, Route G, Link 280 (3.8 miles). In this section, Route A has higher potential impacts to areas with high wind and water erosion potential, possible impacts to a greater number of intermittent streams, and potential impacts to a greater number of miles of sage grouse leks and habitat for the long-billed curlew, sandhill crane, and antelope. Route G has more miles of potential impacts to habitat for the ferruginous hawk, bald eagle, and sage grouse winter range. Route A has more acres of possible impacts to areas with shallow ground water, and has 3.8 miles of potentially high impacts to shallow ground water areas compared to 1.1 miles for Route G. Again, we believe further review may be appropriate for this segment, including analysis of potential impacts to shallow ground water areas that may be wetlands.

H Page 2-51, Identification of Preferred Alternatives. Environmentally Preferred Alternatives: Midpoint to Dry Lake: Paragraph 4 states that the Bureau of Land Management has expressed concern for Route D near Wells, Nevada and the potential for wet soils and standing water occurring at certain times of the year in the Independence Valley. Information is needed on the precise location of this area. However, the sections on Earth Resources: Ground Disturbance Impacts to Water Resources in the volume on Data Tables for Natural Environment provide information that likely is applicable to this statement. We reviewed the applicable map (Panel 2) from the Map Volume, identified the links which apply to the Independence Valley (Links 170 and 190), and note from the Data Tables for the Natural Environment that portions of these links include shallow ground water as a resource feature. The Technical Report, Volume II: Natural Environment, discusses shallow ground water on pages 3-7 under the section on Water Resources in Chapter 3. Shallow ground water is defined as areas where shallow ground water is consumed by evaporation. These areas were identified in the DEIS on a one to one million scale U.S. Geological Survey hydrologic atlas.

Piecing together information reported throughout the document and technical reports, we believe that many areas identified in the Data Tables for Natural Environment as having shallow ground water may be wetlands. We found information on wetlands to be lacking specificity. The extent to which the shallow ground water areas meet the Service's definition of wetlands as discussed in Cowardin (1979), or meet the criteria for jurisdictional wetlands found in the 1987 Corps of Engineers (Corps) Wetlands Delineation Manual is unknown, since the areas were identified from a one to one million scale hydrologic atlas and not from field surveys.

RESPONSES

G In comparing Link 280 with Links 291 and 293, it is noted that Links 291 and 293 have more miles of soils with high wind and/or water erosion potential than the alternative Link 280. However, in assessing the impact level which incorporates the soil erosion potential, construction disturbance level, and applied mitigation, the result is more miles of alternative corridor of no or low level impact for Links 291 and 293 than for Link 280.

As with comment E, biological resources were not the only factor driving the selection of Links 291 and 293 versus Link 280.

Available mapping for jurisdictional wetlands and satellite imagery were reviewed to identify shallow ground water areas and potential wetlands. If any wetlands are encountered and unavoidable during construction, the project proponent will pursue 401 and/or 404 permits.

H Available mapping for jurisdictional wetlands and satellite imagery were reviewed to identify shallow ground water areas and potential wetlands. Many shallow ground water areas in this area occur as unvegetated playas and salt flats. Therefore, such areas do not meet the COE (1987) definition of wetlands that states " ...under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions." The two links referenced contain primarily grass and sage (i.e. sagebrush) vegetation types. Shallow groundwater types can usually be avoided or spanned by transmission line construction activities.

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H The criteria for identifying wetlands along the route and the rationale for not including any areas of shallow ground water as wetlands should be discussed in the final document. We recommend that field surveys be conducted to identify wetlands along all routes. Results of such surveys may affect the designation of the environmentally preferred alternative and selection of the final route. Discharges of fill material into jurisdictional wetlands are regulated by the Corps pursuant to section 404 of the Clean Water Act.

I Page 3-2, Issues: The DEIS lists soil loss as a result of increased wind and water erosion as an issue of concern. Wind and water erosion can reduce the ability of disturbed areas to revegetate. We recommend that, in areas with moderate to high potential for wind and water erosion, specific mitigation measures be developed for revegetation of these sites to reduce or eliminate this impact.

J Page 3-15, Biological Resources: Vegetative Communities: This section states that the spectral qualities of some vegetative communities were similar on satellite images used in the analysis, and, therefore, the eleven identified plant communities were mapped as seven vegetation types. Information provided by the Service's Cooperative Research Unit at Utah State University, which is using satellite imagery to map vegetation in Nevada as part of their ongoing Gap Analysis effort, indicates that some of the vegetative communities that were combined by Dames and Moore should be readily distinguishable from Landsat imagery. The category of greatest interest is limber/bristlecone pine and quaking aspen. The pine and aspen communities should be readily distinguishable on satellite imagery. We believe it is important to distinguish them because of their different values for wildlife and the importance of bristlecone pine as a unique forest type. The section on plants on page 4-78 of Volume II of the Technical Report, Natural Environment, indicates that samples of bristlecone pine encountered along the selected alternative route would be sent to the dendrochronology lab in Tucson, Arizona. We recommend that all areas of bristlecone pine be avoided. Loss of quaking aspen groves should be compensated by planting or protecting other aspen areas. Such areas should be specifically identified to facilitate selection of the environmentally preferable alternative, and measures to mitigate for impacts to these resources specified.

An additional plant community that may be prevalent along the route but is not identified in the DEIS is mountain shrub community dominated by mountain mahogany (Cercocarpus spp.). This plant community type should be discussed.

K Table 4-1, Environmental Consequences: Generic mitigation measure number 4 should include references to reseeding/revegetation with "native" plant species from local seed sources. Use of local, native sources will help limit

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I The BLM agrees. These detailed rehabilitation plans will be developed during the COM Plan (refer to page 1-34 in this document).

J Specific forest types (i.e., individual species) were not distinguishable from the computer classification of thematic mapper satellite imagery used for mapping vegetation types for the SWIP alternatives

Forests along ridge tops and along bedrock outcroppings above 9000 feet in elevation will be avoided by the line (or spanned) to reduce the potential for bristlecone pine to be affected. Disturbance of aspen will be mitigated by use of seedling-sapling transplants from nearby areas. Shallow blading will allow for natural regeneration from rootstocks, and transplanting would be required as necessary to supplement natural restocking to attain required stand densities. The transition from shrub-dominated plateaus and lower mountain slopes is often marked by a zone of broad-leaved scrub that is dominated by mountain mahogany (*Cercocarpus ledifolius*) and evergreen oaks (*Quercus turbinella, Q. emary, Q. dumosa*) which replace deciduous shrub oak species in southern Utah (West, 1988).[1]

Mountain mahogany scrub vegetation usually occurs in patchy but dense clumps in association with grassland or low shrub steppe vegetation. Mountain brush vegetation also occurs at the upper elevation zone on some lower mountain ranges in the Great Basin, and grazing and fire suppression have increased its distribution.

Other characteristic species include antelope bitterbrush (*Purolia tridentata*), sumac (*Rhus trilobata*), buckbrush (*Rhamnus crocea*), Apache plume, (*Gallugia paradoxa*), cliffrose (*Cowania mexicana*), snowberry (*Symphoricarpos spp.*), and serviceberry (*Amelanchier spp.*)

K The BLM agrees that indigenous plant species should be utilized. These plans, incorporating your suggestions, will be developed during the COM Plan (refer to page 1-34 in this document).

[1] West, N.E., 1988, "Intermountain Deserts, Shrub Steppes, and Woodlands". In M.G. Barbara and W.D. Billings (eds.) North American Terrestrial Vegetation. Cambridge University Press. New York, NY.

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K invasion by nonindigenous species and competition with threatened, endangered, rare, or sensitive plant species.

L Pages 4-3 and 4-4, Biological Resource Issues: A significant issue that should be addressed is the likelihood that areas with high ground water or willow riparian plant communities may qualify as wetlands and/or provide important nesting, foraging and cover habitats for migratory birds. Such areas should be identified in the data tables.

M Page 4-10, Mitigation Planning: This section refers to the Generic and Selectively Recommended Mitigation Measures listed in Tables 4-1 and 4-2 of the DEIS and in Volume I of the Technical Report. Subsequent sections of the document state that mitigation measures would reduce many impacts to insignificant levels. The mitigation measures are very general, and the Service recommends that monitoring and contingency plans be provided so that impacts would indeed be avoided and reduced. The following comments concern mitigation measures of interest to the Service:

Generic Mitigation Measures Included in the Project Description:

4. "In construction areas ... 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) . . . ."

N We are concerned that where disturbance is moderate, no restoration would occur. As stated above, restoration of the natural ecosystems should be the overall goal for the entire length of the right-of-way if this measure is to reduce impacts to a level of insignificance. Only native plants indigenous to the area should be used in revegetation. Seeding may not be adequate to restore some areas, particularly in times of drought, and active state-of-the-art revegetation techniques with supplemental watering may be required. The document should provide more specific information on restoration of ecosystems within the right-of-way. Information should also be provided on requirements for mitigation/revegetation plans that would be developed, mitigation monitoring, and the monitoring reports that would be provided to land management agencies.

5. "Watering facilities ... would be repaired or replaced if they are damaged or destroyed by construction activities to their predisturbed condition as required by the landowner or land management agency."

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L Areas with high groundwater that support vegetation and riparian communities containing wetlands, and that also provide important nesting, foraging and cover for migratory birds, songbirds and other wildlife species will be avoided by construction activities, or will be spanned whenever possible by transmission tower spacing.

M Detailed mitigation will be developed as part of the COM Plan (refer to page 1-34 in this document). In most cases impacts would be reduced to insignificant levels even with mitigation. However, there may instances where this may not be possible.

N There will be areas where no blading is done but may be used for access. These areas would not need to be restored by ripping, seeding, etc. All disturbed areas will be monitored for their rehabilitation success and measured by a performance specification. In other words, all areas will be restored within a reasonable timeframe or supplemental restoration work will have to be done. This may include supplemental watering. These detailed plans and specifications (including performance specifications) will be developed during the COM Plan (refer to page 1-34 in this document).

Natural springs will be included under watering facilities in mitigation measure #5 (refer to Table 4-1 of the SWIP DEIS/DPA) as you suggested. This correction is in the Errata in Chapter 4 of this document.

Because EMF research is inconclusive, and sometimes contradictory, definitive answers are still years away. The project sponsor attempts to site facilities in areas that avoid or minimize human exposure. This policy also minimizes visual impacts.

The project sponsor will take measurements of magnetic field levels at customers' homes at their request. The project sponsor provides this service to assist customers in gaining as much information as possible. For those customers with concerns specific to the SWIP facilities, company representatives will communicate directly with the customer and provide requested on-site measurements of the EMF levels associated with the facilities.

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Our comments under measure number 4 above apply to this measure as well. Natural springs are not among the watering facilities addressed in this measure, and we recommend they be included.

N

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."

We recommend that the monitoring plan identify remedial actions to be pursued if significant effects are discovered.

O

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."

In order to mitigate impacts, we recommend this measure include the full restoration of stream, wash, and riparian plant communities temporarily disturbed by project construction. It should also include full compensation for any permanent losses to these plant communities that would occur.

Selectively Committed Mitigation Measures:

P

2. "Existing crossings would be utilized at perennial streams..."

We recommend that intermittent streams with riparian vegetation important to migratory birds, such as willows (Salix spp.), desert willow (Chilopsis linearis), catclaw acacia (Acacia greggii), and mesquite (Prosopis spp.), be included in this measure where feasible.

Q

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.... This would limit new or improved accessibility into the area."

In order to mitigate impacts, closed access roads should be revegetated and livestock excluded from these areas until new vegetation is well established.

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O The BLM does not anticipate any loss of riparian vegetation or habitat as a result of the construction or operation of the SWIP. If during the COM Plan it is proposed to cross or disturb any of these areas the BLM will require the compensation that you suggest. Although the BLM does not anticipate any loss, disturbance to, or filling in wetland areas, the BLM would also require full compliance with Sections 404 of the Clean Water Act and Section 401 Certification. For more information regarding the COM Plan refer to page 1-34 in this document).

P Permanent and intermittent streams containing riparian scrub vegetation (willows, desert willow, catclaw acacia, mesquite) will be avoided. Mitigation measure #6 (refer to Table 4-2 of the SWIP DEIS/DPA) has been corrected in the Errata in Chapter 4 of this document.

Q The COM Plan will address specific road segments where livestock exclusion will be required for successful vegetation establishment. The requirement for reseeding is a generic mitigation measure (refer to page 1-34 in this document).

[redacted]

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5. "Modified tower design or alternate tower type would be utilized to minimize ground disturbance, operational conflicts, visual contrast and/or avian conflicts."

R We were unable to find any information in the DEIS or Technical Report on modified tower designs to minimize avian conflicts. This information should be provided. One design we recommend in areas where predation could significantly impact sensitive wildlife species such as candidate birds and sage grouse is the use of steel wire or hard plastic fabrics attached to tower components to discourage perching by predatory birds.

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."

S We recommend that this measure include the provision for field surveys to be conducted on those portions of the route with habitat for candidate plant species prior to any ground disturbing activities. No proposed species are located in the project area that we are aware of at this time.

We also recommend that a mitigation measure be added to address areas where there would be permanent or long-term impacts to habitat for sensitive wildlife species. We recommend that disturbed habitat in other areas be restored or enhanced to compensate for this impact.

T Page 4-11 to 4-21, Alternative Routes: Midpoint to Dry Lake: Several portions of this section state that if access to the right-of-way is adequately controlled, impacts to candidate or sensitive plant species would not occur. However, no information is provided on how access will be controlled in these areas. This information should be provided.

U Page 4-15, Environmental Consequences: Since surveys for threatened, endangered or sensitive plant species have not been conducted over much of the area, the Service recommends that the project proponent fund and conduct a detailed vegetation survey over the proposed route.

Degradation of water quality of streams during construction is listed as an issue. This should be expanded to include wetlands, which as discussed previously may include those areas with near surface ground water. Mitigation measures to prevent degradation of water quality should be applied to these areas.

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R The BLM has not specifically researched possible means of deterring perching by predatory birds on support structures. The BLM anticipates that the COM Plan that will be developed for the project following a Record of Decision will address such issues in detail (refer to page 1-34 in this document). As a means of reducing impacts from predators using towers as hunting perches, the biologists have generally argued that new transmission lines should be placed as close as possible to existing ones in areas where increased predation may be a problem.

The BLM will confer further with raptor experts and the Fish and Wildlife Service during the preparation of the COM Plan for this project (refer to page 1-34 in this document). It may be possible to discourage use of towers by predators in some areas where there are currently no existing structures associated with other transmission lines. In those areas where the SWIP would follow existing electrical transmission systems, the BLM doubts that "raptor-proofing" the new lines would yield benefits commensurate with costs.

S The COM Plan for the SWIP will address preconstruction surveys for sensitive plant and wildlife species (refer to page 1-34 in this document). The BLM is aware that there are many areas within the SWIP's corridors that have not been surveyed for rare plants, and the probability of finding populations of such species is fairly high. The BLM will consider inclusion of survey work for species on the Federal Revised List of Migratory Birds.

T Means of controlling access will be addressed in the COM Plan (refer to page 1-34 in this document).

U On-the-ground surveys will be stipulated in the COM Plan in accordance with land management agencies policies (refer to page 1-34 in this document).

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V Figure ER-4. Initial Impact Levels for Water Resource Categories: This table lists alkali flats as a water resource category. Playas are also addressed briefly on page 4-11. Such areas may be used for nesting by a category 2 candidate for Federal listing as threatened or endangered, the snowy plover (Charadrius alexandrinus nivosus). We recommend that surveys be conducted in these areas prior to any ground disturbance activities to ensure that nesting habitat for this species is not affected by the project. This should be included as a generic mitigation measure. Playas may also provide important habitat for waterfowl and shorebirds during wet years. Such sites should be identified in the document and Technical Report and evaluated in the impact assessment.

W Table ER-8. Summary of Water Resource Inventory: This table lists shallow ground water and wetland areas as two separate categories. As discussed above, shallow ground water areas may qualify as wetlands. The document should discuss the technical differences between these two categories. The table specifies that one spring is found along Link 92, but the document states that many springs are found along this link. This discrepancy should be clarified.

X Page 4-41, Mammals: Pygmy Rabbit (Brachylagus idahoensis): This species, a category 2 candidate for Federal listing, prefers areas with dense tall sagebrush. Pre-construction surveys should be conducted to identify sites used by pygmy rabbits and these areas avoided to the extent possible. If such habitat cannot be avoided, active revegetation should be considered.

Y Page 4-46, Sensitive Features: Floodplains, Riparian, and Wetlands: A discussion of wetlands along the proposed routes under Corps jurisdiction should be provided in this section.

Z Page 4-48 to 4-50, Habitats of Special Concern: Nevada: This section discusses the major raptor migration corridor along the west side of the Goshute Mountains, and bald eagle winter range in Elko and White Pine Counties. Although raptor power line collisions may not be a serious problem overall, collisions may be more likely in strong winds or poor light conditions in areas with high raptor concentrations. Specific mitigation measures to reduce the potential for such collisions in these areas could include prohibition of construction of transmission lines within 1 mile of communal raptor roosts or high use areas.

AA Pages 4-58 to 4-67, Impact Assessment and Mitigation Planning: Our review indicates that the impact assessment did not consider areas important to migratory birds, important riparian areas, and areas of shallow ground water that may qualify as wetlands and provide important habitat for wildlife. Such areas should be evaluated in determining the environmentally preferable alternative.

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V The BLM acknowledges the potential presence of *Charadrius alexandrinus nivosus* as a nesting species on alkali flats within the SWIP study corridors. Your recommendation of preconstruction surveys for this species are well taken and will be included in the COM Plan for the project (refer to page 1-34 in this document). The BLM has also expanded its discussion of this type under Other Natural Land Cover, in Chapter 3 of the SWIP FEIS/PPA.

W Shallow ground water areas such as playas and salt flats do not qualify as jurisdictional wetlands if not vegetated (COE, 1987, Wetland Delineation Manual). In any case, such areas will be avoided whenever possible or spanned by proper tower placement (see item 6, Table 4-2 of the SWIP DEIS/DPA). Smaller springs which occur along this link are neither indicated on maps nor are evident on Landsat imagery, but are mentioned in the text, and will need to be considered during the COM Plan. Refer to Earth Resources in Volume II of the technical reports (refer to Appendix H for locations where the technical reports can be reviewed).

X As with *Charardrius alexandrinus nivosus* above, recommendations for field surveys for potential habitat of *Brachylagus idahoensis* along the Agency Preferred Alternative will be included in the COM Plan for this project (refer to page 1-34 in this document). The BLM will also consult with range experts regarding the potential for revegetation of dense, tall sagebrush areas that are preferred habitat for the species.

Y The page number cited references the Natural Environment (Volume II) of the Technical Report. Wetlands are defined by the Corps of Engineers (1987) as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." This definition will apply to areas that are included as riparian, and in some cases, shallow ground water. This definition will be added to the Errata in Chapter 4 of this document.

Z Refer to the discussion of Avian Collision Hazard in the biological resource sections in Chapter 3 of this document.

Collisions (and electrocution) involving high voltage lines are very infrequent, highly random events that are unlikely to affect the long term probability of

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The section on ground disturbance impacts on page 4-61 states that nests of some ground-nesting species of songbirds would be affected by construction activities. Mitigation measures should be developed to ensure avoidance of this impact.

AA The section on ground disturbance impacts on page 4-72 states that sensitive plants near construction sites may be trampled, but they may recover depending on the extent of disturbance. This impact is fully preventable through pre-construction surveys and implementation of protective measures such as temporary fencing during construction. Such techniques should be included under mitigation measures.

Technical Report: Data Tables for Natural Environment: The Service identified several discrepancies between the Data Tables and the text of the DEIS. They are as follows:

BB Ground Disturbance Impacts to Sensitive Plant Species: Page 4-15 of the text identifies the sensitive plant, Arabis falcifructa, as being found along link 162; Penstemon bicolor, P. b. roseus, and Astragalus triquestrus could occur along links 690, 700, and 720; and Mentzelia mollis occurs along link 700. However, this information needs to be included in the table.

Public Access Impacts to Sensitive Plant Species: Page 4-15 of the text states that Castilleja salsuginosa is found near Monte Neva Hot Springs and could be affected by future public access to this area. This factor is not reflected in the table.

Chapter 5, Consultation and Coordination, Page 5-15:

CC The most recent threatened and endangered species list for the proposed project in Idaho is dated July 18, 1991. This species list is no longer valid and, according to Federal Regulations, should be updated within 180 days of project construction. Species lists should be current for project proposals in Idaho, Nevada, and Utah. A list of Service field office contacts for updating and obtaining species lists follows.

RESPONSES

survival of any species of raptor within the SWIP corridors. There may be some raptor mortality associated with the presence of new transmission lines in the SWIP system. The BLM's professional opinion, which is supported by the scientific literature, however, is that the level of increased mortality likely to occur will not be measurable and will not adversely affect the population status of any raptor species. The annual mortality of raptors from illegal shooting in western Utah and eastern Nevada is probably far higher than would be experienced in a decade or two of presence of the SWIP transmission lines.

AA The BLM will discuss compliance with the Federal Migratory Bird Treaty Act as it applies to songbirds during preparation of the COM Plan for this project (refer to page 1-34 in this document). Consultation will take place with the Fish and Wildlife Service and state wildlife management agencies regarding this issue.

Preconstruction surveys for individuals and populations of sensitive plant species will be included in the COM Plan for the project (refer to page 1-34 in this document). The BLM agrees that impacts to such species are almost fully avoidable. The BLM believes that preconstruction surveys coupled with construction period compliance monitoring can serve this end.

BB There is one population of *Arabis falcifructa* known within the one-mile corridor for Link 162 which should be on the Table. The population of *Mentzelia mollis* was incorrectly identified. *Astragalus triquetrus* is the only species which occurs within the one-mile corridors of Links 790, 800, 830, and 840. The two species of *Penstemon* are known to occur within the vicinity of the proposed Dry Lake substation, but not within the mapped one-mile corridor.

Information provided to use stated that *Castilleja salsuginosa* occurred in the vicinity of Monte Neva Hotsprings, but did not have an exact location. Therefore, this was not mapped although its existence was noted in the text.

CC The Boise, Reno, and Salt Lake offices of the Fish and Wildlife Service were contacted on the 14th and 15th of October 1992 with regard to updated lists for threatened and endangered species, as well as species proposed for listing as threatened or endangered.

LETTER #C-11
COMMENTS

Contacts for Updating Species Lists

U.S. Fish and Wildlife Service
Boise Field Office
4696 Overland Road, Room 576
Boise, ID 83705
(208) 334-1931

U.S. Fish and Wildlife Service
Reno Field Office
4600 Kietzke Lane, Bldg. C-125
Reno, NV 89502
(702) 784-5227

U.S. Fish and Wildlife Service
Salt Lake City Field Office
1745 W. 1700 S., 2060 Admin. Bldg
Salt Lake City, UT 84105-5110
(801) 524-5630

Literature Cited

Army Corps of Engineers, 1987. Corps of Engineers Wetlands Oelineation Manual. Technical Report Y-87-1.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Oeepwater Habitats of the United States. Report FWS/OBS-79/31. Office of Biological Services, Fish and Wildlife Service, Washington

RESPONSES

The list of threatened and endangered species for this project will be updated prior to construction. Our contacts with the Fish and Wildlife Service indicate that no new species, except a plant, Ute Lady's Tresses (believed extirpated from Nevada). have been listed in the study area since the original letters and species lists were provided for this project. The Fish and Wildlife Service has renderod a favorable Biological Opinion for the project (refer to Appendix C of this document).

LETTER C-11

LETTER #C-12
COMMENTS

RESPONSES

John A Chachas
Julio C Costello
Bunny Hill
John S Lampros
Barlow N White

P O Box 1002
Ely, Nevada 89301
(702) 289-8841

A Your comments are noted and will be considered in the BLM's decision process.

White Pine County
Board of County Commissioners

September 14, 1992

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

On behalf of the White Pine County Commission, I would like to thank you for the opportunity to respond to the Draft Environmental Impact Statement and Plan Amendment for the Southwest Intertie Project. The Commission endorses the proposed project because we feel it will be beneficial to White Pine County and its residents. The Southwest Intertie Project will provide jobs and encourage business activity during construction, it will generate tax revenue, and it will contribute to the transmission system needed for the White Pine Power Project.

The White Pine Power Project is a significant element in the county's efforts to diversify its economy and provide jobs for its residents. The Southwest Intertie Project will result in construction of transmission lines as well as a sub-station near Ely, both of which will enhance the future development of the White Pine Power Project.

LETTER C-12

LETTER #C-12
COMMENTS

RESPONSES

At our September 9 County Commission meeting, we reviewed concerns raised by some residents of Baker who feel that the Agency Preferred Cross Tie Route to Delta, Utah, negatively impacts the

Great Basin National Park and residents of the Snake Valley area. The Commission would like to ask these concerns be taken into account in the final selection of the cross tie route as well as mitigation of the visual impacts of the transmission line and the placement of the individual towers.

Thank you for your consideration.

Sincerely,

John S. Lampros,
Chairman

COMMENT LETTERS RECEIVED AFTER THE SWIP DEIS/DPA COMMENT PERIOD

LETTER #D-1
COMMENTS

RESPONSES

A No response is necessary.

Deseret
Generation & Transmission Co-operative
8722 South 300 West • Sandy, Utah 84070
801-566-1238 • FAX: 801-562-6302

January 7, 1993

Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

Southwest Intertie Project
Environmental Impact Statement

Dear Mr. Simonson:

Deseret Generation & Transmission Co-operative (Deseret) supports the Southwest Intertie Project (SWIP). Currently, Deseret's generation export capabilities are at their limit. Due to this constraint we are not able to sell electricity to potential purchasers to meet their load growth.

As a participant in the Utah-Nevada Transmission Project, the SWIP will interconnect and provide a valuable additional path to potential customers.

LETTER D-1

LETTER #D-1
COMMENTS

RESPONSES

If you have any questions or would like further comments, please contact me at (801) 566-1238.

Sincerely,

Merrill J. Millett
General Manager and CEO

dph

cc: Dennis B. Whitney
Los Angeles Department of Water and Power
Room 1149
P.O. Box 111
Los Angeles, California 90051-0100

Jan Packwood
Idaho Power Company
P.O. Box 70
Boise, Idaho 83707

"Creating Power Through Cooperation"

LETTER #D-2
COMMENTS

8 October 1992

Dear Sir:

I am writing in support of the "No Action" alternative for the Southwest Intertie Project.

A The project will hideously bespoil extensive areas and vistas without a definite need to do so. The negative impacts to wildlife

B and Great Basin National park, a favorite of mine, cannot be justified for this project.

Please put me on your mailing list for information on the project.

Sincerely,
Frank B Guros

RESPONSES

A There would be significant visual impacts to the scenic natural landscapes of public lands. Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although undisturbed natural landscapes of open desert valleys possess inherent scenic value, the scenic quality of these areas is considered "minimal" to "common" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landscape character. Open desert valley landscapes are characteristic and common to the project study area. The BLM will consider public concerns for scenic quality in their decision process. The BLM uses the VRM System to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model refer to the methods section under Visual Resources in Volume III - Human Environment Technical Report (refer to Appendix H of the DEIS/DPA for the locations where the technical reports can be reviewed).

B The proposed 230kV Corridor Route is approximately 2 miles north of Great Basin National Park and 4-5 miles north of Wheeler Peak. To further minimize visual impacts to travel routes leading into the park, several mitigation reroutes through Sacramento Pass have been evaluated (refer to Sacramento Pass Mitigation Reroute on page 3-39 of this document).

No significant visual impacts to viewpoints in Great Basin National Park would occur because of the distance of the alternative routes from these viewpoints. Non-specular conductors and steel H-frame towers across the highway would minimize other adverse visual effects of the SWIP.

LETTER D-2

LETTER #D-3
COMMENTS

Sacred Datura, Zion National Park, Utah.

Dear Mr. Simmons,

A I ask you to please re-consider the need for the Idaho to L.A. powerline project. If indeed a justification exists, then please use the existing powerline right-of-way in Utah.

B A new, major power line through an unspoiled area will have devastating impact on raptor migration, tortoise populations, visual appeal, archaeological sites, etc., etc.

Thank you for your consideration.

Mark Lindberg
8 Eden Lane
Larkspur, CA 94939

NORTH BAY CA 949 PM 3 A... SEP ... 1992 DISTRICT BUR... AM '92

From *The Sierra Club Nature in Close-Up Postcard Collection.*
Photograph copyright © 1988 Kevin Hass.

LETTER D-3

RESPONSES

A Please refer to Chapter 3 of this document for an expanded discussion of the purpose and need.

B Given the structural configuration of 500kV transmission lines, the potential electrocution hazard to birds of prey is relatively minor. The 500kV transmission line proposed for the SWIP would utilize V-guyed steel lattice, self-supporting steel lattice, and tubular steel H-frame towers. The spacing between conductors on towers is sufficient to prevent phase-to-phase or phase-to-ground contact. Conductors are hung on towers in such a manner that they are 23 to 32 feet apart. Further, conductors are hung on insulating systems that will be 14 to 20 feet in length depending on tower design (refer to the SWIP DEIS/DPA pages 2-12 through 2-14). Because of the distance between conductors and the tower, other conductor bundles, static lines, and the ground, it is virtually impossible for even the largest species of raptor to be electrocuted as a result of alighting on conductors or the tower.

The BLM acknowledges that numbers of raptors are killed each year in the United States as a result of electrocution. Most such incidents occur, however, on lower voltage distribution lines.

Refer to Avian Collision Hazard on page 3-89 of this document.

There would be impacts to desert tortoise, although mitigation measures taken during construction should be very effective in reducing or eliminating these adverse effects. The question of transmission line impacts on hatchling tortoises is a subject of ongoing study. Raven predation on hatchlings in some portions of the Mojave Desert may be having a deleterious effect on tortoise population structure, and the presence of transmission lines (providing nesting sites and hunting perches for ravens) may be contributory. The phenomenon appears to be localized, however, and generalizations cannot be made at this time. Further, given the presence of an existing transmission line, it is not obvious that increased perch sites will result in increased raven numbers, or raven predation. It is unlikely that perch site availability is currently limiting the potential for raven predation in the project area.

There would be significant visual impacts to the scenic natural landscapes of public lands. Visual impacts were assessed using a model based on the criteria of the BLM's Visual Resource Management (VRM) System. The VRM System tends to focus on impacts to sensitive viewpoints. Although

LETTER #D-3
COMMENTS

RESPONSES

undisturbed natural landscapes of open desert valleys possess inherent seenic value, the seenie quality of these areas is considered "minimal" to "eommon" based on the definitions of scenic quality used in the VRM System. Scenic quality classes are determined in context with the regional landscape eharacter. Open desert valley landseapes are eharacteristic and eommon to the project study area. The BLM will consider public concems for scenic quality in their decision proeess. The BLM uses the VRM System to manage the visual resources of public lands. For a detailed explanation of the VRM System and the visual impact assessment model refer to the methods section under Visual Resources in Volume III - Human Environment Technieal Report (refer to Appendix H of thc DEIS/DPA for thc locations where the technical reports can be reviewed).

If one of the routes is approved by the BLM, there will be a cultural survey completed for any potentially disturbed areas, (e.g., rights-of-way, access routes, assembly yards) prior to any ground disturbing activities. Refer to mitigation measure #9 in Table 1-6 of this document. All Cultural resource impaets will be mitigated.

LETTER #D-4
COMMENTS

October 7, 1992
Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, Idaho 83318

cc: Manuel Lujan
Cy Jamison A

Dear Mr Simonson,

Please add these comments as part of the final E.I.S. for the Southwest Intertie Project.

A If the SWIP is allowed as proposed, it would require giant steel towers every 1,500 feet, which would be visible from many viewpoints within Great Basin National Park. The area's beauty relys on the scenic views and habitat for tortoise, antelope and sage grouse.

I urge you to oppose the BLM proposed action and support the "no action" alternative. This alternative would have no adverse environmental impacts and would include eliminating financial costs.

LETTER D-4

1 of 2

RESPONSES

A The proposed 230kV Corridor Route is approximately 2 miles north of Great Basin National Park and 4-5 miles north of Wheeler Peak. To further minimize visual impacts to travel routes leading into the park, several mitigation reroutes through Sacramento Pass have been evaluated (refer to Sacramento Pass Mitigation Reroute on page 3-39 of this document).

No significant visual impacts to viewpoints in Great Basin National Park would occur because of the distance of the alternative routes from these viewpoints. Non-specular conductors and steel H-frame towers across the highway would minimize other adverse visual effects of the SWIP.

LETTER #D-4
COMMENTS

RESPONSES

It has come a time, where Americans need to use conservation as a means of meeting our needs, and stop depleting our natural beauties - our public lands. Thank you for your consideration.

Sincerely,

Kimberly Martinez
3980 Frandon Court
Simi Valley, California 93063

LETTER #D-5
COMMENTS

RESPONSES

United States Department of the Interior

NATIONAL PARK SERVICE
P.O. BOX 37127
WASHINGTON, D.C. 20013-7127

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
L7617(774)
DES-92/0023

30 MAR 1993

Mr. Karl Simonson
Burley District Office
Bureau of Land Management
Route 3, Box 1
Burley, Idaho 83318

Dear Mr. Simonson:

This is a follow-up to our comments, contained in our letter of October 9, 1992, on the Draft Environmental Impact Statement and Proposed Plan Amendment for the Southwest Intertie Project (SWIP). These follow-up comments respond to issues raised at your project steering committee meeting, held in Salt Lake City, Utah, December 9-10, 1993, and attended by Superintendent Al Hendricks of Great Basin National Park and Western Regional Office Environmental Goordinator Jim Huddlestun, and your request for comments on the preliminary final environmental statement and subsequent redraft of the Purpose and Need section of that document. In addition, we are responding to your more recent consideration of an alternative alignment to the 230 kilovolt (kv) route in the vicinity of Great Basin National Park.

We appreciate the fact that the Bureau of Land Management and the involved power companies are willing to consider a modification of the 230 kv corridor that would move the proposed transmission line northward in the vicinity of the park. While we continue to have serious reservations over selection of the 230 kv corridor as the preferred routing, we are hopeful that this potential modification would result in the reduction of visual impact to the park. We will withhold further comment and any endorsement of this modification pending availability and our review of more detailed plans for the modification.

LETTER D-5

LETTER #D-5
COMMENTS

During the aforementioned steering committee meeting, our attendees mentioned the fact that our comment letter of October 9, 1992, did not appear in the preliminary final document. It was their understanding that you did not plan to publish letters of comment from cooperating agencies. We believe this would be a procedural error in violation of the Council of Environmental Quality Guidelines at 40 CFR Part 1503.4(b). Even though you informally provided us responses to our comments and made some modifications in the draft final environmental statement in response to those comments, we believe it necessary and proper to include the comments and associated responses in the final document.

Our review of the January 15, 1993, revision of the Purpose and Need section indicates that while there is some improvement over that presented in the draft environmental statement, the revision primarily involves the reorganization of earlier material, with certain key words being changed, and large portions which remain substantially unchanged. Our primary objection is that a tone of justification for the SWIP project remains. For example, statements frequently appear that indicate what the SWIP would do to fill needs identified in this section. The function of this section should be an impartial description of circumstances that cause the proposed action and alternatives to be considered. How well the SWIP, specifically, will meet the identified needs, is more appropriately discussed in the alternatives section. If this guideline were to be followed, the content of the Purpose and Need could be greatly reduced.

Other comments on specific sections of the Purpose and Need redraft are as follows:

A 1. On page 3-1, Line 4. we believe that the information printed here is an expansion of the Purpose and Need described in the Summary, not Chapter 1.

B 2. On page 3-3, under Diversity Benefits from Interconnections, paragraph 2, second sentence, the "1992 National Energy Policy Legislation" is cited as specifically addressing transmission and transmission access. This implies that the legislation relates in some way to the Purpose and Need of SWIP. If there is some specific relationship between the legislation and SWIP, it should be stated. If there is not, the reference should be omitted.

C 3. On page 3-5, under Environmental and Consumer Benefit Tests paragraph 1, final sentence, NEPA is the National Environmental Policy Act.

D 4. On Page 3-9, the entire Regional Economic Benefits of SWIP section is an example of material more appropriately covered under the alternatives and/or environmental consequences sections than in this section.

RESPONSES

A The document correctly states that the information on Purpose and Need presented in the FEIS/PPA is an expansion of the Purpose and Need in Chapter 1 of the DEIS/DPA.

B There is no specific relationship between the SWIP and the "1992 National Energy Policy Legislation". The sentence in paragraph 3 and other references to it have been removed from the SWIP FEIS/PPA.

C This has been corrected in the SWIP FEIS/PPA

D The BLM believes that the information presented on economic benefits of the SWIP is appropriate information for the Purpose and Need.

LETTER #D-5
COMMENTS

E 5. On page 3-11, under Bonanza Generating Station, second paragraph, it is implied that the SWIP needs to be constructed in order to make the Bonanza Generating Station profitable. The fact that all 400 megawatts (MW) of Bonanza's generating capacity must be sold to meet operating costs is the concern of Deseret Generation and Transmission Cooperative, and not SWIP. Further, it is implied that a second 400 MW generation unit could be built at Bonanza if transmission links could be developed. This would be an additional impact of the SWIP project that has not been covered in the environmental analysis.

The following specific comments are directed to the December 1992 preliminary draft of the Final Environmental Impact Statement.

F 1. We continue to be concerned with and question the rationale behind the contention, on page 3-54 of the document under Leland Harris Spring Complex, that "The presence of this spring complex near the Direct Route was a factor in not considering the Direct Route as a preferred crosstie route of the SWIP." During the December 1992 steering committee meeting, the consulting firm of Dames & Moore's biologist stated that their review of the situation indicated that transmission towers could be sited in a way that completely avoids the riparian areas in the vicinity of Leland-Harris Spring. Furthermore, their review, substantiated with color slides taken at the spring complex, revealed an area which had been heavily used by livestock with most available forage consumed up to the edge of the springs and ponds. Accordingly, we question potential biological impact of the powerline on this complex as being a significant factor in either rejecting the Direct Route as the preferred alternative or at least not designating it as the environmentally preferred alternative.

G 2. Based on concerns expressed throughout the review process on this project, we have concluded that there has not been sufficient information or supportable conclusions to select the 230 kv route as the project proposal. Therefore, we recommend its rejection in favor of either more intensive study of the Direct Route or selection of the no action alternative. Accordingly, we recommend that the last sentence on pages 1-5 of the preliminary final document be revised to read: "Because of concern for visual impacts to the park and to visitors driving to the park, the National Park Service recommends rejection of the 230 kv route."

H 3. Hagerman Fossil Beds National Monument is incorrectly identified on Figures 1-1, and 1-2, as well as in Appendix C, page 2.

I 4. On page 3-56, first paragraph the superintendent of Great Basin National Park is mentioned specifically as the source of a particular proposal. Personal sources are not identified elsewhere throughout the document and agency sources are rarely noted. If this specific attribution is believed significant in this instance, then the National Park Service, not the superintendent, should be cited as the source.

RESPONSES

E The section describing the Bonanza Generating Station has been rewritten, refer to this section in the Purpose and Need in Chapter 3.

F The impacts to Leland-Harris Spring Complex have been lowered to moderate reflect findings of Dr. Linwood Smith. The direct impacts of the SWIP through this area could be largely mitigated. However, the BLM remains concerned that even a small impact could cause the species of concern to "go over the edge". For this reason, the cumulative effect remains significant. Refer to the Leland Harris Spring Complex section under Biological Resources in Chapter 3 on page 3-91 describing the potential impacts to the Leland-Harris Spring Complex.

Although the Leland-Harris Spring Complex was considered it was not the determining factor in the selection of the environmentally preferred route. The impacts to the military flight operations in the R-6405 Restricted Area are what made the Direct Route less environmentally favorable. Although moderate, these impacts would be extensive (approx. 65 miles) and were considered significant.

G Your comments relative to rejection of the 230kV Corridor Route will be considered by BLM in their final decision. The wording you have suggested has been incorporated into this document.

H This has been corrected in the FEIS/PPA.

I This has been corrected in the FEIS/PPA.

LETTER #D-5
COMMENTS

J 5. On page 4-8, this errata section relating to page 3-3 of the AFFECTED ENVIRONMENT remains inaccurate. Only those national parks and wilderness areas which were in existence in 1977 were designated Class I. Neither Great Basin National Park, nor Mount Moriah Wilderness Area fall into this category. The Jabidge Wilderness area did exist in 1977, and is Class I. Areas initially designated as Class II, can be redesignated as Class I, either by Congress through additional action, or by the State legislatures in the affected States. In addition, the correct size of Great Basin National Park is 77,100 acres.

K 6. In Figure 4-4, the California National Study Trail is now designated as the California National Historic Trail. In Figure 4-12, the diagram showing the inset location on panel 3 is improperly located.

L 7. It is our understanding that the Final EIS/PA is in an abbreviated format, which therefore references the information included in the draft document. As such, we request an addition to the information which was presented in the draft, which will address the matter of relative impacts anticipated on each of the alternative routes. Specifically, on page 4-70 and 4-71 of the June 1992 draft, a summary of anticipated cultural resource impacts for each of the routes was presented, along with an explanation of how these figures were derived. We find these figures to be most illustrative and revealing, and request that the figures developed for each of the five resource categories evaluated (Cultural, Biology, Land Use, Earth, and Visual), be presented in a single chart showing the various alternatives.

M 8. By letter of February 11, 1993, to Jake Hoogland, Chief, Environmental Quality Division, Dames & Moore requested clarification on the status of the Antelope Springs Trilobite Beds. By Memorandum of Understanding dated May 8, 1988, the Bureau of Land Management and National Park Service set forth procedures for evaluating potential impacts on designated or potential National Natural Landmarks (NNL). The Antelope Springs Trilobite Beds are a potential NNL. Our review of the draft environmental statement indicated that the 230 kv route would pass through the central to southeast portion of the potential NNL. Therefore, we requested that this potential impact be addressed along with any needed avoidance or mitigation measures in the final document. For further information on this specific concern, please contact Gheryl A. Schreier, the NNL coordinator for our Rocky Mountain Region, at (303) 969-2850 or National Park Service, Rocky Mountain Region, 12795 West Alameda Parkway, Box 25287, Denver, Colorado 80225.

RESPONSES

J This has been corrected in the FEIS/PPA.

K This has been corrected in the FEIS/PPA.

L The cultural resources for each alternative are at best predicted, since no "on-the-ground" surveys were conducted to compare alternatives for the EIS process. Surveys will be conducted on the selected alternative.

The cultural scoring model for each alternative used an index which was unique for cultural resources and was not used to determine route preferences for the other disciplines. It is based on the study team's concerns about the unknowns of cultural resources and the potential for mitigation.

The basis of comparison for each of the disciplines was the miles of high, moderate, and low impacts, which represents the level of impact significance for each of the resources potentially affected. This information is presented in detailed comparative form for the five resource disciplines in Tables 1-1 and 1-2 of the FEIS/PPA for all of the alternative routes as you suggested.

M Refer to the Antelope Spring Trilobite Beds section in Chapter 3 of this document.

In summary, we believe that the preliminary final document continues to fail to provide factual information to support the selection of the 230 kv corridor. Also, the Purpose and Need section sets an improper tone for an objective analysis. In addition, the late introduction of a possible modification in the 230 kv corridor near Great Basin National Park now becomes a critically needed addition to the document in order to demonstrate that all reasonable alternatives have been considered.

For any questions on the above comments, please contact Jake Hoogland, Chief, Division of Environmental Quality, at (202) 208-5214; Superintendent Al Hendricks at (702) 234-7331; or Jim Huddlestun, Western Regional Office, at (415) 744-3968.

Sincerely,

Denis P. Galvin
Associate Director,
Planning and Development

[redacted]

LETTER #D-6
COMMENTS

RESPONSES

Nov. 1, 1982

Burley Bureau Office
BLM
Rte. 3, Box 1
Burley, Idaho, 83318

Re: SWIP Corridor Route

A The proposed alternative for the corridor route near Great Basin National Park would degrade the vistas of Mount Wheeler and the Snake Range from outside the park and spoil views of the valleys from the park's mountainsides.

A The proposed 230kV Corridor Route is approximately 2 miles north of Great Basin National Park and 4-5 miles north of Wheeler Peak. To further minimize visual impacts to travel routes leading into the park, several mitigation reroutes through Sacramento Pass have been evaluated (refer to Sacramento Pass Mitigation Reroute on page 3-39 of this document).

No significant visual impacts to viewpoints in Great Basin National Park would occur because of the distance of the alternative routes from these viewpoints. Non-specular conductors and steel H-frame towers across the highway would minimize other adverse visual effects of the SWIP.

LETTER D-6

LETTER #D-6
COMMENTS

RESPONSES

Besides it is a great waste of
Taxpayers money adding to the deficit.

Sincerely
John Savarese
74 Mobile Ave.
Staten Island
NY 10306

LETTER #D-7
COMMENTS

RESPONSES

A No response is necessary.

Sierra Pacific Power Company
Your Energy People

Thomas O. Parker
Vice President
Electric System
Planning & Engineering

January 15, 1993

Mr. Karl Simonson
Bureau of Land Management
Burley District Office
Route 3, Box 1
Burley, ID 83318

RE: **Southwest Intertie Project**
Environmental Impact Statement

Dear Mr. Simonson:

We understand that it is beyond the comment period for the draft EIS. However, we at Sierra Pacific Power Company (Sierra) feel it necessary to apprise you of the electrical transmission situation into Northern Nevada.

Currently, Sierra's bulk electric transmission capabilities are nearing capacity. Due to this constraint, without additional transmission facilities (such as SWIP), potential suppliers of capacity and energy to meet our current and growing customers needs for electric power must be internal to Sierra's control area.

Participation agreements for SWIP have not been finalized and it is uncertain whether Sierra will have any ownership in SWIP. However, SWIP will be using an important State of Nevada transmission corridor. SWIP 's utilization must be evaluated for the optimum use of this corridor. Sierra is interested in interconnecting with SWIP in two locations. One is with an open market 230 kV interconnection in the Ely, Nevada area, the other is a future site at 345 kV identified as the substation/series compensation siting area located Northeast of the Wells, Nevada area. This will allow Sierra to conduct economical energy transactions that would benefit our customers.

LETTER D-7

LETTER #D-7
COMMENTS

RESPONSES

If you have any questions or would like further comments, please contact me at 702-689-4569.

Sincerely,

Michael R. Smart

Michael R. Smart, Director
Electric Planning

MRS:lj

cc: Dennis B. Whitney
Jan Packwood

6100 Neil Road P O Box 10100 Reno, Nevada 89520-0026 Telephone 702/689-4609

LETTER #D-8
COMMENTS

BUREAU OF LAND MANAGEMENT
RECEIVED
JUN 10 1993

SHILOAH COMMUNITIES, INC.
1100 Circle Dr., Eskdale, UT 84728-9702

June 10, 1993

Nancy DeMille
BLM
Fillmore, UT 87776
FAX (801)743-5112
Office: (801)743-6811

Dear Ms. DeMille,

We've discussed our concerns about the impact that the proposed construction of the new power lines for the Intertie project will have on our lives, homes, and business. Basically the concerns can be summarized into three areas.

A Our first concern is the increased limitation of future land development in the proposed corridor for the power line. The proposed corridor separates our properties and the expanded use of the corridor restricts any further utilization of the land connecting our properties.

B Secondly, there are many concerns about the health hazards surrounding high tension power lines and while these lines do not pass over any of our homes or buildings, our daily activities have us passing under them frequently. We understand that adverse health effects are not yet proven but should they be substantiated then we would be better off to not increase our risk when other options are available and viable.

C Our third concern is about the congestion of power lines in our back yard. Again, when other options are feasible for the line our preference is to select those other options rather than to fill our country side with visually offensive power lines.

No one here favors the proposed construction of the Intertie project, but especially not in the proposed area adjacent to our property. Our recommendation is that the BLM show adverse impact from the construction of the power line in our area.

Sincerely,

Dean G. Hayward

RESPONSES

A Impacts have been assessed for all developments and planned developments in the SWIP project area, however, impacts on future developments cannot be assessed in an area which does not have a plan for development. Your comments have been noted and will be considered in the BLM's decision process.

B The many studies that have been conducted on EMF demonstrate that we are all affected in everyday life. Electromagnetic fields exist from microwaves, florescent 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 are expected to be no higher than normally occur in household appliances. Please refer to pages 3-72 through 3-82 in the DEIS/DPA and page 3-19 in this document for additional information on EMF.

C Your comments have been noted and will be considered in the BLM's decision process.

FORMAL PUBLIC MEETING COMMENTS AND RESPONSES

Formal Public Meeting Comments and Responses

Name	Location	Issue/Concern	Response
Bill Chrisholm	Twin Falls	A. Alternative energy sources need to be evaluated.	A. Alternative sources of energy have been evaluated as alternatives to the SWIP in Chapter 2 of the DEIS/DPA. IPCo is pursuing many alternative energy sources to further diversity resources. However, alternative energy sources do not meet the purpose and need for the SWIP and do not replace the need for the SWIP.
		B. The DEIS/DPA lacks analysis of true energy conservation	B. Refer to Conservation and Demand Side Management on page 3-4 of this document.
Brenda Herrmann	Twin Falls	A. Favors alternative route for health reasons and land depreciation if the transmission line is placed on their land.	A. Your comments are noted and will be considered in BLM's decision process.
John Herrmann	Twin Falls	A. The DEIS/DPA does not analyze impacts on people, their health and loss of private property.	A. These impacts were addressed in the DEIS/DPA on pages 4-51 through 4-68 and pages 4-46 through 4-51 of Chapter 4.
		B. Concerned about the depreciation of the land. With a transmission line currently running through his property, SWIP would further depreciate the value of his land.	B. IPCo would compensate for the fair market value of lands used for transmission easement. There is no conclusive research that suggests that transmission lines depreciate the value of adjacent lands.
Bob Molyneux	Twin Falls	A. Recommended the preferred route	A. Your comments are noted and will be considered in BLM's decision process.

Formal Public Meeting Comments and Responses (Continued)

Janet OCrowley	Twin Falls	A.	What agency will govern, regulate and set rates for the transmission line?	A.	The Public Service Commission in each state regulates utilities that provide service to customers in that state.
William Johnson	Wells	A.	If the intertie were moved to some degree, it would avoid going through our land and certainly benefit our planned development.	A.	Please refer to the Agency Preferred plan in Chapter 1 of this document. The Agency Preferred Alternative is to move the route as you suggest.
Dawn King	Wells	A.	To preserve visual quality, the line should be placed across the valley, not through Oasis.	A.	The Agency Preferred Alternative has been modified in the Oasis area in response to public comments. Also, please refer to Impacts in the Oasis Area on page 3-17 of Chapter 3 and the Agency Preferred Alternative in Chapter 1 of this document.
		B.	Concerned that the power line would affect the wetlands, wildlife, and waterfowl.	B.	These resources have been identified and impacts to them assessed. The analysis can be found beginning on pages 3-14 and 4-9 of this document, as well as the Biological Resources section in Chapter 3.

C. Concerned about the health effects of being around the lines.	C. The many studies that have been conducted on EMF demonstrate that we are all affected in everyday life. Electromagnetic fields exist from microwaves, florescent 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 are expected to be no higher than normally occur in household appliances. Please refer to pages 3-72 through 3-82 of the DEIS/DPA for additional information on EMF.
D. Need to address alternative energy.	D. Alternative sources of energy have been evaluated as alternatives to the SWIP in Chapter 2 of the DEIS/DPA. IPCo is pursuing many alternative energy sources to further diversity resources. However, alternative energy sources do not meet the purpose and need for the SWIP and do not replace the need for the SWIP.
E. Since the document did not mention the communities of Oasis and Wendover, the DEIS/DPA is inadequate.	E. Oasis was considered in the DEIS/DPA process, refer to the page 5-20 of the Technical Reports, Volume III - Human Environment. Also, Oasis has been added to the list of communities in Nevada (refer to Chapter 4 of this document). Wendover is 8 miles outside of the study corridor.



		F. Public notification was inadequate.	F. The BLM believes that the public notification was adequate. The planning process occurred over a several year period. Numerous news releases were sent communities in the area and newsletters were sent to a mailing list of over 3000 individuals, agencies, and organizations in order to gain public input.
		G. Expressed concern about global warming.	G. Please refer to page 4-90 of the DEIS/DPA.
William Fisher	Wells	A. Concerned about health issues.	A. The many studies that have been conducted on EMF demonstrate that we are all affected in everyday life. Electromagnetic fields exist from microwaves, florescent 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 are expected to be no higher than normally occur in household appliances. Please refer to pages 3-72 through 3-82 of the DEIS/DPA for additional information on EMF.

Formal Public Meeting Comments and Responses (Continued)

Hiko Wirtz	Wells	A. The power line affects health, property value, and the scenic qualities of the Oasis area.	A. The BLM agrees that the SWIP will affect the scenic quality of the landscape in the Oasis area. These impacts are documented in the DEIS/DPA, in Volume III of the Technical Report, and further in Chapter 3 of this document. The potential health effects are documented in the DEIS/DPA. There is no conclusive research that indicates that transmission lines affect human health or land values of adjacent properties. Also, the Agency Preferred Alternative has been moved so as not to affect the planned developments of Northern Holdings.
		B. Weren't adequately notified of the project	B. The planning process occurred over a several year period. Numerous news releases were sent communities in the area and newsletters were sent to a mailing list of over 3000 individuals, agencies, and organizations in order to gain public input.
Jack Ekker	Wells	A. Prefer the line bypass Oasis for health and quality of life reasons.	A. Your comment has been noted and will be considered in the BLM's decision process.
Scott Brooke	Wells	A. Received no legal or actual notice of the project until recently.	A. The BLM believes there was adequate notification about the project, the release of the DEIS/DPA, and the public meetings. The public meetings were announced in the DEIS/DPA which was released in June. There also were press releases published in local newspapers and a series of 12 newsletters mailed to over 3000 recipients over more than three years during the project.

[redacted]

		B. The powerline would depreciate the value of the Oasis area property itself and visually depreciate the surrounding properties.	B. Although there has been much research on the effects of transmission lines on property values there is no conclusive evidence that there is such an effect. With the Agency Preferred Alternative (refer to Chapter 1 of this document) we do not believe that the visual impacts to the planned developments at Oasis or to the residents of Oasis will be significant. All visual impacts are documented in the DEIS/DPA, the Technical Report, and in this document.
		C. How were the various routes selected?	C. The various routes were selected based on the criteria located on page 2-50 of the DEIS/DPA. Also refer to page 1-6 of this document.
Alfred King	Wells	A. The visual beauty of the Oasis area will be destroyed if the power line goes through this area.	A. The BLM agrees that there will be visual impacts as a result of constructing the SWIP. Visual impacts were assessed from Big Springs Ranch, Oasis, all other residences, and many other sensitive viewpoints along the alternative routes. Volume III of the Technical Report documents in more detail the potential visual impacts to this area (refer to Appendix H of the DEIS/DPA for locations of these reports for public review).
		B. The power line will cause a direct loss of property, making it difficult to develop.	B. The Agency Preferred Alternative (refer to Chapter 1 of this document) will not affect the planned development of Northern Holdings in Sections 2 and 3.

		C. The electromagnetic fields would cause a reduction in the potential for future residents and land owner.	C. Refer to response B above.
George Thiel	Wells	A. The potential power line through the Oasis would impact the proposed land use plans.	A. The Agency Preferred Alternative (refer to Chapter 1 of this document) will no affect the planned development of Northern Holdings in Sections 2 and 3.
Bob Barton	Wells	A. There was not enough notice to land owners to inform them of SWIP.	A. The BLM believes that there was adequate notification. Press releases were sent to 17 newspapers serving the communities in the area to announce the meetings. Newsletters announcing the meetings were also sent to all individuals and organizations on the mailing list. You have been on our mailing list since the beginning of the project and have also received a copy of the DEIS/DPA.
		B. Concerned about the visual impacts to the local people in the Oasis area rather than impacts to those who travel along Interstate 80.	B. Visual impacts were assessed from Big Springs Ranch and all other residences along the alternative routes. Our methodology states that residences are more visually sensitive than travellers on I-80, and this was used to assess visual impacts. In Table VR-7 of Volume III of the Technical Report documents that all residences have a high visual sensitivity and Interstate highways received a visual sensitivity rating of moderate.

Formal Public Meeting Comments and Responses (Continued)

Fredd Dunham	Wells	A. The close proximity of high-voltage power lines to the proposed subdivisions greatly reduces the viability of the proposed land use plans.	A. The Agency Preferred Alternative (refer to Chapter 1 of this document) will not affect the planned development of Northern Holdings in Sections 2 and 3.
		B. Suggests having an alternative that bypasses around Oasis and the Big Springs Ranch.	B. Note that the Agency Preferred Alternative has been changed from links 221 and 223 to 211. Refer to response A above.
Patricia Dunham	Wells	A. The local communities needs have not been addressed in the DEIS/DPA.	A. The BLM believes that local impacts are addressed. Visual impacts, land use, and socioeconomic impacts are all documented in the DEIS/DPA. We were not made aware of the planned developments by Northern Holdings, nor have they been filed with Elko County. We have now considered this planned development as a future land use (refer to Chapter 3 of this document).
Joanne Garrett	Ely	A. The Ely to Delta segment is a violation of the Great Basin National Park.	A. Alternative highway crossings to mitigate potential visual impacts to the park are evaluated under the Sacramento Pass Mitigation Reroute in Chapter 3 of this document.
		B. Object to the military concerns having preference over the national park concerns.	B. The military concerns have been evaluated with similar criteria to other impacts. These different impacts are being carefully weighed in determining the environmental preferences. BLM will consider your concerns when it makes its decision.

		C. Although the DEIS/DPA addresses the health issues, still believes there is a health issue.	C. The evidence is still inconclusive on health effects. Your comments are noted.
		D. The simulations did not portray the visual impacts adequately.	D. The simulations were done to create the best likeness to the real situation as current technology allows.
		E. Could not locate the tax revenue comparison tables for the various routes.	E. Refer to Table 4-4 in the DEIS/DPA. Note, an updated table including the Agency Preferred and Utility Routes were added. Refer to page 4-16 in Chapter 4 of this document.
Rod McKenzie	Ely	A. Panel 4 does not include highway 318.	A. That is correct. Highway 318 is not on the Panel 4 map. The highway is contained within the boundary of Panel 3 and 5 maps and does not occur in the area that Panel 4 map covers.
		B. Boundaries from the Humboldt National Forest are missing near Ely on Ward Mountain.	B. This error has been corrected in the Errata of this document.
Joseph Reilly	Delta	A. What is the purpose of the public hearing if the DEIS/DPA hasn't been circulated for more than one month?	A. The DEIS/DPA had been in circulation for over two months prior to the public meeting in Delta.
Rex Stanworth	Delta	A. Who will own the Ely to Delta segment of the SWIP, Idaho Power or Los Angeles Department of Water & Power?	A. The right-of-way for the Ely to Delta Segment would be assigned to IPCo who would request that BLM assign it to LADWP. The LADWP on behalf of the UNTP participants would construct, operate, and maintain this portion of the line.

B. Doesn't feel SWIP will be a benefit to the intermountain area, other than a small source of tax revenue.	B. There are potential benefits to the intermountain region from power transfers, reliability, and power sales from the various generation stations located within this region.
C. If LADWP gets the right-of-way granted, will they have to meet Millard County's environmental criteria and regulations that go along with having a right-of-way?	C. Yes.
D. Can part of an unbuilt IPP corridor be used for this project?	D. There is no unbuilt IPP corridor along the Ely to Delta segment of the SWIP.
E. Recommends using existing corridors for environmental reasons.	E. It is not possible to route the SWIP parallel to existing utilities for its entire length although BLM agrees in principal to your comment and the mandate of the Federal Lands Policy and Management Act (1976) to consolidate corridors. The selected routes are based on planning methodology to identify and minimize impacts. Subsequent evaluation and comparison was done to select an alternative that minimizes impacts to the degree possible. Your comments will be taken into consideration during BLM's decision process.
F. Would like to have an additional public meeting.	F. The BLM does not believe that an additional public meeting is warranted.

Jeff Van Ee	Las Vegas	A.	No-Action alternative needs further evaluation	A.	The BLM believes that an adequate range of alternatives to the SWIP was evaluated and that the SWIP DEIS/DPA discussion of the no-action alternative is adequate. The no-action alternative would result in other actions being taken, which is discussed in the SWIP DEIS/DPA on pages 2-10 and 2-11. The no-action alternative could lead to construction of new generation resources in various parts of the West because existing electrical resources would not be able to utilize the SWIP for regional exchanges. Environmental impacts associated with generation (e.g., air quality) and transmission (e.g., similar types of impacts to the SWIP) would occur if generation is constructed. A second possible result of the no-action is that electrical rates in various parts of the West may be impacted if the SWIP is not constructed and more expensive generation options are exercised. Finally, the stability and reliability of the electrical system in the West would not be enhanced without the SWIP. The BLM believes that the SWIP is a desirable action for the utility industry to most efficiently utilize electrical conservation and availability and minimize environmental impacts in the western United States.

B. There is not sufficient data in the DEIS/DPA to judge the economic feasibility of the proposed line.	B. Please refer to the expanded discussion of Purpose and Need in Chapter 3 of this document.
C. The DEIS/DPA does not discuss getting the power from Dry Lake Substation through to California. The transmission line would have to go through the Sunrise Mountain WSA and other critical areas.	C. This is addressed in the discussion of the Marketplace-Allen Transmission (MAT) Project through the Sunrise Mountain area in the DEIS/DPA on pages 2-52 and 4-81. Also refer to the Cumulative Effects discussion on the MAT in Chapter 3 of this document.
D. Suggest expanding the scope to look at impacts in the future, where the power is ultimately going and when it is scheduled to arrive in some markets. Also should look at connecting and routing future power lines through critical areas.	D. It is not possible without contracts in place to discuss precisely where the power will be scheduled to flow. However, the expanded purpose and need in Chapter 3 of this document has an illustration showing the potential seasonal diversity between regions of the west. We believe that the planning studies during the SWIP EIS process has analyzed all reasonable and feasible routing alternatives, and corridors have been consolidated where possible.
E. In some of the areas that SWIP will be serving there will be an excess of power at certain times of the year. Would like to see further regional analysis done to study where the power is, where it is going, and which areas are deficient.	E. Refer to response D above.

F.	Doesn't feel the DEIS/DPA adequately address the impacts the transmission line will have on adjacent WSAs.	F. This discussion has been expanded in Chapter 3 of this document.
G.	There is insufficient economic data to show why this is the least costly alternative to provide electricity both north and south	G. The revised Purpose and Need section in Chapter 3 of this document contains information about comparative costs of different resource options. To meet the future electrical needs of the region, transmission is shown to be the least cost alternative as compared to demand-side management (i.e., conservation) or new generation.

[redacted]

Bob Maichle	Las Vegas	A. No-Action alternative not adequately analyzed.	A. The BLM believes that an adequate range of alternatives to the SWIP was evaluated and that the SWIP DEIS/DPA discussion of the no-action alternative is adequate. The no-action alternative would result in other actions being taken, which is discussed in the SWIP DEIS/DPA on pages 2-10 and 2-11. The no-action alternative could lead to construction of new generation resources in various parts of the West because existing electrical resources would not be able to utilize the SWIP for regional exchanges. Environmental impacts associated with generation (e.g., air quality) and transmission (e.g., similar types of impacts to the SWIP) would occur if generation is constructed. A second possible result of the no-action is that electrical rates in various parts of the West may be impacted if the SWIP is not constructed and more expensive generation options are exercised. Finally, the stability and reliability of the electrical system in the West would not be enhanced without the SWIP. The BLM believes that the SWIP is a desirable action for the utility industry to most efficiently utilize electrical conservation and availability and minimize environmental impacts in the western United States.

		B. Will the utility corridors be able to be used for things other than transmission lines (e.g. water lines, access)?	B. IPCo and LADWP are concerned about vandalism and potential liability issues associated with sanctioned use of these rights-of-way. Especially if the liability concerns can be adequately addressed by user groups it is possible that they would be open to discussion. The BLM can allow joint occupancy of a right-of-way by compatible uses.
		C. Would like more detail concerning the banking of energy.	C. The utilities are not aware of banking of energy, although reserve margins are planned by every utility to handle unexpected occurrences.
David Breekey	Las Vegas	A. Concerned about the ability of the right-of-way to be used by other utilities.	A. The BLM reserves the right to require the common use of a right-of-way (ROW) and the right to authorize use of the ROW for other compatible uses. Any additional use of the ROW is subject to compliance with the National Environmental Policy Act.
		B. What does Nevada Power have to say concerning the availability of power in extra by 1997 (when SWIP is in operation) or power in extra anywhere in the southwest.	B. Please refer to the discussion in the DEIS/DPA about Nevada Power on pages 1-7 and 1-8.

[redacted]

C. The no-Action alternative needs further evaluation.	C. The BLM believes that an adequate range of alternatives to the SWIP was evaluated and that the SWIP DEIS/DPA discussion of the no-action alternative is adequate. The no-action alternative would result in other actions being taken, which is discussed in the SWIP DEIS/DPA on pages 2-10 and 2-11. The no-action alternative could lead to construction of new generation resources in various parts of the West because existing electrical resources would not be able to utilize the SWIP for regional exchanges. Environmental impacts associated with generation (e.g., air quality) and transmission (e.g., similar types of impacts to the SWIP) would occur if generation is constructed. A second possible result of the no-action is that electrical rates in various parts of the West may be impacted if the SWIP is not constructed and more expensive generation options are exercised. Finally, the stability and reliability of the electrical system in the West would not be enhanced without the SWIP. The BLM believes that the SWIP is a desirable action for the utility industry to most efficiently utilize electrical conservation and availability and minimize environmental impacts in the western United States.

D. Need to address alternative energy.	D. Alternative sources of energy have been evaluated as alternatives to the SWIP in Chapter 2 of the DEIS/DPA. IPCo is pursuing many alternative energy sources to further diversity resources. However, alternative energy sources do not meet the purpose and need for the SWIP and do not replace the need for the SWIP.
E. If LADWP gets the Ely to Delta power, how does the power get to Los Angeles? To get the power to LA. a corridor will need to go through the Sunrise Mountain WSA. How will this be done?	E. There are two 500kV lines currently through the Sunrise Mountain ISA. The Navajo-McCullough line and the IPP #1 500kV DC transmission line. The Utah-Nevada Transmission Project already has a third right-of-way grant from Delta through the Sunrise Mountain ISA, but cannot proceed until the WSA issue is resolved. The SWIP DEIS/DPA discusses the Marketplace-Allen Transmission (MAT) Project in the Cumulative Effects on page 4-81 of the DEIS/DPA. This project was conceived to attempt to minimize the number of total lines through the Sunrise corridor.
F. A one mile wind power corridor that goes through the Sunrise Mountain WSA is being proposed to Congress, how does this tie in with SWIP?	F. The BLM is not aware of this proposal or any of its details.

G. It is said that the Northwest power generation will be affected by the salmon being listed. How will this affect the ability to transfer power if it is not in the Northwest to bring it to Nevada?	G. It is not clear how the listing of the salmon will impact the operation of the SWIP. The utilities believe that there may be benefits to the salmon by operating the SWIP.
H. The DEIS/DPA did not adequately address why SWIP is needed.	H. Refer to the expanded Purpose and Need in Chapter 3 of this document.

REFERENCES

REFERENCES

Purpose and Need

Northwest Power Planning Council. 1991. Northwest Power Plan. Portland, Oregon.

Military Airspace

Desert Research Institute. 1991. Special Nevada Report.

U.S. Department of Transportation. Federal Aviation Administration. 1984. 7400.2C Procedures for Handling Airspace Matters.

U.S. Department of Transportation. Federal Aviation Administration. 1988. FAA Handbook 7610.4.

USDI. Bureau of Land Management. 1989. Nellis Air Force Range Resource Plan and Draft Environmental Impact Statement. Caliente Resource Area, Las Vegas District, Caliente, Nevada.

Utah Test and Training Range. 1988. Utah test and Training Range and Lucin/Gandy MOAs.

Sacramento Pass - Cultural

Busby, Colin I.
1974 *Archaeological Impact Statement on Sacramento Pass and Blackhorse Chainings.* Department of Anthropology, University of California, Berkeley, California.

Cain, Donald R.
1968 *Miller Basin Black Horse Mining District and Cemetery Recreation Site Inventory and Evaluation.* Bureau of Land Management, Ely, Nevada.

Henderson, Mark
1979 *Snake Valley Class II Survey Site Forms.* Bureau of Land Management, Ely, Nevada.

Moore, Joe
1988 *Cultural Resource Inventory Survey of US 6/50, White Pine County From Milepost 75.00 to 101.88 (the Utah State Line).* Nevada Department of Transportation, Carson City, Nevada.

Newkirk, Judith
1982 *Archaeological Survey of the Gonder Spur of the Intermountain Power Project.* Commonwealth, Englewood, Colorado.

Revitte, Marian
1983 *Eskdale Land Exchange Site Forms.* Bureau of Land Management, Fillmore, Utah.

Steward, Julian H.
1938 *Basin-Plateau Aboriginal Sociopolitical Groups.* Bureau of American Ethnology Bulletin 120. Smithsonian Institution, Washington, D.C.

Stornetta, Susan
1988 *An Archaeological Investigation of the Eldridge Ranch-Willow Patch Spring, Hogum, Osceola, Turnley Spring-Waking Spring, Cherry Creek, Zip's Cabin, and Currant Segments of Nevada Bell's Rural Improvement Project.* Intermountain Research, Silver City, Nevada.

Biological Resources

Avery, M.L., P.F. Springer, and N.S. Dailey. 1978. Avian mortality at man-made structures: an annotated bibliography. Biological Services Program. FWS/OBS-78/58. USDI. Fish and Wildlife Service.

Beer, J.V. and M.A. Ogilvie. 1972. Mortality. pp 125-142 In Peter Scott and the Wildlife Trust, the Swans. Houghton Mifflin Co., Boston.

Boyd, H. 1961. Reported casualties to ringed ducks in the spring and summer. Wildfowl Trust Ann. Report 12:144-146.

Fike, Richard. 1992. Bureau of Land Management. Personal communication, August, 1992.

Harrison, J. 1963. Heavy mortality of Mute Swans from electrocution. Wildfowl Trust Ann. Rep. 14:164-165.

Hoover, K.H. 1978. Introduction To: Impacts of transmission lines on birds in flight. A proceedings. Oak Ridge Associated Universities. Sponsored by USDI, Fish and Wildlife Services.

Krapu, G.L. 1974. Avian mortality from collisions with overhead wires in North Dakota. Fall 1972. The Prairie Naturalist (6)1.

Kroodsma, R.L. 1977. Effects of powerlines on raptors and waterfowl. Paper presented at AIBS Meetings, East Lansing, Michigan.

Lee, J.M., Jr. 1978. Effects of transmission lines on bird flights: Studies of Bonneville Power Administration lines. In Impacts of transmission lines on birds in flight. pp 93-116. Proceedings of a symposium sponsored by the USDI, Fish and Wildlife Service

Ogilvie, M.A. 1967. Population changes and mortality of the Mute Swan in Britain. Wildfowl Trust. 1965-66, 18:64-73.

Olendorff, R.R. and R.N. Lehman. 1986. Raptor collisions with utility lines: An analysis using subjective field observations. Report submitted to Pacific Gas and Electric Company, San Ramon, CA. 73 pp.

Osmundson, D.B. 1985. 1985 status survey of least chub (Iotichthys phlegethontis) in desert springs of western Utah. Report to Utah Division of Wildlife Resources. 25 pp.

Scott, R.E., L.J. Roberts, and C.J. Cadbury. 1972. Bird deaths from powerlines at Dungeness. British Birds 65(7): 271-286.

Stout, I.J. and G.W. Cornwell. 1976. Non-hunting mortality of fledged North American waterfowl. J. Wildl. Manage. 40(4):681-693.

Thompson, L.S. 1978. Transmission line strikes: Mitigation through engineering design and habitat modification. In Impacts of transmission lines on birds in flight. pp 51-92. Proceedings of a symposium sponsored by the USDI, Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 1991. Endangered and threatened wildlife and plants; animal candidate review for listing as endangered or threatened species, proposed rule. Fed. Regist. 56(225):58804-58836.

Willard, D.E., J.T. Harris and M.J. Jaeger. 1977. The impact of a proposed 500kV transmission route on waterfowl and other birds. Public Util. Comm., Salem, Oregon. 89 pp.

Comments and Responses to the DEIS/DPA

Olendorff, R.R. and R.N. Lehman. 1986. Raptor collisions with utility lines: An analysis using subjective field observations. Report submitted to Pacific Gas and Electric Company, San Ramon, CA. 73 pp.

West, N.E. 1988. Intermountain deserts, shrubs steppes, and woodlands. In M.G. Barbara and W.D. Billings (eds.) North American terrestrial vegetation. Cambridge University Press. New York, NY.

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MISSION STATEMENT

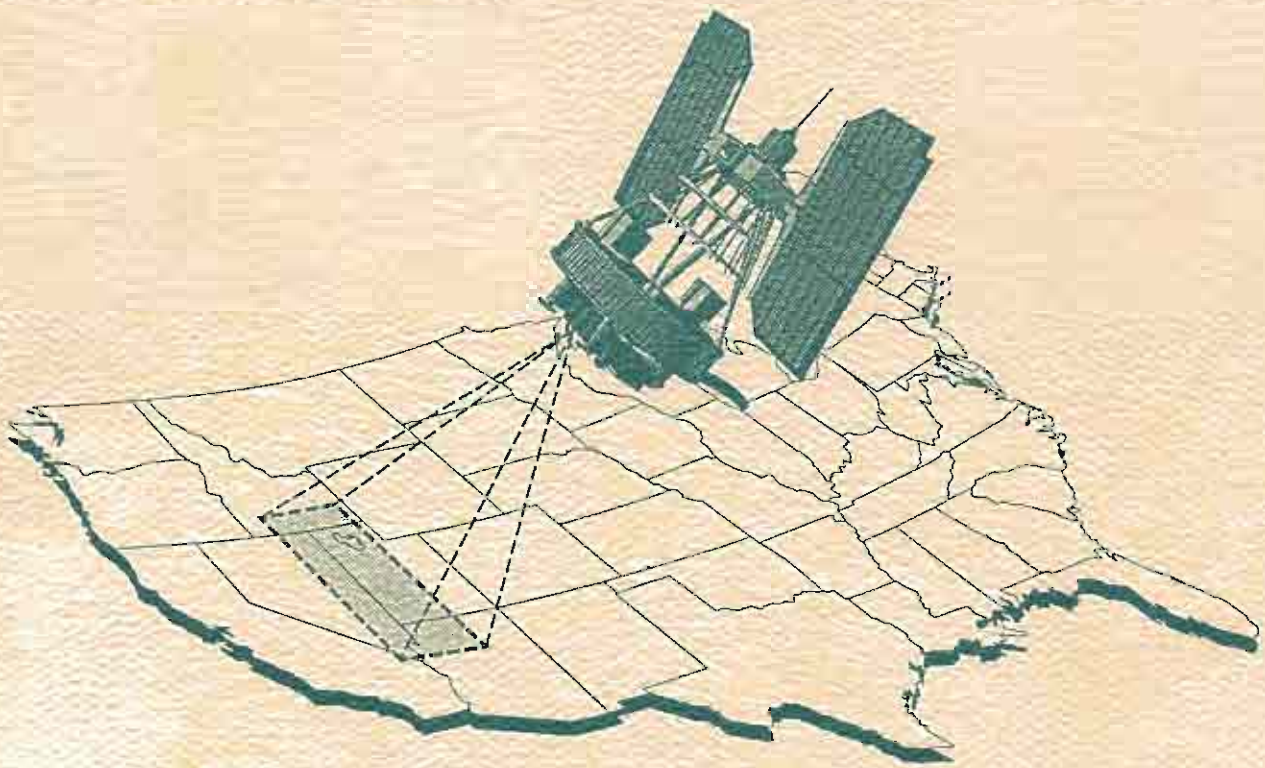
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SOUTHWEST INTERTIE PROJECT

FINAL ENVIRONMENTAL IMPACT STATEMENT and PROPOSED PLAN AMENDMENT

Appendices



Prepared by the:

U.S. Department of the Interior
Bureau of Land Management
Burley, Shoshone, and Boise District Offices, Idaho
Elko, Ely, and Las Vegas District Offices, Nevada
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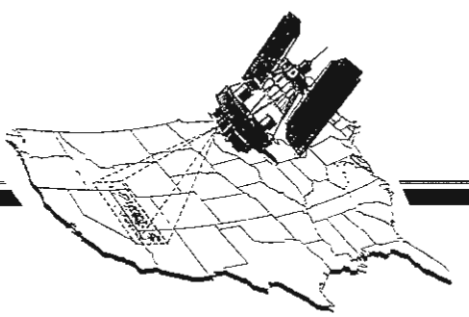
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APPENDICES

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APPENDIX A

GLOSSARY, ACRONYMS, & ABBREVIATIONS

APPENDIX A

Glossary

Access (road)	Road used for passage to and along transmission line for purposes of construction and maintenance.
Alignment	The specific, surveyed route of a transmission line.
Alluvium	A general term for all detrital deposits resulting from the operations of modern rivers, including the sediments laid down in river beds, floodplains, lakes and fans at the foot of mountain slopes and estuaries.
Alternative (action)	An option for meeting the stated need.
Alternative (route)	An optional path or direction for a transmission line.
Ambient	Characteristic of the atmosphere.
Annual (ecology)	A plant that completes its development in one year or one season and then dies.
Aquifer	A stratum of permeable rock, sand, etc., which contains water. Water source for a well.
Archaeology	The science that investigates the history of peoples by the remains belonging to the earlier periods of their existence.
Archival	Pertaining to or contained in documents or records preserved in evidence of something.
Artifact	Any object showing human workmanship or modification, especially from a prehistoric or historic culture.
Assumed Centerline	For purposes of assessing impacts and recommending mitigation a centerline was assigned that may be slightly adjusted during engineering design.
Assessment (environment)	An evaluation of existing resources and potential impacts to them from a proposed act or change to the environment.
Background	That portion of the visual landscape lying between the middleground limits to infinity. Color and texture are subdued in these areas; primarily concerned with the two-dimensional shape of landforms against the sky.
Base Load	The minimum load of a utility over a given period of time.

Glossary (continued)

Candidate, Category 1 (C1)	Taxa for which FWS has substantial information on hand to support proposing the species for listing as threatened or endangered. Listing proposals are either being prepared or have been delayed by higher priority listing work.
Candidate, Category 2 (C2)	Taxa for which the FWS has information to indicate that the listing is possibly appropriate. Additional information is being collected.
Candidate, Category 3 (C3)	Taxa that were once being considered for listing as endangered and threatened but are no longer receiving such consideration.
Capacity	The maximum load that can be generated or transmitted by generating or transmission facilities for a given period of time without exceeding approved limits of temperature or stress.
Capability	The ability to generate or transmit power.
Centerline	A line identified within each broad corridor representing the preferred location for the transmission line.
Circuit	A complete closed conducting path over which electric current may flow.
Committed mitigation	Obligation to a measure that would diminish the severity of an impact.
Community (biological)	A group of one or more populations of organisms that form a distinct ecological unit. Such a unit may be defined in terms of plants, animals or both.
Conductor	A material, usually in the form of a wire or cable, suitable for carrying an electric current.
Construction, Operation and Maintenance (COM) Plans	A detailed plan depicting engineering, access, construction, environmental, and reclamation that is prepared prior to construction and operation of a proposed action.
Contrast	The effect of a striking difference in the form, line, color or texture of an area being viewed.
Contrast rating	A method of determining the extent of visual impact for an existing or proposed activity that would modify any landscape feature (land and water form, vegetation and structures).

Glossary (continued)

Corona	The discharge of energy from an energized transmission line that occurs when the voltage gradient exceeds the breakdown strength of air.
Corridor	A continuous trace of land of defined width through which a utility route passes.
Critically endangered (CE)	State of Nevada Status Code. State status based on NRS 527.260 - .300.
Cultural resources	Any site or artifact associated with cultural activities.
Delete (D)	State of Nevada Status Code. This follows federal non-candidate definitions 3A, 3B, 3C plus NNNPS category 3D: species delisted because name was not formally published.
Distance zone	A visibility threshold distance where visual perception changes. It is expressed as fore-ground, middleground and background.
Electromagnetic field	A space or region within which magnetic forces are present around an electrical current.
Electrostatic field	Pertaining to a space or region within which atmospheric electricity at rest interferes with radar, radio or television reception.
Emergent (vegetation)	Vegetation coming into existence.
Endangered species (E or LE)	Any species in danger of extinction throughout all or a significant portion of its range. This definition excludes species of insects that the Secretary of Interior determines to be pests and whose protection under the Endangered Species Act of 1973 would present an overwhelming and overriding risk to man.
Energy conservation	A means of saving energy.
Environment	The surrounding conditions, influences or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.
Ephemeral	Lasting for a brief time.
Erosion	The group of processes whereby earth or rock material is loosened or dissolved and removed from any part of the earth's surface.

Glossary (continued)

Ethnography	That aspect of cultural and social anthropology devoted to the first-hand description of particular cultures.
Fault	A fracture or fracture zone along which there has been displacement of the sides relative to one another parallel to the fracture.
Floodplain	That portion of a river valley, adjacent to the river channel, which is built of sediments and is inundated with water at least once every 100 years.
Foreground	The visible area from a viewpoint or use area out to a distance of one-half mile. The ability to perceive detail in the landscape is greatest in this zone.
Foreground/Middleground	The area visible from a travel route, residence or other use area to a distance of 3-5 miles. The outer boundary of this zone is defined as the point where texture and form of individual plants are no longer apparent in the landscape. Vegetation is apparent only in patterns or outline.
Generic mitigation	Mitigation measures or techniques to which the applicants made commitment on a nonspecific basis.
Geology	The science that relates to the earth, the rocks of which it is composed, and the changes that the earth has undergone or is undergoing.
Habitat	A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover and living space.
Hydrology	The science that relates to the water of the earth.
Impact	A modification in the status of the environment brought about by the proposed action.
Insulator	A device that is resistant to the conduction of electricity used for isolating and supporting conductors.
Interdisciplinary team	A group of people with different training representing the physical sciences, social sciences and environmental design arts assembled to solve a problem or perform a task. The members of the team proceed to solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions.

Glossary (continued)

Ionization	The process of removing an electron from a molecule.
Jurisdictions	The limits or territory within which authority may be exercised.
Kilovolt	1,000 volts (a volt is a measure of electrical potential difference which would cause a current of 1 ampere to flow through a conductor whose resistance is 1 ohm).
Kilovolts per meter (kV/m)	A unit measure of electric field strength.
Kilowatt	A unit of power equivalent to 1,000 watts.
Landform	A term used to describe the many types of land surfaces that exist as the result of geologic activity and weathering, e.g., plateaus, mountains, plains and valleys.
Landscape character type	The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color and texture. These factors give the area a distinct quality which distinguishes it from immediate surroundings.
Link	A segment of a route alternative sharing common endpoints with adjacent links. Endpoints of a link are determined by the location of intersection with other segments (links) of other routes.
Megawatts (MW)	1,000 kilowatts or 1 million watts (a watt is a unit of electrical power equal to 1/756th horsepower).
Microwave	A very short electromagnetic wave.
Milliampere (mA)	Measure of electric current induced in conductive materials within an electric field.
Milligaus (mG)	A unit of measurement for magnetic fields.
Mitigation	To alleviate or render less intense or severe.
Monitor	State of Idaho Status Code. Taxa that are common within a limited range as well as those taxa that are uncommon, but have no identifiable threats (i.e., certain alpine taxa).
One-hundred-year flood	A flood with a magnitude which may occur once every one hundred years. A 1-in-100 chance of a certain area being inundated during any year.

Glossary (continued)

Ozone	A form of oxygen, O_3, produced especially when an electric spark is passed through oxygen or air.
Paleontology	The science that deals with the life of past geological ages through the study of the fossil remains of organisms.
Particulates	Minute, separate particles, such as dust or other air pollutants.
Perennial	Lasting through a year or many years.
Playa	The shallow central basin of a desert plain, in which water gathers after a rain and is evaporated.
Raptor	A bird of prey.
Rare	A plant or animal restricted in distribution. May be locally abundant in a limited area or few in number over a wide area.
Reconnaissance	Preliminary examination or survey of a territory.
Region	A large tract of land generally recognized as having similar character types and physiographic types.
Residual impact	The adverse impact of an action occurring after application of all mitigating measures.
Review	State of Idaho Status Code. Taxa that may be of conservation concern, but for which the state has insufficient data upon which to base a recommendation regarding their appropriate classification.
Right-of-way	Strip of land over which the power line, access road and maintenance road would pass.
Riparian	Situated on or pertaining to the bank of a river, stream, or other body of water. Riparian is normally used to refer to the plants of all types that grow along streams or around springs.
Route	A transmission route is the general path of a transmission line and associated facilities. In this environmental document, a route is comprised of contiguous segments or links.

Scenic-quality class	The designation (A, B, or C) assigned a scenic quality rating unit to indicate the visual importance or quality of a unit relative to other units within the same physiographic province (BLM designation).
Scenic-quality rating unit (SQRU)	A portion of the landscape that displays primarily homogeneous visual characteristics of the basic landscape features (landform, water, vegetation and structures and modifications) which separate it from the surrounding landscape.
Seen area	That portion of the landscape which can be viewed from one or more observer positions. The extent or area that can be viewed is normally limited by landform, vegetation, structures or distance.
Seismicity	The likelihood of an area being subject to earthquakes. The phenomenon of earth movements.
Seldom-seen area	Areas that are either beyond the furthest extent of the background zone (of the area or travel routes) or that are seen from areas or travel routes of low use volume.
Selective mitigation	Mitigation measures or techniques to which the Project Sponsors made commitment on a case-by-case basis after impacts were identified and assessed.
Sensitivity	The state of being readily affected by the actions of external influence.
Series Compensation capacitors)	Provides voltage support and increases the electrical (series capacity of long transmission lines as well as provides for economical loading of the line.
Set	A subdivision of the overall routing network representing localized routing options. Each set is comprised of two or more routes sharing common endpoints.
Significant (impact)	"Significant" has been used in this document to describe any impact that would cause a substantial adverse change or stress to one or more environmental resources. In general, all potential high impacts were considered to be "significant;" but in some cases potential moderate impacts were considered significant.
Site	Any locale showing evidence of human activity.

Glossary (continued)

Species	A group of individuals of common ancestry that closely resemble each other structurally and physiologically and in nature interbreed producing fertile offspring.
Study area	A given geographical area delineated for specific research.
Substation	A facility in an electrical transmission system with the capability to route and control electrical power, and to transform power to a higher or lower voltage.
Technical Report	Document containing detailed studies summarized in PA/EIS.
Terminal	(see Substation)
Threatened species (T or LT)	Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.
Use volume	The total volume of visitor use each segment of a travel route or use area receives.
Utility corridor	A common route used by more than one utility for transportation.
Variety Class	A designation (A, B, or C) assigned to a homogeneous area of the landscape to indicate the visual importance or quality relative to other landscape areas within the same physiographic province (FWS designation).
Visual Management System	System of land management based upon meeting visual resource goals (FS).
Visual Management Objectives	The term used in this study to generally define VRM (BLM) or VQO classes (FS).
Visual-Resource Management classes (VRM)	Classification of landscapes according to the kinds of structures and changes that are acceptable to meet established visual goals (BLM designation).
Visual sensitivity levels	The index of the relative degree of user interest in scenic quality and concern for existing or proposed changes in the landscape features of that area in relation to other areas in the study area.

Visual Quality Objectives	Classification of landscape areas according to the types of structures and changes that are acceptable to meet established visual goals (FS designation).
Volts per Meter (v/m)	A unit of measurement of an electric field.
Watch (W)	Plants of uncertain abundance and distribution and/or those whose threats cannot be currently defined.
Wetlands	Those areas that are inundated by surface or groundwater with a frequency sufficient to support vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Acronyms and Abbreviations

AC	alternating current
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACSR	aluminum conductor steel-reinforced
AFB	Air Force Base
AGL	above ground limit
AN	audible noise
ANMPA	Arizona-New Mexico Power Area
ANSI	American National Standards Institute
AQMP	Air Quality Management Program
BLM	Bureau of Land Management
BMP	Best Management Practices
BNRC	Board on Natural Resources & Conservation (Montana)
BPA	Bonneville Power Administration
BOR	Bureau of Reclamation
CEQ	Council on Environmental Quality
C/EE	Conservation and Energy Efficiency
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
COM	Construction, Operation, and Maintenance
CWA	Clean Water Act of 1972
DC	direct current
dbA (or db(A)	decibels on the A-scale

Acronyms and Abbreviations (continued)

DEIS	Draft Environmental Impact Statement
DG&T	Deseret Generation and Transmission
DNA	deoxyribonucleic acid
DOE	Department of Energy
DPA	Draft Plan Amendment
EEI	Edison Electrical Institute
EHV	extra high voltage
EIS	environmental impact statement
EMF	eIectromagnetic field
EMI	electromagnetic interference
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FS	USDA Forest Service
FWS	USDI Fish and Wildlife Service
GBNP	Great Basin National Park
GIMS	geographic information management system
GIS	geographic information system
GMP	General Management Plan
GW	gigawatt

Acronyms and Abbreviations (continued)

HMA	Herd Management Area
HC	hydrocarbons
HCC	high current configuration
HV	high voltage
H_z	hertz
IA/MPP	Impact Assessment/Mitigation Planning Process
IBLA	Interior Board of Land Appeals
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
IFR	instrument flight rules
IGS	Intermountain Generating Station
IPA	Intermountain Power Authority
IPCo	Idaho Power Company
IPP	Intermountain Power Project
ISA	instant study area
ITS	Intermountain Transmission System
kHz	kilohertz
kV	kilovolt
kV/m	kilovolts per meter
LADWP	Los Angeles Department of Water and Power
LCC	low current configuration
mA	milliampere
MAP	Marketplace-Allen Transmission Project
MAT	Marketplace-Allen Transmission

Acronyms and Abbreviations (continued)

mG	milligauss
MFP	Management Framework Plan
MEQB	Minnesota Environmental Quality Board
MOA	military operating area
MOU	Memorandum of Understanding
mRNA	messenger ribonucleic acid
MSL	Mean Sea Level
MUSY	Multiple Use, Sustained Yield Act of 1960
MVA	mega-volt ampere
MW	megawatt
MWH	megawatt-hour
NA	Natural Area
NAAQS	National Ambient Air Quality Standards
NATCF	Nellis Air Traffic Control Facility
NDOW	Nevada Department of Wildlife
NDPSC	North Dakota Public Service Commission
NEPA	National Environmental Protection Act of 1969
NERC	Nuclear Energy Regulatory Commission
NESC	National Electrical Safety Code
NHPA	National Historic Preservation Act of 1986
NJDEP	New Jersey Department of Environmental Protection
NMBM&MR	New Mexico Bureau of Mines and Mineral Resources
NNNPS	Northern Nevada Native Plant Society
NO_x	nitrogen oxide

NPC	Nevada Power Company
NPS	National Park Service
NRA	National Recreation Area
NRHP	National Register of Historic Places
NWPP	Northwest Power Pool
NYPSC	New York Public Service Commission
OHV	off-highway vehicle
ORV	off-road vehicle
PA	Plan Amendment
PIFUA	Powerplant and Industrial Fuel Use Act
PGE	Portland Gas & Electric
PPL	Pacific Power & Light
PSD	Particulates of Significant Deterioration
PURPA	Public Utilities Regulatory Policies Act of 1978
Qs	Quarternary Alluvium and Colluvium
RFP	Request for Proposal
RI	Radio Interference
RMP	Resource Management Plan
RMPA	Rocky Mountain Power Area
rms	root-mean-square
RNA	ribonucleic acid
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum

Acronyms and Abbreviations (continued)

SA	Special Area
SCADA	Supervisory Control and Data Acquisition
SCS	Soil Conservation Service
SCPPA	Southern California Public Power Authority
SHPO	State Historic Preservation Office
SQRU	Scenic Quality Rating Unit
SO_2	sulfur dioxide
SPPC	Sierra Pacific Power Company
SRMA	Special Recreation Management Area
SRP	Salt River Project
SWIP	Southwest Intertie Project
TDHS	Transmission and Distribution Health and Safety
TSP	Total Suspended Particulates
TSPP	Thousand Springs Power Plant
TVI	Television Interference
Tys	Tertiary sedimentary rocks
UAMPS	Utah Associated Municipal Power Systems
UDWR	Utah Division of Wildlife Resources
UNTP	Utah-Nevada Transmission Project
UPL	Utah Power & Light
U.S.	United States
USDI	United States Department of the Interior
USGS	USDI Geological Survey
UTTR	Utah Training and Testing Range

Acronyms and Abbreviations (continued)

VFR	visual flight rules
V/m	volts per meter
VRM	Visual Resource Management
VQO	Visual Quality Objective
WAPA	Western Area Power Administration
WPPP	White Pine Power Project
WSA	Wilderness Study Area
WSCC	Western Systems Coordinating Council

APPENDIX B

LIST OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING THE FEIS/PPA

APPENDIX B

LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS RECEIVING THE FEIS/PPA

A listing has been developed of those individuals, groups, organizations, and political representatives to whom all public documents will be sent. This includes, but is not limited to, the following:

Federal Agencies

Environmental Protection Agency
- Office of Federal Activities
- Chief Environmental Policy Branch, Region-8 Office
- Region 10, Environmental Evaluation Branch, Seattle, WA
- Environmental Review Coord., Div. E-3, Region 9, San Francisco, CA
- Office of Environmental Affairs

Federal Highway Administration, Portland, OR
Office of Public Affairs
Natural Resources Library
Department of the Interior
- Bureau of Land Management
  - Idaho State Office
    - Boise District
      - Jarbidge Resource Area
      - Owyhee Resource Area
    - Burley District
      - Snake River Resource Area
    - Shoshone District
      - Bennett Hills Resource Area
  - Nevada State Office
    - Elko District
    - Ely District
    - Las Vegas District
      - Caliente Resource Area
      - Stateline Resource Area
  - Utah State Office
    - Richfield District
      - House Range Resource Area
      - Warm Springs Resource Area
    - Salt Lake District
  - Denver Service Center
  - Director, Washington, DC

- California
  - Barstow Resource Area
- Bureau of Mines
  - Branch of Mineral Assessment
  - Western Field Operation Center
  - Intermountain Field Operation Center
  - Director/State Geologist, Reno, NV
- Bureau of Reclamation
  - Division of Power, Washington, DC
  - Burley, Idaho
  - Regional Director, Pacific Northwest Region
  - Regional Director, Lower Colorado Region
  - Regional Director, Mid-Pacific Region
  - Regional Environmental Officer, Upper Colorado Region, Salt Lake City, UT
  - Division of Engineering & Technical Services, Boulder City, NV
  - Denver Federal Center
- Fish and Wildlife Service
  - Idaho Field Office
  - Reno
  - Office of Regional Director, Denver, CO
  - Chief, Division of Environmental Coordination, Washington, DC
- Minerals Management Service
  - Offshore Environmental Assessment Division, Washington, DC
- National Park Service
  - Denver Service Center
  - Hagerman Fossil Bed National Monument
  - Golden Spike National Historic Site
  - Great Basin National Park
  - Western Regional Office
  - Division of Environmental Compliance, Washington, DC
  - Division of Environmental Quality-774, Washington, DC
  - Regional Director, Rocky Mountain Regional Office, Denver, CO
  - Pacific Northwest Regional Office, Seattle, WA
- U.S. Geological Survey
  - Environmental Affairs Program, Reston, VA

Department of Agriculture
- Forest Service,
  - Environmental Coordination Staff, Chief of Forest Service, Washington, DC
  - Intermountain Region, Ogden, UT
  - Sawtooth National Forest, Twin Falls, ID
  - Humboldt National Forest
- Soil Conservation Service
- Mel Anderson, District Supervisor, USDA - APHIS - ADC, Ely, NV
- Office of Environmental Coord., Washington, DC

Department of Defense, Air Force
- Office of Deputy A/S of the USAF, Washington, DC
- HQ-USAF/LEEV, Washington, DC
- Edwards AFB, CA

Hill AFB, UT
Chief, Plans, Programs & Resources Division,
Mountain AFB, ID
Wing Airspace Manager, Mountain Home AFB, ID
Department of Defense, U.S. Army Corps of Engineers
North Pacific Division
South Pacific Division
Department of Energy
Office of Environmental Compliance
Government Printing Office
Marked Files
Depository Receiving Section

State Agencies

California

Department of Water Resources, Energy Division, Sacramento
California Energy Commission, Environmental Protection Office, Sacramento

Idaho

Planning Commission Secretary, Lincoln County Planning Commission, Shoshone
Public Utilities Commission, Boise
Historic Preservation Office, Boise
Idaho Department of Lands, South Central Area, Gooding and Boise
State Archaeologist, U.S. Assay Office, Archaeology, State Board of Education
Department of Parks and Recreation, Boise
Department of Fish and Game
Director, Boise
Regional Director, Jerome
Department of Transportation, Boise
Department of Water Resources, Boise

Nevada

Administrator, Division of State Lands, Carson City
Department of Wildlife, Elko, Ely, Las Vegas, and Reno, Panaca
Department of Administration, Carson City
Division of Forestry, Elko and Las Vegas
Division of Historic Pres. & Archeology, Historic Preservation Officer, Carson City
Natural Heritage Program, Carson City
Department of Planning, Henderson
Department of Transportation, Ely
District Manager, State Park System, Panaca
Department of Agriculture, Las Vegas

Director, Mailroom Complex, Las Vegas
Military Department, USPFO
Legislative Counsel Bureau

Utah

Division of Wildlife
Wildlife Resources, Habitat Chief
State Historic Preservation Office, Salt Lake City
State Lands & Forestry, Richfield
Geological & Mineral Survey, Salt Lake City
Parks and Recreation, Salt Lake City
Department of Transportation

Other

Center for Urban Affairs & Policy Research, Evanston, IL
Chief, Department of Water Resources, Energy Division, Sacramento, CA

Local Agencies

California

City of Glendale
City of Burbank

Idaho

Burley District Advisory Council
Cassia County, County Commissioners
City of Boise
    Planning Department, Boise
City of Twin Falls
    Community Development Office
Gooding County, County Commissioners
Jerome County, Planning and Zoning Commission, Jerome
Lincoln County, County Commissioners, Shoshone
Twin Falls County, County Commissioners

Nevada

City Engineer, Ely
City of Henderson
    Economic Development Dept., Henderson
    Planning Department

City of Boulder City
    Department of Public Works
    Community Development Director
City of North Las Vegas
    Community Planning & Zoning
    Office of Economic Development
Clark County
    Reg. Flood Control District, Las Vegas
    Comprehensive Planning, Las Vegas
    Conservation District
    County Manager
    School District
    Zoning Administration
Economic Diversification Program, White Pines Development Comm., Ely
Elko County
    Association of Conservation Districts, Elko
    County Manager
    Library Bookmobile
Elko District Advisory Council, Wells
Juab County, County Commissioners
Lincoln County, County Commissioners
Nevada League of Cities, Carson City
Nevada County Planning Department
Nye County
    Road Department, Tonopah
    County Commissioners
White Pine
    Conservation District, Ely
    County Commissioners, Ely
White Pines Development Committee, Economic Diversification Program, Ely

Utah

City of Boulder City,
    Department of Public Works, Boulder City
    Community Development Director
Bear River Association of Governments, Logan
Millard County
    Planning Administration, Delta
    County Commissioners, Fillmore
Six County Economic Development, Richfield

Senators, Congressmen, Representatives, Commissioner, etc.

Idaho

Dirk Kempthorne, US Senator, Boise
Larry E. Craig, US Senator, Boise
Mike Crapo, US Representative, Boise
Larry LaRocco, US Representative, Boise
Governor's Office
    Special Assistant Natural Resources

Nevada

Harry Reid, US Senator, Reno
Richard H. Bryan, US Senator, Reno
James H. Bilbray, US Representative, Reno
Barbara Vucanovich, US Representative, Reno
John C. Carpenter, Assemblyman, Elko
Kris Johnson, District Representative, Las Vegas
Bob Miller, Governor, Carson City

Utah

Robert Bennett, US Senator, Salt Lake City
Orrin G. Hatch, US Senator, Salt Lake City
James V. Hansen, US Representative, Salt Lake City
Karen Shepherd, US Representative, Salt Lake City
William Orton, US Representative, Salt Lake City
Michael O. Leavitt, Governor, Salt Lake City

Organizations

Edwina Allen, Sierra Club, Middle Snake Group
American Mustang & Burro Association
Arctic Precious Metals, Inc.
Russell Avery, Avery Engineering Company
Frank Bachman, J.R. Simplot Co., Land & Livestock Division
Carl Baker, Silver Creek Ranch
Bob Barton, Nevada Land & Cattle Co.
Duane Bauer, Western Rock Products
Michael Bean, Environmental Defense Fund
Kraig Beckstrand, Nevada Division of Wildlife
Beth Blattenberger, Seattle City Lights
Stu Bengson, UFWDA
Greg Bilyeu, Thiel Winchell Assoc.
Lois Blumberg, The Wilderness Society

Nancy Brackett, Big Springs Ranch
Dave Brickey, Sierra Club
Keith Brecheisen, Baron Mining Corporation
Pat Briggs, Great Salt Lake Audubon
Scott Brooke, Attorneys Brooke & Shaw
Scott Broong, CSY Investments - Big Springs Ranch
Betsy Buffington, The Wilderness Society
Grace Bukowski, Citizen's Alert
Betty Burge, TORT Group
Karl Burke, LAC Minerals
Russ Butcher, Pacific Southwest Director, National Parks & Conservation Assoc.,
John A. Cameron, Jr., Vice President, Portland General Exchange
Steven Carter, Carter Cattle Company
Don Cecala, Western Gypsum
Jack Christensen, Bar O Ranch
Laura Christenson, William Danley, AMAX Gold Inc.
Russell J. Cowley, Six County Economic Development
Janet Crowley, Connecting Power for Public Lands
Chris Cull, Morrison-Maierle Environmental
Willy Cunningham, National Outdoor Leadership School
Colorado River Commission
Alan Cox, Homestake Mining Company
Courtney Dahl, Delamar Valley Cattle
William D. Davidson, Ely District Grazing Board
Don Dayton, SNORE
Donna Del Giudice, Woodward-Clyde Consultants - Library
Desert Mountain Realty, Inc.
Desert National Wildlife Range
Paul E. Dorvel, P.E., R.W. Beck and Associates
Jack Doyle, Aggrandize Mining Company, Inc.
Paul Dudley, Aero Jet
Fred Dunham, Oasis Mobile Home Brokers
Patricia Dunham, Oasis Mobile Home Brokers
Joan Dunlap, Boston/Pacific Company
Earth Satellite Corporation
Kurt Eckerstrom, Haloburton N. U.S. Environment Corp.
Bill Eisinger, Power Engineers
Robert Ellis, Desert Survivors
Sheldon Eppich, President, Utah Wildlife & Outdoor Rec. Federation
Rey Flake, H. H. Land & Cattle Co.
Donna Flanigan, Flanigan & Flanigan, Inc.
Stephan D. Flint, Bridgerland Audubon Society
William G. Fonte, Sundance Realty & Development
H. Paul Friesema, Center for Urban Affairs & Policy Research
Bob Fulkerson, Citizen Alert
Cathy Gough, M&M Court Reporting
Jane Graham, Public Service of New Mexico
Emily Gray, Energy and Environmental Services Commission

Nancy Green, The Wilderness Society
Andrew D. Gregorich, Magma Copper Company
Greystone
Jack Groves, Groves, Wray, & Associates
Dian M. Grueneich, Grueneich & Ellison
Paula Del Giudice, Nevada Wildlife Federation
Bruce Hall, Victor Land & Livestock Co.
Lloyd Harvego, President, Resource Management International, Inc.
Stan Haye, Sierra Club, CA/NV Mining Committee
Hark Heidecke, G.E. Raleigh & Associates
John Hiatt, Conservation Chairman, Red Rocks Audubon Society
Larry Hippler, Idaho Bureau of Aeronautics
Paul Hovan, Newmont Gold Co.
Pete Hovingh, Intermountain Water Alliance
Thomas H. Hunt, National Trails Preservation Officer, Oregon-California Trails Office
Judy Imhoff, PSCo
William Johnson, CSY Investments
Douglass W. Kimmelman, Goldman, Sachs, & Company
Bruce King, Bear River Association of Governments
Mel Kirschner, Noble-Tech Group, Ltd.
Donna Knipschild, SEC, Inc.
Hank Knox, Utah Wildlife Federation
Don Kondoleon, California Energy Commission
Mary Kozlowski, Las Vegas Board of Realtors
Lands of Sierra, Inc.
Dawn Lappin, Wild Horse Organized Assist
Doug Larson, WIEB
Russel Light, Sargeant & Lundy Engineers
Shirley Lindstrom, Consolidated Hydro
Rudy Lukez, Conservation Chair, Sierra Club, Utah Chapter
Robert W. Maichle, Motorcycle Racing Association of Nevada
Jack McCall, High Country Association
Beverly Mellinger, Desert Echo
Minerals Exploration Coalition
Montana Public Service Commission
Rick Moody, West Millard Wildlife Conservation Association
Randall Morris, Committee for Idaho's High Desert
I. Claire Morrow, Warm Springs Ranch
MRW & Associates
Nevada Wildlife Federation
George Nesgos, Chas. T. Main, Inc.
Jim Nyenheuis, ENSR
Dawn Olowinski, Hawley, Traxell, Ennis & Hawley
Kathryne Olson, Curator, Lost City Museum
Oneida Farms, Inc.
Nancy Sue Pearlman, Ecology Center of So. California
Colin Persichetti, PacifiCorp
Vern Peterman, Resource Concepts Inc.

Dale O. Pierce, Burley District Grazing Advisory Board
Irene Porter, Southern Nevada Home Builders Assn.
Catherine Quinn, Utah Wildlife Resources
Barbara J. Rehfield, AMBA
Charles Reinhold, Arizona Power Pooling Association
George B. Rice, Kerr-McGee Chemical Corporation
Peter Richardson, Davis, Wright, Tremaine
Shane & Jannatte Ritchie, Big Springs Ranch
George Rogers, Silver State Disposal Company
Steven Rupp, Resource Management Int.
Tim Seaton, S & S Geologic Consulting Services
Hero Shiosaki, I.A.C.L.
Barry Singleton, Singleton Associates Engineering
Paul Smith, Smith Bros. Ox Ranch
Al Steninger, Western Range Service
Eric Sepulveda, Ana-Lab Corp.
Glen Swalbert, Miller Co. Tourism
George M. Thiel, P.E., CSY Investments - Big Springs Ranch
Dave Tilford, Desert Mt. Realty, Inc.
Mark Trinko, NOHUC
Robert Tyler, Committee for Idaho's High Desert
Phillip Wagner, Ducks Unlimited
Lester Walcott, Common Wealth Assoc., Inc.
Richard Walsh, Tenaska, Inc.
James P. Wold, Newmont Gold Co.
Robert R. Wright, Robert R. Wright Company
William B. Wright, Jr., Marys River Ranch
Richard Wyman, Wyman Engineering
Ann Zorn, Nevada League of Women Voters

Individuals

James W. Adams
Mr. & Mrs. C.G. Andress
Walter Barbuck
Carl F. Beker
Wally Bellows
Carl Bennett
Garlyn Bergdale
Elliott Bernshaw
Jim & Cindy Bitzenburg
Sharon Boivin
Ron Booth
Steve Bradhurst
James Bringle
David Brown
Mary Lou Brown
Mike Buchenau
Carolyn Burk
Van Burroughs
Thorne J. Butler, M.D.
John Cape
Ella Lee Carone
Carole Carter
Jim Case
Walters Charley
Bill Chisholm
Kurt Chriss
Jack Claiborn, Jr.
Todd & Sue Ann Claiborn

John Clark
Lenore Clay
Paul C. Clifford
Mark Cochran
Demar and Elizabeth Dahl
M. Jeoffry Dail
L.L. Daniels
Doug Dashiell
Dave Davis
George Day
Beth Defend
Lynn Dille
Jack Doyle
Loretta Cartner
Jack and Ann Ekker
Frank Elder
David Eubank
J.A. Favinger
Michael Fewell
J. Felix
Garry & Louise Ferrin
Wm. J. Fisher
R.T. Fitzsimons
Gordon Foppiano
John Forman
Van Fowers
Golden Gardner
JoAnne Garrett
Greg Gault
John Geddie
Bill Glauz
Sydney Gordon
Joe L. Grembau
Robert Hadfield
Craig A. Hanson
P.D. Hargis
Roger J. Hatch
Gene Heckethorn
E. Nick Henery
Brenda & Tim Herrmann
Joseph L. Herring
Charles L. Hester
Vera Hester
Luke Heyerdahl
Bruce Hinckley
David Hornbeck
W. Berry Hutchings
Catherine C. Igoa
Richard Ingersoll
George L. Irlbeck
Letha Jacobucis
Sergio Jaramillo
Jim Jensen
Marion Johnson
Becky Johnstone
Bob Jones
Larry Jones
Dr. Stanley E. Jones
Alice F. Kasai
Alfred King
R. Jane Kinnee
Bruce and Clarissa Kunkel
Dorothy Larson
Larry Laurent
Eric Law
Clyde Lay
Robert & Christie Leavitt
J.A. Leitch
Barbara Lewis
Frank W. Lewis
Howard Lieberman
Warren Linnell
Richard Loper
Cher Lowe
Calvert Lyon
Donald Mack
Dewitt Marshall
Kimberly Martinez
Grace Mayes
W.E. McLean
Joe McGloin
Rod McKenzie
Mitchell Meek
Joe Merkel
Alvin Meyerhoff
Stan Millan
Craig W. Miller
Greg Miller
Dan Moreno
Kenneth N. Morris
George F. Morrow
Barbara Murphy
Carl L. Myers
Neil Namin
Jay Nance
Dave Naslund

Tom Needham
Grant Nelson
Ray Nelson
Albert Nickle
William A. Nisbet
Wilma L. Norris
Kevin O'Brien
Paul Okamura
Kimberly Otero
Randy Palmer
Ruth Pearson
G.M. Perkins
Willard Pete
L.W. Petersen MC
Arthur Pidduck
Geoffrey Pool
Robert Pribila
John Pruess
John Qoyawayma
Catherine Quinn
Kenneth R. Rand
Jerry Reagan
Joseph Reilly
Robert Ribe
Gene Rogge
Margaret Rowe
Martha Rozelle
Joe Sanchez
Charles Scardino
George Shiozawa
Marjorie Sill
Terry Simmons
Cindy Smith
Fred Smith
Linwood Smith
Rick Smith
S.J. Smith, M.D.
Arlene C. Southard
Frank Sperry
Rex Stanworth
Rex Steninger
Jean Stevens
Emilie Strauss
Thomas E. Strochon
Karen Sussman
Tim Sutko
Helen Swainston
Thomas Tabacco
Mike Takac
Jonathan M. Teague
Paul Trenter
Masa Tsukamoto
Herbert Uhlig
Jeff Van Ee
Charles P. Van Epps
Robert O. Vaughan
John Wahl
Hal W. Walker
Craig Walton
Derril Wenzel
Vivian Bowie & Roy F Westoak
Loretta Williams
Harry E. Wilson
Heiko Wirtz
E.E. Wright
Ed Wright
Dr. Terrence Yorks
Harvey W. Young Jr.
Ronald Younger

Utilities

Sohrab Allahyari, San Diego Gas & Electric
Antonio Alvarez, Pacific Gas and Electric Company
Don Bacon, TransAlta Utilities Corporation
Nancy Baker, Bonneville Power Administration
Carl Barnett, Sierra Pacific Power Company
Beehive Telephone Company, Inc.
Bob Bickers, AT&T Communications
R.J. Blatnik, Public Service Company of Colorado
Daniel K. Bowers, Idaho Power Company
James Bringle, Sacramento Municipal Utility District
Tyler Carlson, Western Area Power Administration
R.I. Clements, Idaho Power Company
Steve Cooper, Idaho Power Company
Craig Cox, Utah Power & Light Company, Environmental Services
Bill Crenshaw, SW Public Service Co.
Carol Cunningham, Consolidated Hydro, Inc.
Thomas A. Delawder, Vice President, Tucson Electric Power Company, Power Supply & System Control
Department of Water & Power, Transmission Systems Engineers
Kathy Ehli, Bonneville Power Administration
Edison G. Elizeh, Nevada Power Company
Edward Elliott, Idaho Power Company Shareholder
Ela Esterberg, Seattle City Light
S. Etcheverry, Nevada League of Cities
Howard Ferris, P.E., PacifiCorp
Tom Fleming, Bonneville Power Administration
Ray Forbes, Western Area Power Administration
Greg Galbraith, Sierra Pacific Power Company
Peter Gerloch, Sacramento Municipal Utility District
Sharon Gifford, Nevada Power Company
David Hagen, Guild & Hagen, Inc.
I.S. Hagen, City of Los Angeles, Department of Water & Power
Pat Hasenoehrl, Idaho Power Company
Tom Hendricks, Tenaska, Inc.
Linda Hensley, Sacramento Municipal Utility District
Son Thai Hoang, PE, City of Los Angeles, Department of Water & Power
Kris Hohenshelt, Kern River Gas Transmission Company
Chuck Holloway, City of Los Angeles, Department of Water & Power
Darwin Jensen, El Paso Electric
Brian Jobson, Sacramento Municipal Utility District
David Jones, Woodward-Clyde Consultants
Edward Karapetian, City of Los Angeles, Department of Water & Power, System Development Division
Donald W. Kimball, Executive Vice President and Manager, Arizona Electric Power Cooperative, Inc.

Marlys Kinsey, Western Area Power Administration
Delmar Leatham, Overton Power District #5
Jim Lee, Deseret Generation and Transmission Cooperative
Warren Linnell, Wells Rural Electric Company
Thomas A. Lockhart, PacifiCorp Electric Operations
Thomas A. Lockhart, Vice President, Power Systems, Pacific Power--Utah Power
Sally Long, Bonneville Power Administration
Mike Mann, Idaho Power Company
Steve Maxfield, Utah Associated Municipal Power System
Kenneth H. McKinney, General Manager, M-S-R Public Power Agency
Carolyn S. McNeil, Utah Associated Municipal Power Systems
Ronald P. Merlo, City of Los Angeles, Department of Water & Power, White Pine Power Project
Selby Mohr, Sacramento Municipal Utility District
Janet Monaco, Las Vegas Valley Water District
Bob Mooney, Idaho Independent Council
Anthony Morrell, Environmental Manager, U.S. Department of Energy, Bonneville Power Administration, Environmental Department
Steven P. Muse, Idaho Power Company
Robert V. Myers, Senior Vice President, Puget Sound Power & Light Company, Operations
Jan Packwood, Idaho Power Company
Ricky Poon, Bonneville Power Administration, Idaho Falls District Office
Dave Porter, Sierra Pacific Power Company
Ed Potthurst, Seattle City & Light, Environmental Affairs
T.W. Prange, Idaho Power Company
Vernon Ravenscroft, Consulting Association
Gary H. Richins, Environmental Coordinator, Deseret Generation and Transmission Cooperative
Edward Roman, Sacramento Municipal Utility District
Gregory M. Rueger, Senior Vice President, Pacific Gas and Electric Company
David Sabo, Western Area Power Administration
Dennis Schwehr, Nevada Power Company
Bob Scott, Incentive Power Project
Jennifer Shaw, Western Area Power Administration
George Sheldon, Vice President, Operations, Plains Electric Generation & Trans.
F.K. Skaggs, Idaho Power Company
Mike Smart, Sierra Pacific Power Company
Stan Smith, Intermountain Power Service Corporation
Allen Stott, Utah Power & Light Company, Salt Lake City, UT
Rob Stuart, Montana Power Company
Duane Sudweeks, Nevada Power Company
Robert Taylor, Idaho Power Company
Jim Tomsic, Asst. Area Manager for Engineering, Western Area Power Administration
Art Trevino, Southwest Gas Corporation
Dennis Vermillion, Washington Water Power Company
Rick Walsh, Montana Power Company
Larry Weiss, Cogeneration & Small Power
Murray Westgate, Nevada Power Company

John P. Wheeler, General Manager, Mt. Wheeler Power Company
Glen P. Willardson, Garkane Power Association
H.F. Wright, Idaho Power Company
Fred Yost, Utilities Data Institute

Media

Paul Beebe, Idaho Statesman
Andrew J. Davis, Elko Daily Free Press
Kate Heelenbrand, Millard County Chronicle Progress
Mary Manning, Sun News
Doug McMillan, Reno Gazette Journal
D. Mitchell, KKLZ Radio
N.S. Nokkentved, Times News
Keith Rogers, Review Journal
Connie Simkins, Lincoln County Record
Jim Woolf, Salt Lake Tribune
Ely Daily Times
High Country News
High Desert Advocate
Public Lands News, Washington, DC

Libraries, Universities and Museums

Nevada

Ann Brinkmeyer, State of Nevada, Nevada State Library, Carson City
Jaak Daemen, Mackay School of Mines
Carl Fox, Bio-Resources Center, Desert Research Institute, University of Nevada-Reno
Charleston Heights Library, Las Vegas
Clark County Library, Las Vegas
Henderson Library, Henderson
James Dickenson Library, University of Las Vegas
John W. Fordham, Desert Research Institute, Water Resources, University of Nevada-Reno
Lincoln County Library, Pioche
Rainbow Library, Las Vegas
Ron Marlow, RECON, Department of Biological Sciences
Sunrise Public Library, Las Vegas
Teri Knight, The Nature Conservancy, Barrick Museum, University of Nevada
Kelly Jackson, Staff Council, University of Nevada, Las Vegas, Public Service Commission, Carson City
David E. James, Civil & Environmental Engineer, University of Las Vegas, Las Vegas
Jan Nachlinger, The Nature Conservancy, Reno
Dr. Kevin Rafferty, Clark County Community College, Division of Behavioral Sciences, North Las Vegas

Utah

Dr. Allen Rasmussen, Utah State University, Range Science Department, Logan

Washington

Attn: President, American Alpine Institute, Bellingham

Indian Interests

Donna Bradley, USDI Bureau of Indian Affairs, Eastern Nevada Agency
Ken Esplin, USDI Bureau of Indian Affairs, Paiute Field Station
Peter Ford, Chairman of Baker Advisory Board
Fort Hall Business Council, Shoshone-Bannock Tribes
Amy Heuslein Scott, Chief, Branch Environmental Quality Services, Phoenix Area Office, Confederated Tribes of Goshute Res.
Calvin Meyers, Moapa Band of the Paiute
Jerry Millett, Chief, Western Shoshone National Council
Vernon Strickland, Power Manager, USDI Bureau of Indian Affairs
Louella Tom, Tribal Chairperson, Moapa Band of Paiute
Dee C. Wilcox, Field Representative, Cedar City, UT
Raymond Yowell, Chief, Western Shoshone National Council

Bureau of Indian Affairs
- Western Nevada Agency
- Paiute Field Station
- Phoenix Area Office

APPENDIX C

BIOLOGICAL OPINION

United States Department of the Interior
FISH AND WILDLIFE SERVICE
NEVADA ECOLOGICAL SERVICES FIELD OFFICE
4600 Kietzke Lane, Building C-125
Reno, Nevada 89502-5093

May 12, 1993
File No. 1-5-93-F-91

Memorandum

To: District Manager, Burley District, Bureau of Land Management, Burley, Idaho (Attn: Karl Simonson)

From: Field Supervisor, Ecological Services, Reno, Nevada

Subject: Formal Section 7 Consultation for the Issuance of a Right-of-way Permit for the Southwest Intertie Project

This Biological Opinion responds to your December 23, 1992, request for formal consultation with the Fish and Wildlife Service (Service) pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act). The Service will analyze those impacts upon the desert tortoise (*Gopherus agassizii*), a species federally listed as threatened, that may result from the issuance of a right-of-way permit for the Southwest Intertie Project (SWIP). This consultation is conducted pursuant to 50 CFR Part 402 of our interagency regulations governing section 7 of the Act. The Service initiated formal consultation upon receipt of your request on December 28, 1992.

The Bureau of Land Management (BLM) has determined that the proposed action is not likely to adversely affect the endangered bald eagle (*Haliaeetus leucocephalus*) or the American peregrine falcon (*Falco peregrinus anatum*). The Service concurs with this finding. Therefore, these two species will not be addressed in this Biological Opinion.

This Biological Opinion contains information from BLM correspondence dated December 23, 1992, January 6, 1993, February 23, 1993, March 26, 1993, and May 3, 1993; Dames & Moore correspondence dated January 18, 1993; February 9, 1993, March 4, 1993, March 25, 1993, and April 23, 1993; Service correspondence dated January 5, 1993, March 24, 1993, and April 30, 1993; a meeting held January 11, 1993, with BLM, Los Angeles Department of Water and Power, Idaho Power Company (Idaho Power), and Dames & Moore; a biological assessment dated December 1992; conversations with BLM and Dames & Moore staffs; and information in our files.

Description of the Proposed Action

BLM received an application from Idaho Power for a right-of-way permit (BLM No. N-49781) to construct SWIP, a 500-kilovolt (kV) transmission line project. SWIP consists of two segments: (1) A 500-mile Midpoint to Dry Lake segment between an existing substation near Shoshone, Idaho, and a new proposed substation site in Dry Lake Valley northeast of Las Vegas, Nevada; and (2) a 200-mile Crosstie segment between a new proposed substation site near Ely, Nevada, east to a new proposed substation near Delta, Utah (Figure 1).

Only the last 53.2 miles of the Midpoint to Dry Lake segment is in desert tortoise habitat. The BLM estimates that a total of 379.7 acres of desert tortoise habitat will be disturbed during the development of this portion of the Midpoint to Dry Lake segment. Wire pulling sites and wire splicing sites will result in the short-term disturbance of 24.4 acres of desert tortoise habitat. Marshaling yards, batch plants, tower bases, tower footings, and tower anchors will result in the long-term disturbance of 355.3 acres of desert tortoise habitat.

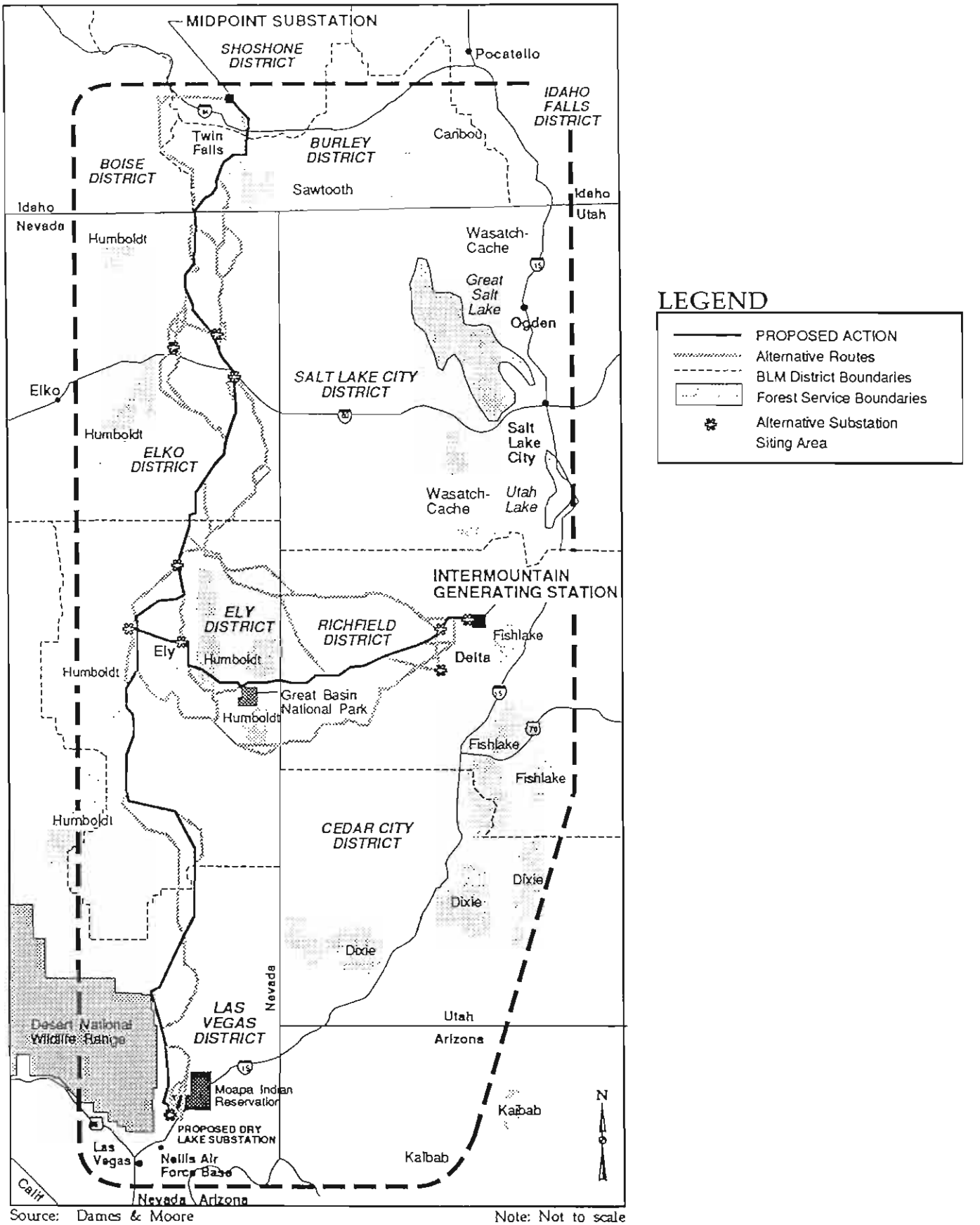
According to the offsite compensation mitigation formula developed and approved by the Management Oversight Group in "*Compensation for the Desert Tortoise*" (Hastey et al. 1991), Idaho Power shall pay a total offsite mitigation fee of $522,859.50. The mitigation rate is based on $295 per acre, multiplied by a compensation value of 4, multiplied by 24.4 acres of short-term disturbance of desert tortoise habitat and $295 per acre, multiplied by a compensation value of 5, multiplied by 355.3 acres of long-term disturbance of desert tortoise habitat.

BLM proposes the following mitigation measures to minimize impacts to desert tortoises from the proposed action (BLM 1993, Dames & Moore 1992):

1. To the extent possible, tower sites will not be located within 100 feet of caliche caves or rock coversites which could be used by tortoises.

2. Access along the project will only be allowed from those points at which the project crosses Highway 93, Kane Springs Road, State Route 168, the substation, and one access point near mile marker 15 within Link Number 720.

3. Prior to construction, a vegetative rehabilitation plan must be incorporated into the Construction, Operations, and Maintenance Plan (COMP) that shall be approved by BLM and Service. This plan will describe in specific detail as to how surface-disturbance sites will be rehabilitated using reasonable state-of-the-art techniques. As an



Source: Dames & Moore

Note: Not to scale

Southwest Intertie Project Alternative Corridors

Figure 1

objective, at least a 70-percent recovery towards natural conditions should be achieved within 7 years of completion of the rehabilitation project using native plant species. Disturbed sites within 500 feet of all access points should be recovered to 90 percent of preconstruction condition within 2 years of completion of the project construction. Vegetation rehabilitation actions will begin within 1 year of project construction completion and be completed within 2 years of construction completion. Recovery includes recontouring to natural contours and reestablishing locally native plant species within the disturbed sites. Recovery success will be based upon percent ground cover (both basal and canopy), plant composition, and plant frequency in relation to those natural conditions occurring adjacent to the project site. The rehabilitation plan shall also describe in detail how the evaluation will be made for determining the success of the rehabilitation effort.

4. Prior to construction and development of a vegetative rehabilitation plan, the project proponent shall collect baseline vegetative data within the project area to be used as baseline against which recovery efforts will be evaluated. BLM and Service will determine in consultation with the project proponent the level of inventory necessary to achieve a reasonable baseline data base.

5. The project proponent shall receive credit and subsequent rebate of offsite mitigation fees in direct proportion to the extent in which actual surface disturbance has been reduced from that identified in the biological assessment. Such rebates may be made upon completion of project construction and all clean-up operations but before vegetative rehabilitation actions are taken. The burden will be on the project proponent to demonstrate that the actual surface disturbance is indeed less than that identified in the biological assessment.

6. Offsite mitigation fees collected shall be deposited in an interest-bearing escrow account to be established by the project proponent. Upon conclusion of the rehabilitation evaluation, which shall occur no later than 7 years after the reclamation project work is completed, the project proponent shall receive a refund of the offsite mitigation fees equal to the percentage in which the rehabilitation is successful. For example, if the disturbed sites have been rehabilitated to 70 percent of the natural plant community, the project proponent will receive back 70 percent of the mitigation fee. Remaining mitigation fees will be disposed of in accordance with concurrent instructions from BLM and

Service. Specific details shall be discussed in the Rehabilitation Plan. If rehabilitation objectives are achieved prior to the 7-year evaluation period, the project proponent may request a refund of the appropriate level of mitigation fees as described above. However, the project proponent will be required to provide an evaluation (that meets BLM and Service requirements as identified in the rehabilitation plan) as to the success of the rehabilitation effort.

7. Prior to blasting, all tortoise burrows/coversites within a 200-foot radius of the blast site will be located and the entrances carefully stuffed with crumpled newspapers or other material approved by BLM and Service. After blasting is completed, all burrows/coversites will be inspected for damage. If a burrow/coversite has collapsed and there is a possibility it is occupied, it will be excavated to ensure that no tortoises have been buried and, therefore, in danger of suffocation. If a tortoise is present, or potentially present (e.g, end of tortoise burrow is not visible), and the burrow/coversite has not been damaged; stuffing material will remain in place for 2 weeks in order to prevent tortoises from abandoning the burrow/coversite.

   All tortoises located within 100 feet of the blast site will be removed and temporarily relocated (in accordance with desert tortoise handling protocol) prior to blasting.

8. To prevent mortality, injury, and harassment of desert tortoises and damage to their burrow and coversite, no pets shall be permitted in any project construction area unless confined or leashed.

9. Where construction activities occur during the tortoise activity period (March 1 through October 31), the project proponent shall install a temporary tortoise-proof fence along the access routes and construction sites.

10. During the tortoise activity period, a tortoise biologist shall be present during all construction activity where one or more pieces of heavy construction equipment are being used.

11. All construction-vehicle movement outside the right-of-way will be restricted to predesignated access, contractor acquired access, or public roads.

12. The real limits of construction activities will be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring

agents will be applied to rocks or vegetation to indicate survey or construction activity limits.

13. In construction areas where recontouring is not required, vegetation will be left in place wherever possible and original contour will be maintained to avoid excessive root damage and allow for resprouting.

14. The project sponsors will 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.

15. 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.

16. No widening or upgrading of existing access roads will 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.

17. The alignment of any new access roads or overland routes will follow the designated area's landform contours where possible, provided that such alignment does not additionally impact resource values. This would minimize ground disturbance and/or reduce scaring (visual contrast).

18. All new access roads not required for maintenance will 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., stockpiling and replacing topsoil, or rock replacement). This would limit new or improved accessibility into the area.

19. The project proponent will designate a field contact representative (FCR). The FCR will be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordinating compliance with BLM. FCR will have the authority to halt activities of construction equipment which may be in violation of the stipulations.

20. All construction and maintenance workers will participate in a tortoise-education program. The program will be developed by the project proponent prior to the beginning

of construction. The program will be submitted to the Service for review and approval prior to implementation. The program will include, at a minimum, the following topics: Occurrence of desert tortoises, sensitivity of the species to human activities, legal protection for desert tortoises, penalties for violations of Federal and State laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, and personal measures employees can take to promote the conservation of desert tortoises.

21. Within desert tortoise habitat, a biologist will be assigned to the pre-construction survey team(s). The biologist will be responsible for ensuring that placement of new access routes, spur roads, and tower sites affect as few tortoise burrows as possible. The placement of access and spur roads will be as direct as possible to minimize habitat disturbance while minimizing destruction of tortoise burrows. Other work areas (e.g., splicing, tensioning, pulling, batch sites) will also be surveyed by a biologist as construction proceeds. Potential work areas will be flagged several days prior to construction for review by a biologist. To the extent possible, these sites will be located in already disturbed areas.

22. Overnight parking and storage of equipment and material will be in previously disturbed areas (i.e, lacking vegetation). These areas will also be designated by the pre-construction survey team. If previously disturbed areas are not available, these activities will be restricted to the right-of-way and will be cleared of tortoises by the on-site biologist prior to use.

23. Within desert tortoise habitat, construction and maintenance workers will strictly limit their activities and vehicles to construction areas and routes of travel which have been flagged to eliminate adverse impacts to desert tortoises and their habitat. Aside from these areas, workers may not drive cross-country even within the right-of-way. All workers will be instructed that their activities are restricted to flagged and cleared areas.

24. To the extent possible, vehicle use on spur roads, tower sites, and at splicing and tensioning sites, will occur by crushing of vegetation only (i.e., no blading of such would occur). FCR will ensure that blading is conducted only where necessary. However, due to construction constraints, a result of equipment size and personnel safety, most spur roads and tower sites would need to be bladed.

25. Prior to construction, a plan establishing handling, holding, and relocation procedures for tortoises will be developed. The plan will be developed in consultation with BLM and the Service, and will be approved by these agencies. This plan will include, at a minimum: (1) A protocol for moving tortoises found above ground in construction areas; (2) a protocol for excavating and relocating tortoises found in burrows in areas flagged for disturbance; and (3) the techniques for constructing artificial burrows for relocated tortoises. The plan will take into account the time of year and temperature ranges in establishing procedures. The purpose for deferring development of the plan is to ensure the use of the most current and effective techniques available at the time of construction.

26. The Service will be notified within 3 days of any tortoise death or injury caused by project activities. Notification would include the date, time, circumstances, and location of any injury or death. Dead animals may be marked and left onsite. Injured animals will be transported to a qualified veterinarian. The Service will furnish direction on the final disposition of tortoises taken to a veterinarian.

27. Trash and food items will be removed daily by the construction workers and placed in raven-proof containers.

28. From March 15 through November 1, construction and maintenance vehicles will not exceed a speed of 25 mile per hour in tortoise habitat.

29. No later than 90 days after completion of construction within tortoise habitat, FCR and on-site biologist will prepare a report for BLM and Service. The report will document the effectiveness of the tortoise mitigation measures, the number of tortoises excavated from burrows, and the number of tortoises moved from construction sites. The report will make recommendations for modifying or refining the stipulations to enhance benefits to the tortoise or to reduce needless hardship on the project proponent. The report will include an estimate of the actual acreage of habitat disturbance caused by crushing and blading versus what was estimated prior to construction.

30. Herbicides will not be used as a part of this project.

Status of the Species/Environmental Baseline

The desert tortoise, a large herbivorous reptile, is generally active when annual plants are most common (spring, early summer, autumn). Desert tortoises usually spend the remainder of the year in shelter sites, escaping the extreme weather conditions of the desert. Sheltering habits of desert tortoises vary greatly in different geographic locations. Shelter sites may be located under bushes, in the banks or beds of washes, in rock outcrops, or in caliche caves. Further information on the range, biology, and ecology of the desert tortoise can be found in Berry (1984), Berry and Burge (1984), Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Karl (1981, 1983a, 1983b), Luckenbach (1982), and Weinstein et al. (1987).

On April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (Service 1990). The Mojave population includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah and in the Colorado Desert in California (a division of the Sonoran Desert). In Nevada, the native range of this species is generally restricted to Clark County and those portions of Nye and Lincoln Counties south of 37 degrees North latitude and below approximately 1,330 meters elevation (4,000 feet). Reasons for listing the desert tortoise included loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture. Grazing and off-road vehicles have degraded additional habitat. Also cited as threatening the desert tortoise's continuing existence were illegal collection, upper respiratory tract disease, and predation on juvenile desert tortoises by common ravens *(Corvus corax)*.

According to *Desert Tortoise Habitat Management on Public Lands; A Rangewide Plan* (Spang et al. 1988), BLM classified desert tortoise habitat into three categories based on: (1) Importance of the habitat to maintaining viable populations; (2) resolvability of conflicts; (3) desert tortoise density; and (4) desert tortoise population status (stable, increasing, or decreasing). SWIP traverses 53.2 miles of desert tortoise habitat of which 45.7 miles is classified as category I desert tortoise habitat and 7.5 miles is classified as category III desert tortoise habitat (Dames & Moore 1992).

The *Short-Term Habitat Conservation Plan for the Desert Tortoise in Las Vegas Valley, Clark County, Nevada* (Regional Environmental Consultants 1991), identifies 14 potential tortoise management areas (PTMAs) in Clark and Lincoln Counties. Only the Eldorado and the Piute Valley PTMAs have

been designated as Tortoise Management Areas (TMAs). SWIP traverses the Coyote Spring Valley PTMA.

The *Draft Recovery Plan for the Desert Tortoise (Mojave Population)* (Brussard et. al. 1993) identifies proposed desert wildlife management areas (DWMAs) where management actions should be undertaken to recover the desert tortoise. SWIP traverses the proposed Mormon Mesa DWMA.

Based on BLM triangular-strip transects Dames & Moore (1992) estimated that SWIP traverses 4.3 miles of low-density desert tortoise habitat, 3.2 miles of low- to medium-density habitat, 30.2 miles of medium- to high-density habitat, and 15.5 miles of high-density habitat. Also, SWIP traverses the creosote-bursage series of the Mojave Desertscrub biome. Dominant shrubs are cresotebush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*).

Effects of the Proposed Action on the Listed Species

The proposed development of SWIP may result in the short-term disturbance of 24.4 acres of desert tortoise habitat and the long-term disturbance of 355.3 acres of desert tortoise habitat. Mitigation proposed by BLM to require Idaho Power to set up a interest-bearing escrow account for the rehabilitation of the desert tortoise habitat destroyed during the construction of SWIP should minimize these impacts.

The proposed development of SWIP may impact 95 desert tortoises. Desert tortoises may be killed or injured by vehicles and may be harassed through removal from construction areas. The proposed project could result in the death or injury of desert tortoises that move onto construction areas and roads used by preconstruction and construction crews (Bury 1978, Luckenbach 1975, Nicholson 1978). Furthermore, vehicles that stray from construction areas and roads may crush desert tortoises above ground or in their burrows. Mitigation proposed by BLM to require Idaho Power to: (1) Install a temporary tortoise-proof fence around the perimeter of construction zones during desert tortoise activity period; and (2) restrict vehicle access to five specific access routes should minimize these impacts.

Desert tortoises may be killed or injured by vehicles, resulting from the increased accessibility of the area during and after construction of the SWIP transmission line. Such increased access may also result in increased illegal collection of desert tortoises found on or near roadways. This may impede BLM's effort to manage the project area as a recovery area for desert tortoises. BLM proposes to minimize this impact by requiring rehabilitation of all roadways; however, before rehabilitation is complete, the roadways will be visible to off-road vehicle enthusiasts.

Desert tortoises may be killed or injured by the noise and electrostatic and electromagnetic fields generated by the SWIP transmission lines.

Additional harassment may occur from increased levels of human activity, noise, and ground vibrations produced by vehicles and heavy equipment (Bondello 1976, Bondello et al. 1979); attraction of ravens to the area if trash is not removed immediately (Berry 1985, BLM 1990); capture of tortoises by construction and maintenance crews for use as pets; death or injury of desert tortoises by construction and maintenance crews' unleashed dogs; and entrapment of desert tortoises in their collapsed burrows during blasting. BLM proposes to minimize these adverse impacts by requiring Idaho Power to: (1) Provide a desert tortoise-education program; (2) initiate a leashed-dog program; (3) initiate a trash-abatement program; and (4) initiate a desert tortoise burrow-protection program prior to blasting should minimize these impacts.

The Service has determined that the level of impact described herein will not reduce appreciably the likelihood of survival and recovery of the Mojave population of the desert tortoise in the wild because: (1) The proposed temporary tortoise-proof fencing along the perimeters of all construction zones will exclude desert tortoises from entering the project site during construction; (2) BLM will require Idaho Power to establish and maintain an interest-bearing escrow account for the rehabilitation of desert tortoise habitat; (3) the project site is near U.S. Highway 93, and (4) access roads will be minimized and rehabilitated following construction.

Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered and threatened species or critical habitat that are reasonably certain to occur during the course of the Federal activity subject to consultation. Future Federal actions are subject to the consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

The majority of the land surrounding the project site is under public ownership and managed by BLM. The proposed SWIP would allow utilities in the northwestern, southwestern, and intermountain United States, to add capacity and reliability to the western electrical power system at an economical price. This system may stimulate development in southern Nevada, especially in the Las Vegas Valley.

The Las Vegas Valley is currently undergoing rapid commercial and residential development. Nearly all portions of the valley contain ongoing and planned future developments,

including much of the northern, western, and southern portions, as well as the Henderson area. Over the next 10 years, the Las Vegas Valley is expected to gain over 215,000 residents. Between 1979 and 1986, the amount of developed land in the Las Vegas Valley increased annually by about 7 percent. That trend is expected to continue well into the 1990s.

Clark County is proceeding with preparation of a long-term habitat conservation plan (HCP) for an incidental take permit, pursuant to section 10(a)(1)(B) of the Act. The application will address take of desert tortoises and their habitat from future development projects on all non-Federal lands within Clark County and will propose mitigation to minimize such impacts.

Biological Opinion

It is our Biological Opinion that the issuance of a right-of-way permit for the development of SWIP is not likely to jeopardize the continued existence of the threatened Mojave population of the desert tortoise. Because critical habitat was designated for the Beaver Dam Slope subpopulation in Utah in 1980, but not for the subpopulations in Arizona, California, and Nevada, no critical habitat will be destroyed or adversely modified by issuance of this permit.

Incidental Take

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the reasonable and prudent measures, and the terms and conditions that implement them, as set forth below.

The Service hereby incorporates by reference BLM's 30 mitigation measures from the *Description of the Proposed Action* into this incidental take statement as part of these terms and conditions. The following terms and conditions either specify additional measures considered necessary by the

Service or modify measures proposed by BLM. Where these terms and conditions vary from or contradict mitigation measures proposed under the *Description of the Proposed Action*, specifications in these terms and conditions shall apply. The measures described below are nondiscretionary and must be implemented by BLM so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply.

BLM has a continuing duty to regulate the activity that is covered by this incidental take statement. If BLM fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse.

Based on the analysis of impacts provided above, mitigation measures proposed by BLM, desert tortoise surveys conducted by BLM, and anticipated project duration, the Service anticipates that the following take could occur as a result of the proposed action:

1. Five (5) desert tortoise may be accidently injured or killed by vehicles or equipment during development and maintenance of SWIP.

2. Ninety (90) desert tortoises may be harassed by removal from the boundaries of SWIP.

3. An unknown number of desert tortoise eggs may be destroyed during development of SWIP.

4. An unknown number of desert tortoises may be taken in the form of indirect mortality through predation by ravens drawn to trash within the SWIP site.

5. An unknown number of desert tortoises may be taken indirectly in the form of harm through increased noise associated with operation of heavy equipment.

6. An unknown number of desert tortoises may be taken indirectly in the form of harm through noise and electrostatic and electromagnetic fields associated with operation of 500-kV transmission lines.

7. An unknown number of desert tortoises may be taken indirectly in the form of harm through suffocation in burrows collapsed during blasting operations.

8. An unknown number of desert tortoises may be killed or injured by vehicles driving off-road to conduct emergency repairs of electrical transmission lines.

9. A total of 379.7 acres of desert tortoise habitat may be destroyed during construction of SWIP which could result in harm and/or harassment of desert tortoises.

Reasonable and Prudent Measures

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take:

1. Measures shall be taken to minimize mortality or injury of desert tortoises due to construction or maintenance activities and operation of heavy equipment.

2. Measures shall be taken to minimize predation on tortoises by ravens drawn to construction areas or by unleashed dogs brought to construction areas.

3. Measures shall be taken to minimize destruction of desert tortoise habitat, such as soil compaction, erosion, or crushed vegetation, due to construction or maintenance activities.

4. Measures shall be taken to ensure compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this Biological Opinion.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. To implement Reasonable and Prudent Measure number 1, BLM shall fully implement mitigation measures 7, 9, 10, 11, 12, 14, 15, 25, and 28 from the *Description of the Proposed Action*.

   In addition, to BLM's mitigation measure 9, the following shall be added to their measure:

   > Typical fence design will consist of 1-inch mesh, 48-inch-wide, plastic fence constructed to maintain zero clearance between the ground and the bottom edge of the fence. Other proposed fence designs must be approved by the Service prior to implementation.

   In addition, to BLM's mitigation measure 28, the following shall be added to their measure:

BLM's mitigation measure shall be initiated from March 1 through October 31 during the desert tortoise active period.

In addition, to BLM's mitigation measures, the following terms and conditions shall be implemented:

a. All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed that their activities must be confined to within the marked or flagged areas.

   Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to initiation of construction. Surveys shall provide 100-percent coverage of the entire construction area. All desert tortoise burrows located will be conspicuously flagged or marked. All desert tortoise burrows, and other species' burrows which may be used by desert tortoises, will be examined with a fiber-optic scope, if necessary, to determine occupancy of each burrow by tortoises.

b. From November 1 through February 28, environmental monitors (in place of desert tortoise biologists) will be onsite during all phases of transmission line construction to ensure all construction vehicles and heavy equipment remain in the boundaries of the construction zone delineated by Term and Condition 1.a. above.

c. Any desert tortoises or eggs found along the fence will be removed by qualified tortoise biologists in accordance with the attachment.

d. The tortoise-proof fence shall be monitored at least monthly, particularly following precipitation, and maintained during construction. Monitoring and maintenance shall include regular removal of trash and sediment accumulation and restoration of zero clearance between the ground and the bottom of the fence.

e. Desert tortoises and eggs found within construction sites shall be removed by qualified desert tortoise biologists in accordance with the attachment. Desert tortoises removed from the project sites shall be released into undisturbed habitat within 1,000 feet from the collection site.

Desert tortoises removed from these construction sites shall be placed in the shade of a shrub or in a natural unoccupied burrow similar to the hibernaculum in which it was found, or in an artificial burrow following the protocol provided in the attachment. Desert tortoises shall not be placed on lands outside the administration of the Federal government without the written permission of the landowner. Desert tortoises shall be purposefully moved only by qualified desert tortoise biologists solely for the purpose of moving them out of harm's way.

If a suitable location is not found, desert tortoises shall be provided to a Service-approved transfer facility. The transfer facility must be provided with a 10-day notice that tortoises may be delivered. Idaho Power shall bear all costs associated with delivery of desert tortoises to the transfer facility. Each desert tortoise shall be delivered in an individual cardboard box which is marked with the date and location of collection, Biological Opinion number, and "BLM" to distinguish these desert tortoises from those collected on private lands.

2. To implement Reasonable and Prudent Measure number 2, BLM shall fully implement mitigation measures 8 and 27 from the *Description of the Proposed Action*.

3. To implement Reasonable and Prudent Measure number 3, BLM shall fully implement mitigation measures 1, 2, 3, 5, 6, 13, 16, 17, 18, 21, 22, 23, 24, and 30 from the *Description of the Proposed Action*.

In addition, mitigation measure 1 shall be replaced by the following term and condition and shall be implemented:

Tower sites shall not be located within 100 feet of caliche caves or rock coversites which could be used by tortoises.

In addition, to BLM's mitigation measure 6, the following shall be added to their measure:

Prior to issuance of right-of-way permit, Idaho Power shall transfer $524,067.50 into an interest-bearing escrow account administered by Idaho Power, as offsite mitigation for the destruction of desert tortoise habitat within the project boundaries. The mitigation rate is based on $295 per acre,

multiplied by a compensation value of 5, multiplied by 355.3 acres of long-term disturbance of desert tortoise habitat. Any refunds to Idaho Power shall include principle and interest.

In addition, mitigation measure 16 shall be replaced by the following term and condition and shall be implemented:

> No widening or upgrading of existing access roads will be undertaken in the area of construction and operation, except for minor repairs necessary to make roads passable.

In addition, mitigation measure 24 shall be replaced by the following term and condition and shall be implemented:

> Vehicle use on spur roads, tower sites, and at splicing and tensioning sites, shall occur by crushing of vegetation only (i.e., no blading of such would occur).

In addition, to BLM's mitigation measures, the following terms and conditions shall be implemented:

a. Prior to issuance of right-of-way permit, Idaho Power shall transfer $28,792 into an account administered by Clark County, as offsite mitigation for the destruction of desert tortoise habitat within the project boundaries. The mitigation rate is based on $295 per acre, multiplied by a compensation value of 4, multiplied by 24.4 acres of short-term disturbance of desert tortoise habitat, but will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index beginning January 1, 1994. These funds shall be directly deposited into Desert Tortoise Habitat Conservation Fund Number 236-8290 administered by Clark County for the purpose of securing TMAs, habitat enhancement, and desert tortoise research. None of these funds shall be used to develop a HCP. These funds are independent of any other fees collected by the county for desert tortoise conservation planning. These funds shall be held in an interest-bearing account, and the accrued interest also shall be expended on desert tortoise conservation measures. All section 7 funds shall be expended only at the direction of the Service.

   Total payment must be made prior to issuance of right-of-way for BLM and Idaho Power to be in compliance with the provisions of the Act. Payment,

if made directly, shall be by certified check or money order payable to Clark County, and delivered to:

Clark County
Department of Administrative Services
225 Bridger Avenue, 6th Floor
Las Vegas, Nevada 89155
(702) 455-3530

The payment, whether made directly or transferred under an interlocal agreement, shall be accompanied by a cover letter from the project proponent that identifies the project and biological opinion that is requiring the payment, the amount of payment enclosed, and the number of the check or money order. The cover letter shall also identify the name and address of the project proponent, the name and address of the Federal agency responsible for authorizing the project, and the address of the Service office issuing the biological opinion. This information will be used to notify the project proponent, the authorizing Federal agency, and the Service that the payment has been received.

b. Idaho Power shall patrol the transmission line by helicopter. Any maintenance by vehicle shall require rehabilitation of the vehicle trail upon completion of the maintenance activity. Rehabilitation will be conducted according to a Service approved Construction, Operations, and Maintenance Plan identified in BLM mitigation measure 3.

4. To implement Reasonable and Prudent Measure number 4, BLM shall fully implement mitigation measures 4, 19, 20, 26, and 29 from the *Description of the Proposed Action*.

In addition, to BLM's mitigation measure 19, the following shall be added to their measure:

BLM shall designate a representative responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this Biological Opinion. The designated representative shall provide coordination among BLM, Idaho Power, and the Service.

In addition, to BLM's mitigation measure 20, the following shall be added to their measure:

> The program shall also be presented to all supervisory personnel and personnel associated with maintenance activities in desert tortoise habitat. All such personnel shall also be informed of the terms and conditions included in this Biological Opinion. All such persons shall sign a statement indicating that they have completed the educational program and understand fully its provisions and the terms and conditions included in this Biological Opinion.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the anticipated incidental take that may result from the proposed action. With implementation of these measures, the Service believes that no more than 95 desert tortoises may be incidentally taken (5 killed or injured and 90 harassed) and 379.7 acres of desert tortoise habitat may be destroyed. If, during the course of the action, the level of incidental take identified is exceeded, reinitiation of consultation will be required. BLM must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

Upon locating a dead, injured, or sick endangered or threatened species, initial notification must be made to the Service's Division of Law Enforcement, Special Agent Edward Dominguez, in Las Vegas, Nevada, at telephone number (702) 388-6380. Care should be taken in handling sick or injured desert tortoises to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured desert tortoises or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by the Law Enforcement Division to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Sick or injured desert tortoises shall be delivered to any qualified veterinarian for appropriate treatment or disposal. Dead desert tortoises suitable for preparation as museum specimens shall be frozen immediately and provided to an institution holding appropriate Federal and State permits per their instructions. Should no institutions want the desert tortoise specimens, or if it is determined that they are too damaged (crushed, spoiled, etc.) for preparation as a museum specimen, then they may be buried away from the project area

or cremated. The applicant or project proponent shall bear the cost of any required treatment of injured desert tortoises, euthanasia of sick desert tortoises, or cremation of dead desert tortoises. Should sick or injured desert tortoises be treated by a veterinarian and survive, they may be transferred as directed by the Service.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information.

> The Service recommends that BLM in cooperation with Idaho Power conduct a long-term study to determine if the effects of audible noise and electrostatic and electromagnetic fields generated by SWIP transmission project on desert tortoises living in Coyote Spring Valley.

In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

Reinitiation Requirement

This concludes formal consultation on the actions outlined in the December 23, 1992, request. As required by 50 CFR § 402.16, reinitiation of formal consultation is required if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

The designation of the Mormon Mesa Desert Wildlife Management Area and/or the designation of the Coyote Spring Tortoise Management Area may provide significant new information that warrants reinitiation of consultation. In instances where the amount or extent of incidental take is exceeded, any operations that are causing such take must be stopped in the interim period between the initiation and completion of the

new consultation if any additional taking is likely to occur.

We appreciate the assistance and cooperation of your staff throughout this consultation process. If we can be of any further assistance, please contact me or Mark Maley at (702) 784-5227.

for David L. Harlow

Attachment

cc:
Idaho Power Company, Boise, Idaho (Attn: Patrick Hasenoehrl)
District Manager, Las Vegas District, Bureau of Land Management, Las Vegas, Nevada (Attn: Sid Slone)
(w/atch)
Operations Services Coordinator, Administrative Services, Clark County, Las Vegas, Nevada
Desert Tortoise HCP Coordinator, The Nature Conservancy, Las Vegas, Nevada
Director, Nevada Department of Wildlife, Reno, Nevada
Regional Manager, Nevada Department of Wildlife, Las Vegas, Nevada
State Director, Nevada State Office, Bureau of Land Management, Reno, Nevada
Chief, Division of Endangered Species, Fish and Wildlife Service, Arlington, Virginia
Senior Resident Agent, Division of Law Enforcement, Fish and Wildlife Service, Reno, Nevada
Special Agent, Division of Law Enforcement, Fish and Wildlife Service, Las Vegas, Nevada
Assistant Regional Director, Ecological Services, Fish and Wildlife Service, Portland, Oregon (Attn: Richard Hill)
(all w/o atch)

Literature Cited

Berry, K. H. (ed.) 1984. The status of the desert tortoise (*Gopherus agassizii*) in the United States. Report from the Desert Tortoise Council to the U.S. Fish and Wildlife Service, Sacramento, California. Order No. 11310-0083-81.

Berry, K. H. and B. L. Burge. 1984. The desert tortoise in Nevada. Chapter 8 *In*: The status of the desert tortoise (*Gopherus agassizii*) in the United States. Report to U.S. Fish and Wildlife Service from the Desert Tortoise Council. Order No. 11310-0083-81.

Berry, K. H. 1985. Avian predation on the desert tortoise (*Gopherus agassizii*) in California. U.S. Bureau of Land Management, Riverside, California. Report to Southern California Edison Company, Rosemead, California.

Bondello, M. C. 1976. The effects of high-intensity motorcycle sounds on the acoustical sensitivity of the desert iguana *(Dipsosaurus dorsalis)*. M.A. Thesis, Biology Dept., California State University, Fullerton. 37 pp.

Bondello, M. C., A. C. Huntley, H. B. Cohen, and B. H. Brattstrom. 1979. The effects of dune buggy sounds on the telencephalic auditory evoked response in the Mojave fringe-toed lizards (*Uma scoparia*). Report, Contract NO. CA-060-CT7-2737, USDI Bureau of Land Management, Riverside, California. 31 pp.

Brussard, P. F., K. H. Berry, M. E. Gilpin, E. R. Jacobson, D. J. Morafka, C. Schwalbe, C. R. Tracy, and F. C. Vacek. 1933. Draft Recovery Plan for the Desert Tortoise (Mojave Population). Prepared for the U.S. Fish and Wildlife Service, Portland, Oregon. 173 pp.

Burge, B. L. 1978. Physical characteristics and patterns of utilization of cover sites by *Gopherus agassizii* in southern Nevada. Proc. 1978 Symp. Desert Tortoise Council. pp. 80-111.

Burge, B. L., and W. G. Bradley. 1976. Population density, structure and feeding habits of the desert tortoise *(Gopherus agassizii)*, in a low desert study area in southern Nevada. Proc. 1976 Symp. Desert Tortoise Council. pp. 51-74.

Bury, R. B. 1978. Desert tortoises and off-road vehicles: do they mix? Proc. 1978 Symp. Desert Tortoise Council. p. 126.

Dames & Moore. 1992. Biological Assessment for the Southwest Intertie Project prepared for BLM in behalf of the Idaho Power Company by Dames & Moore. December 1992. 38 pp. Dames & Moore, 1790 East River Road, Suite E-300, Tucson, Arizona 85718

Hastey, E., L. K. Rosenkrance, B. R. Templeton, J. M. Parker, W. H. Radtkey, D. L. Harlow, B. D. Taubert, F. Worthley, W. A. Molini, R. D. Radant, S. Spiller, and R. Harris. 1991. Compensation for the Desert Tortoise: A report prepared for the Desert Tortoise Management Oversight Group by the Desert Tortoise Compensation Team. November 13, 1991. 16 pp.

Hovik, D. C. and D. B. Hardenbrook. 1989. Summer and fall activity and movements of desert tortoise in Pahrump Valley, Nevada. Abstract of paper presented at the Fourteenth Annual Meeting of the Desert Tortoise Council.

Karl. A. 1981. The distribution and relative densities of the desert tortoise (*Gopherus agassizii*) in Lincoln and Nye counties, Nevada. Proc. 1981 Symp. Desert Tortoise Council. pp. 76-92.

Karl, A. E. 1983a. The distribution and relative densities of the desert tortoise (*Gopherus agassizi*) in Clark County, Nevada. Unpubl. Rept. to Bureau of Land Management, Denver, Colorado. Contract No. YA-512-CT9-90. 46 pp.

Karl, A. E. 1983b. The distribution, relative densities, and habitat associations of the desert tortoise (*Gopherus agassizii*) in Nevada. MS Thesis, California State University, Northridge. 111 pp.

Luckenbach, R. A. 1975. What the ORVs are doing to the desert. Fremontia 2:3-11

Luckenbach, R. A. 1982. Ecology and management of the desert tortoise (*Gopherus agassizii*) in California. *In*: R. B. Bury (ed.). North American Tortoise: Conservation and Ecology. U.S. Fish and Wildlife Service, Wildlife Research Report 12, Washington, D.C.

Nicholson, Lori. 1978. The effects of roads on desert tortoise populations. Proc. 1978 Symp. Desert Tortoise Council. pp. 127-129.

Regional Environmental Consultants. 1991. Short-term habitat conservation plan for the desert tortoise in Las Vegas Valley, Clark County, Nevada. Prepared for Clark County, 225 Bridger Avenue, Las Vegas, Nevada 89155. January 1991. 143 pp.

Spang, E. F., G. W. Lamb, F. R. Rowley, W. H. Radtkey, R. R. Olendorff, E. A. Dahlem, and S. Slone. 1988. Desert tortoise habitat management on public lands: A rangewide plan. Bureau of Land Management, Division of Wildlife and Fisheries, Washington. D.C. 23 pp.

U.S. Bureau of Land Management. 1990. Draft Raven Management Plan for the California Desert Conservation Area. Prepared by Bureau of Land Management, California Desert District, Riverside, California. April 1990.

U.S. Bureau of Land Management. 1993. Memorandum from Las Vegas District Office, Bureau of Land Management, providing additional information regarding SWIP. Prepared by Bureau of Land Management, Las Vegas District Office. March 26, 1993.

U.S. Fish and Wildlife Service. 1990. Endangered and threatened wildlife and plants; Determination of threatened status for the Mojave population of the desert tortoise. 55 FR 12178. April 2, 1990.

Weinstein, M., K. H. Berry, and F. B. Turner. 1987. An analysis of habitat relationships of the desert tortoise in California. A report prepared for Southern California Edison Company. 96 pp.

ATTACHMENT

DESERT TORTOISE HANDLING AND OVERWINTERING PROCEDURES

(Note: Much of the information contained herein was obtained from Chapter III, Protocols for Handling Live Tortoises, in the Interim Techniques Handbook for Collecting and Analyzing Data on Desert Tortoise Populations and Habitats. This handbook is a cooperative effort among federal and state agencies. Primary editor is Dr. Cecil Schwalbe of the University of Arizona, Tucson, Arizona. The information on handling tortoise eggs was developed by the Reno Field Station in consultation with Dr. Schwalbe, Betty Burge of Las Vegas, Nevada, and the Service's Ventura Field Office.)

1. All desert tortoises shall be handled in a careful manner. This includes lifting the animal slowly, fully supporting the animal in an upright position, and completing various measurements in the minimum amount of time. A tortoise can be damaged or die of intestinal torsion. If a tortoise must be turned over on its back, this should be done gently. The fieldworker shall turn the tortoise over by carefully rolling it over on its side to its back, and return the tortoise to the upright position by rolling it back in the same direction. The tortoise shall not be rolled end over end, side over side, or spun.

   Tortoises, especially females, may be fatally damaged by blows, butting, or overturning, which results in egg yolk peritonitis brought on by seepage of egg yolk or breakage of shelled eggs into the peritoneal cavity. Handling of potentially gravid females shall be done very carefully.

   To prevent hyperthermia, on warm days a tortoise must be kept in the shade (of the fieldworker, a pack, other equipment, etc.) except during photography. Tortoises shall not be weighed, measured, etc. when air temperatures exceed 90°F (32°C) at 1.5 m (4.9 ft) above ground unless measures are taken to insure the animal does not overheat. Tortoises shall be placed in shaded areas during handling, and if the animal is to be held for a longer period, it shall be individually placed in a sterile cardboard box, placed in a shaded, cool location and returned to the site of capture or relocation at sunrise on the following day. CAUTION! TEMPERATURES ARE MUCH HIGHER NEARER THE GROUND. Take extreme caution to avoid overheating a tortoise whenever surface temperatures exceed 86°F (30°C). Shield the bulb of the thermometer from direct solar radiation and wind when measuring temperatures.

2. Because of the threat of Upper Respiratory Tract Disease (URTD), all tortoises shall be handled so as to minimize the chances of spreading the disease, even if URTD has not been documented in a given locality. All personnel handling tortoises must be initially trained using protocols developed by Dr. Cecil Schwalbe of the University of Arizona. These protocols will be used to minimize the spread of URTD. All personnel handling tortoises shall wear disposable latex or plastic gloves to prevent transmission of diseases among tortoises. Not more than one tortoise shall be handled with each pair of gloves.

   All equipment that comes in contact with any tortoise shall be sterilized before it is used on another tortoise. For example, triangular files for notching, calipers for measuring shell length, rules, and other equipment should be sterilized by soaking in 95% isopropyl or ethyl alcohol for at least 20 minutes before using on another tortoise. A 25% solution of chlorine bleach may also be used, but bleach is extremely corrosive and may damage many types of equipment. Wooden rules should not be used; they are difficult to sterilize because of the porosity of the wood. Use metal or plastic rules instead.

   To avoid sterilizing spring scales or weighing straps prior to weighing each tortoise, use individual "T-shirt" bags, the plastic bags with two handles that are used to bag groceries. The handles of the bag can be used to suspend the tortoise during weighing.

   The fieldworker's clothes shall be changed completely, including shoes, before visiting other tortoise sites. Dr. Schwalbe defines a site as follows: "As a general rule, a single valley or desert mountain range would be considered one site, unless there were special circumstances, such as URTD confirmed in one part of a valley, but not thought to occur in other parts of that valley. In such an instance, a change of clothes would be necessary before visiting other parts of that valley." Always visit the site with known occurrence of URTD last to minimize the chance of spreading the disease. Vehicle undercarriages and tires shall be washed when travelling between sites where URTD is known or suspected to occur. The fieldworker is not required to wash vehicles if there are no confirmed reports of URTD on a study site. The fieldworker shall consider that wet soil carrying microbes will adhere to vehicles, and such microbes are less likely to die before a new study area is visited. It is advisable to wash a vehicle after driving in wet soil if feasible.

When transported by vehicle or confined, each tortoise shall be contained in a newly-purchased, clean cardboard box of an appropriate size. Boxes shall be discarded after use. Tortoises shall never be placed in automobile trunks or on floorboards in an unconfined manner. Tortoises shall never be placed in the bed of a truck over the catalytic converter as this area of the metal bed may become extremely hot. Tortoises must not be left unattended in vehicles; this measure is intended to eliminate accidental mortality caused by overheating. Truck beds and floorboards must be padded and travel shall be at speeds which eliminate unnecessary vibrations.

3. Tortoises removed from the project area and released into the wild as a result of mitigation measures for this project shall not be individually marked, except for those hibernating tortoises removed temporarily as specified under Procedure number 6 below. These tortoises shall be marked per Bureau of Land Management (BLM) standards (Attachment A-1). Tagging is the current preferred method for long-term marking and is supplemented with photographs and drawings. All three methods should be used to insure that over time the tortoise can be properly identified in future years.

Tagging: Tagging was originally used in 1977 and appears to be as effective or better than notching for a long-term marking technique. Place a small dot of white paint or a small piece of heavy white paper (card stock) on the fourth left costal scute; wait for the paint to dry. Write the identifying number for that tortoise on the dry dot or paper using permanent black ink. Wait for the ink to dry and cover the dot or paper and the ink with quick-drying clear epoxy. Note that the epoxy shall not touch the suture lines between the scutes. Numbers shall not be placed in the middle of the scute as this area may be sloughed or rubbed depending on the age of the tortoise and habitat in which it occurs.

In addition a photograph (35mm slide) of the carapace and fourth left costal scute shall be taken. If possible dust off the tortoise with a small brush to remove mud or dust from the scutes. Remember the brush must be either sterilized or disposed of after each use. Place a small piece of white paper (16 mm x 90 mm) on the edge of the shell with information on the study site name, date, and tortoise number. The tortoise shell area and fourth costal scute shall fill the slide frame. Drawings shall be made showing any anomalies (e.g., extra or missing marginal, costal, or vertebral scutes) or injuries (e.g., punctures holes from canines, tooth scrapes).

The responsible Federal Agency shall develop its own cataloging format to enable it and others to track tortoises handled as a result of development projects.

4. A standard data sheet should be developed to record the following information:
   - A. Name of person collecting the animal.
   - B. Exact location and date of collection.
   - C. The individual number assigned to that animal.
   - D. The over-wintering location of the tortoise.
   - E. The release site and date of release of the animal.
   - F. Health condition of the tortoise, including measured weight and length at initial capture and release. In addition to this information complete the URTD checklist (Attachments A-2 & A-3).
   - G. Photographs of carapace, plastron, and fourth left costal scute.
   - H. The information specified in 4.A. through 4.G. must be supplied to the responsible Federal agency and the Fish and Wildlife Service (Service) immediately after cessation of both tortoise clearing and release activities. The information shall be provided in the form of a report accompanied by data sheets.

5. Tortoises found actively moving on the surface, and to be removed from the project site, shall be released between 150 and 1000 feet from the outer boundary of the project area nearest the capture point. Relocated tortoises shall be placed under a shrub in the shade. Tortoises shall be monitored at the release site until they are exhibiting normal behavior. Should the capture occur late in the day so the animal will not have sufficient time to find a suitable burrow for the night, the tortoise shall be placed in a clean cardboard box as described above and held in an appropriate place safe from predators and danger of hyperthermia, until release can occur in the morning.

6. If tortoises found in burrows, and to be removed from the project site and released into the wild, are removed from burrows between November 1 and March 15, they shall be transported in cardboard boxes to the approved over-wintering site. Each tortoise shall be placed in an artificial burrow within a fenced enclosure with one tortoise per enclosure. Each enclosure must be separate from adjacent pens so that one tortoise can not place its head or limbs through the fence and physically contact a tortoise in an adjacent enclosure. Fencing does not need to be buried but shall be stable enough to preclude escape.

The main chamber of the burrow shall be constructed of plywood and the roof placed approximately 2.5 feet below the soil surface. The burrow's tunnel shall be eight to 10 feet long with a gentle slope (e.g., about 4:1). The tunnel shall be stabilized on the top with PVC pipe cut in half. The pipe shall be no smaller than 15 inch in diameter and soil shall be used to adjust tunnel to tortoise size. After placement of the tortoise in the burrow, the entrance of the tunnel shall be partially blocked with loose topsoil.

If any tortoise excavated is underweight, as determined by comparison to regressions developed by Dr. Michael Weinstein for the tortoises at the Honda project, the tortoise shall be placed in a room at a temperature of 90° to 100°F and allowed to soak in fresh water for two to three hours. After rehydration and drying, the tortoise shall be cooled to hibernation temperature slowly and placed in an artificial burrow. This procedure shall be implemented only by persons instructed in this manner of treatment.

Beginning in February, activity of the tortoises within the artificial burrows shall be monitored to determine an appropriate release time. Tortoises shall be released in the morning hours when temperatures are conducive to activity. The appropriate time for release will probably occur in the third week of March.

Each tortoise shall be released between 150 and 1000 feet from the outer boundary of the project area nearest the capture point. Released tortoises shall be placed under a shrub in the shade. Releases shall occur at a temperature that is suitable for activity, with reasonable expectation that the temperature will remain within the tortoise's thermal preference long enough for the tortoise to adjust to its surroundings. Tortoises shall be monitored at the release site until they are exhibiting normal behavior. To facilitate this measure, each tortoise must be accompanied by one of the approved biologists. There shall be no mass releases of animals.

7. Tortoise eggs shall be moved to artificial nests either in the wild or at an approved facility. Biologists must receive special training in the procedures outlined below, but such training can be obtained after a nest is actually found. If this is done, the nest shall be carefully covered with soil so as not to move the eggs and protected until on site training is provided. The responsible Federal agency shall ensure that this training is made available.

Any nest that is found shall be carefully excavated by hand at a time of day when the air temperature 6 inches above the ground is approximately equal to the soil temperature at egg level. Immediately upon finding a nest, large tool use shall be discontinued and the nest excavated by the biologist using his or her hands. Before disturbance of nest contents, each egg shall be gently marked with a small dot on the top using a felt-tipped pen to establish the egg's orientation in the nest. In handling nest contents, eggs must be maintained in this orientation at all times. Because egg shells become extremely fragile in the last few weeks before hatching, special care shall be taken with eggs found from August to mid-October. Because these eggs are very fragile, some may break during handling. This will be lethal to egg contents. Such an accident can be expected to occur until techniques are developed to avoid this type of incident. Broken eggs shall be buried nearby and left in the field, or the contents preserved and provided to qualified researchers.

The biologist shall measure and record the depth of the nest below the soil surface, the location of the nest in relation to any adjacent shrub (i.e., whether on the north, south, east, or west side of the shrub), the species of shrub and its approximate foliage volume, and the soil type. Place approximately one inch of soil from the nest area in a bucket and carefully transfer the eggs to the bucket, maintaining egg orientation. Cover the eggs with soil that is free of cobbles and pebbles, to a depth equivalent to that in the original nest.

If good tortoise habitat is available in the general area, the eggs shall be relocated between 150 to 1,000 feet from outer boundary of the project site. Prepare a nest with the same depth, orientation, location in relation to a specific shrub species, and in the same soil type as the original nest. Carefully transfer the eggs, maintaining their original orientation, to the new nest. The eggs shall be replaced so that they touch one another. Gently cover with soil from which cobbles and pebbles have been removed so that all the air spaces around the eggs are filled. Relocated nests in the wild shall be monitored by a qualified biologist. The monitoring program shall be developed in consultation with the Service.

If a suitable site for a new nest is not available in the wild, the eggs shall be prepared for incubation in a suitable holding facility. Place a small amount of soil in a bucket and transfer the eggs to the bucket using the technique specified above, making sure the eggs are touching one another. Carefully fill the bucket to the

depth of the original nest, but leave the top of the soil layer 3 inches below the rim of the bucket so that future hatchlings cannot escape. Bury the bucket in soil in a safe location at an approved holding facility.

The biologist shall record in detail all the procedures used in moving eggs. Personnel caring for incubating eggs at a facility shall maintain a record of where the eggs were found, method of incubation, length of time and conditions under which the eggs were incubated, observations of eggs during the incubation period, information about hatchling health and behavior, and disposition of the hatchlings.

8. Should any deviation from the procedures outlined above be necessary, the approved biologist shall contact the Fish and Wildlife Service as soon as possible.

9. A final report, containing all the information noted above and including release information, must be supplied to the Service and the responsible Federal agency within one month of the final releases or disposition of tortoises.

APPENDIX D

COMMITTED MITGATION FOR THE PROPOSED ACTION

APPENDIX D-1

COMMITTED MITIGATION FOR THE PROPOSED ACTION

MIDPOINT TO DRY LAKE

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
10	0.0	0.1		♦	♦		♦	♦			♦		♦	
10	0.1	0.2	♦				♦	♦			♦		♦	
10	0.2	0.3	♦				♦				♦		♦	
10	0.3	0.4	♦				♦				♦		♦	
10	0.4	0.5	♦				♦				♦		♦	
10	0.5	0.6	♦				♦				♦		♦	
10	0.6	0.7	♦				♦				♦		♦	
10	0.7	0.8		♦	♦		♦				♦		♦	
10	0.8	0.9		♦	♦		♦				♦		♦	
10	0.9	1.0		♦	♦	♦	♦				♦		♦	
10	1.0	1.1		♦	♦	♦	♦				♦		♦	
10	1.1	1.2		♦	♦	♦	♦				♦		♦	
10	1.2	1.3	♦				♦				♦		♦	
10	1.3	1.4	♦				♦				♦		♦	
10	1.4	1.5		♦	♦	♦	♦				♦		♦	
10	1.5	1.6	♦				♦				♦	♦	♦	
10	1.6	1.7	♦				♦	♦			♦	♦	♦	
10	1.7	1.8	♦				♦	♦			♦	♦	♦	
10	1.8	1.9	♦			♦	♦	♦			♦			
10	1.9	2.0	♦			♦	♦	♦			♦			
10	2.0	2.1	♦				♦				♦		♦	
10	2.1	2.2	♦			♦	♦	♦			♦		♦	
10	2.2	2.3	♦				♦				♦		♦	
10	2.3	2.4				♦	♦	♦			♦			
10	2.4	2.5				♦	♦	♦			♦			
10	2.5	2.6				♦	♦	♦			♦			
10	2.6	2.7		♦	♦	♦	♦				♦		♦	
10	2.7	2.8				♦	♦	♦			♦			
10	2.8	2.9				♦	♦	♦						
10	2.9	3.0				♦	♦	♦						
10	3.0	3.1				♦	♦				♦			
10	3.1	3.2				♦	♦				♦			
10	3.2	3.3				♦	♦				♦			
10	3.3	3.4		♦	♦	♦	♦				♦		♦	
10	3.4	3.5		♦	♦	♦	♦				♦		♦	
10	3.5	3.6		♦	♦	♦	♦				♦		♦	
10	3.6	3.7		♦	♦	♦	♦				♦		♦	
10	3.7	3.8		♦	♦	♦	♦				♦		♦	
10	3.8	3.9		♦	♦		♦				♦		♦	
10	3.9	4.0		♦	♦	♦	♦				♦		♦	
10	4.0	4.1		♦	♦		♦				♦		♦	
10	4.1	4.2		♦	♦		♦				♦		♦	
10	4.2	4.3	♦				♦				♦		♦	
10	4.3	4.4	♦				♦				♦		♦	
10	4.4	4.5	♦				♦				♦		♦	
10	4.5	4.6	♦				♦				♦		♦	
10	4.6	4.7	♦				♦				♦		♦	
10	4.7	4.8		♦	♦		♦				♦		♦	
10	4.8	4.9		♦	♦		♦				♦		♦	
10	4.9	5.0		♦	♦		♦				♦		♦	
10	5.0	5.1		♦	♦		♦				♦		♦	
10	5.1	5.2	♦				♦				♦		♦	
10	5.2	5.3	♦				♦				♦		♦	
10	5.3	5.4	♦				♦				♦		♦	
10	5.4	5.5	♦				♦				♦		♦	
10	5.5	5.6	♦	♦	♦		♦				♦		♦	
10	5.6	5.7		♦	♦		♦				♦		♦	
10	5.7	5.8		♦	♦		♦				♦		♦	
10	5.8	5.9		♦	♦		♦				♦		♦	
10	5.9	6.0	♦				♦				♦	♦	♦	
10	6.0	6.1		♦	♦		♦				♦	♦	♦	
10	6.1	6.2	♦	♦	♦		♦				♦	♦	♦	
10	6.2	6.3		♦	♦		♦				♦		♦	
10	6.3	6.4		♦	♦		♦				♦		♦	
10	6.4	6.5		♦	♦		♦				♦		♦	
10	6.5	6.6	♦				♦				♦		♦	
10	6.6	6.7	♦				♦				♦		♦	
10	6.7	6.8	♦	♦	♦		♦				♦	♦	♦	
10	6.8	6.9		♦	♦	♦	♦				♦	♦		
10	6.9	7.0				♦	♦				♦			

* Refer to Table 1-5 in this document for Committed Mitigation Measures

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
10	7.0	7.1				♦	♦				♦			
10	7.1	7.2				♦	♦				♦			
10	7.2	7.3				♦	♦				♦			
10	7.3	7.4				♦	♦				♦			
10	7.4	7.5	♦				♦				♦		♦	
10	7.5	7.6	♦				♦				♦		♦	
10	7.6	7.7	♦				♦				♦		♦	
10	7.7	7.8	♦	♦	♦		♦				♦		♦	
10	7.8	7.9		♦	♦		♦				♦		♦	
10	7.9	8.0		♦	♦		♦				♦		♦	
10	8.0	8.1		♦	♦		♦				♦		♦	
10	8.1	8.2		♦	♦		♦				♦		♦	
10	8.2	8.3		♦	♦	♦	♦				♦		♦	
10	8.3	8.4		♦	♦	♦	♦				♦		♦	
10	8.4	8.5		♦	♦	♦	♦				♦		♦	
10	8.5	8.6		♦	♦	♦	♦				♦		♦	
10	8.6	8.7		♦	♦		♦				♦		♦	
10	8.7	8.8		♦	♦	♦	♦				♦		♦	
10	8.8	8.9		♦	♦	♦	♦				♦		♦	
10	8.9	9.0		♦	♦		♦				♦		♦	
10	9.0	9.1		♦	♦	♦	♦				♦		♦	
10	9.1	9.2		♦	♦	♦	♦				♦		♦	
10	9.2	9.3		♦	♦	♦	♦				♦		♦	
10	9.3	9.4		♦	♦		♦				♦		♦	
10	9.4	9.5		♦	♦		♦				♦		♦	
10	9.5	9.6		♦	♦		♦				♦		♦	
10	9.6	9.7		♦	♦		♦				♦		♦	
10	9.7	9.8		♦	♦		♦				♦		♦	
10	9.8	9.9		♦	♦		♦				♦		♦	
10	9.9	10.0		♦	♦		♦				♦		♦	
10	10.0	10.1		♦	♦		♦				♦		♦	
10	10.1	10.2		♦	♦		♦				♦		♦	
10	10.2	10.3	♦				♦				♦		♦	
10	10.3	10.4	♦				♦				♦		♦	
10	10.4	10.5	♦				♦	♦			♦		♦	
10	10.5	10.6	♦				♦				♦		♦	
10	10.6	10.7	♦				♦				♦		♦	
10	10.7	10.8	♦				♦				♦		♦	
10	10.8	10.9	♦				♦				♦		♦	
10	10.9	11.0	♦				♦				♦		♦	
10	11.0	11.1	♦				♦						♦	
10	11.1	11.2	♦				♦				♦		♦	
10	11.2	11.3	♦				♦				♦		♦	
10	11.3	11.4	♦	♦	♦		♦				♦		♦	
10	11.4	11.5		♦	♦		♦				♦		♦	
10	11.5	11.6		♦	♦		♦				♦		♦	
10	11.6	11.7	♦				♦				♦		♦	
10	11.7	11.8	♦				♦				♦		♦	
10	11.8	11.9	♦				♦	♦			♦		♦	
10	11.9	12.0		♦	♦		♦	♦			♦		♦	
10	12.0	12.1		♦	♦		♦				♦		♦	
10	12.1	12.2		♦	♦		♦				♦		♦	
10	12.2	12.3		♦	♦		♦				♦		♦	
10	12.3	12.4		♦	♦		♦				♦		♦	
10	12.4	12.5		♦	♦		♦				♦		♦	
10	12.5	12.6		♦	♦		♦				♦		♦	
10	12.6	12.7	♦				♦				♦		♦	
10	12.7	12.8	♦	♦	♦		♦				♦		♦	
10	12.8	12.9	♦				♦				♦		♦	
10	12.9	13.0	♦				♦				♦		♦	
10	13.0	13.1	♦				♦				♦		♦	
10	13.1	13.2	♦				♦				♦		♦	
10	13.2	13.3	♦				♦				♦		♦	
10	13.3	13.4	♦				♦	♦			♦		♦	
10	13.4	13.5	♦				♦	♦			♦		♦	
10	13.5	13.8				♦	♦	♦			♦			
10	13.6	13.7					♦	♦			♦			
	Total Miles		5.9	6.8	6.8	3.9	13.7	2.0	0.0	0.0	13.4	0.8	11.8	0.0
20	0.0	0.1					♦	♦			♦			
20	0.1	0.2				♦	♦	♦			♦			
20	0.2	0.3					♦	♦			♦			
20	0.3	0.4				♦	♦	♦			♦			
20	0.4	0.5				♦	♦	♦			♦			
20	0.5	0.6				♦	♦	♦		♦	♦	♦		
20	0.6	0.7	♦			♦	♦	♦		♦	♦	♦		
20	0.7	0.8				♦	♦			♦	♦	♦		
20	0.8	0.9					♦	♦		♦	♦	♦		
20	0.9	1.0				♦	♦	♦			♦	♦		
20	1.0	1.1				♦	♦				♦			
20	1.1	1.2				♦	♦				♦			
20	1.2	1.3				♦	♦				♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
20	1.3	1.4				♦	♦				♦			
20	1.4	1.5				♦	♦				♦			
20	1.5	1.6				♦	♦				♦			
20	1.6	1.7				♦	♦				♦			
20	1.7	1.8				♦	♦				♦			
20	1.8	1.9				♦	♦				♦			
20	1.9	2.0				♦	♦				♦			
20	2.0	2.1				♦	♦				♦			
20	2.1	2.2				♦	♦				♦			
20	2.2	2.3	♦				♦				♦		♦	
20	2.3	2.4		♦	♦		♦				♦	♦	♦	
20	2.4	2.5		♦	♦		♦				♦	♦	♦	
20	2.5	2.6		♦	♦		♦				♦	♦	♦	
20	2.6	2.7		♦	♦		♦				♦		♦	
20	2.7	2.8		♦	♦	♦	♦				♦		♦	
20	2.8	2.9		♦	♦	♦	♦				♦		♦	
20	2.9	3.0		♦	♦	♦	♦				♦		♦	
20	3.0	3.1		♦	♦	♦	♦				♦		♦	
20	3.1	3.2		♦	♦	♦	♦				♦		♦	
20	3.2	3.3		♦	♦		♦				♦		♦	
20	3.3	3.4		♦	♦		♦				♦		♦	
20	3.4	3.5		♦	♦		♦				♦		♦	
20	3.5	3.6	♦				♦				♦		♦	
20	3.6	3.7	♦				♦				♦		♦	
20	3.7	3.8	♦				♦				♦		♦	
20	3.8	3.9		♦	♦		♦				♦		♦	
20	3.9	4.0		♦	♦		♦	♦			♦		♦	
20	4.0	4.1		♦	♦		♦				♦		♦	
20	4.1	4.2		♦	♦		♦				♦		♦	
20	4.2	4.3		♦	♦		♦				♦		♦	
20	4.3	4.4		♦	♦		♦				♦		♦	
20	4.4	4.5		♦	♦		♦	♦			♦		♦	
20	4.5	4.6		♦	♦	♦	♦				♦		♦	
20	4.6	4.7		♦	♦	♦	♦				♦	♦	♦	
20	4.7	4.8	♦			♦	♦	♦			♦	♦	♦	
20	4.8	4.9	♦				♦	♦			♦		♦	
20	4.9	5.0	♦				♦	♦			♦	♦		
20	5.0	5.1				♦	♦	♦			♦			
20	5.1	5.2				♦	♦				♦			
20	5.2	5.3				♦	♦				♦			
20	5.3	5.4				♦	♦				♦			
20	5.4	5.5					♦	♦			♦			
20	5.5	5.6					♦	♦		♦	♦			
	Total Miles		0.8	2.1	2.1	3.1	5.6	1.7	0.0	0.5	5.6	1.1	2.7	0.0
41	0.0	0.1					♦	♦		♦	♦			
41	0.1	0.2					♦	♦		♦	♦			
41	0.2	0.3					♦	♦		♦	♦			
41	0.3	0.4				♦	♦			♦	♦			
41	0.4	0.5				♦	♦				♦			
41	0.5	0.6				♦	♦				♦			
41	0.8	0.7				♦	♦				♦			
41	0.7	0.8				♦	♦				♦			
41	0.8	0.9				♦	♦	♦			♦			
41	0.9	1.0				♦	♦	♦			♦			
41	1.0	1.1		♦	♦	♦	♦	♦			♦			
41	1.1	1.2	♦				♦	♦			♦			
41	1.2	1.3				♦	♦	♦			♦			
41	1.3	1.4				♦	♦	♦			♦			
41	1.4	1.5				♦	♦				♦			
41	1.5	1.6		♦	♦	♦	♦				♦			
41	1.6	1.7		♦	♦		♦				♦			
41	1.7	1.8		♦	♦	♦	♦				♦			
41	1.8	1.9		♦	♦	♦	♦				♦			
41	1.9	2.0		♦	♦	♦	♦				♦			
41	2.0	2.1	♦				♦			♦	♦			
41	2.1	2.2	♦				♦			♦	♦			
41	2.2	2.3				♦	♦			♦	♦			
41	2.3	2.4				♦	♦	♦		♦	♦			
41	2.4	2.5				♦	♦			♦	♦			
41	2.5	2.6				♦	♦				♦			
41	2.6	2.7				♦	♦				♦			
41	2.7	2.8	♦	♦	♦	♦	♦				♦			
41	2.8	2.9		♦	♦	♦	♦	♦			♦			
41	2.9	3.0		♦	♦	♦	♦	♦			♦			
41	3.0	3.1		♦	♦	♦	♦	♦			♦	♦		
41	3.1	3.2				♦	♦	♦			♦			
41	3.2	3.3				♦	♦	♦			♦			
41	3.3	3.4				♦	♦				♦			
41	3.4	3.5				♦	♦			♦	♦			
41	3.5	3.6	♦			♦	♦	♦		♦	♦			

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continucd)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
41	3.6	3.7		♦	♦	♦	♦			♦	♦	♦		
41	3 7	3 8				♦	♦				♦			
41	3 8	3 9	♦				♦				♦	♦		
41	3 9	4 0				♦	♦				♦			
41	4 0	4 1	♦			♦	♦	♦			♦			
41	4 1	4 2		♦	♦	♦	♦				♦			
41	4 2	4 3	♦			♦	♦	♦			♦			
41	4.3	4 4				♦	♦				♦			
41	4 4	4 5				♦	♦				♦			
41	4 5	4 6				♦	♦				♦			
41	4.6	4 7				♦	♦				♦			
41	4 7	4 8	♦			♦	♦	♦			♦			
41	4.8	4 9	♦				♦	♦			♦			
41	4.9	5 0	♦				♦	♦			♦			
41	5.0	5 1	♦				♦	♦			♦			
41	5 1	5.2	♦			♦	♦	♦		♦	♦			
41	5 2	5.3				♦	♦	♦		♦	♦			
41	5 3	5.4	♦			♦	♦	♦		♦	♦			
41	5 4	5 5	♦				♦	♦		♦	♦			
41	5.5	5 6				♦	♦	♦		♦	♦			
41	5.6	5 7					♦	♦			♦			
41	5.7	5.8					♦	♦			♦			
41	5 8	5.9				♦	♦	♦			♦			
41	5 9	6.0				♦	♦	♦			♦			
41	6 0	6 1	♦				♦	♦			♦			
41	6.1	6.2					♦	♦			♦			
41	6 2	6 3					♦	♦			♦			
41	6 3	6.4	♦				♦				♦			
41	6 4	6.5				♦	♦				♦			
41	6.5	6 6				♦	♦							
41	6 6	6 7					♦	♦						
41	6 7	6 8					♦	♦						
41	6 8	8 9					♦	♦						
41	6 9	7 0				♦	♦							
41	7 0	7.1				♦	♦							
41	7 1	7 2				♦	♦							
41	7.2	7 3				♦	♦							
41	7 3	7 4	♦				♦				♦			
41	7 4	7 5	♦				♦				♦			
41	7 5	7.6	♦				♦				♦			
41	7 6	7 7	♦				♦	♦			♦			
41	7 7	7 8	♦				♦				♦			
41	7 8	7.9	♦				♦				♦			
41	7 9	8 0	♦				♦				♦			
41	8 0	8.1	♦				♦	♦			♦			
41	8.1	8 2	♦				♦				♦			
41	8 2	8 3				♦	♦							
41	8.3	8 4	♦				♦				♦			
41	8 4	8 5		♦	♦		♦	♦			♦			
41	8.5	8 6		♦	♦		♦				♦			
41	8.6	8 7		♦	♦	♦	♦				♦			
41	6.7	8.8		♦	♦	♦	♦				♦			
41	8 8	8 9				♦	♦				♦			
41	8.9	9 0				♦	♦				♦			
41	9 0	9 1				♦	♦				♦			
41	9 1	9 2				♦	♦	♦			♦			
41	9 2	9.3				♦	♦				♦			
41	9 3	9 4				♦	♦				♦			
41	9 4	9.5				♦	♦				♦			
41	9 5	9 6					♦	♦			♦			
41	9 6	9 7					♦	♦			♦			
41	9.7	9 8					♦	♦			♦			
41	9.8	9 9					♦	♦			♦			
41	9.9	10 0				♦	♦				♦			
41	10.0	10 1				♦	♦				♦			
41	10.1	10 2				♦	♦				♦			
41	10 2	10 3				♦	♦	♦			♦			
41	10 3	10 4				♦	♦				♦			
41	10 4	10 5				♦	♦				♦			
41	10.5	10.6				♦	♦				♦			
41	10 6	10 7				♦	♦				♦			
41	10 7	10 8				♦	♦				♦			
41	10.8	10.9				♦	♦				♦			
41	10 9	11 0				♦	♦				♦			
41	11 0	11.1				♦	♦				♦			
41	11 1	11.2				♦	♦				♦			
41	11.2	11.3				♦	♦				♦			
41	11.3	11.4				♦	♦				♦			
41	11 4	11.5				♦	♦				♦			
41	11 5	11.6				♦	♦				♦			
41	11 6	11.7					♦	♦			♦			
41	11 7	11.8					♦	♦			♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
41	11.8	11.9				♦	♦				♦			
41	11.9	12.0				♦	♦				♦			
41	12.0	12.1				♦	♦				♦			
41	12.1	12.2				♦	♦				♦			
41	12.2	12.3				♦	♦				♦			
41	12.3	12.4				♦	♦				♦			
41	12.4	12.5				♦	♦				♦			
41	12.5	12.6					♦	♦			♦			
41	12.6	12.7				♦	♦				♦			
41	12.7	12.8				♦	♦				♦			
41	12.8	12.9				♦	♦				♦			
41	12.9	13.0				♦	♦				♦			
41	13.0	13.1				♦	♦				♦			
41	13.1	13.2				♦	♦				♦			
41	13.2	13.3				♦	♦				♦			
41	13.3	13.4				♦	♦				♦			
41	13.4	13.5					♦	♦			♦			
41	13.5	13.6				♦	♦				♦			
41	13.6	13.7				♦	♦				♦			
41	13.7	13.8				♦	♦				♦			
41	13.8	13.9		♦	♦	♦	♦				♦	♦		
41	13.9	14.0		♦	♦		♦				♦	♦		
41	14.0	14.1		♦	♦		♦				♦			
41	14.1	14.2	♦				♦				♦			
41	14.2	14.3	♦				♦	♦			♦			
41	14.3	14.4	♦				♦				♦			
41	14.4	14.5					♦	♦			♦			
41	14.5	14.6				♦	♦				♦			
41	14.6	14.7				♦	♦				♦			
41	14.7	14.8				♦	♦				♦			
41	14.8	14.9					♦	♦			♦			
41	14.9	15.0					♦	♦			♦	♦		
41	15.0	15.1				♦	♦				♦	♦		
41	15.1	15.2				♦	♦				♦	♦		
41	15.2	15.3				♦	♦				♦	♦		
41	15.3	15.4				♦	♦				♦			
41	15.4	15.5				♦	♦				♦			
41	15.5	15.6				♦	♦				♦			
41	15.6	15.7				♦	♦				♦			
41	15.7	15.8				♦	♦				♦	♦		
41	15.8	15.9				♦	♦				♦	♦		
41	15.9	16.0	♦					♦			♦	♦		
41	16.0	16.1		♦	♦	♦					♦	♦		
41	16.1	16.2		♦	♦	♦		♦			♦	♦		
41	16.2	16.3		♦	♦	♦		♦			♦	♦		
41	16.3	16.4	♦								♦			
41	16.4	16.5	♦								♦			
41	16.5	16.6	♦								♦			
41	16.6	16.7		♦	♦	♦					♦			
41	16.7	16.8		♦	♦	♦					♦			
41	16.8	16.9		♦	♦	♦					♦			
41	16.9	17.0		♦	♦	♦					♦			
41	17.0	17.1		♦	♦	♦					♦			
41	17.1	17.2		♦	♦						♦			
41	17.2	17.3		♦	♦	♦					♦			
41	17.3	17.4	♦								♦			
41	17.4	17.5	♦					♦			♦			
41	17.5	17.6	♦								♦			
41	17.6	17.7		♦	♦	♦					♦			
41	17.7	17.8		♦	♦	♦					♦			
41	17.8	17.9		♦	♦	♦					♦			
41	17.9	18.0		♦	♦	♦					♦			
41	18.0	18.1		♦	♦	♦		♦			♦			
41	18.1	18.2		♦	♦	♦					♦			
41	18.2	18.3		♦	♦	♦					♦			
41	18.3	18.4		♦	♦	♦					♦			
41	18.4	18.5		♦	♦	♦					♦			
41	18.5	18.6		♦	♦	♦		♦			♦			
41	18.6	18.7		♦	♦	♦					♦			
41	18.7	18.8		♦	♦						♦			
41	18.8	18.9		♦	♦						♦			
41	18.9	19.0		♦	♦						♦			
41	19.0	19.1	♦					♦			♦			
41	19.1	19.2	♦								♦			
41	19.2	19.3	♦								♦			
41	19.3	19.4		♦	♦	♦					♦			
41	19.4	19.5		♦	♦	♦					♦			
41	19.5	19.6		♦	♦	♦		♦			♦			
41	19.6	19.7	♦								♦			
41	19.7	19.8	♦								♦			
41	19.8	19.9	♦					♦			♦			
41	19.9	20.0		♦	♦						♦			

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
41	20.0	20.1		♦	♦	♦		♦			♦			
41	20.1	20.2		♦	♦	♦		♦			♦			
41	20.2	20.3		♦	♦	♦		♦			♦			
41	20.3	20.4		♦	♦	♦					♦			
41	20.4	20.5		♦	♦	♦					♦			
41	20.5	20.6		♦	♦	♦					♦			
41	20.6	20.7	♦					♦			♦			
41	20.7	20.8	♦					♦			♦			
41	20.8	20.9		♦	♦	♦					♦			
41	20.9	21.0		♦	♦	♦					♦			
41	21.0	21.1		♦	♦	♦					♦			
41	21.1	21.2		♦	♦	♦		♦			♦			
41	21.2	21.3		♦	♦	♦					♦			
41	21.3	21.4		♦	♦	♦					♦			
41	21.4	21.5		♦	♦	♦		♦			♦			
41	21.5	21.6		♦	♦	♦		♦			♦			
41	21.6	21.7		♦	♦	♦		♦			♦			
41	21.7	21.8		♦	♦	♦		♦			♦			
41	21.8	21.9		♦	♦	♦					♦			
41	21.9	22.0		♦	♦	♦					♦			
41	22.0	22.1		♦	♦	♦					♦			
41	22.1	22.2		♦	♦	♦					♦			
41	22.2	22.3		♦	♦	♦					♦			
41	22.3	22.4		♦	♦			♦			♦			
41	22.4	22.5												
41	22.5	22.6												
41	22.8	22.7												
41	22.7	22.8		♦	♦						♦			
41	22.8	22.9		♦	♦	♦					♦			
41	22.9	23.0												
41	23.0	23.1												
41	23.1	23.2												
41	23.2	23.3												
41	23.3	23.4		♦	♦	♦					♦			
41	23.4	23.5		♦	♦	♦		♦			♦			
41	23.5	23.8		♦	♦	♦		♦			♦			
41	23.6	23.7		♦										
41	23.7	23.8		♦	♦						♦			
41	23.8	23.9		♦	♦						♦			
41	23.9	24.0		♦	♦						♦			
41	24.0	24.1		♦	♦						♦			
41	24.1	24.2		♦	♦	♦					♦			
41	24.2	24.3		♦	♦	♦					♦			
41	24.3	24.4		♦	♦	♦					♦			
41	24.4	24.5	♦								♦		♦	
41	24.5	24.6		♦	♦	♦					♦		♦	
41	24.8	24.7		♦	♦	♦					♦		♦	
41	24.7	24.8		♦	♦	♦					♦			
41	24.8	24.9		♦	♦	♦					♦			
41	24.9	25.0	♦								♦		♦	
41	25.0	25.1	♦								♦		♦	
41	25.1	25.2	♦								♦		♦	
41	25.2	25.3	♦								♦		♦	
41	25.3	25.4	♦								♦		♦	
41	25.4	25.5		♦	♦						♦		♦	
41	25.5	25.6		♦	♦	♦					♦		♦	
41	25.6	25.7		♦	♦						♦		♦	
41	25.7	25.8		♦	♦	♦					♦		♦	
41	25.8	25.9		♦	♦	♦					♦		♦	
41	25.9	28.0		♦	♦	♦	♦				♦			
41	26.0	26.1		♦	♦	♦					♦			
41	26.1	26.2	♦								♦		♦	
41	26.2	26.3	♦								♦		♦	
41	26.3	26.4		♦	♦	♦					♦		♦	
41	26.4	26.5		♦	♦	♦					♦		♦	
41	26.5	26.6		♦	♦	♦					♦		♦	
41	26.6	26.7		♦	♦	♦					♦			
41	26.7	26.8	♦								♦		♦	
41	26.8	26.9	♦								♦		♦	
41	26.9	27.0	♦					♦					♦	
41	27.0	27.1	♦					♦					♦	
41	27.1	27.2		♦	♦	♦					♦			
41	27.2	27.3		♦	♦	♦					♦		♦	
41	27.3	27.4		♦	♦	♦					♦		♦	
41	27.4	27.5		♦	♦	♦		♦			♦		♦	
	Total Miles		5.7	10.1	10.0	17.8	16.0	7.9	0.0	1.7	25.6	1.5	2.5	0.0
40	0.0	0.1		♦	♦	♦		♦			♦		♦	
40	0.1	0.2		♦	♦	♦					♦		♦	
40	0.2	0.3		♦	♦	♦					♦		♦	
40	0.3	0.4		♦	♦	♦					♦		♦	
40	0.4	0.5		♦	♦	♦					♦		♦	

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
40	0 5	0.6		♦	♦	♦					♦		♦	
40	0.6	0.7		♦	♦	♦		♦			♦		♦	
40	0 7	0.8		♦	♦	♦		♦			♦		♦	
40	0 8	0 9		♦	♦						♦		♦	
40	0.9	1.0		♦	♦	♦		♦			♦		♦	
40	1 0	1.1		♦	♦			♦			♦		♦	
40	1 1	1 2	♦					♦			♦		♦	
40	1 2	1.3	♦					♦			♦		♦	
40	1 3	1.4	♦								♦			
40	1 4	1 5	♦					♦			♦		♦	
40	1 5	1 6	♦								♦			
40	1.6	1 7		♦	♦	♦		♦			♦			
40	1 7	1 8		♦	♦	♦					♦			
40	1 8	1 9		♦	♦	♦					♦			
40	1 9	2.0		♦	♦	♦					♦			
40	2.0	2.1		♦	♦	♦					♦			
40	2.1	2.2		♦	♦	♦		♦			♦			
40	2.2	2.3		♦	♦			♦			♦			
40	2.3	2 4		♦	♦	♦					♦			
40	2.4	2.5		♦	♦	♦					♦	♦		
40	2 5	2.6		♦	♦	♦					♦			
40	2.6	2 7		♦	♦	♦					♦			
40	2 7	2.8		♦	♦	♦					♦			
40	2.8	2.9		♦	♦	♦					♦			
40	2.9	3 0		♦	♦	♦					♦			
40	3.0	3 1	♦								♦			
40	3.1	3 2	♦								♦			
40	3.2	3 3	♦								♦			
40	3 3	3 4	♦								♦			
40	3.4	3.5						♦						
40	3 5	3.6		♦				♦						
40	3.6	3 7		♦	♦			♦			♦			
40	3 7	3.8		♦	♦						♦			
40	3 8	3.9		♦	♦	♦		♦			♦			
40	3 9	4 0		♦	♦	♦					♦			
40	4 0	4 1		♦	♦	♦		♦			♦			
40	4.1	4 2		♦	♦	♦					♦			
40	4 2	4 3		♦	♦	♦		♦			♦			
40	4.3	4 4		♦	♦	♦	♦				♦		♦	
40	4.4	4 5		♦	♦	♦					♦		♦	
40	4.5	4.6		♦	♦	♦					♦		♦	
40	4.6	4 7		♦	♦	♦	♦				♦		♦	
40	4.7	4.8		♦	♦	♦	♦				♦		♦	
40	4.8	4.9		♦	♦	♦	♦				♦		♦	
40	4.9	5 0		♦	♦	♦	♦				♦		♦	
40	5 0	5 1		♦	♦	♦	♦						♦	
40	5 1	5 2		♦	♦		♦				♦		♦	
40	5 2	5.3		♦	♦		♦	♦			♦		♦	
40	5 3	5.4		♦	♦		♦				♦		♦	
40	5 4	5.5		♦	♦		♦				♦		♦	
40	5.5	5 6	♦				♦						♦	
40	5 6	5 7	♦				♦						♦	
40	5 7	5.8	♦				♦						♦	
40	5 8	5 9	♦				♦						♦	
40	5 9	6 0	♦				♦				♦		♦	
40	6 0	6 1	♦				♦				♦		♦	
40	6 1	6.2		♦	♦		♦				♦		♦	
40	6.2	6 3		♦	♦		♦				♦			
40	6 3	6 4		♦	♦		♦	♦			♦			
40	6.4	6 5		♦	♦	♦	♦				♦			
40	6 5	6 6		♦	♦	♦	♦				♦			
40	6 6	6 7		♦	♦	♦	♦				♦			
40	6 7	6 8		♦	♦	♦	♦				♦			
40	6 8	6 9		♦	♦	♦	♦				♦			
40	6 9	7 0		♦	♦	♦	♦				♦			
40	7 0	7 1		♦	♦		♦	♦			♦			
40	7 1	7 2		♦	♦		♦	♦			♦			
40	7.2	7 3		♦	♦	♦	♦				♦			
40	7 3	7 4		♦	♦		♦	♦			♦			
40	7 4	7.5		♦	♦	♦	♦	♦			♦			
40	7 5	7 6		♦	♦	♦	♦	♦			♦			
40	7 6	7 7		♦	♦	♦	♦	♦			♦			
40	7 7	7 8	♦				♦	♦			♦			
40	7 8	7 9	♦				♦	♦			♦			
40	7.9	8 0	♦					♦			♦			
40	8.0	8 1	♦					♦			♦			
40	8.1	6 2		♦	♦			♦			♦			
	Total Miles		1.9	6.2	6.1	4.5	3.4	3.0	0.0	0.0	7.5	0.1	3.3	0.0
50	0 0	0 1		♦	♦			♦			♦			
50	0 1	0 2	♦					♦			♦			
50	0 2	0 3		♦	♦						♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
50	0.3	0.4		♦	♦						♦			
50	0.4	0.5		♦	♦			♦			♦			
50	0.5	0.6	♦					♦			♦			
50	0.6	0.7	♦					♦			♦			
50	0.7	0.8	♦					♦			♦			
50	0.8	0.9	♦					♦			♦			
50	0.9	1.0	♦								♦			
50	1.0	1.1	♦								♦			
50	1.1	1.2	♦								♦			
50	1.2	1.3	♦								♦			
50	1.3	1.4		♦	♦			♦			♦			
50	1.4	1.5		♦	♦			♦			♦			
50	1.5	1.6						♦						
50	1.6	1.7												
50	1.7	1.8		♦	♦			♦			♦			
50	1.8	1.9		♦	♦			♦			♦			
50	1.9	2.0						♦						
50	2.0	2.1						♦						
50	2.1	2.2						♦						
50	2.2	2.3		♦	♦			♦			♦			
50	2.3	2.4		♦	♦						♦			
50	2.4	2.5						♦						
50	2.5	2.6						♦						
50	2.6	2.7												
50	2.7	2.8		♦	♦	♦		♦			♦			
50	2.8	2.9		♦	♦	♦		♦			♦			
50	2.9	3.0		♦	♦	♦		♦			♦			
50	3.0	3.1						♦						
50	3.1	3.2						♦						
50	3.2	3.3		♦	♦	♦					♦			
50	3.3	3.4		♦	♦	♦					♦			
50	3.4	3.5		♦	♦	♦		♦			♦			
50	3.5	3.6		♦	♦	♦		♦			♦			
50	3.6	3.7		♦	♦	♦		♦			♦			
50	3.7	3.8		♦	♦	♦		♦			♦			
50	3.8	3.9		♦	♦	♦		♦			♦			
50	3.9	4.0		♦	♦	♦		♦			♦			
50	4.0	4.1		♦	♦	♦		♦			♦			
50	4.1	4.2		♦	♦	♦		♦			♦			
50	4.2	4.3		♦	♦	♦					♦			
50	4.3	4.4		♦	♦			♦			♦			
50	4.4	4.5		♦	♦	♦		♦			♦			
50	4.5	4.6		♦	♦	♦		♦			♦			
50	4.6	4.7		♦	♦						♦			
50	4.7	4.8		♦	♦			♦			♦			
50	4.8	4.9		♦	♦						♦			
50	4.9	5.0		♦	♦						♦			
50	5.0	5.1		♦	♦						♦			
50	5.1	5.2		♦	♦						♦			
50	5.2	5.3		♦	♦						♦			
50	5.3	5.4		♦	♦			♦			♦			
50	5.4	5.5		♦	♦			♦			♦			
50	5.5	5.6		♦	♦			♦			♦			
50	5.6	5.7		♦	♦	♦				♦	♦	♦		
50	5.7	5.8		♦	♦	♦				♦	♦	♦		
50	5.8	5.9	♦					♦		♦	♦	♦		
50	5.9	6.0	♦							♦	♦	♦		
50	6.0	6.1		♦	♦	♦				♦	♦	♦		
50	6.1	6.2		♦	♦	♦		♦			♦			
50	6.2	6.3		♦	♦	♦					♦			
50	8.3	6.4		♦	♦	♦		♦			♦			
50	6.4	6.5		♦	♦	♦		♦			♦			
50	6.5	6.6		♦	♦	♦					♦			
50	6.6	6.7		♦	♦	♦					♦			
50	6.7	6.8		♦	♦	♦					♦			
50	6.8	6.9		♦	♦	♦		♦			♦			
50	6.9	7.0		♦	♦	♦					♦			
50	7.0	7.1		♦	♦	♦		♦			♦			
50	7.1	7.2		♦	♦	♦					♦			
50	7.2	7.3		♦	♦	♦					♦			
50	7.3	7.4		♦	♦	♦					♦			
50	7.4	7.5		♦	♦	♦		♦			♦			
50	7.5	7.6												
50	7.6	7.7												
50	7.7	7.8												
50	7.8	7.9		♦	♦			♦			♦			
50	7.9	8.0		♦	♦	♦					♦			
50	8.0	8.1		♦	♦	♦					♦			
50	8.1	8.2		♦	♦	♦					♦			
50	8.2	8.3		♦	♦	♦		♦			♦			
50	8.3	8.4		♦	♦	♦					♦			
50	8.4	8.5		♦	♦	♦					♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
50	8.5	8.6		♦	♦	♦		♦			♦			♦
50	8.6	8.7		♦	♦	♦					♦			♦
50	8.7	8.8		♦	♦	♦					♦			♦
50	8.8	8.9		♦	♦	♦					♦			
50	8.9	9.0		♦	♦	♦		♦			♦			
50	9.0	9.1		♦	♦	♦					♦			
50	9.1	9.2		♦	♦	♦		♦			♦			
50	9.2	9.3		♦	♦	♦					♦			
50	9.3	9.4		♦	♦	♦		♦			♦			
50	9.4	9.5												
50	9.5	9.6												
50	9.6	9.7						♦						
50	9.7	9.8												
50	9.8	9.9						♦						
50	9.9	10.0						♦						
50	10.0	10.1												
50	10.1	10.2												
50	10.2	10.3		♦	♦	♦					♦			
50	10.3	10.4		♦	♦	♦		♦			♦			
50	10.4	10.5		♦	♦	♦		♦			♦			
50	10.5	10.6		♦	♦	♦					♦			
50	10.6	10.7		♦	♦	♦					♦			
50	10.7	10.8		♦	♦	♦					♦			
50	10.8	10.9		♦	♦	♦					♦			
50	10.9	11.0		♦	♦	♦					♦			
50	11.0	11.1		♦	♦	♦					♦			
50	11.1	11.2		♦	♦	♦					♦			
50	11.2	11.3		♦	♦	♦		♦			♦			
50	11.3	11.4		♦	♦	♦					♦			
50	11.4	11.5		♦	♦	♦					♦			
50	11.5	11.6		♦	♦	♦					♦			
50	11.6	11.7		♦	♦	♦		♦			♦			
50	11.7	11.8		♦	♦	♦					♦			
50	11.8	11.9		♦	♦	♦					♦			
50	11.9	12.0		♦	♦	♦					♦			
50	12.0	12.1		♦	♦	♦					♦			
50	12.1	12.2		♦	♦	♦					♦			
50	12.2	12.3		♦	♦	♦					♦			
50	12.3	12.4		♦	♦	♦					♦			
50	12.4	12.5		♦	♦	♦		♦			♦			
50	12.5	12.6		♦	♦	♦					♦			
50	12.6	12.7		♦	♦	♦				♦	♦			
50	12.7	12.8		♦	♦	♦		♦		♦	♦			
50	12.8	12.9		♦	♦	♦		♦		♦	♦			
50	12.9	13.0	♦	♦	♦	♦				♦	♦	♦		
50	13.0	13.1	♦							♦	♦	♦		
50	13.1	13.2	♦							♦	♦	♦		
50	13.2	13.3	♦							♦	♦	♦		
50	13.3	13.4	♦							♦	♦	♦		
50	13.4	13.5	♦							♦	♦	♦		
50	13.5	13.6	♦							♦	♦	♦		
50	13.6	13.7	♦							♦	♦	♦		
50	13.7	13.8	♦							♦	♦	♦		
50	13.8	13.9	♦					♦		♦	♦	♦		
50	13.9	14.0	♦							♦	♦	♦		
50	14.0	14.1	♦							♦	♦	♦		
	Total Miles		**2.3**	**9.8**	**9.8**	**7.6**	**0.0**	**6.2**	**0.0**	**2.0**	**12.0**	**1.7**	**0.0**	**0.3**
70	0.0	0.1	♦							♦	♦	♦		
70	0.1	0.2		♦	♦	♦				♦	♦	♦		
70	0.2	0.3	♦					♦		♦	♦	♦		
70	0.3	0.4	♦	♦	♦	♦		♦		♦	♦	♦		
70	0.4	0.5	♦					♦		♦	♦	♦	♦	
70	0.5	0.6	♦					♦		♦	♦	♦	♦	
70	0.6	0.7	♦					♦		♦	♦	♦	♦	
70	0.7	0.8	♦					♦		♦	♦	♦	♦	
70	0.8	0.9	♦					♦		♦	♦	♦	♦	
70	0.9	1.0		♦	♦	♦		♦		♦	♦	♦	♦	
70	1.0	1.1		♦	♦	♦		♦		♦	♦	♦	♦	
70	1.1	1.2		♦	♦	♦		♦		♦	♦	♦	♦	
70	1.2	1.3		♦	♦	♦		♦			♦		♦	
70	1.3	1.4		♦	♦			♦			♦		♦	
70	1.4	1.5		♦	♦			♦			♦		♦	
70	1.5	1.6		♦	♦	♦		♦			♦		♦	
70	1.6	1.7		♦	♦	♦		♦			♦		♦	
70	1.7	1.8		♦	♦	♦		♦			♦		♦	
70	1.8	1.9		♦	♦	♦		♦			♦		♦	
70	1.9	2.0		♦	♦	♦		♦			♦		♦	
70	2.0	2.1		♦	♦			♦			♦		♦	
70	2.1	2.2		♦	♦			♦			♦		♦	
70	2.2	2.3		♦	♦	♦		♦			♦		♦	
70	2.3	2.4		♦	♦	♦		♦			♦		♦	

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
70	2.4	2.5		♦	♦	♦		♦			♦		♦	
70	2.5	2.6		♦	♦	♦		♦			♦		♦	
70	2.6	2.7		♦	♦	♦		♦			♦		♦	
70	2.7	2.8		♦	♦	♦		♦			♦		♦	
70	2.8	2.9		♦	♦	♦		♦			♦		♦	
70	2.9	3.0		♦	♦	♦		♦			♦		♦	
70	3.0	3.1		♦	♦	♦		♦			♦		♦	
70	3.1	3.2		♦	♦	♦		♦			♦		♦	
70	3.2	3.3		♦	♦	♦		♦			♦		♦	
70	3.3	3.4		♦	♦	♦		♦			♦		♦	
70	3.4	3.5		♦	♦	♦		♦			♦		♦	
70	3.5	3.6		♦	♦	♦		♦			♦		♦	
70	3.6	3.7		♦	♦			♦			♦		♦	
70	3.7	3.8		♦	♦			♦			♦		♦	
70	3.8	3.9		♦	♦			♦			♦		♦	
70	3.9	4.0		♦	♦			♦		♦	♦	♦	♦	
70	4.0	4.1	♦					♦		♦	♦	♦	♦	
70	4.1	4.2	♦					♦		♦	♦	♦	♦	
70	4.2	4.3	♦					♦		♦	♦	♦	♦	
70	4.3	4.4		♦	♦			♦		♦	♦	♦	♦	
70	4.4	4.5		♦	♦			♦			♦	♦	♦	
70	4.5	4.6	♦					♦			♦	♦	♦	
70	4.6	4.7		♦	♦			♦			♦	♦	♦	
70	4.7	4.8		♦	♦	♦		♦			♦	♦	♦	
70	4.8	4.9		♦	♦	♦		♦			♦	♦	♦	
70	4.9	5.0		♦	♦	♦		♦			♦	♦	♦	
70	5.0	5.1		♦	♦	♦		♦			♦	♦	♦	
70	5.1	5.2		♦	♦	♦		♦			♦	♦	♦	
70	5.2	5.3		♦	♦	♦		♦			♦	♦	♦	
70	5.3	5.4		♦	♦	♦		♦			♦	♦	♦	
70	5.4	5.5		♦	♦	♦					♦	♦		
70	5.5	5.6		♦	♦	♦					♦	♦		
70	5.6	5.7		♦	♦	♦		♦			♦	♦		
70	5.7	5.8		♦	♦	♦					♦	♦		
70	5.8	5.9		♦	♦	♦		♦			♦	♦		
	Total Miles		1.2	4.8	4.8	3.7	0.0	5.4	0.0	1.7	5.9	3.2	5.0	0.0
711	0.0	0.1		♦	♦	♦		♦			♦			
711	0.1	0.2		♦	♦	♦		♦			♦	♦		
711	0.2	0.3		♦	♦	♦		♦			♦			
711	0.3	0.4		♦	♦	♦		♦			♦		♦	♦
711	0.4	0.5		♦	♦	♦		♦			♦		♦	♦
711	0.5	0.6		♦	♦	♦		♦			♦		♦	♦
711	0.6	0.7		♦	♦	♦		♦			♦		♦	♦
711	0.7	0.8		♦	♦	♦		♦			♦		♦	
711	0.8	0.9		♦	♦	♦		♦		♦	♦	♦	♦	
711	0.9	1.0		♦	♦	♦		♦		♦	♦	♦	♦	
711	1.0	1.1		♦	♦	♦		♦			♦	♦	♦	♦
711	1.1	1.2		♦	♦	♦		♦			♦	♦	♦	♦
711	1.2	1.3		♦	♦	♦		♦			♦	♦	♦	♦
711	1.3	1.4		♦	♦	♦		♦			♦	♦	♦	♦
711	1.4	1.5		♦	♦	♦		♦			♦	♦	♦	♦
711	1.5	1.6		♦	♦	♦		♦			♦	♦	♦	♦
711	1.6	1.7		♦	♦	♦		♦			♦	♦	♦	
	Total Miles		0.0	1.7	1.7	1.7	0.0	1.7	0.0	0.2	1.7	1.0	1.4	1.0
714	0.0	0.1		♦	♦	♦		♦			♦	♦	♦	
714	0.1	0.2		♦	♦	♦		♦			♦	♦	♦	
714	0.2	0.3		♦	♦	♦		♦			♦	♦	♦	
714	0.3	0.4		♦	♦	♦		♦			♦		♦	
714	0.4	0.5		♦	♦	♦		♦			♦		♦	
714	0.5	0.6		♦	♦	♦		♦			♦		♦	
714	0.6	0.7		♦	♦	♦		♦			♦		♦	
714	0.7	0.8		♦	♦			♦			♦		♦	
714	0.8	0.9		♦	♦			♦			♦		♦	
714	0.9	1.0		♦	♦			♦			♦		♦	
714	1.0	1.1		♦	♦			♦			♦		♦	
714	1.1	1.2		♦	♦			♦			♦		♦	
714	1.2	1.3		♦	♦			♦			♦		♦	
714	1.3	1.4		♦	♦			♦			♦		♦	
714	1.4	1.5		♦	♦	♦		♦			♦		♦	
714	1.5	1.6		♦	♦	♦		♦			♦		♦	
714	1.6	1.7		♦	♦	♦		♦			♦		♦	
714	1.7	1.8		♦	♦	♦		♦			♦		♦	
714	1.8	1.9		♦	♦	♦		♦			♦		♦	
714	1.9	2.0		♦	♦	♦		♦			♦		♦	
714	2.0	2.1		♦	♦	♦		♦			♦		♦	
714	2.1	2.2		♦	♦	♦		♦			♦		♦	
714	2.2	2.3		♦	♦	♦		♦			♦		♦	
714	2.3	2.4		♦	♦			♦			♦		♦	
714	2.4	2.5		♦	♦			♦			♦		♦	
714	2.5	2.6		♦	♦			♦			♦		♦	

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
714	2.6	2.7		♦	♦			♦			♦		♦	
714	2.7	2.8		♦	♦			♦			♦		♦	
	Total Miles		0.0	2.8	2.8	1.6	0.0	2.8	0.0	0.0	2.8	0.3	2.8	0.0
101	0.0	0.1		♦	♦			♦			♦		♦	
101	0.1	0.2		♦	♦						♦		♦	
101	0.2	0.3		♦	♦						♦		♦	
101	0.3	0.4		♦	♦						♦		♦	
101	0.4	0.5	♦	♦	♦						♦		♦	
101	0.5	0.6	♦	♦	♦						♦		♦	
101	0.6	0.7		♦	♦	♦					♦		♦	♦
101	0.7	0.8		♦	♦	♦					♦		♦	
101	0.8	0.9		♦	♦						♦		♦	
101	0.9	1.0		♦	♦						♦		♦	
101	1.0	1.1		♦	♦						♦		♦	
101	1.1	1.2		♦	♦	♦					♦		♦	
101	1.2	1.3		♦	♦	♦					♦		♦	
101	1.3	1.4		♦	♦	♦					♦		♦	
101	1.4	1.5		♦	♦	♦					♦	♦	♦	
101	1.5	1.6	♦	♦	♦						♦	♦	♦	
101	1.6	1.7	♦	♦	♦						♦		♦	
101	1.7	1.8	♦	♦	♦			♦			♦		♦	
101	1.8	1.9	♦	♦	♦						♦		♦	
101	1.9	2.0	♦	♦	♦						♦		♦	
101	2.0	2.1	♦	♦	♦						♦			
101	2.1	2.2	♦	♦	♦						♦			
101	2.2	2.3		♦	♦						♦		♦	
101	2.3	2.4		♦	♦	♦					♦		♦	
101	2.4	2.5	♦	♦	♦						♦			
101	2.5	2.6	♦								♦			
101	2.6	2.7	♦								♦			
101	2.7	2.8	♦	♦	♦	♦					♦		♦	
101	2.8	2.9	♦								♦			
101	2.9	3.0	♦	♦	♦						♦			
101	3.0	3.1	♦	♦	♦						♦			
101	3.1	3.2	♦								♦			
101	3.2	3.3	♦								♦			
101	3.3	3.4	♦								♦			
101	3.4	3.5		♦	♦	♦					♦		♦	
101	3.5	3.6		♦	♦	♦					♦		♦	
101	3.6	3.7		♦	♦	♦					♦		♦	
101	3.7	3.8		♦	♦						♦		♦	
101	3.8	3.9		♦	♦						♦		♦	
101	3.9	4.0		♦	♦						♦		♦	
101	4.0	4.1		♦	♦	♦					♦		♦	
101	4.1	4.2		♦	♦	♦		♦		♦	♦		♦	
101	4.2	4.3		♦	♦	♦				♦	♦		♦	
101	4.3	4.4	♦	♦	♦					♦	♦			
101	4.4	4.5	♦	♦	♦					♦	♦			
101	4.5	4.6		♦	♦	♦				♦	♦		♦	
101	4.6	4.7		♦	♦	♦				♦	♦	♦	♦	♦
101	4.7	4.8		♦	♦	♦				♦	♦	♦	♦	♦
101	4.8	4.9	♦	♦	♦					♦	♦			
101	4.9	5.0	♦	♦	♦					♦	♦			
101	5.0	5.1		♦	♦	♦				♦	♦		♦	
101	5.1	5.2		♦	♦	♦				♦	♦		♦	♦
101	5.2	5.3	♦								♦			
101	5.3	5.4		♦	♦	♦					♦		♦	
101	5.4	5.5	♦								♦			
101	5.5	5.6	♦								♦			
101	5.6	5.7	♦								♦			
101	5.7	5.8	♦								♦			
101	5.8	5.9		♦	♦						♦		♦	
101	5.9	6.0		♦	♦						♦		♦	
101	6.0	6.1		♦	♦						♦		♦	
101	6.1	6.2		♦	♦						♦		♦	
101	6.2	6.3		♦	♦						♦		♦	
101	6.3	6.4	♦								♦			
101	6.4	6.5	♦								♦			
101	6.5	6.6	♦								♦			
101	6.6	6.7		♦	♦						♦		♦	
101	6.7	6.8		♦	♦						♦		♦	
101	6.8	6.9	♦		♦	♦		♦			♦		♦	
101	6.9	7.0	♦								♦			
101	7.0	7.1	♦								♦			
101	7.1	7.2		♦	♦					♦	♦			
101	7.2	7.3		♦	♦	♦				♦	♦		♦	
101	7.3	7.4	♦					♦			♦			
101	7.4	7.5	♦								♦			
101	7.5	7.6		♦	♦	♦				♦	♦		♦	
101	7.6	7.7		♦	♦	♦				♦	♦		♦	
101	7.7	7.8		♦	♦					♦	♦		♦	

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
101	7.8	7.9	♦	♦	♦			♦		♦	♦			
101	7.9	8.0		♦	♦	♦				♦	♦		♦	
101	8.0	8.1		♦	♦	♦				♦	♦		♦	
101	8.1	8.2		♦	♦	♦				♦	♦		♦	
101	8.2	8.3	♦	♦	♦					♦	♦			
101	8.3	8.4	♦	♦	♦					♦	♦			
101	8.4	8.5		♦	♦	♦		♦		♦	♦		♦	
101	8.5	8.6		♦	♦	♦		♦		♦	♦		♦	
101	8.6	8.7		♦	♦	♦		♦		♦	♦		♦	
101	8.7	8.8		♦	♦	♦		♦		♦	♦		♦	
101	8.8	8.9		♦	♦	♦		♦		♦	♦		♦	
	Total Miles		3.9	7.0	7.1	3.2	0.0	1.1	0.0	2.7	8.9	0.4	5.8	0.4
715	0.0	0.1	♦					♦			♦			
715	0.1	0.2		♦	♦	♦		♦			♦		♦	
715	0.2	0.3		♦	♦	♦		♦			♦		♦	
715	0.3	0.4	♦								♦			
715	0.4	0.5	♦								♦			
715	0.5	0.6	♦	♦	♦	♦		♦			♦		♦	
715	0.6	0.7	♦								♦			
715	0.7	0.8	♦								♦			
715	0.8	0.9	♦					♦			♦			
715	0.9	1.0	♦	♦	♦			♦		♦	♦			
715	1.0	1.1	♦								♦			
715	1.1	1.2	♦	♦	♦			♦		♦	♦		♦	
715	1.2	1.3	♦	♦	♦			♦		♦	♦		♦	
715	1.3	1.4	♦	♦	♦					♦	♦		♦	
715	1.4	1.5	♦	♦	♦					♦	♦	♦	♦	
715	1.5	1.6	♦								♦	♦	♦	
715	1.6	1.7	♦	♦	♦					♦	♦	♦	♦	
715	1.7	1.8		♦	♦	♦				♦	♦	♦	♦	
715	1.8	1.9		♦	♦	♦					♦		♦	
715	1.9	2.0		♦	♦	♦					♦		♦	
715	2.0	2.1	♦	♦	♦	♦				♦	♦		♦	
715	2.1	2.2	♦								♦		♦	
	Total Miles		1.7	1.3	1.3	0.7	0.0	0.8	0.0	0.8	2.2	0.4	1.4	0.0
713	0.0	0.1	♦	♦	♦					♦	♦		♦	
713	0.1	0.2	♦	♦	♦					♦	♦		♦	
713	0.2	0.3		♦	♦	♦				♦	♦		♦	
713	0.3	0.4		♦	♦	♦				♦	♦		♦	
713	0.4	0.5		♦	♦					♦	♦		♦	
713	0.5	0.6		♦	♦					♦	♦		♦	
713	0.6	0.7		♦	♦	♦					♦		♦	
713	0.7	0.8		♦	♦	♦		♦			♦		♦	
713	0.8	0.9	♦		♦	♦		♦			♦		♦	
713	0.9	1.0	♦								♦		♦	
713	1.0	1.1	♦								♦		♦	
713	1.1	1.2	♦					♦			♦		♦	
713	1.2	1.3		♦	♦	♦		♦			♦		♦	
713	1.3	1.4		♦	♦	♦					♦		♦	♦
	Total Miles		0.6	1.0	1.1	0.7	0.0	0.4	0.0	0.6	1.4	0.0	1.4	0.1
110	0.0	0.1		♦	♦	♦					♦		♦	
110	0.1	0.2		♦	♦						♦		♦	
110	0.2	0.3		♦	♦	♦		♦			♦		♦	
110	0.3	0.4		♦	♦	♦					♦		♦	
110	0.4	0.5		♦	♦	♦					♦		♦	
110	0.5	0.6		♦	♦	♦					♦		♦	
110	0.6	0.7		♦	♦	♦					♦		♦	
110	0.7	0.8		♦	♦	♦					♦		♦	
110	0.8	0.9		♦	♦	♦					♦		♦	
110	0.9	1.0		♦	♦	♦					♦		♦	
110	1.0	1.1		♦	♦	♦					♦		♦	
110	1.1	1.2		♦	♦	♦					♦		♦	
110	1.2	1.3		♦	♦	♦					♦		♦	
110	1.3	1.4		♦	♦	♦		♦			♦		♦	
110	1.4	1.5		♦	♦	♦					♦		♦	
110	1.5	1.6		♦	♦	♦					♦		♦	
110	1.6	1.7												
110	1.7	1.8												
110	1.8	1.9						♦						
110	1.9	2.0												
110	2.0	2.1		♦	♦	♦		♦			♦		♦	
110	2.1	2.2		♦	♦	♦					♦		♦	
110	2.2	2.3		♦	♦	♦					♦		♦	
110	2.3	2.4		♦	♦	♦					♦		♦	
110	2.4	2.5		♦	♦	♦					♦		♦	
110	2.5	2.8		♦	♦	♦					♦		♦	
	Total Miles		0.0	2.2	2.2	2.1	0.0	0.4	0.0	0.0	2.2	0.0	2.2	0.0
130	0.0	0.1		♦	♦	♦					♦		♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
130	0.1	0.2												
130	0.2	0.3												
130	0.3	0.4		♦	♦	♦					♦		♦	
130	0.4	0.5		♦	♦	♦					♦		♦	
130	0.5	0.6		♦	♦	♦		♦			♦		♦	
130	0.6	0.7												
130	0.7	0.8												
130	0.8	0.9												
130	0.9	1.0		♦	♦	♦		♦			♦		♦	
130	1.0	1.1		♦	♦	♦					♦		♦	
130	1.1	1.2		♦	♦	♦		♦			♦		♦	
130	1.2	1.3		♦	♦						♦		♦	
130	1.3	1.4		♦	♦	♦					♦		♦	
130	1.4	1.5		♦	♦						♦		♦	
130	1.5	1.6		♦	♦	♦					♦		♦	
130	1.6	1.7		♦	♦	♦					♦			
130	1.7	1.8		♦	♦	♦					♦			
130	1.8	1.9		♦	♦	♦					♦			
130	1.9	2.0		♦	♦	♦					♦			
130	2.0	2.1		♦	♦	♦					♦			
130	2.1	2.2		♦	♦	♦		♦			♦			
130	2.2	2.3		♦	♦	♦					♦			
130	2.3	2.4		♦	♦	♦					♦			
130	2.4	2.5		♦	♦	♦					♦			
130	2.5	2.6		♦	♦	♦					♦			
130	2.6	2.7		♦	♦	♦					♦			
130	2.7	2.8		♦	♦	♦					♦			
130	2.8	2.9		♦	♦	♦					♦			
130	2.9	3.0		♦	♦	♦					♦			
130	3.0	3.1		♦	♦	♦					♦			
130	3.1	3.2		♦	♦	♦					♦			
130	3.2	3.3												
130	3.3	3.4												
130	3.4	3.5		♦	♦	♦		♦			♦			
130	3.5	3.6		♦	♦	♦					♦			
130	3.6	3.7		♦	♦	♦					♦			
130	3.7	3.8		♦	♦	♦					♦			
130	3.8	3.9		♦	♦	♦					♦			
130	3.9	4.0		♦	♦	♦					♦			
130	4.0	4.1		♦	♦	♦					♦			
130	4.1	4.2		♦	♦	♦		♦			♦			
130	4.2	4.3		♦	♦	♦					♦			
130	4.3	4.4		♦	♦	♦					♦			
130	4.4	4.5		♦	♦	♦					♦			
130	4.5	4.6		♦	♦	♦					♦			
130	4.6	4.7		♦	♦	♦					♦			
130	4.7	4.8		♦	♦	♦					♦			
130	4.8	4.9		♦	♦	♦					♦			
130	4.9	5.0		♦	♦	♦		♦			♦			
130	5.0	5.1		♦	♦	♦					♦			
130	5.1	5.2		♦	♦	♦					♦			
130	5.2	5.3		♦	♦	♦					♦			
130	5.3	5.4		♦	♦	♦					♦			
130	5.4	5.5		♦	♦	♦					♦			
130	5.5	5.6		♦	♦						♦			
130	5.6	5.7		♦	♦			♦			♦			
130	5.7	5.8		♦	♦	♦		♦			♦			
130	5.8	5.9		♦	♦	♦		♦			♦			
130	5.9	6.0		♦	♦	♦					♦			
130	6.0	6.1		♦	♦	♦					♦			
130	6.1	6.2		♦	♦	♦					♦			
130	6.2	6.3												
130	6.3	6.4	♦					♦			♦			
130	6.4	6.5	♦								♦			
130	6.5	6.6		♦	♦	♦					♦			
130	6.6	6.7		♦	♦	♦					♦			
130	6.7	6.8		♦	♦	♦					♦			
130	6.8	6.9		♦	♦	♦					♦			
130	6.9	7.0		♦	♦	♦					♦			
130	7.0	7.1		♦	♦						♦			
130	7.1	7.2		♦	♦						♦			
130	7.2	7.3		♦	♦						♦			
130	7.3	7.4		♦	♦						♦			
130	7.4	7.5		♦	♦			♦			♦			
130	7.5	7.6		♦										
130	7.6	7.7		♦										
130	7.7	7.8		♦										
130	7.8	7.9		♦										
130	7.9	8.0		♦		♦								
130	8.0	8.1		♦	♦	♦					♦			
130	8.1	8.2		♦	♦	♦					♦			
130	8.2	8.3		♦	♦	♦					♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
130	8.3	8.4		♦	♦	♦					♦			
130	8.4	8.5		♦	♦	♦					♦			
130	8.5	8.6		♦	♦	♦					♦			
	Total Miles		0.2	7.6	7.1	6.3	0.0	1.2	0.0	0.0	7.3	0.0	1.1	0.0
150	0.0	0.1		♦	♦	♦		♦			♦			
150	0.1	0.2		♦	♦	♦					♦			
150	0.2	0.3		♦	♦	♦					♦			
150	0.3	0.4		♦	♦	♦					♦			
150	0.4	0.5		♦	♦	♦					♦			
150	0.5	0.6		♦		♦								
150	0.6	0.7		♦		♦								
150	0.7	0.8		♦		♦								
150	0.8	0.9			♦	♦								
150	0.9	1.0			♦	♦								
150	1.0	1.1			♦	♦								
150	1.1	1.2			♦	♦								
150	1.2	1.3			♦	♦								
150	1.3	1.4			♦	♦		♦						
150	1.4	1.5			♦	♦								
150	1.5	1.6			♦	♦								
150	1.6	1.7		♦	♦	♦		♦					♦	
150	1.7	1.8		♦	♦	♦		♦					♦	
150	1.8	1.9	♦					♦					♦	
150	1.9	2.0	♦					♦					♦	
150	2.0	2.1	♦					♦					♦	
150	2.1	2.2		♦				♦					♦	
150	2.2	2.3		♦	♦	♦		♦					♦	
150	2.3	2.4		♦	♦	♦		♦					♦	
150	2.4	2.5		♦	♦	♦		♦					♦	
150	2.5	2.6		♦	♦	♦		♦					♦	
150	2.6	2.7			♦	♦		♦					♦	
150	2.7	2.8			♦	♦		♦					♦	
150	2.8	2.9			♦	♦		♦					♦	
150	2.9	3.0		♦		♦		♦					♦	
150	3.0	3.1		♦		♦		♦					♦	
150	3.1	3.2		♦		♦		♦					♦	
150	3.2	3.3		♦		♦		♦					♦	
150	3.3	3.4			♦	♦		♦					♦	
150	3.4	3.5			♦	♦		♦					♦	
150	3.5	3.6			♦	♦		♦					♦	
150	3.6	3.7			♦	♦		♦					♦	
150	3.7	3.8			♦	♦		♦					♦	
150	3.8	3.9			♦	♦		♦						
150	3.9	4.0			♦	♦								
150	4.0	4.1		♦		♦								
150	4.1	4.2		♦		♦								
150	4.2	4.3		♦		♦								
150	4.3	4.4		♦		♦								
150	4.4	4.5		♦		♦								
150	4.5	4.6		♦		♦								
150	4.6	4.7		♦		♦								
150	4.7	4.8		♦		♦								
150	4.8	4.9		♦		♦								
150	4.9	5.0		♦		♦								
150	5.0	5.1		♦		♦		♦						
150	5.1	5.2		♦		♦								
150	5.2	5.3		♦		♦								
150	5.3	5.4		♦		♦		♦						
150	5.4	5.5		♦		♦		♦						
150	5.5	5.6		♦		♦								
150	5.6	5.7		♦		♦								
150	5.7	5.8			♦	♦								
150	5.8	5.9		♦		♦								
150	5.9	6.0		♦		♦								
150	6.0	6.1		♦		♦								
150	6.1	6.2		♦		♦		♦						
150	6.2	6.3			♦	♦		♦						
150	6.3	6.4			♦	♦								
150	6.4	6.5		♦										
150	6.5	6.6			♦	♦								
150	6.6	6.7		♦										
150	6.7	6.8		♦										
150	6.8	6.9												
150	6.9	7.0						♦						
150	7.0	7.1												
150	7.1	7.2		♦	♦	♦		♦					♦	
150	7.2	7.3		♦	♦	♦		♦					♦	
150	7.3	7.4		♦	♦	♦		♦					♦	
150	7.4	7.5		♦	♦	♦		♦					♦	
150	7.5	7.6			♦	♦		♦					♦	
150	7.6	7.7			♦	♦		♦					♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
150	7.7	7.8			♦	♦		♦					♦	
150	7.8	7.9			♦	♦		♦					♦	
150	7.9	8.0			♦	♦		♦					♦	
150	8.0	8.1			♦	♦		♦					♦	
150	8.1	8.2			♦	♦		♦					♦	
150	8.2	8.3			♦	♦		♦					♦	
150	8.3	8.4			♦	♦		♦					♦	
	Total Miles		0.3	4.7	4.6	7.4	0.0	4.4	0.0	0.0	0.5	0.0	3.5	0.0
151	0.0	0.1			♦	♦		♦					♦	
151	0.1	0.2			♦	♦		♦					♦	
151	0.2	0.3			♦	♦		♦					♦	
151	0.3	0.4			♦	♦		♦					♦	
151	0.4	0.5			♦	♦		♦					♦	
151	0.5	0.6			♦	♦		♦					♦	
151	0.6	0.7			♦	♦		♦					♦	
151	0.7	0.8			♦	♦		♦					♦	
151	0.8	0.9			♦	♦								
151	0.9	1.0			♦	♦								
151	1.0	1.1			♦	♦		♦						
151	1.1	1.2			♦	♦								
151	1.2	1.3			♦	♦								
151	1.3	1.4		♦	♦	♦								
151	1.4	1.5			♦	♦								
151	1.5	1.6			♦	♦		♦						
151	1.6	1.7			♦	♦								
151	1.7	1.8		♦	♦	♦					♦			
151	1.8	1.9	♦	♦	♦						♦			
151	1.9	2.0	♦								♦			
151	2.0	2.1	♦					♦			♦			
151	2.1	2.2		♦	♦	♦		♦			♦			
151	2.2	2.3		♦	♦	♦					♦			
151	2.3	2.4		♦	♦	♦					♦			
151	2.4	2.5		♦	♦	♦					♦			
151	2.5	2.6		♦	♦	♦					♦			
151	2.6	2.7		♦	♦	♦		♦			♦			
151	2.7	2.8		♦	♦	♦		♦			♦			
151	2.8	2.9		♦	♦	♦					♦			
151	2.9	3.0		♦	♦	♦					♦			
151	3.0	3.1		♦	♦	♦					♦			
151	3.1	3.2		♦	♦	♦					♦			
151	3.2	3.3		♦	♦	♦					♦			
151	3.3	3.4		♦	♦						♦			
151	3.4	3.5		♦	♦	♦					♦			
151	3.5	3.6		♦	♦	♦					♦			
151	3.6	3.7		♦	♦	♦		♦			♦			
151	3.7	3.8		♦	♦	♦					♦			
151	3.8	3.9		♦	♦	♦					♦			
151	3.9	4.0		♦	♦	♦					♦			
151	4.0	4.1		♦	♦	♦		♦			♦			
151	4.1	4.2		♦	♦	♦		♦			♦			
151	4.2	4.3		♦	♦	♦					♦			
151	4.3	4.4		♦	♦	♦					♦			
151	4.4	4.5		♦	♦	♦					♦	♦		
151	4.5	4.6		♦	♦	♦					♦	♦		
151	4.6	4.7		♦	♦	♦					♦	♦		
151	4.7	4.8		♦	♦	♦					♦	♦		
151	4.8	4.9		♦	♦	♦					♦	♦		
151	4.9	5.0		♦	♦	♦					♦	♦		
151	5.0	5.1		♦	♦	♦					♦	♦		
151	5.1	5.2		♦	♦	♦		♦			♦	♦		
151	5.2	5.3		♦	♦						♦			
151	5.3	5.4		♦	♦						♦			
151	5.4	5.5		♦	♦	♦					♦	♦		
151	5.5	5.6		♦	♦	♦					♦	♦		
151	5.6	5.7		♦	♦	♦					♦	♦		
151	5.7	5.8		♦	♦	♦					♦			
151	5.8	5.9		♦	♦	♦					♦	♦		
151	5.9	6.0		♦	♦	♦				♦	♦	♦		
151	6.0	6.1	♦							♦	♦	♦		
151	6.1	6.2	♦					♦		♦	♦	♦		
151	6.2	6.3	♦							♦	♦	♦		
151	6.3	6.4	♦							♦	♦	♦		
151	6.4	6.5	♦					♦		♦	♦	♦		
151	6.5	6.6		♦	♦			♦		♦	♦	♦		
151	6.6	6.7		♦	♦						♦			
151	6.7	6.8		♦	♦						♦			
151	6.8	6.9		♦	♦						♦			
151	6.9	7.0		♦	♦						♦			
151	7.0	7.1		♦	♦						♦	♦		
151	7.1	7.2		♦	♦						♦	♦		
151	7.2	7.3		♦	♦						♦	♦		

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
151	7.3	7.4		♦	♦			♦			♦	♦		
151	7.4	7.5	♦	♦	♦						♦	♦		
151	7.5	7.6	♦					♦			♦	♦		
151	7.6	7.7	♦								♦	♦		
151	7.7	7.8	♦					♦			♦	♦		
151	7.8	7.9	♦	♦	♦						♦	♦		
151	7.9	8.0		♦	♦	♦					♦	♦		
151	8.0	8.1		♦	♦	♦					♦	♦		
151	8.1	8.2		♦	♦						♦	♦		
151	8.2	8.3		♦	♦	♦					♦	♦		
151	8.3	8.4	♦	♦	♦						♦			
151	8.4	8.5	♦								♦			
151	8.5	8.8	♦								♦			
151	8.6	8.7	♦								♦			
151	8.7	8.8	♦	♦	♦	♦		♦			♦	♦		
151	8.8	8.9	♦								♦			
151	8.9	9.0		♦	♦			♦			♦	♦		
151	9.0	9.1		♦	♦						♦	♦		
151	9.1	9.2		♦	♦						♦	♦		
151	9.2	9.3		♦	♦	♦					♦	♦		
151	9.3	9.4		♦	♦			♦			♦	♦		
151	9.4	9.5		♦	♦						♦			
151	9.5	9.6		♦	♦						♦	♦		
151	9.8	9.7		♦	♦	♦					♦	♦		
151	9.7	9.8		♦	♦	♦					♦	♦		
151	9.8	9.9		♦	♦						♦			
151	9.9	10.0		♦	♦						♦			
151	10.0	10.1		♦	♦	♦					♦			
151	10.1	10.2		♦	♦	♦					♦			
151	10.2	10.3		♦	♦	♦					♦			
151	10.3	10.4		♦	♦	♦		♦			♦			
151	10.4	10.5		♦	♦	♦		♦			♦			
151	10.5	10.6		♦	♦	♦					♦	♦		
151	10.8	10.7		♦	♦	♦					♦	♦		
151	10.7	10.8		♦	♦	♦		♦			♦	♦		
151	10.8	10.9		♦	♦	♦					♦	♦		
151	10.9	11.0		♦	♦	♦					♦	♦		
151	11.0	11.1		♦	♦	♦					♦	♦		
151	11.1	11.2		♦	♦	♦					♦	♦		
151	11.2	11.3		♦	♦	♦					♦	♦		
151	11.3	11.4		♦	♦	♦					♦	♦		
151	11.4	11.5		♦	♦	♦					♦	♦		
151	11.5	11.6		♦	♦	♦		♦			♦	♦	♦	
151	11.6	11.7		♦	♦	♦		♦			♦	♦	♦	
151	11.7	11.8		♦	♦	♦		♦			♦	♦	♦	
151	11.8	11.9		♦	♦	♦		♦			♦	♦	♦	
151	11.9	12.0		♦	♦	♦		♦			♦	♦	♦	
151	12.0	12.1		♦	♦	♦		♦			♦	♦	♦	
151	12.1	12.2		♦	♦	♦		♦			♦	♦	♦	
151	12.2	12.3		♦	♦	♦					♦	♦		
151	12.3	12.4		♦	♦	♦					♦	♦		
151	12.4	12.5		♦	♦	♦					♦			
151	12.5	12.6		♦	♦	♦					♦			
151	12.6	12.7		♦	♦	♦					♦			
151	12.7	12.8		♦	♦	♦					♦			
151	12.8	12.9		♦	♦	♦		♦			♦			
151	12.9	13.0		♦	♦	♦					♦			
151	13.0	13.1		♦	♦						♦			
151	13.1	13.2		♦	♦						♦			
151	13.2	13.3		♦	♦			♦			♦			
151	13.3	13.4		♦	♦						♦			
151	13.4	13.5	♦	♦	♦			♦			♦			
151	13.5	13.6	♦								♦			
151	13.6	13.7	♦								♦			
151	13.7	13.8		♦	♦						♦			
151	13.8	13.9		♦	♦	♦					♦			
151	13.9	14.0		♦	♦	♦					♦			
151	14.0	14.1		♦	♦	♦					♦			
151	14.1	14.2			♦	♦								
151	14.2	14.3		♦		♦		♦						
	Total Miles		2.2	11.0	12.6	9.6	0.0	4.1	0.0	0.7	12.4	6.0	1.5	0.0
152	0.0	0.1		♦		♦								
152	0.1	0.2		♦		♦								
152	0.2	0.3		♦		♦								
152	0.3	0.4		♦		♦								
152	0.4	0.5		♦		♦								
152	0.5	0.6		♦		♦		♦						
152	0.6	0.7		♦		♦		♦						
152	0.7	0.8		♦		♦								
152	0.8	0.9		♦		♦								
152	0.9	1.0		♦		♦								

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
152	1.0	1.1		♦		♦								
152	1.1	1.2		♦		♦								
152	1.2	1.3		♦		♦								
152	1.3	1.4		♦		♦								
152	1.4	1.5		♦		♦								
152	1.5	1.6		♦		♦								
152	1.6	1.7		♦				♦						
152	1.7	1.8		♦				♦						
152	1.8	1.9		♦										
152	1.9	2.0		♦										
152	2.0	2.1												
152	2.1	2.2												
152	2.2	2.3						♦						
152	2.3	2.4		♦										
152	2.4	2.5		♦										
152	2.5	2.6		♦										
152	2.6	2.7		♦										
152	2.7	2.8		♦		♦		♦						
152	2.8	2.9		♦		♦		♦						
152	2.9	3.0		♦		♦								
152	3.0	3.1		♦		♦								
152	3.1	3.2		♦		♦								
152	3.2	3.3		♦		♦		♦						
152	3.3	3.4			♦	♦								
152	3.4	3.5			♦	♦								
152	3.5	3.6			♦	♦								
152	3.6	3.7			♦	♦								
152	3.7	3.8			♦	♦								
152	3.8	3.9		♦		♦								
152	3.9	4.0		♦	♦	♦								
152	4.0	4.1		♦		♦								
152	4.1	4.2						♦						
152	4.2	4.3						♦						
152	4.3	4.4												
152	4.4	4.5												
152	4.5	4.6												
152	4.6	4.7												
152	4.7	4.8						♦						
152	4.8	4.9						♦						
152	4.9	5.0												
152	5.0	5.1			♦	♦								
152	5.1	5.2												
152	5.2	5.3												
152	5.3	5.4												
152	5.4	5.5												
152	5.5	5.6												
152	5.6	5.7												
152	5.7	5.8												
152	5.8	5.9			♦	♦								
152	5.9	6.0			♦	♦								
152	6.0	6.1			♦	♦								
152	6.1	6.2			♦	♦								
152	6.2	6.3			♦	♦								
152	6.3	6.4			♦	♦		♦						
152	6.4	6.5			♦	♦								
152	6.5	6.6			♦	♦								
152	6.6	6.7												
152	6.7	6.8												
152	6.8	6.9												
152	6.9	7.0												
152	7.0	7.1												
152	7.1	7.2						♦						
152	7.2	7.3												
152	7.3	7.4												
152	7.4	7.5												
152	7.5	7.6												
152	7.6	7.7												
152	7.7	7.8						♦						
152	7.8	7.9						♦						
152	7.9	8.0												
152	8.0	8.1												
152	8.1	8.2												
152	8.2	8.3												
152	8.3	8.4												
152	8.4	8.5			♦	♦								
152	8.5	8.6			♦	♦								
152	8.6	8.7			♦	♦		♦						
152	8.7	8.8			♦	♦								
152	8.8	8.9			♦	♦								
152	8.9	9.0												
152	9.0	9.1												
152	9.1	9.2			♦	♦								

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
152	9 2	9 3			♦	♦								
152	9 3	9.4		♦				♦						
152	9.4	9 5						♦						
152	9 5	9.6												
152	9 6	9 7												
152	9 7	9 8						♦						
152	9 8	9 9						♦						
	Total Miles		0.0	3.4	2.2	4.6	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0
200	0 0	0 1						♦						
200	0 1	0 2												
200	0.2	0.3			♦	♦								
200	0.3	0.4		♦	♦	♦		♦					♦	
200	0 4	0.5		♦				♦					♦	
200	0.5	0.6		♦				♦					♦	
200	0.6	0.7		♦				♦					♦	
200	0 7	0.8		♦				♦					♦	
200	0.8	0.9	♦					♦					♦	
200	0.9	1 0	♦					♦					♦	
200	1 0	1.1	♦					♦					♦	
200	1 1	1 2		♦				♦					♦	
200	1 2	1 3		♦				♦					♦	
200	1 3	1.4		♦				♦					♦	
200	1 4	1 5		♦				♦					♦	
200	1 5	1.6		♦				♦					♦	
200	1 6	1.7		♦				♦					♦	
200	1 7	1 8	♦					♦					♦	
200	1 8	1 9	♦					♦					♦	
200	1 9	2 0	♦					♦					♦	
200	2.0	2 1	♦					♦					♦	
200	2.1	2.2	♦					♦					♦	
200	2.2	2 3												
200	2.3	2.4												
200	2.4	2.5			♦	♦								
200	2.5	2.6												
200	2.6	2 7												
200	2.7	2.8						♦						
200	2.8	2.9			♦	♦								
200	2.9	3 0												
200	3.0	3.1			♦	♦								
200	3 1	3.2			♦	♦		♦						
200	3.2	3.3			♦	♦								
200	3.3	3.4			♦	♦								
200	3.4	3.5			♦	♦								
200	3 5	3.6			♦	♦								
200	3.6	3.7			♦	♦								
200	3.7	3 8			♦	♦								
200	3.8	3.9			♦	♦								
200	3.9	4 0			♦	♦								
200	4 0	4 1			♦	♦								
200	4 1	4 2			♦	♦		♦						
200	4.2	4 3			♦	♦								
200	4 3	4 4												
200	4 4	4 5												
200	4.5	4 6												
200	4 6	4 7												
200	4 7	4 8						♦						
200	4.8	4 9												
200	4.9	5.0												
200	5 0	5 1												
200	5 1	5.2												
200	5 2	5.3												
200	5 3	5 4			♦	♦								
200	5 4	5 5			♦	♦								
200	5.5	5 6			♦	♦								
200	5.6	5 7			♦	♦		♦						
200	5 7	5 8			♦	♦								
200	5 8	5 9			♦	♦								
200	5 9	6.0			♦	♦								
200	6 0	6.1			♦	♦								
200	6 1	6.2			♦	♦								
200	6 2	6.3			♦	♦								
200	6 3	6 4			♦	♦		♦						
200	6 4	6.5			♦	♦								
200	6.5	6.6			♦	♦								
200	6.6	6.7			♦	♦								
200	6.7	6.8												
200	6.8	6.9												
200	6 9	7.0												
200	7 0	7 1												
200	7 1	7.2						♦						
200	7 2	7 3												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
	Total Miles		0.8	1.1	3.1	3.1	0.0	2.7	0.0	0.0	0.0	0.0	1.9	0.0
221	0.1	0.2			♦	♦								
221	0.2	0.3			♦	♦								
221	0.3	0.4			♦	♦								
221	0.4	0.5												
221	0.5	0.6												
221	0.6	0.7												
221	0.7	0.8												
221	0.8	0.9												
221	0.9	1.0			♦	♦								
221	1.0	1.1												
221	1.1	1.2	♦								♦			
221	1.2	1.3	♦								♦			
221	1.3	1.4		♦	♦			♦			♦			
221	1.4	1.5		♦	♦			♦			♦			
221	1.5	1.6		♦	♦						♦			
221	1.6	1.7		♦	♦			♦			♦			
221	1.7	1.8		♦	♦			♦			♦			
221	1.8	1.9		♦	♦						♦			
221	1.9	2.0		♦	♦						♦			
221	2.0	2.1		♦	♦	♦					♦			
221	2.1	2.2		♦	♦	♦		♦			♦		♦	
221	2.2	2.3		♦	♦	♦		♦			♦		♦	
221	2.3	2.4		♦	♦	♦		♦			♦		♦	
221	2.4	2.5		♦	♦	♦		♦			♦		♦	
221	2.5	2.6		♦	♦	♦		♦		♦	♦		♦	
221	2.6	2.7		♦	♦	♦		♦		♦	♦	♦	♦	
221	2.7	2.8		♦	♦	♦		♦		♦	♦	♦	♦	
221	2.8	2.9		♦	♦	♦		♦		♦	♦	♦	♦	
221	2.9	3.0		♦	♦	♦		♦		♦	♦	♦	♦	
221	3.0	3.1		♦	♦	♦		♦			♦		♦	
221	3.1	3.2		♦	♦	♦		♦			♦		♦	
221	3.2	3.3		♦	♦	♦		♦			♦		♦	
221	3.3	3.4		♦	♦	♦		♦			♦		♦	
221	3.4	3.5		♦	♦	♦		♦			♦		♦	
221	3.5	3.6	♦			♦		♦			♦		♦	
221	3.6	3.7	♦								♦			
221	3.7	3.8	♦								♦			
221	3.8	3.9		♦	♦						♦			
221	3.9	4.0		♦	♦						♦			
221	4.0	4.1		♦	♦						♦			
221	4.1	4.2		♦	♦						♦			
221	4.2	4.3		♦	♦						♦			
221	4.3	4.4		♦	♦						♦			
	Total Miles		0.5	2.8	3.2	2.0	0.0	1.9	0.0	0.5	3.3	0.4	1.5	0.0
223	0.0	0.1		♦	♦						♦			
223	0.1	0.2	♦					♦			♦			
223	0.2	0.3	♦	♦	♦						♦	♦		
223	0.3	0.4	♦					♦			♦			
223	0.4	0.5	♦					♦			♦			
223	0.5	0.6	♦								♦			
223	0.6	0.7	♦								♦			
223	0.7	0.8	♦								♦			
223	0.8	0.9	♦					♦			♦			
223	0.9	1.0	♦					♦			♦			
223	1.0	1.1	♦					♦			♦			
223	1.1	1.2	♦					♦			♦			
223	1.2	1.3	♦					♦			♦			
223	1.3	1.4	♦					♦			♦			
223	1.4	1.5						♦						
223	1.5	1.6						♦						
223	1.6	1.7						♦						
223	1.7	1.8												
223	1.8	1.9												
223	1.9	2.0												
223	2.0	2.1												
223	2.1	2.2												
223	2.2	2.3												
223	2.3	2.4												
223	2.4	2.5												
223	2.5	2.6												
223	2.6	2.7												
223	2.7	2.8												
223	2.8	2.9												
223	2.9	3.0												
223	3.0	3.1												
223	3.1	3.2												
223	3.2	3.3												
223	3.3	3.4												
223	3.4	3.5												

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
223	3.5	3.6												
223	3.6	3.7						♦						
223	3.7	3.8												
223	3.8	3.9												
223	3.9	4.0												
223	4.0	4.1												
223	4.1	4.2						♦						
223	4.2	4.3						♦						
223	4.3	4.4						♦						
223	4.4	4.5						♦						
223	4.5	4.8												
223	4.6	4.7												
223	4.7	4.8												
223	4.8	4.9												
223	4.9	5.0												
223	5.0	5.1												
223	5.1	5.2												
223	5.2	5.3												
223	5.3	5.4						♦						
223	5.4	5.5						♦						
223	5.5	5.6						♦						
223	5.6	5.7												
223	5.7	5.8												
223	5.8	5.9												
223	5.9	6.0												
223	6.0	6.1												
223	6.1	6.2												
223	6.2	6.3												
223	6.3	6.4												
223	6.4	6.5						♦						
223	6.5	6.6						♦						
223	6.6	6.7												
223	6.7	6.8												
223	6.8	6.9	♦								♦			
223	6.9	7.0	♦								♦			
223	7.0	7.1	♦								♦			
223	7.1	7.2	♦								♦			
223	7.2	7.3	♦								♦			
223	7.3	7.4	♦								♦			
223	7.4	7.5	♦								♦			
223	7.5	7.6	♦								♦			
223	7.6	7.7	♦								♦			
223	7.7	7.8	♦								♦			
223	7.8	7.9	♦					♦			♦			
223	7.9	8.0	♦								♦			
223	8.0	8.1	♦								♦			
223	8.1	8.2	♦								♦			
223	8.2	8.3	♦								♦			
223	8.3	8.4	♦								♦			
223	8.4	8.5	♦								♦			
223	8.5	8.6	♦								♦			
223	8.6	8.7	♦								♦			
223	8.7	8.8	♦								♦			
223	8.8	8.9	♦								♦			
223	8.9	9.0	♦								♦			
223	9.0	9.1	♦					♦			♦			
223	9.1	9.2	♦					♦			♦			
223	9.2	9.3	♦					♦			♦			
223	9.3	9.4	♦					♦			♦			
223	9.4	9.5	♦					♦			♦			
223	9.5	9.6	♦					♦			♦			
223	9.6	9.7	♦								♦	♦		
223	9.7	9.8	♦								♦	♦		
223	9.8	9.9	♦								♦	♦		
223	9.9	10.0	♦					♦			♦			
223	10.0	10.1	♦	♦	♦						♦	♦		
223	10.1	10.2		♦	♦			♦			♦			
223	10.2	10.3		♦	♦			♦			♦			
223	10.3	10.4		♦	♦						♦			
223	10.4	10.5		♦	♦			♦			♦			
223	10.5	10.6		♦	♦			♦			♦			
223	10.6	10.7		♦	♦						♦			
223	10.7	10.8		♦	♦						♦			
223	10.8	10.9		♦	♦			♦			♦			
223	10.9	11.0		♦	♦						♦			
223	11.0	11.1		♦	♦			♦			♦			
223	11.1	11.2	♦					♦			♦			
223	11.2	11.3		♦	♦			♦			♦			
223	11.3	11.4		♦	♦			♦			♦			
223	11.4	11.5		♦	♦						♦			
223	11.5	11.6		♦	♦			♦			♦			
223	11.6	11.7		♦	♦			♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
223	11.7	11.8		♦	♦						♦			
223	11.8	11.9		♦	♦			♦			♦			
223	11.9	12.0		♦	♦						♦			
223	12.0	12.1		♦	♦						♦			
223	12.1	12.2		♦	♦						♦			
223	12.2	12.3						♦						
223	12.3	12.4	♦								♦			
223	12.4	12.5	♦					♦			♦			
223	12.5	12.6	♦					♦			♦			
223	12.6	12.7	♦					♦			♦			
223	12.7	12.8	♦								♦			
223	12.8	12.9	♦								♦			
223	12.9	13.0	♦					♦			♦			
223	13.0	13.1	♦					♦			♦			
223	13.1	13.2	♦								♦			
	Total Miles		5.60	2.30	2.30	0.00	0.00	4.80	0.00	0.00	7.70	0.50	0.00	0.00
212	0.0	0.1	♦								♦			
212	0.1	0.2	♦								♦			
212	0.2	0.3	♦								♦			
212	0.3	0.4	♦								♦			
212	0.4	0.5	♦								♦			
212	0.5	0.6	♦					♦			♦			
212	0.6	0.7	♦					♦			♦	♦		
212	0.7	0.8	♦					♦			♦	♦		
212	0.8	0.9	♦								♦	♦		
212	0.9	1.0	♦					♦			♦	♦		
212	1.0	1.1	♦								♦	♦		
212	1.1	1.2	♦								♦	♦		
212	1.2	1.3	♦								♦	♦		
212	1.3	1.4	♦								♦	♦		
212	1.4	1.5	♦								♦			
212	1.5	1.6	♦								♦			
212	1.6	1.7	♦								♦	♦		
212	1.7	1.8	♦								♦	♦		
212	1.8	1.9	♦								♦	♦		
212	1.9	2.0	♦								♦	♦		
212	2.0	2.1	♦								♦			
212	2.1	2.2	♦								♦			
212	2.2	2.3	♦								♦			
212	2.3	2.4	♦								♦			
212	2.4	2.5	♦								♦			
212	2.5	2.6	♦								♦			
212	2.6	2.7	♦	♦	♦						♦	♦		
212	2.7	2.8		♦	♦						♦	♦		
212	2.8	2.9		♦	♦						♦			
212	2.9	3.0		♦	♦						♦			
212	3.0	3.1		♦	♦						♦			
212	3.1	3.2		♦	♦						♦			
212	3.2	3.3												
212	3.3	3.4	♦								♦			
212	3.4	3.5		♦	♦						♦			
212	3.5	3.6		♦	♦						♦			
212	3.6	3.7		♦	♦						♦			
212	3.7	3.8		♦	♦						♦			
212	3.8	3.9		♦	♦						♦			
212	3.9	4.0		♦	♦						♦			
212	4.0	4.1		♦	♦						♦			
212	4.1	4.2		♦	♦						♦			
212	4.2	4.3		♦	♦						♦			
212	4.3	4.4		♦	♦						♦			
212	4.4	4.5		♦	♦						♦			
212	4.5	4.6		♦	♦						♦			
212	4.6	4.7		♦	♦						♦			
212	4.7	4.8		♦	♦						♦			
212	4.8	4.9		♦	♦						♦			
212	4.9	5.0		♦	♦						♦			
212	5.0	5.1		♦	♦						♦			
212	5.1	5.2		♦	♦						♦			
212	5.2	5.3												
212	5.3	5.4												
212	5.4	5.5												
212	5.5	5.6												
212	5.6	5.7												
212	5.7	5.8												
212	5.8	5.9												
212	5.9	6.0												
212	6.0	6.1												
212	6.1	6.2												
212	6.2	6.3												
212	6.3	6.4												
212	6.4	6.5												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
212	6.5	6.6												
212	6.6	6.7												
212	6.7	6.8												
212	6.8	6.9												
212	6.9	7.0												
212	7.0	7.1												
212	7.1	7.2												
212	7.2	7.3												
212	7.3	7.4												
212	7.4	7.5												
212	7.5	7.6												
212	7.8	7.7												
212	7.7	7.8												
212	7.8	7.9												
212	7.9	8.0												
212	8.0	8.1												
212	8.1	8.2												
212	8.2	8.3												
212	8.3	8.4												
212	8.4	8.5												
212	8.5	8.6												
212	8.6	8.7												
212	8.7	8.8												
212	8.8	8.9												
212	8.9	9.0												
212	9.0	9.1												
212	9.1	9.2	♦								♦			
212	9.2	9.3	♦								♦			
212	9.3	9.4		♦	♦						♦			
212	9.4	9.5		♦	♦						♦			
212	9.5	9.6		♦	♦						♦			
212	9.6	9.7		♦	♦						♦			
212	9.7	9.8		♦	♦						♦			
212	9.8	9.9	♦	♦	♦						♦			
212	9.9	10.0	♦								♦			
212	10.0	10.1	♦								♦			
212	10.1	10.2		♦	♦						♦			
212	10.2	10.3		♦	♦						♦			
212	10.3	10.4		♦	♦						♦			
212	10.4	10.5	♦								♦			
212	10.5	10.6	♦								♦			
212	10.6	10.7	♦								♦			
212	10.7	10.8	♦								♦			
212	10.8	10.9	♦								♦			
212	10.9	11.0	♦								♦			
212	11.0	11.1	♦								♦			
212	11.1	11.2	♦								♦			
212	11.2	11.3		♦	♦						♦			
212	11.3	11.4		♦	♦						♦			
212	11.4	11.5		♦	♦						♦			
212	11.5	11.6		♦	♦						♦			
212	11.6	11.7	♦								♦			
212	11.7	11.8												
212	11.8	11.9												
212	11.9	12.0												
212	12.1	12.2												
212	12.2	12.3												
212	12.3	12.4												
212	12.4	12.5												
212	12.5	12.6												
212	12.6	12.7												
212	12.7	12.8												
212	12.8	12.9												
212	12.9	13.0												
212	13.1	13.2												
212	13.2	13.3												
212	13.3	13.4												
212	13.4	13.5												
212	13.5	13.6												
212	13.6	13.7												
212	13.7	13.8												
212	13.8	13.9												
212	13.9	14.0												
212	14.0	14.1												
212	14.1	14.2												
212	14.2	14.3												
212	14.3	14.4												
212	14.4	14.5												
212	14.6	14.7												
212	14.7	14.8												
212	14.8	14.9												
212	14.9	15.0												

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
212	15.0	15.1												
212	15.1	15.2												
212	15.2	15.3												
212	15.3	15.4												
212	15.4	15.5												
212	15.5	15.6												
212	15.6	15.7												
212	15.7	15.8												
212	15.8	15.9												
212	15.9	16.0												
212	16.0	16.1												
212	16.1	16.2												
212	16.2	16.3												
212	16.2	16.3												
	Total Miles		**4.20**	**3.70**	**3.70**	**0.00**	**0.00**	**0.40**	**0.00**	**0.00**	**7.70**	**1.40**	**0.00**	**0.00**
230	0.0	0.1									♦			
230	0.1	0.2									♦			
230	0.2	0.3									♦			
230	0.3	0.4									♦			
230	0.4	0.5									♦			
230	0.5	0.6									♦			
230	0.6	0.7									♦			
230	0.7	0.8									♦			
230	0.8	0.9									♦			
230	0.9	1.0									♦			
230	1.0	1.1									♦			
230	1.1	1.2									♦			
230	1.2	1.3									♦			
230	1.3	1.4									♦			
230	1.4	1.5						♦			♦			
230	1.5	1.6									♦			
230	1.6	1.7									♦			
230	1.7	1.8									♦			
230	1.8	1.9									♦			
230	1.9	2.0									♦			
230	2.0	2.1									♦			
230	2.1	2.2									♦			
230	2.2	2.3	♦								♦			
230	2.3	2.4	♦								♦			
230	2.4	2.5	♦								♦			
230	2.5	2.6		♦							♦			
230	2.6	2.7		♦							♦			
230	2.7	2.8		♦							♦			
230	2.8	2.9		♦							♦			
230	2.9	3.0		♦							♦			
230	3.0	3.1						♦			♦			
230	3.1	3.2						♦			♦			
230	3.2	3.3						♦			♦			
230	3.3	3.4						♦			♦			
230	3.4	3.5						♦			♦			
230	3.5	3.6									♦			
230	3.6	3.7									♦			
230	3.7	3.8	♦								♦			
230	3.8	3.9									♦			
230	3.9	4.0									♦			
230	4.0	4.1	♦								♦			
230	4.1	4.2									♦			
230	4.2	4.3		♦							♦			
230	4.3	4.4	♦								♦			
230	4.4	4.5									♦			
230	4.5	4.6									♦			
230	4.6	4.7									♦			
230	4.7	4.8									♦			
230	4.8	4.9									♦			
230	4.9	5.0									♦			
230	5.0	5.1									♦			
230	5.1	5.2									♦			
230	5.2	5.3									♦			
230	5.3	5.4									♦			
230	5.4	5.5									♦			
230	5.5	5.6									♦			
230	5.6	5.7									♦			
230	5.7	5.8									♦			
230	5.8	5.9									♦			
230	5.9	6.0									♦			
230	6.0	6.1									♦			
230	6.1	6.2									♦			
230	6.2	6.3									♦			
230	6.3	6.4									♦			
230	6.4	6.5									♦			
230	6.5	6.6									♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
230	6.6	6.7									♦			
230	6.7	6.8									♦			
230	6.8	6.9									♦			
230	6.9	7.0									♦			
230	7.0	7.1									♦			
230	7.1	7.2									♦			
230	7.2	7.3												
230	7.3	7.4												
230	7.4	7.5												
230	7.5	7.6												
230	7.6	7.7												
230	7.7	7.8												
230	7.8	7.9												
230	7.9	8.0												
230	8.0	8.1												
230	8.1	8.2												
230	8.2	8.3												
230	8.3	8.4												
230	8.4	8.5												
230	8.5	8.6												
230	8.6	8.7												
230	8.7	8.8												
230	8.8	8.9												
230	8.9	9.0												
230	9.0	9.1												
230	9.1	9.2		♦	♦						♦			
230	9.2	9.3		♦	♦						♦			
230	9.3	9.4		♦	♦						♦			
230	9.4	9.5		♦	♦						♦			
230	9.5	9.6		♦	♦						♦			
230	9.6	9.7		♦	♦						♦			
230	9.7	9.8		♦	♦						♦			
230	9.8	9.9	♦								♦			
230	9.9	10.0	♦	♦	♦						♦			
230	10.0	10.1	♦								♦			
230	10.1	10.2	♦	♦	♦						♦			
230	10.2	10.3		♦	♦						♦			
230	10.3	10.4		♦	♦						♦			
230	10.4	10.5		♦	♦						♦			
230	10.5	10.6	♦	♦	♦						♦			
230	10.6	10.7	♦	♦	♦						♦			
230	10.7	10.8		♦	♦						♦			
230	10.8	10.9		♦	♦						♦			
230	10.9	11.0		♦	♦						♦			
230	11.0	11.1												
230	11.1	11.2		♦	♦						♦			
230	11.2	11.3	♦								♦			
230	11.3	11.4		♦	♦						♦			
230	11.4	11.5		♦	♦						♦	♦		
230	11.5	11.6		♦	♦						♦	♦		
230	11.6	11.7		♦	♦						♦	♦		
230	11.7	11.8		♦	♦						♦	♦		
230	11.8	11.9		♦	♦						♦	♦		
230	11.9	12.0		♦	♦						♦	♦		
230	12.0	12.1		♦	♦						♦	♦		
230	12.1	12.2		♦	♦						♦	♦		
230	12.2	12.3		♦	♦						♦	♦		
230	12.3	12.4		♦	♦						♦	♦		
230	12.4	12.5		♦	♦						♦	♦		
230	12.5	12.6		♦	♦						♦	♦		
230	12.6	12.7		♦	♦						♦			
230	12.7	12.8		♦	♦						♦			
230	12.8	12.9		♦	♦						♦			
230	12.9	13.0		♦	♦						♦			
230	13.0	13.1		♦	♦						♦			
230	13.1	13.2		♦	♦						♦			
230	13.2	13.3		♦	♦						♦			
230	13.3	13.4		♦	♦						♦			
230	13.4	13.5		♦	♦						♦			
230	13.5	13.6		♦	♦						♦			
230	13.6	13.7		♦	♦						♦			
230	13.7	13.8		♦	♦						♦			
230	13.8	13.9		♦	♦						♦			
230	13.9	14.0	♦								♦			
230	14.0	14.1	♦								♦			
230	14.1	14.2	♦								♦			
230	14.2	14.3	♦								♦			
230	14.3	14.4		♦	♦						♦			
230	14.4	14.5		♦	♦						♦			
230	14.5	14.6		♦	♦						♦			
230	14.6	14.7		♦	♦						♦			
230	14.7	14.8		♦	♦						♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
230	14 8	14 9		♦	♦						♦			
230	14.9	15.0		♦	♦						♦			
230	15 0	15 1		♦	♦						♦			
230	15 1	15 2		♦										
230	15 2	15.3		♦										
230	15 3	15 4		♦										
230	15.4	15.5		♦										
230	15 5	15 6		♦		♦								
230	15.8	15 7		♦		♦								
230	15.7	15 8		♦		♦								
230	15.8	15 9		♦		♦								
230	15 9	16 0		♦		♦								
230	16 0	16 1		♦		♦								
230	16 1	16 2		♦		♦								
230	16 2	16 3		♦		♦								
230	16 3	16 4		♦		♦								
	Total Miles		1.7	7.1	5.2	0.9	0.0	0.6	0.0	0.0	13.1	1.2	0.0	0.0
241	0 0	0 1		♦		♦								
241	0 1	0 2		♦		♦								
241	0 2	0 3		♦		♦								
241	0 3	0 4		♦		♦								
241	0 4	0 5		♦										
241	0 5	0 6		♦										
241	0.6	0 7		♦				♦						
241	0 7	0 8		♦										
241	0.6	0.9												
241	0 9	1 0												
241	1 0	1 1												
241	1 1	1 2												
241	1 2	1 3		♦										
241	1 3	1 4		♦										
241	1 4	1 5		♦										
241	1 5	1 6		♦										
241	1.6	1 7		♦										
241	1 7	1 8												
241	1 8	1 9												
241	1 9	2 0												
241	2 0	2 1		♦										
241	2 1	2 2		♦										
241	2 2	2.3		♦										
241	2.3	2 4		♦										
241	2.4	2 5		♦										
241	2 5	2 6		♦										
241	2 6	2 7		♦										
241	2.7	2 8		♦										
241	2 8	2.9		♦										
241	2 9	3.0		♦										
241	3 0	3 1		♦										
241	3 1	3 2		♦										
241	3 2	3.3		♦										
241	3 3	3 4		♦										
241	3 4	3.5		♦										
241	3.5	3 6		♦										
241	3 6	3 7		♦										
241	3.7	3 8		♦										
241	3 8	3 9		♦										
241	3 9	4 0		♦										
241	4 0	4 1		♦										
241	4.1	4 2		♦										
241	4 2	4 3		♦										
241	4.3	4.4		♦										
241	4 4	4 5		♦										
241	4.5	4.6		♦										
241	4 6	4.7		♦										
241	4 7	4 8		♦										
241	4 6	4.9		♦										
241	4.9	5.0		♦										
241	5.0	5 1		♦										
241	5 1	5.2		♦										
241	5.2	5 3		♦				♦						
241	5 3	5 4		♦										
241	5 4	5 5		♦										
241	5 5	5.6		♦										
241	5 6	5 7		♦										
241	5 7	5 8		♦										
241	5 8	5.9		♦										
241	5.9	6.0		♦										
241	6 0	6.1		♦										
241	6 1	6 2		♦		♦								
241	6 2	6.3		♦		♦		♦						
241	6 3	6.4		♦		♦								

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
241	6.4	6.5		♦		♦								
241	6.5	6.6		♦		♦								
241	6.6	6.7		♦										
241	6.7	6.8		♦										
241	6.8	6.9		♦										
241	6.9	7.0		♦										
241	7.0	7.1												
241	7.1	7.2												
241	7.2	7.3												
241	7.3	7.4												
241	7.4	7.5												
241	7.5	7.6												
241	7.6	7.7												
241	7.7	7.8		♦										
241	7.8	7.9			♦	♦		♦						
241	7.9	8.0			♦	♦		♦						
241	8.0	8.1			♦	♦		♦						
241	8.1	8.2			♦	♦		♦						
241	8.2	8.3			♦	♦		♦						
241	8.3	8.4			♦	♦								
241	8.4	8.5			♦	♦								
241	8.5	8.6		♦										
241	8.6	8.7		♦										
241	8.7	8.8		♦										
241	8.8	8.9		♦		♦								
241	8.9	9.0		♦		♦		♦						
241	9.0	9.1		♦		♦								
241	9.1	9.2		♦		♦								
241	9.2	9.3		♦		♦								
241	9.3	9.4		♦		♦								
241	9.4	9.5		♦		♦								
241	9.5	9.6		♦		♦								
241	9.6	9.7		♦		♦								
241	9.7	9.8												
241	9.8	9.9												
241	9.9	10.0												
241	10.0	10.1						♦						
241	10.1	10.2												
241	10.2	10.3												
241	10.3	10.4												
241	10.4	10.5												
241	10.5	10.6												
241	10.6	10.7			♦	♦								
241	10.7	10.8			♦	♦								
241	10.8	10.9			♦	♦								
241	10.9	11.0			♦	♦								
241	11.0	11.1			♦	♦								
241	11.1	11.2												
241	11.2	11.3												
241	11.3	11.4												
241	11.4	11.5						♦						
241	11.5	11.6						♦						
241	11.6	11.7												
241	11.7	11.8												
241	11.8	11.9												
241	11.9	12.0												
241	12.0	12.1												
241	12.1	12.2												
241	12.2	12.3												
241	12.3	12.4												
241	12.4	12.5												
241	12.5	12.6												
241	12.6	12.7		♦										
241	12.7	12.8												
241	12.8	12.9		♦	♦						♦			
241	12.9	13.0		♦	♦						♦			
241	13.0	13.1		♦	♦						♦			
241	13.1	13.2		♦	♦						♦			
241	13.2	13.3		♦	♦						♦			
241	13.3	13.4		♦	♦						♦			
241	13.4	13.5		♦	♦	♦					♦			
241	13.5	13.6		♦	♦	♦					♦			
241	13.6	13.7		♦	♦	♦					♦			
241	13.7	13.8		♦	♦	♦					♦			
241	13.8	13.9		♦	♦	♦					♦			
241	13.9	14.0		♦	♦	♦					♦			
241	14.0	14.1		♦	♦	♦					♦			
241	14.1	14.2		♦	♦			♦			♦			
241	14.2	14.3		♦	♦					♦	♦		♦	
241	14.3	14.4		♦	♦					♦	♦		♦	
241	14.4	14.5		♦	♦					♦	♦		♦	
241	14.5	14.6	♦							♦	♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
241	14.6	14.7	♦							♦	♦			
241	14.7	14.8	♦							♦	♦			
241	14.8	14.9	♦								♦			
241	14.9	15.0	♦								♦			
241	15.0	15.1	♦								♦			
241	15.1	15.2	♦								♦			
241	15.2	15.3	♦								♦			
241	15.3	15.4	♦	♦	♦						♦			
241	15.4	15.5	♦								♦			
241	15.5	15.6	♦								♦			
241	15.6	15.7	♦								♦			
241	15.7	15.8	♦								♦			
241	15.8	15.9		♦	♦						♦			
241	15.9	16.0		♦	♦						♦			
241	16.0	16.1		♦	♦						♦			
241	16.1	16.2		♦	♦						♦			
241	16.2	16.3		♦	♦						♦			
241	16.3	16.4		♦	♦						♦			
241	16.4	16.5		♦	♦						♦			
241	16.5	16.6		♦	♦						♦			
241	16.6	16.7		♦	♦	♦					♦			
241	16.7	16.8		♦	♦	♦					♦			
241	16.8	16.9		♦	♦	♦					♦			
241	16.9	17.0		♦	♦	♦		♦			♦			
241	17.0	17.1		♦	♦	♦					♦			
241	17.1	17.2		♦	♦	♦					♦			
241	17.2	17.3		♦	♦						♦			
241	17.3	17.4		♦	♦						♦			
241	17.4	17.5		♦	♦						♦			
241	17.5	17.6		♦	♦						♦			
241	17.6	17.7	♦								♦			
241	17.7	17.8	♦								♦			
241	17.8	17.9	♦								♦			
241	17.9	18.0		♦	♦						♦			
241	18.0	18.1		♦	♦						♦			
241	18.1	18.2		♦	♦						♦			
241	18.2	18.3		♦	♦						♦			
241	18.3	18.4		♦	♦						♦			
241	18.4	18.5	♦								♦			
241	18.5	18.6	♦								♦			
241	18.6	18.7	♦								♦			
241	18.7	18.8		♦	♦						♦			
241	18.8	18.9		♦	♦						♦			
241	18.9	19.0		♦	♦						♦			
241	19.0	19.1		♦	♦						♦			
241	19.1	19.2		♦	♦	♦					♦			
241	19.2	19.3		♦	♦	♦					♦			
241	19.3	19.4		♦	♦	♦					♦			
241	19.4	19.5		♦	♦	♦					♦			
241	19.5	19.6		♦	♦	♦					♦			
241	19.6	19.7		♦	♦	♦					♦			
241	19.7	19.8		♦	♦	♦					♦			
241	19.8	19.9		♦	♦	♦					♦			
241	19.9	20.0		♦	♦	♦					♦			
241	20.0	20.1		♦	♦	♦					♦			
241	20.1	20.2		♦	♦	♦					♦			
241	20.2	20.3		♦	♦	♦					♦			
241	20.3	20.4		♦	♦	♦					♦			
241	20.4	20.5		♦	♦	♦					♦			
241	20.5	20.6		♦	♦	♦					♦			
241	20.6	20.7		♦	♦	♦					♦			
241	20.7	20.8		♦	♦	♦					♦			
241	20.8	20.9		♦	♦	♦					♦			
241	20.9	21.0		♦	♦	♦					♦			
241	21.0	21.1		♦	♦	♦					♦			
241	21.1	21.2		♦	♦	♦					♦			
241	21.2	21.3		♦	♦	♦					♦			
241	21.3	21.4		♦	♦	♦					♦			
241	21.4	21.5		♦	♦	♦					♦			
241	21.5	21.6		♦	♦	♦					♦			
241	21.6	21.7		♦	♦	♦					♦			
241	21.7	21.8		♦	♦	♦					♦			
241	21.8	21.9		♦	♦	♦					♦			
241	21.9	22.0		♦	♦	♦					♦			
241	22.0	22.1		♦	♦	♦					♦			
241	22.1	22.2		♦	♦	♦					♦			
241	22.2	22.3		♦	♦	♦					♦			
241	22.3	22.4		♦	♦	♦					♦			
241	22.4	22.5		♦	♦	♦					♦			
241	22.5	22.6		♦	♦	♦					♦			
241	22.6	22.7		♦	♦	♦					♦			
241	22.7	22.8		♦	♦	♦					♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
241	22.8	22.9		♦		♦					♦			
241	22.9	23 0		♦	♦	♦					♦			
241	23 0	23 1		♦	♦	♦					♦			
241	23 1	23 2		♦	♦	♦					♦			
241	23 2	23 3		♦	♦	♦					♦			
241	23 3	23 4		♦	♦	♦					♦			
241	23.4	23 5		♦	♦	♦					♦			
241	23 5	23 6		♦	♦	♦					♦			
241	23 6	23 7		♦		♦					♦			
241	23 7	23 8		♦		♦					♦			
241	23.8	23 9		♦	♦	♦					♦			
241	23 9	24 0		♦	♦	♦					♦			
241	24 0	24.1		♦	♦	♦					♦			
241	24 1	24 2		♦	♦	♦					♦			
241	24 2	24 3		♦	♦	♦					♦			
241	24 3	24.4		♦	♦	♦					♦			
241	24 4	24 5		♦	♦	♦					♦			
241	24 5	24 6		♦	♦	♦					♦			
241	24 6	24 7		♦	♦	♦					♦			
241	24 7	24.8		♦	♦	♦					♦			
241	24 8	24 9		♦	♦	♦					♦			
241	24.9	25 0		♦	♦	♦					♦			
241	25 0	25 1		♦	♦	♦					♦			
241	25 1	25.2		♦	♦	♦					♦	♦		
241	25 2	25.3		♦	♦	♦					♦	♦		
241	25 3	25.4		♦	♦	♦					♦	♦		
241	25 4	25.5		♦	♦	♦					♦	♦		
241	25.5	25 6		♦	♦	♦					♦	♦		
241	25.6	25 7		♦	♦	♦					♦	♦		
241	25 7	25.8		♦	♦	♦					♦	♦		
241	25.8	25 9		♦	♦	♦					♦	♦		
241	25.9	26 0		♦	♦	♦					♦	♦		
241	26 0	26 1		♦	♦	♦		♦			♦	♦		
241	26 1	26 2		♦	♦	♦					♦	♦		
241	26.2	26.3		♦	♦	♦					♦	♦		
241	26 3	26 4		♦	♦	♦					♦			
241	26 4	26 5		♦	♦	♦					♦			
241	26 5	26 6		♦	♦	♦					♦			
241	26 6	26 7		♦	♦	♦					♦			
241	26.7	26.8		♦	♦						♦			
241	26 8	26 9		♦	♦						♦			
241	26.9	27 0		♦	♦						♦			
241	27.0	27 1		♦	♦	♦					♦			
241	27 1	27 2	♦								♦			
241	27.2	27 3	♦								♦			
241	27 3	27 4		♦	♦						♦	♦		
241	27 4	27.5		♦	♦						♦			
241	27 5	27.6		♦	♦	♦					♦	♦		
241	27.6	27.7		♦	♦						♦	♦		
241	27 7	27 8		♦	♦	♦					♦	♦		
241	27 8	27 9		♦	♦	♦		♦			♦		♦	
241	27.9	28 0		♦	♦			♦			♦		♦	
241	28 0	28 1		♦	♦			♦			♦	♦	♦	
241	28 1	28.2		♦	♦			♦			♦	♦	♦	
241	28.2	28.3		♦	♦			♦			♦	♦	♦	
241	26.3	28.4	♦					♦			♦		♦	
241	26 4	28.5	♦					♦			♦		♦	
241	28.5	28.6	♦					♦			♦		♦	
241	28.6	28.7		♦	♦			♦			♦		♦	
241	26.7	28.8	♦					♦			♦		♦	
241	28.8	28.9	♦					♦			♦		♦	
241	28.9	29.0	♦					♦			♦		♦	
241	29.0	29 1	♦								♦			
241	29 1	29 2	♦								♦			
241	29.2	29 3	♦								♦			
241	29 3	29 4	♦								♦			
241	29.4	29 5	♦								♦			
241	29 5	29 6		♦	♦						♦			
	Total Miles		3.2	21.4	14.6	12.3	0.0	2.7	0.0	0.6	16.8	2.2	1.2	0.0
242	0 0	0 1		♦	♦						♦			
242	0 1	0 2		♦	♦			♦			♦		♦	
242	0 2	0 3		♦	♦			♦			♦		♦	
242	0.3	0.4		♦	♦			♦			♦		♦	
242	0 4	0 5		♦	♦			♦			♦		♦	
242	0 5	0.6	♦					♦			♦		♦	
242	0 8	0 7	♦					♦			♦		♦	
242	0 7	0.8	♦					♦			♦		♦	
242	0 8	0.9	♦					♦			♦		♦	
242	0.9	1 0									♦			
	Total Miles		0.4	0.5	0.5	0.0	0.0	0.8	0.0	0.0	1.0	0.0	0.8	0.0

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
244	0.0	0.1	♦					♦			♦		♦	
244	0.1	0.2	♦					♦			♦		♦	
244	0.2	0.3		♦	♦	♦		♦			♦		♦	
244	0.3	0.4		♦	♦	♦		♦			♦		♦	
244	0.4	0.5		♦	♦	♦		♦			♦		♦	
244	0.5	0.6		♦	♦	♦		♦			♦		♦	
244	0.6	0.7		♦	♦	♦		♦			♦		♦	
244	0.7	0.8		♦	♦	♦		♦			♦		♦	
244	0.8	0.9		♦	♦	♦					♦			
244	0.9	1.0		♦	♦	♦					♦			
244	1.0	1.1		♦	♦	♦					♦			
244	1.1	1.2		♦	♦	♦					♦			
244	1.2	1.3			♦	♦					♦			
244	1.3	1.4		♦	♦	♦					♦			
244	1.4	1.5		♦	♦	♦					♦			
244	1.5	1.8		♦	♦	♦					♦			
244	1.6	1.7		♦	♦	♦					♦			
244	1.7	1.8		♦	♦	♦					♦			
244	1.8	1.9		♦	♦	♦					♦			
244	1.9	2.0		♦	♦	♦					♦			
244	2.0	2.1		♦	♦	♦					♦			
244	2.1	2.2		♦	♦	♦		♦			♦			
244	2.2	2.3		♦	♦	♦					♦			
244	2.3	2.4		♦	♦	♦					♦			
244	2.4	2.5			♦	♦					♦			
244	2.5	2.6		♦	♦	♦					♦			
244	2.6	2.7		♦	♦	♦					♦			
244	2.7	2.8		♦	♦	♦					♦			
244	2.8	2.9		♦	♦	♦					♦			
244	2.9	3.0		♦	♦	♦					♦			
244	3.0	3.1			♦	♦					♦			
244	3.1	3.2		♦	♦	♦					♦			
244	3.2	3.3		♦	♦	♦					♦			
244	3.3	3.4		♦	♦	♦					♦			
244	3.4	3.5	♦								♦			
244	3.5	3.6	♦								♦			
244	3.6	3.7	♦					♦			♦			
244	3.7	3.8		♦	♦			♦			♦			
244	3.8	3.9		♦	♦						♦			
244	3.9	4.0		♦	♦						♦			
244	4.0	4.1		♦	♦						♦			
244	4.1	4.2		♦	♦	♦					♦			
244	4.2	4.3		♦	♦	♦					♦			
244	4.3	4.4		♦	♦	♦					♦			
244	4.4	4.5		♦	♦	♦					♦			
244	4.5	4.6		♦	♦	♦					♦			
244	4.6	4.7		♦	♦	♦					♦			
244	4.7	4.8		♦	♦	♦					♦			
244	4.8	4.9		♦	♦	♦					♦			
244	4.9	5.0				♦		♦			♦			
244	5.0	5.1		♦	♦	♦					♦			
244	5.1	5.2		♦	♦	♦					♦			
244	5.2	5.3		♦	♦	♦					♦			
244	5.3	5.4		♦	♦	♦					♦			
244	5.4	5.5		♦	♦	♦					♦			
244	5.5	5.6		♦	♦	♦					♦			
244	5.6	5.7		♦	♦	♦					♦			
244	5.7	5.8		♦	♦	♦					♦			
244	5.8	5.9		♦	♦	♦					♦			
244	5.9	6.0		♦	♦	♦					♦			
244	6.0	6.1		♦	♦	♦					♦			
	Total Miles		**0.5**	**5.2**	**5.5**	**5.2**	**0.0**	**1.2**	**0.0**	**0.0**	**6.1**	**0.0**	**0.8**	**0.0**
270	0.0	0.1		♦	♦	♦					♦			
270	0.1	0.2		♦	♦	♦					♦			
270	0.2	0.3		♦	♦	♦					♦			
270	0.3	0.4		♦	♦	♦					♦			
270	0.4	0.5		♦	♦	♦					♦			
270	0.5	0.6		♦	♦	♦					♦			
270	0.6	0.7		♦	♦	♦					♦			
270	0.7	0.8		♦	♦	♦					♦			
270	0.8	0.9		♦	♦	♦					♦			
270	0.9	1.0		♦	♦	♦		♦			♦			
270	1.0	1.1		♦	♦	♦		♦			♦			
270	1.1	1.2		♦	♦	♦		♦			♦			
270	1.2	1.3		♦	♦	♦		♦			♦			
270	1.3	1.4		♦	♦	♦					♦	♦		
270	1.4	1.5		♦	♦	♦				♦	♦	♦		
270	1.5	1.6		♦	♦	♦				♦	♦	♦		
270	1.6	1.7		♦	♦	♦				♦	♦	♦		
270	1.7	1.8	♦	♦	♦	♦				♦	♦			
270	1.8	1.9	♦							♦	♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
270	1.9	2.0	♦								♦			
270	2.0	2.1	♦											
270	2.1	2.2	♦											
270	2.2	2.3	♦											
270	2.3	2.4	♦											
270	2.4	2.5		♦	♦	♦					♦			
270	2.5	2.6		♦	♦	♦					♦			
270	2.6	2.7		♦	♦	♦					♦			
270	2.7	2.8			♦	♦								
270	2.8	2.9		♦	♦	♦					♦			
270	2.9	3.0		♦	♦	♦					♦			
270	3.0	3.1		♦	♦	♦					♦			
270	3.1	3.2		♦	♦	♦					♦			
270	3.2	3.3		♦	♦	♦					♦			
270	3.3	3.4		♦	♦	♦					♦			
270	3.4	3.5		♦	♦	♦					♦			
270	3.5	3.6		♦	♦	♦					♦			
270	3.6	3.7		♦	♦	♦					♦			
270	3.7	3.8		♦	♦	♦					♦			
270	3.8	3.9		♦	♦	♦					♦			
270	3.9	4.0		♦	♦	♦					♦			
270	4.0	4.1		♦	♦	♦					♦			
270	4.1	4.2		♦	♦						♦			
270	4.2	4.3			♦	♦								
	Total Miles		0.7	3.5	3.7	3.6	0.0	0.4	0.0	0.5	3.7	0.4	0.0	0.0
291	0.0	0.1		♦	♦	♦					♦			
291	0.1	0.2		♦	♦	♦					♦			
291	0.2	0.3	♦											
291	0.3	0.4	♦								♦			
291	0.4	0.5	♦								♦			
291	0.5	0.6	♦								♦			
291	0.6	0.7		♦	♦						♦			
291	0.7	0.8		♦	♦	♦					♦	♦		
291	0.8	0.9		♦	♦	♦					♦	♦		
291	0.9	1.0		♦	♦	♦					♦	♦		
291	1.0	1.1		♦	♦	♦					♦	♦		
291	1.1	1.2		♦	♦	♦					♦	♦		
291	1.2	1.3		♦	♦	♦		♦			♦	♦		
291	1.3	1.4	♦					♦			♦	♦		
291	1.4	1.5	♦					♦			♦	♦		
291	1.5	1.6	♦					♦			♦	♦		
291	1.6	1.7		♦	♦	♦		♦			♦	♦		
291	1.7	1.8		♦	♦	♦		♦			♦	♦		
291	1.8	1.9		♦	♦	♦		♦			♦	♦		
291	1.9	2.0		♦	♦	♦		♦			♦	♦		
291	2.0	2.1		♦	♦	♦					♦	♦		
291	2.1	2.2		♦	♦	♦					♦	♦		
291	2.2	2.3		♦	♦	♦		♦			♦			
291	2.3	2.4	♦					♦			♦			
291	2.4	2.5	♦					♦						
291	2.5	2.6	♦											
291	2.6	2.7	♦											
291	2.7	2.8	♦											
291	2.8	2.9		♦	♦	♦					♦			
291	2.9	3.0		♦	♦	♦					♦			
291	3.0	3.1		♦	♦	♦					♦			
291	3.1	3.2		♦	♦	♦					♦			
291	3.2	3.3		♦	♦						♦			
291	3.3	3.4		♦	♦						♦			
291	3.4	3.5		♦	♦	♦					♦			
291	3.5	3.6		♦	♦	♦					♦			
291	3.6	3.7		♦	♦	♦					♦			
291	3.7	3.8		♦	♦	♦					♦			
291	3.8	3.9		♦	♦	♦					♦			
291	3.9	4.0		♦	♦	♦					♦			
291	4.0	4.1		♦	♦	♦					♦			
291	4.1	4.2		♦	♦	♦					♦			
291	4.2	4.3		♦	♦	♦					♦			
291	4.3	4.4		♦	♦	♦					♦			
291	4.4	4.5		♦	♦	♦		♦			♦		♦	
291	4.5	4.6		♦	♦			♦			♦		♦	
291	4.6	4.7	♦					♦					♦	
291	4.7	4.8		♦	♦	♦		♦			♦		♦	
291	4.8	4.9		♦	♦	♦		♦			♦	♦	♦	
291	4.9	5.0		♦	♦	♦		♦			♦	♦	♦	
291	5.0	5.1		♦	♦	♦		♦			♦	♦	♦	
291	5.1	5.2		♦	♦	♦		♦			♦		♦	
291	5.2	5.3		♦	♦	♦		♦			♦		♦	
291	5.3	5.4		♦	♦	♦		♦			♦		♦	
291	5.4	5.5		♦				♦					♦	

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
291	5.5	5.6		♦	♦	♦		♦			♦		♦	
291	5.6	5.7		♦	♦	♦		♦			♦		♦	
291	5.7	5.8		♦	♦	♦		♦			♦		♦	
291	5.8	5.9	♦					♦					♦	
291	5.9	6.0	♦					♦					♦	
291	6.0	6.1		♦				♦					♦	
291	6.1	6.2		♦	♦	♦					♦			
291	6.2	6.3		♦	♦	♦					♦			
291	6.3	6.4		♦	♦	♦					♦			
291	6.4	6.5		♦	♦	♦					♦			
291	6.5	6.6		♦	♦	♦					♦			
291	6.6	6.7		♦	♦	♦					♦			
291	6.7	6.8		♦	♦						♦			
291	6.8	6.9		♦	♦						♦			
291	6.9	7.0		♦	♦	♦					♦			
291	7.0	7.1		♦	♦	♦					♦			
291	7.1	7.2		♦	♦	♦					♦			
291	7.2	7.3			♦	♦								
291	7.3	7.4		♦	♦						♦			
291	7.4	7.5		♦	♦						♦			
291	7.5	7.6		♦	♦	♦					♦		♦	
291	7.6	7.7		♦	♦	♦					♦		♦	
291	7.7	7.8		♦	♦	♦					♦		♦	
291	7.8	7.9		♦	♦	♦					♦		♦	
291	7.9	8.0	♦										♦	
291	8.0	8.1		♦	♦	♦					♦		♦	
291	8.1	8.2		♦	♦	♦					♦		♦	
291	8.2	8.3		♦	♦	♦					♦		♦	
291	8.3	8.4		♦	♦	♦					♦		♦	
291	8.4	8.5	♦										♦	
291	8.5	8.6	♦										♦	
291	8.6	8.7	♦										♦	
291	8.7	8.8	♦										♦	
291	8.8	8.9	♦										♦	
291	8.9	9.0	♦										♦	
291	9.0	9.1	♦										♦	
291	9.1	9.2	♦					♦					♦	
291	9.2	9.3	♦										♦	
291	9.3	9.4	♦										♦	
291	9.4	9.5	♦										♦	
291	9.5	9.6	♦										♦	
291	9.6	9.7	♦										♦	
291	9.7	9.8	♦					♦					♦	
291	9.8	9.9	♦					♦					♦	
291	9.9	10.0	♦					♦					♦	
291	10.0	10.1	♦					♦					♦	
291	10.1	10.2	♦					♦					♦	
291	10.2	10.3	♦					♦					♦	
291	10.3	10.4	♦					♦					♦	
291	10.4	10.5	♦					♦					♦	
291	10.5	10.6	♦					♦					♦	
291	10.6	10.7	♦					♦					♦	
291	10.7	10.8	♦					♦					♦	
291	10.8	10.9	♦					♦					♦	
291	10.9	11.0	♦					♦					♦	
291	11.0	11.1	♦					♦					♦	
291	11.1	11.2	♦					♦					♦	
291	11.2	11.3	♦					♦					♦	
291	11.3	11.4	♦					♦					♦	
291	11.4	11.5	♦					♦					♦	
291	11.5	11.6	♦					♦					♦	
291	11.6	11.7	♦					♦					♦	
291	11.7	11.8	♦					♦			♦		♦	
291	11.8	11.9	♦											
291	11.9	12.0	♦											
291	12.0	12.1	♦					♦			♦			
291	12.1	12.2	♦								♦			
291	12.2	12.3	♦								♦			
291	12.3	12.4	♦								♦			
291	12.4	12.5	♦								♦			
291	12.5	12.6		♦	♦	♦					♦			
291	12.6	12.7	♦					♦			♦			
291	12.7	12.8	♦					♦			♦			
291	12.8	12.9	♦					♦						
291	12.9	13.0	♦					♦			♦			
291	13.0	13.1						♦						
291	13.1	13.2						♦						
291	13.2	13.3	♦					♦			♦			
291	13.3	13.4	♦	♦	♦			♦			♦	♦		
291	13.4	13.5		♦	♦	♦		♦			♦	♦		
291	13.5	13.6	♦								♦			
291	13.6	13.7	♦								♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
291	13.7	13 8	♦	♦	♦	♦					♦	♦		
291	13 8	13 9		♦	♦	♦					♦	♦		
291	13.9	14 0		♦	♦	♦		♦			♦	♦		
291	14.0	14 1	♦								♦			
291	14 1	14 2		♦	♦	♦					♦	♦		
291	14.2	14 3	♦								♦			
291	14 3	14 4	♦								♦			
	Total Miles		6.9	7.4	7.3	6.4	0.0	6.1	0.0	0.0	9.4	2.4	6.0	0.0
293	0 0	0 1	♦								♦			
293	0 1	0 2		♦	♦						♦	♦		
293	0 2	0.3	♦	♦	♦	♦					♦	♦		
293	0.3	0.4	♦								♦			
293	0 4	0 5		♦	♦	♦					♦	♦		
293	0 5	0 6		♦	♦	♦					♦	♦		
293	0 6	0 7		♦	♦	♦					♦	♦		
293	0.7	0.8		♦	♦	♦					♦	♦		
293	0.8	0 9		♦	♦	♦					♦	♦		
293	0.9	1 0		♦	♦	♦					♦	♦		
293	1.0	1 1	♦								♦			
293	1.1	1.2	♦								♦			
293	1.2	1.3	♦								♦			
293	1.3	1.4		♦	♦	♦					♦	♦		
293	1.4	1.5	♦	♦	♦						♦			
293	1.5	1.6	♦								♦			
293	1.6	1.7	♦								♦			
293	1.7	1.8		♦	♦	♦					♦			
293	1.8	1 9		♦	♦	♦					♦			
293	1.9	2.0		♦	♦			♦			♦		♦	
293	2 0	2.1		♦	♦	♦		♦			♦		♦	
293	2.1	2.2		♦	♦	♦		♦			♦		♦	
293	2.2	2 3		♦	♦	♦		♦			♦		♦	
293	2.3	2 4		♦	♦	♦		♦			♦		♦	
293	2 4	2.5		♦	♦	♦		♦			♦		♦	
293	2.5	2 6		♦	♦	♦		♦			♦		♦	
293	2 6	2.7		♦	♦	♦		♦			♦		♦	
293	2.7	2.8		♦	♦	♦		♦			♦		♦	
293	2.8	2.9		♦	♦	♦		♦			♦		♦	
293	2.9	3 0		♦	♦	♦		♦			♦		♦	
293	3.0	3.1		♦	♦	♦		♦			♦		♦	
293	3 1	3.2	♦	♦	♦			♦			♦		♦	
293	3.2	3.3	♦					♦			♦		♦	
293	3.3	3 4	♦					♦					♦	
293	3.4	3.5		♦	♦	♦		♦			♦		♦	
293	3.5	3 6		♦	♦	♦		♦			♦		♦	
293	3.6	3.7		♦	♦	♦		♦			♦		♦	
293	3 7	3.8		♦	♦	♦		♦			♦		♦	
293	3 8	3.9		♦	♦	♦		♦			♦		♦	
293	3.9	4.0	♦					♦			♦		♦	
293	4.0	4.1	♦					♦			♦		♦	
293	4.1	4 2	♦					♦			♦		♦	
293	4 2	4 3		♦	♦	♦		♦			♦		♦	
293	4.3	4 4	♦					♦			♦		♦	
293	4.4	4 5	♦					♦					♦	
293	4 5	4 6	♦								♦			
293	4 6	4 7	♦								♦			
293	4 7	4 8		♦	♦						♦			
293	4 8	4.9		♦	♦	♦		♦			♦		♦	
293	4 9	5 0		♦	♦	♦		♦			♦		♦	
293	5 0	5.1		♦	♦	♦		♦			♦		♦	
293	5 1	5 2	♦					♦			♦		♦	
293	5 2	5.3		♦	♦	♦		♦			♦		♦	
293	5.3	5 4		♦	♦	♦		♦			♦		♦	
293	5.4	5.5	♦					♦			♦		♦	
293	5.5	5 6	♦					♦			♦		♦	
293	5 6	5.7	♦					♦			♦		♦	
293	5.7	5 8		♦	♦	♦		♦			♦		♦	
293	5 6	5 9	♦	♦	♦	♦		♦			♦		♦	
293	5 9	6.0	♦					♦			♦		♦	
293	6 0	6.1	♦					♦					♦	
293	6.1	6 2	♦					♦			♦		♦	
293	6 2	6 3	♦					♦			♦		♦	
293	6.3	6.4	♦					♦					♦	
293	6.4	6.5	♦					♦			♦		♦	
293	6 5	6 6	♦					♦			♦			
293	6 6	6 7												
293	6 7	6 8	♦								♦			
293	6 8	6 9	♦					♦			♦			
293	6 9	7 0	♦					♦			♦			
293	7 0	7 1	♦								♦			
293	7 1	7 2	♦					♦			♦			
293	7 2	7 3	♦					♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
293	7.3	7.4	♦					♦			♦			
293	7.4	7.5						♦						
293	7.5	7.6	♦								♦			
293	7.6	7.7	♦								♦			
293	7.7	7.8		♦	♦	♦					♦			
293	7.8	7.9		♦	♦	♦					♦			
293	7.9	8.0												
293	8.0	8.1	♦								♦			
293	8.1	8.2	♦								♦			
293	8.2	8.3	♦					♦			♦			
293	8.3	8.4	♦								♦			
293	8.4	8.5	♦								♦			
293	8.5	8.6	♦								♦			
293	8.6	8.7	♦								♦			
293	8.7	8.8												
293	8.8	8.9		♦	♦	♦					♦			
293	8.9	9.0		♦	♦	♦					♦			
293	9.0	9.1		♦	♦	♦					♦			
293	9.1	9.2	♦								♦			
293	9.2	9.3	♦								♦			
293	9.3	9.4	♦								♦			
293	9.4	9.5	♦								♦			
293	9.5	9.6	♦								♦			
293	9.6	9.7	♦								♦			
293	9.7	9.8		♦	♦	♦					♦			
293	9.8	9.9			♦	♦								
293	9.9	10.0			♦	♦								
293	10.0	10.1			♦	♦								
293	10.1	10.2			♦	♦								
293	10.2	10.3												
293	10.3	10.4												
293	10.4	10.5												
293	10.5	10.6												
293	10.6	10.7												
293	10.7	10.8			♦	♦								
293	10.8	10.9												
293	10.9	11.0												
293	11.0	11.1												
293	11.1	11.2												
293	11.2	11.3												
293	11.3	11.4												
293	11.4	11.5												
293	11.5	11.6												
293	11.6	11.7												
293	11.7	11.8	♦					♦					♦	
293	11.8	11.9	♦					♦					♦	
293	11.9	12.0	♦					♦					♦	
293	12.0	12.1		♦				♦					♦	
293	12.1	12.2	♦	♦				♦					♦	
293	12.2	12.3	♦	♦	♦	♦		♦					♦	
293	12.3	12.4		♦	♦	♦		♦					♦	
293	12.4	12.5		♦	♦	♦		♦					♦	
293	12.5	12.6		♦	♦	♦		♦					♦	
293	12.6	12.7	♦					♦					♦	
293	12.7	12.8	♦					♦					♦	
293	12.8	12.9												
293	12.9	13.0						♦						
293	13.0	13.1												
293	13.1	13.2												
293	13.2	13.3												
293	13.3	13.4												
293	13.4	13.5												
293	13.5	13.6												
293	13.6	13.7												
293	13.7	13.8		♦										
293	13.8	13.9		♦										
293	13.9	14.0		♦										
293	14.0	14.1		♦										
293	14.1	14.2		♦										
293	14.2	14.3		♦										
293	14.3	14.4		♦										
293	14.4	14.5		♦				♦						
293	14.5	14.6		♦				♦						
293	14.6	14.7		♦										
293	14.7	14.8		♦										
293	14.8	14.9		♦										
293	14.9	15.0		♦										
293	15.0	15.1		♦										
293	15.1	15.2		♦		♦		♦					♦	
293	15.2	15.3		♦		♦		♦					♦	
293	15.3	15.4		♦		♦		♦					♦	
293	15.4	15.5		♦		♦		♦					♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
293	15.5	15.6		♦		♦		♦					♦	
293	15.6	15.7		♦		♦		♦					♦	
293	15.7	15.8		♦		♦		♦					♦	
293	15.8	15.9		♦		♦		♦					♦	
293	15.9	16.0		♦		♦		♦					♦	
293	16.0	16.1		♦				♦					♦	
293	16.1	16.2		♦				♦					♦	
293	16.2	16.3		♦				♦					♦	
293	16.3	16.4	♦					♦					♦	
293	16.4	16.5	♦					♦					♦	
293	16.5	16.6	♦					♦					♦	
293	16.6	16.7		♦		♦		♦					♦	
293	16.7	16.8		♦		♦		♦					♦	
293	16.8	16.9		♦		♦		♦					♦	
293	16.9	17.0				♦		♦					♦	
293	17.0	17.1				♦		♦					♦	
293	17.1	17.2				♦		♦					♦	
293	17.2	17.3				♦		♦					♦	
293	17.3	17.4		♦		♦		♦					♦	
293	17.4	17.5		♦		♦		♦					♦	
293	17.5	17.6		♦		♦		♦					♦	
293	17.6	17.7		♦		♦		♦					♦	
293	17.7	17.8	♦					♦					♦	
293	17.8	17.9	♦					♦					♦	
293	17.9	18.0	♦					♦					♦	
293	18.0	18.1	♦					♦					♦	
293	18.1	18.2						♦						
293	18.2	18.3						♦						
293	18.3	18.4						♦						
293	18.4	18.5												
293	18.5	18.6						♦						
293	18.6	18.7												
293	18.7	18.8		♦	♦						♦			
293	18.8	18.9		♦	♦						♦			
293	18.9	19.0		♦	♦						♦			
293	19.0	19.1		♦	♦	♦					♦			
293	19.1	19.2		♦	♦	♦					♦			
293	19.2	19.3		♦	♦	♦					♦			
293	19.3	19.4	♦					♦			♦			
293	19.4	19.5	♦	♦	♦	♦		♦			♦			
293	19.5	19.6	♦								♦			
293	19.6	19.7	♦								♦			
293	19.7	19.8	♦					♦			♦			
293	19.8	19.9	♦					♦			♦			
293	19.9	20.0	♦								♦			
293	20.0	20.1	♦								♦			
293	20.1	20.2	♦					♦			♦			
293	20.2	20.3	♦					♦			♦			
293	20.3	20.4	♦					♦			♦			
293	20.4	20.5	♦								♦			
293	20.5	20.6												
293	20.6	20.7	♦	♦	♦			♦			♦			
293	20.7	20.8		♦	♦						♦			
293	20.8	20.9	♦								♦			
293	20.9	21.0	♦								♦			
293	21.0	21.1	♦	♦	♦	♦					♦			
293	21.1	21.2	♦								♦			
293	21.2	21.3	♦					♦			♦			
293	21.3	21.4	♦								♦			
293	21.4	21.5	♦								♦			
293	21.5	21.6	♦								♦			
	Total Miles		**8.8**	**9.4**	**6.4**	**7.4**	**0.0**	**10.8**	**0.0**	**0.0**	**11.8**	**0.9**	**8.4**	**0.0**
310	0.0	0.1	♦								♦			
310	0.1	0.2	♦								♦			
310	0.2	0.3	♦								♦			
310	0.3	0.4												
310	0.4	0.5	♦					♦			♦			
310	0.5	0.6	♦					♦			♦			
310	0.6	0.7	♦								♦			
310	0.7	0.8	♦								♦			
310	0.8	0.9												
310	0.9	1.0	♦								♦			
310	1.0	1.1	♦								♦			
310	1.1	1.2	♦								♦			
310	1.2	1.3	♦								♦			
310	1.3	1.4	♦								♦			
310	1.4	1.5	♦								♦			
310	1.5	1.6	♦								♦			
310	1.6	1.7	♦								♦			
310	1.7	1.8	♦								♦			
310	1.8	1.9	♦								♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
310	1.9	2.0	♦								♦			
310	2.0	2.1	♦								♦			
310	2.1	2.2	♦								♦			
310	2.2	2.3	♦								♦			
310	2.3	2.4	♦					♦			♦			
310	2.4	2.5	♦								♦			
310	2.5	2.6	♦								♦			
310	2.6	2.7	♦								♦			
310	2.7	2.8		♦	♦	♦					♦			
310	2.8	2.9		♦	♦	♦					♦			
310	2.9	3.0		♦	♦	♦					♦			
310	3.0	3.1		♦	♦	♦					♦			
310	3.1	3.2		♦	♦	♦					♦			
310	3.2	3.3		♦	♦						♦			
310	3.3	3.4		♦	♦					♦	♦	♦		
310	3.4	3.5		♦	♦					♦	♦	♦		
310	3.5	3.6		♦	♦	♦		♦		♦	♦	♦		
310	3.6	3.7		♦	♦	♦				♦	♦	♦		
310	3.7	3.8		♦	♦	♦				♦	♦	♦		
310	3.8	3.9		♦	♦	♦					♦			
310	3.9	4.0		♦	♦	♦					♦			
310	4.0	4.1		♦	♦	♦					♦			
310	4.1	4.2		♦	♦	♦					♦			
310	4.2	4.3		♦	♦	♦					♦			
310	4.3	4.4		♦	♦	♦		♦			♦			
310	4.4	4.5		♦	♦	♦					♦			
310	4.5	4.6		♦	♦	♦					♦			
310	4.6	4.7		♦	♦	♦					♦			
310	4.7	4.8		♦	♦	♦					♦			
	Total Miles		**2.5**	**2.1**	**2.1**	**1.8**	**0.0**	**0.5**	**0.0**	**0.5**	**4.6**	**0.5**	**0.0**	**0.0**
340	0.0	0.1		♦	♦	♦		♦			♦			
340	0.1	0.2		♦	♦	♦					♦			
340	0.2	0.3		♦	♦	♦					♦			
340	0.3	0.4		♦	♦	♦					♦			
340	0.4	0.5		♦	♦	♦					♦			
340	0.5	0.6		♦	♦	♦					♦			
340	0.6	0.7		♦	♦	♦					♦			
340	0.7	0.8		♦	♦	♦					♦			
340	0.8	0.9		♦	♦	♦					♦			
340	0.9	1.0		♦	♦	♦					♦			
340	1.0	1.1		♦	♦	♦					♦			
340	1.1	1.2		♦	♦	♦					♦			
340	1.2	1.3		♦	♦	♦					♦			
340	1.3	1.4		♦	♦	♦					♦			
340	1.4	1.5		♦	♦	♦					♦			
340	1.5	1.6		♦	♦	♦					♦			
340	1.6	1.7		♦	♦	♦					♦			
340	1.7	1.8		♦	♦	♦					♦			
340	1.8	1.9		♦	♦	♦					♦			
340	1.9	2.0		♦	♦	♦					♦			
340	2.0	2.1		♦	♦	♦					♦			
340	2.1	2.2		♦	♦	♦					♦			
340	2.2	2.3		♦	♦	♦		♦			♦			
340	2.3	2.4		♦	♦	♦					♦			
340	2.4	2.5		♦	♦	♦					♦			
340	2.5	2.6		♦	♦	♦					♦			
340	2.6	2.7			♦	♦								
340	2.7	2.8		♦	♦	♦								
340	2.8	2.9		♦		♦		♦						
340	2.9	3.0		♦		♦								
340	3.0	3.1		♦		♦								
340	3.1	3.2			♦	♦								
340	3.2	3.3			♦	♦								
340	3.3	3.4			♦	♦								
340	3.4	3.5			♦	♦								
340	3.5	3.6			♦	♦								
340	3.6	3.7			♦	♦								
340	3.7	3.8			♦	♦								
340	3.8	3.9			♦	♦		♦						
340	3.9	4.0			♦	♦								
340	4.0	4.1			♦	♦								
340	4.1	4.2			♦	♦								
340	4.2	4.3			♦	♦								
340	4.3	4.4			♦	♦		♦						
340	4.4	4.5			♦	♦								
340	4.5	4.8			♦	♦								
340	4.8	4.7			♦	♦								
340	4.7	4.8			♦	♦								
340	4.8	4.9			♦	♦								
340	4.9	5.0			♦	♦								
340	5.0	5.1			♦	♦		♦						

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
340	5.1	5.2			♦	♦								
340	5.2	5.3			♦	♦								
340	5.3	5.4			♦	♦								
340	5.4	5.5			♦	♦								
340	5.5	5.6												
340	5.6	5.7												
340	5.7	5.8												
340	5.8	5.9			♦	♦								
340	5.9	6.0			♦	♦		♦						
340	6.0	6.1			♦	♦								
340	6.1	6.2			♦	♦								
340	6.2	6.3			♦	♦								
340	6.3	6.4			♦	♦								
340	6.4	6.5			♦	♦								
340	6.5	6.6			♦	♦								
340	6.6	6.7			♦	♦								
340	6.7	6.8			♦	♦								
340	6.8	6.9		♦	♦	♦		♦						
340	6.9	7.0		♦		♦								
340	7.0	7.1		♦										
340	7.1	7.2		♦										
340	7.2	7.3		♦										
340	7.3	7.4		♦										
340	7.4	7.5												
340	7.5	7.6												
340	7.6	7.7												
340	7.7	7.8		♦										
340	7.8	7.9			♦	♦								
340	7.9	8.0			♦	♦								
340	8.0	8.1			♦	♦								
340	8.1	8.2			♦	♦		♦						
340	8.2	8.3			♦	♦								
340	8.3	8.4			♦	♦		♦						
340	8.4	8.5			♦	♦		♦						
	Total Miles		0.0	3.7	7.0	7.4	0.0	1.1	0.0	0.0	2.6	0.0	0.0	0.0
382	0.0	0.1			♦	♦		♦						
382	0.1	0.2			♦	♦		♦						
362	0.2	0.3		♦		♦		♦						
362	0.3	0.4		♦		♦								
362	0.4	0.5		♦		♦								
362	0.5	0.6		♦	♦	♦					♦			
362	0.6	0.7		♦	♦	♦					♦			
382	0.7	0.8		♦	♦	♦					♦			
362	0.8	0.9		♦	♦	♦					♦			
362	0.9	1.0		♦	♦	♦					♦			
362	1.0	1.1		♦	♦	♦					♦			
362	1.1	1.2		♦	♦	♦					♦			
362	1.2	1.3		♦	♦	♦					♦			
362	1.3	1.4		♦	♦	♦					♦			
362	1.4	1.5		♦	♦	♦					♦			
362	1.5	1.6		♦	♦	♦					♦			
362	1.6	1.7		♦	♦	♦					♦			
362	1.7	1.8		♦	♦	♦					♦			
362	1.8	1.9		♦	♦	♦					♦			
362	1.9	2.0		♦	♦	♦					♦			
362	2.0	2.1		♦	♦	♦		♦			♦			
362	2.1	2.2		♦	♦	♦					♦			
362	2.2	2.3		♦	♦	♦					♦			
362	2.3	2.4		♦	♦	♦					♦			
362	2.4	2.5		♦	♦	♦					♦			
362	2.5	2.6		♦	♦	♦					♦			
362	2.6	2.7		♦	♦	♦					♦			
362	2.7	2.8		♦	♦	♦					♦			
362	2.8	2.9		♦	♦	♦					♦			
362	2.9	3.0		♦	♦	♦					♦			
362	3.0	3.1		♦	♦	♦					♦			
362	3.1	3.2		♦	♦	♦					♦			
362	3.2	3.3		♦	♦	♦					♦			
362	3.3	3.4		♦	♦	♦					♦			
362	3.4	3.5		♦	♦	♦					♦			
362	3.5	3.6		♦	♦	♦		♦			♦			
362	3.6	3.7		♦	♦	♦					♦			
362	3.7	3.8		♦	♦	♦		♦			♦			
362	3.8	3.9		♦	♦	♦		♦			♦			
362	3.9	4.0		♦	♦	♦					♦			
362	4.0	4.1		♦	♦	♦					♦			
362	4.1	4.2		♦	♦	♦					♦			
362	4.2	4.3		♦	♦	♦					♦			
362	4.3	4.4		♦	♦	♦					♦			
362	4.4	4.5		♦	♦	♦					♦			
362	4.5	4.6		♦	♦	♦					♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
362	4.6	4.7		♦	♦	♦					♦			
362	4.7	4.8		♦	♦	♦					♦			
362	4.8	4.9		♦	♦	♦					♦			
362	4.9	5.0		♦	♦	♦					♦			
362	5.0	5.1		♦	♦	♦					♦			
362	5.1	5.2		♦	♦	♦					♦			
362	5.2	5.3		♦	♦	♦					♦			
362	5.3	5.4		♦	♦	♦					♦			
362	5.4	5.5		♦	♦	♦		♦			♦			
362	5.5	5.6		♦	♦	♦					♦			
362	5.6	5.7		♦	♦	♦					♦			
362	5.7	5.8		♦	♦	♦					♦			
362	5.8	5.9		♦	♦	♦					♦			
362	5.9	6.0		♦	♦	♦					♦			
362	6.0	6.1		♦	♦	♦					♦			
362	6.1	6.2		♦	♦	♦					♦	♦		
362	6.2	6.3		♦	♦	♦					♦	♦		
362	6.3	6.4		♦	♦	♦					♦	♦		
362	6.4	6.5		♦	♦	♦					♦	♦		
362	6.5	6.6		♦	♦	♦					♦	♦		
362	6.6	6.7		♦	♦	♦					♦	♦		
362	6.7	6.8		♦	♦	♦					♦	♦		
362	6.8	6.9		♦	♦	♦					♦	♦		
362	6.9	7.0		♦	♦	♦		♦			♦	♦		
362	7.0	7.1		♦	♦	♦		♦			♦	♦		
362	7.1	7.2		♦	♦	♦		♦			♦	♦		
362	7.2	7.3		♦	♦	♦					♦	♦		
362	7.3	7.4		♦	♦	♦		♦			♦	♦		
362	7.4	7.5		♦	♦	♦		♦			♦	♦		
362	7.5	7.6		♦	♦	♦					♦	♦		
362	7.6	7.7		♦	♦	♦					♦	♦		
362	7.7	7.8		♦	♦	♦					♦	♦		
362	7.8	7.9		♦	♦	♦					♦	♦		
362	7.9	8.0		♦	♦	♦					♦	♦		
362	8.0	8.1		♦	♦	♦					♦			
362	8.1	8.2		♦	♦	♦					♦	♦		
362	8.2	8.3		♦	♦	♦					♦	♦		
362	8.3	8.4		♦	♦	♦					♦			
362	8.4	8.5		♦	♦	♦					♦	♦		
362	8.5	8.6	♦								♦			
362	8.6	8.7	♦					♦			♦			
362	8.7	8.8	♦								♦			
362	8.8	8.9	♦								♦			
362	8.9	9.0		♦	♦						♦	♦		
362	9.0	9.1		♦	♦						♦	♦		
362	9.1	9.2		♦	♦			♦			♦	♦		
362	9.2	9.3		♦	♦	♦					♦	♦		
362	9.3	9.4		♦	♦	♦					♦	♦		
362	9.4	9.5		♦	♦	♦					♦	♦		
362	9.5	9.6		♦	♦	♦					♦			
362	9.6	9.7		♦	♦	♦					♦			
362	9.7	9.8		♦	♦	♦					♦			
362	9.8	9.9		♦	♦	♦					♦			
	Total Miles		0.4	9.3	9.2	9.2	0.0	1.5	0.0	0.0	9.4	2.8	0.0	0.0
363	0.0	0.1		♦	♦	♦					♦			
363	0.1	0.2	♦								♦			
363	0.2	0.3	♦								♦			
363	0.3	0.4	♦								♦			
363	0.4	0.5	♦								♦			
363	0.5	0.6	♦					♦			♦			
363	0.6	0.7	♦					♦			♦			
363	0.7	0.8	♦								♦			
363	0.8	0.9	♦								♦			
363	0.9	1.0	♦								♦			
363	1.0	1.1	♦								♦			
363	1.1	1.2	♦								♦			
363	1.2	1.3	♦								♦			
363	1.3	1.4	♦								♦			
363	1.4	1.5	♦					♦			♦			
363	1.5	1.6	♦					♦			♦			
363	1.6	1.7	♦					♦			♦			
363	1.7	1.8	♦					♦			♦			
363	1.8	1.9	♦					♦			♦			
363	1.9	2.0	♦								♦			
363	2.0	2.1	♦								♦			
363	2.1	2.2		♦	♦						♦			
363	2.2	2.3		♦	♦						♦			
363	2.3	2.4		♦	♦						♦			
363	2.4	2.5		♦	♦						♦			
363	2.5	2.6		♦	♦						♦			
363	2.8	2.7		♦	♦						♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
363	2.7	2.8		♦	♦						♦			
363	2.8	2.9	♦								♦			
363	2.9	3.0	♦					♦			♦			
363	3.0	3.1	♦								♦			
363	3.1	3.2	♦								♦			
363	3.2	3.3	♦								♦			
363	3.3	3.4	♦								♦			
363	3.4	3.5		♦	♦	♦					♦			
363	3.5	3.6		♦	♦	♦		♦			♦			
363	3.6	3.7		♦	♦	♦					♦			
363	3.7	3.8		♦	♦	♦					♦			
363	3.8	3.9		♦	♦	♦					♦			
363	3.9	4.0		♦	♦	♦					♦			
363	4.0	4.1		♦	♦	♦					♦			
363	4.1	4.2		♦	♦	♦					♦			
363	4.2	4.3		♦	♦	♦					♦			
363	4.3	4.4		♦	♦	♦					♦			
363	4.4	4.5		♦	♦	♦					♦			
363	4.5	4.6		♦	♦	♦					♦			
363	4.6	4.7		♦	♦	♦		♦			♦		♦	
363	4.7	4.8		♦	♦	♦		♦			♦		♦	
363	4.8	4.9		♦	♦	♦		♦			♦		♦	
363	4.9	5.0		♦	♦	♦		♦			♦		♦	
363	5.0	5.1		♦	♦	♦		♦			♦		♦	
363	5.1	5.2		♦	♦	♦		♦			♦		♦	
363	5.2	5.3		♦	♦	♦		♦			♦		♦	
363	5.3	5.4		♦	♦	♦		♦			♦		♦	
363	5.4	5.5		♦	♦	♦		♦			♦		♦	
363	5.5	5.6		♦	♦	♦					♦			
363	5.6	5.7		♦	♦	♦		♦			♦		♦	
363	5.7	5.8		♦										
363	5.8	5.9												
363	5.9	6.0						♦						
363	6.0	6.1			♦	♦								
363	6.1	6.2			♦	♦								
363	6.2	6.3			♦	♦								
363	6.3	6.4			♦	♦								
363	6.4	6.5			♦	♦								
363	6.5	6.6			♦	♦								
363	6.6	6.7			♦	♦								
363	6.7	6.8			♦	♦								
362	6.8	6.9			♦	♦								
363	6.9	7.0			♦	♦		♦						
363	7.0	7.1			♦	♦								
363	7.1	7.2			♦	♦								
363	7.2	7.3			♦	♦								
363	7.3	7.4			♦	♦								
363	7.4	7.5			♦	♦								
363	7.5	7.6			♦	♦								
363	7.6	7.7			♦	♦								
363	7.7	7.8			♦	♦								
363	7.8	7.9			♦	♦								
363	7.9	8.0			♦	♦								
363	8.0	8.1			♦	♦								
383	8.1	8.2			♦	♦								
363	8.2	8.3			♦	♦								
363	8.3	8.4			♦	♦								
363	8.4	8.5			♦	♦								
363	8.5	8.6		♦	♦	♦								
363	8.6	8.7		♦	♦	♦					♦			
363	8.7	8.8		♦	♦	♦					♦			
363	8.8	8.9			♦	♦								
363	8.9	9.0	♦								♦			
383	9.0	9.1	♦								♦			
363	9.1	9.2	♦								♦			
383	9.2	9.3		♦	♦						♦			
363	9.3	9.4		♦	♦						♦			
363	9.4	9.5	♦	♦	♦			♦			♦			
363	9.5	9.6	♦								♦			
363	9.6	9.7	♦								♦			
363	9.7	9.8	♦								♦			
383	9.8	9.9		♦	♦	♦					♦			
363	9.9	10.0		♦	♦	♦					♦			
363	10.0	10.1		♦	♦	♦					♦			
363	10.1	10.2		♦	♦	♦					♦			
363	10.2	10.3		♦	♦	♦					♦			
363	10.3	10.4		♦	♦	♦					♦			
383	10.4	10.5		♦	♦	♦					♦			
363	10.5	10.6		♦	♦	♦					♦			
363	10.6	10.7		♦	♦	♦					♦		♦	
363	10.7	10.8		♦	♦	♦					♦		♦	
363	10.8	10.9		♦		♦							♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
363	10.9	11.0		♦	♦	♦					♦		♦	
363	11.0	11.1		♦	♦	♦					♦		♦	
363	11.1	11.2		♦	♦	♦					♦		♦	
363	11.2	11.3		♦	♦	♦					♦		♦	
363	11.3	11.4		♦	♦	♦					♦		♦	
363	11.4	11.5		♦	♦	♦					♦		♦	
363	11.5	11.6		♦	♦	♦					♦		♦	
363	11.6	11.7		♦	♦	♦					♦		♦	
	Total Miles		3.3	5.7	8.1	7.2	0.0	2.2	0.0	0.0	8.6	0.0	2.1	0.0
669	0.0	0.1		♦	♦	♦					♦		♦	
669	0.1	0.2		♦	♦	♦					♦		♦	
669	0.2	0.3		♦	♦	♦					♦		♦	
669	0.3	0.4		♦	♦	♦					♦		♦	
669	0.4	0.5		♦	♦	♦					♦		♦	
669	0.5	0.6		♦	♦	♦					♦		♦	
669	0.6	0.7		♦	♦	♦					♦		♦	
669	0.7	0.8		♦	♦	♦					♦		♦	
669	0.8	0.9		♦	♦	♦					♦		♦	
669	0.9	1.0		♦	♦	♦					♦	♦	♦	
669	1.0	1.1		♦	♦	♦					♦	♦	♦	
669	1.1	1.2		♦	♦	♦					♦		♦	
669	1.2	1.3		♦	♦	♦		♦			♦	♦	♦	
669	1.3	1.4		♦	♦	♦		♦			♦	♦	♦	
669	1.4	1.5		♦	♦	♦					♦	♦	♦	
669	1.5	1.6		♦	♦						♦	♦	♦	
669	1.6	1.7		♦	♦						♦	♦	♦	
669	1.7	1.8		♦	♦						♦	♦	♦	
669	1.8	1.9		♦	♦						♦	♦	♦	
669	1.9	2.0		♦	♦			♦			♦	♦	♦	
669	2.0	2.1		♦	♦			♦			♦	♦	♦	
669	2.1	2.2		♦	♦						♦	♦	♦	
669	2.2	2.3		♦	♦						♦	♦	♦	
669	2.3	2.4		♦	♦						♦		♦	
669	2.4	2.5		♦	♦						♦	♦	♦	
669	2.5	2.6		♦	♦			♦			♦	♦	♦	
669	2.6	2.7		♦	♦			♦			♦	♦	♦	
669	2.7	2.8		♦	♦						♦	♦	♦	
669	2.8	2.9		♦	♦						♦	♦	♦	
669	2.9	3.0		♦	♦	♦					♦		♦	
669	3.0	3.1		♦	♦	♦					♦		♦	
669	3.1	3.2		♦	♦	♦					♦		♦	
669	3.2	3.3		♦	♦	♦					♦		♦	
669	3.3	3.4		♦	♦	♦					♦		♦	
669	3.4	3.5		♦	♦	♦					♦		♦	
669	3.5	3.6		♦	♦	♦					♦	♦	♦	
669	3.6	3.7		♦	♦	♦					♦	♦	♦	
669	3.7	3.8		♦	♦	♦					♦	♦	♦	
669	3.8	3.9		♦	♦	♦					♦	♦	♦	
669	3.9	4.0		♦	♦	♦					♦	♦	♦	
669	4.0	4.1		♦	♦	♦					♦	♦	♦	
669	4.1	4.2		♦	♦	♦		♦			♦	♦	♦	
669	4.2	4.3		♦	♦	♦		♦			♦	♦	♦	
669	4.3	4.4		♦	♦	♦		♦			♦	♦	♦	
669	4.4	4.5		♦	♦	♦		♦			♦	♦	♦	
669	4.5	4.6		♦	♦			♦			♦	♦	♦	
669	4.6	4.7		♦	♦			♦			♦	♦	♦	
669	4.7	4.8		♦	♦			♦			♦	♦	♦	
669	4.8	4.9		♦	♦			♦		♦	♦	♦	♦	
669	4.9	5.0		♦	♦			♦		♦	♦	♦	♦	
669	5.0	5.1		♦	♦			♦		♦	♦	♦	♦	
669	5.1	5.2		♦	♦	♦		♦		♦	♦	♦	♦	
669	5.2	5.3		♦	♦	♦		♦		♦	♦	♦	♦	
669	5.3	5.4		♦	♦	♦		♦			♦	♦	♦	
669	5.4	5.5		♦	♦	♦		♦			♦	♦	♦	
669	5.5	5.6	♦					♦			♦		♦	
669	5.6	5.7	♦					♦			♦		♦	
669	5.7	5.8	♦					♦			♦		♦	
669	5.8	5.9		♦	♦	♦		♦			♦	♦		
669	5.9	6.0	♦					♦			♦		♦	
669	6.0	6.1	♦					♦			♦		♦	
669	6.1	6.2	♦								♦			
669	6.2	6.3		♦	♦						♦		♦	
669	6.3	6.4		♦	♦						♦			
669	6.4	6.5		♦	♦						♦			
669	6.5	6.6		♦	♦						♦			
669	6.6	6.7		♦	♦						♦			
669	6.7	6.8		♦	♦						♦			
669	6.8	6.9		♦	♦						♦			
669	6.9	7.0		♦	♦						♦			
669	7.0	7.1		♦	♦						♦			
669	7.1	7.2		♦	♦						♦			

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
669	7.2	7.3		♦	♦						♦			
669	7.3	7.4		♦	♦			♦			♦			
669	7.4	7.5		♦	♦						♦			
669	7.5	7.6		♦	♦						♦			
669	7.6	7.7		♦	♦						♦			
669	7.7	7.8		♦	♦						♦			
669	7.8	7.9		♦	♦						♦			
669	7.9	8.0		♦	♦			♦			♦			
669	8.0	8.1		♦	♦						♦			
669	8.1	8.2		♦	♦						♦			
669	8.2	8.3		♦	♦						♦			
669	8.3	8.4		♦	♦						♦			
669	8.4	8.5		♦	♦						♦			
669	8.5	8.6		♦	♦						♦			
669	8.6	8.7		♦	♦						♦			
669	8.7	8.8		♦	♦						♦			
669	8.8	8.9		♦	♦					♦	♦	♦		
669	8.9	9.0		♦	♦					♦	♦	♦		
669	9.0	9.1		♦	♦					♦	♦			
669	9.1	9.2		♦	♦			♦		♦	♦			
669	9.2	9.3		♦	♦			♦			♦			
669	9.3	9.4		♦	♦						♦			
669	9.4	9.5		♦	♦						♦			
669	9.5	9.6		♦	♦						♦			
669	9.6	9.7		♦	♦						♦			
669	9.7	9.8		♦	♦						♦			
669	9.8	9.9		♦	♦						♦			
669	9.9	10.0	♦								♦			
669	10.0	10.1	♦								♦			
669	10.1	10.2		♦										
669	10.2	10.3												
669	10.3	10.4												
669	10.4	10.5		♦	♦						♦			
669	10.5	10.6		♦	♦						♦			
669	10.6	10.7		♦	♦			♦			♦			
669	10.7	10.8	♦								♦			
669	10.8	10.9	♦								♦			
669	10.9	11.0	♦								♦			
669	11.0	11.1	♦								♦			
669	11.1	11.2	♦								♦			
669	11.2	11.3	♦								♦			
669	11.3	11.4	♦								♦			
669	11.4	11.5	♦								♦			
669	11.5	11.6	♦								♦			
669	11.6	11.7	♦								♦			
669	11.7	11.8	♦					♦			♦			
669	11.8	11.9	♦								♦			
669	11.9	12.0	♦								♦			
669	12.0	12.1	♦								♦			
669	12.1	12.2		♦	♦	♦					♦		♦	
669	12.2	12.3		♦	♦	♦					♦		♦	
669	12.3	12.4	♦	♦	♦						♦			
669	12.4	12.5	♦								♦			
669	12.5	12.6	♦					♦			♦			
669	12.6	12.7	♦								♦			
669	12.7	12.8		♦	♦						♦		♦	
669	12.8	12.9		♦	♦						♦		♦	
669	12.9	13.0		♦	♦						♦		♦	
669	13.0	13.1		♦	♦	♦					♦		♦	
669	13.1	13.2		♦	♦	♦					♦		♦	
669	13.2	13.3	♦								♦			
669	13.3	13.4	♦	♦	♦	♦					♦		♦	
669	13.4	13.5		♦	♦	♦					♦		♦	
669	13.5	13.6		♦	♦	♦					♦		♦	
669	13.6	13.7		♦	♦			♦			♦		♦	
669	13.7	13.8		♦	♦	♦		♦			♦		♦	
669	13.8	13.9		♦	♦			♦			♦		♦	
669	13.9	14.0		♦	♦	♦		♦			♦		♦	
669	14.0	14.1		♦	♦	♦					♦		♦	
669	14.1	14.2		♦	♦	♦					♦		♦	
669	14.2	14.3		♦	♦	♦		♦			♦		♦	
669	14.3	14.4		♦	♦	♦		♦			♦		♦	
669	14.4	14.5		♦	♦	♦					♦		♦	
669	14.5	14.6		♦	♦	♦					♦		♦	
669	14.6	14.7		♦	♦	♦					♦		♦	
669	14.7	14.8	♦					♦			♦			
669	14.8	14.9	♦											
669	14.9	15.0	♦											
669	15.0	15.1	♦											
669	15.1	15.2	♦					♦						
669	15.2	15.3	♦											
669	15.3	15.4												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
669	15.4	15.5												
669	15.5	15.6												
669	15.6	15.7												
669	15.7	15.8						♦						
669	15.8	15.9						♦						
669	15.9	16.0												
669	16.0	16.1												
669	16.1	16.2												
669	16.2	16.3												
669	16.3	16.4												
669	16.4	16.5												
669	16.5	16.6												
669	16.6	16.7												
669	16.7	16.8			♦	♦							♦	
669	16.6	16.9			♦	♦							♦	
669	16.9	17.0			♦	♦		♦					♦	
669	17.0	17.1												
669	17.1	17.2												
669	17.2	17.3												
669	17.3	17.4			♦	♦								
669	17.4	17.5												
669	17.5	17.6												
669	17.6	17.7												
669	17.7	17.8												
669	17.8	17.9												
669	17.9	18.0						♦						
669	18.0	18.1						♦						
669	18.1	18.2			♦	♦								
669	18.2	18.3												
669	18.3	18.4												
669	18.4	18.5												
669	18.5	18.6												
669	18.6	18.7												
669	18.7	18.8												
669	18.8	18.9						♦						
669	18.9	19.0						♦						
669	19.0	19.1												
669	19.1	19.2												
669	19.2	19.3						♦						
669	19.3	19.4												
669	19.4	19.5			♦	♦								
669	19.5	19.6			♦	♦								
669	19.6	19.7			♦	♦								
669	19.7	19.8												
669	19.8	19.9												
669	19.9	20.0												
669	20.0	20.1			♦	♦								
669	20.1	20.2			♦	♦		♦						
669	20.2	20.3												
669	20.3	20.4												
669	20.4	20.5												
669	20.5	20.6												
669	20.6	20.7												
669	20.7	20.8						♦						
669	20.8	20.9												
669	20.9	21.0												
669	21.0	21.1												
669	21.1	21.2												
669	21.2	21.3												
669	21.3	21.4						♦						
669	21.4	21.5												
669	21.5	21.6												
669	21.6	21.7												
669	21.7	21.8												
669	21.8	21.9						♦						
669	21.9	22.0												
669	22.0	22.1												
669	22.1	22.2						♦						
669	22.2	22.3												
669	22.3	22.4												
669	22.4	22.5												
669	22.5	22.6												
669	22.6	22.7												
669	22.7	22.8												
669	22.8	22.9						♦						
669	22.9	23.0												
669	23.0	23.1												
669	23.1	23.2												
669	23.2	23.3						♦						
669	23.3	23.4												
669	23.4	23.5						♦						
669	23.5	23.6												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
669	23.6	23.7												
669	23.7	23.8						♦						
669	23.8	23.9												
669	23.9	24.0						♦						
669	24.0	24.1												
669	24.1	24.2						♦						
669	24.2	24.3						♦						
669	24.3	24.4												
669	24.4	24.5												
669	24.5	24.6												
669	24.6	24.7												
669	24.7	24.8												
669	24.8	24.9												
669	24.9	25.0						♦						
669	25.0	25.1												
669	25.1	25.2						♦						
669	25.2	25.3												
669	25.3	25.4												
669	25.4	25.5												
669	25.5	25.6												
669	25.6	25.7												
669	25.7	25.8			♦	♦								
669	25.6	25.9			♦	♦		♦					♦	
669	25.9	26.0						♦					♦	
669	26.0	26.1						♦					♦	
669	26.1	26.2						♦					♦	
669	26.2	26.3			♦	♦		♦					♦	
669	26.3	26.4			♦	♦		♦					♦	
669	26.4	26.5			♦	♦		♦					♦	
669	26.5	26.6						♦					♦	
669	26.6	26.7	♦					♦			♦		♦	
669	26.7	26.6						♦					♦	
669	26.8	26.9	♦	♦	♦	♦		♦			♦		♦	
669	26.9	27.0		♦	♦	♦		♦			♦		♦	
669	27.0	27.1		♦	♦	♦		♦			♦		♦	
669	27.1	27.2		♦	♦	♦		♦			♦		♦	
669	27.2	27.3		♦	♦	♦		♦			♦		♦	
669	27.3	27.4		♦	♦	♦					♦		♦	
669	27.4	27.5		♦	♦	♦					♦		♦	
669	27.5	27.6	♦								♦			
669	27.6	27.7	♦								♦			
669	27.7	27.8		♦	♦	♦					♦		♦	
669	27.8	27.9		♦	♦	♦		♦			♦		♦	
669	27.9	28.0		♦	♦	♦					♦		♦	
669	28.0	28.1		♦	♦	♦					♦		♦	
669	28.1	28.2		♦	♦	♦					♦		♦	
669	28.2	28.3		♦	♦	♦					♦		♦	
669	28.3	28.4		♦	♦	♦					♦		♦	
669	28.4	28.5		♦	♦	♦					♦		♦	
669	28.5	28.6		♦	♦	♦					♦		♦	
669	28.6	28.7		♦	♦	♦					♦		♦	
669	28.7	28.8		♦	♦	♦					♦		♦	
669	28.8	28.9		♦	♦	♦					♦		♦	
669	28.9	29.0		♦	♦	♦		♦			♦		♦	
669	29.0	29.1		♦	♦	♦		♦			♦		♦	
669	29.1	29.2		♦	♦	♦		♦			♦		♦	
669	29.2	29.3		♦	♦	♦		♦			♦		♦	
669	29.3	29.4		♦	♦	♦		♦			♦		♦	
669	29.4	29.5		♦	♦	♦		♦			♦		♦	
669	29.5	29.6		♦	♦	♦		♦			♦		♦	
669	29.6	29.7		♦	♦	♦		♦			♦		♦	
669	29.7	29.8		♦	♦	♦		♦			♦		♦	
669	29.6	29.9		♦	♦	♦		♦			♦		♦	
669	29.9	30.0		♦	♦	♦		♦			♦		♦	
669	30.0	30.1		♦	♦	♦		♦			♦		♦	
669	30.1	30.2		♦	♦	♦		♦			♦		♦	
669	30.2	30.3		♦	♦	♦		♦			♦		♦	
669	30.3	30.4		♦	♦	♦		♦			♦		♦	
669	30.4	30.5		♦	♦	♦		♦			♦		♦	
669	30.5	30.6	♦					♦			♦		♦	
669	30.6	30.7	♦					♦			♦		♦	
669	30.7	30.8	♦					♦			♦		♦	
669	30.8	30.9						♦					♦	
669	30.9	31.0			♦	♦		♦					♦	
669	31.0	31.1			♦	♦		♦					♦	
669	31.1	31.2			♦	♦		♦					♦	
669	31.2	31.3			♦	♦		♦					♦	
669	31.3	31.4			♦	♦		♦					♦	
669	31.4	31.5			♦	♦							♦	
669	31.5	31.6		♦	♦	♦							♦	
669	31.6	31.7			♦	♦							♦	
669	31.7	31.8			♦	♦							♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
669	31.8	31.9		♦		♦							♦	
669	31.9	32.0		♦		♦							♦	
669	32.0	32.1		♦		♦							♦	
669	32.1	32.2		♦		♦		♦					♦	
669	32.2	32.3		♦		♦							♦	
669	32.3	32.4		♦		♦							♦	
669	32.4	32.5			♦	♦							♦	
669	32.5	32.6			♦	♦							♦	
669	32.6	32.7			♦	♦								
669	32.7	32.8			♦	♦		♦						
669	32.8	32.9			♦	♦								
669	32.9	33.0			♦	♦								
669	33.0	33.1			♦	♦								
669	33.1	33.2			♦	♦		♦						
669	33.2	33.3			♦	♦								
669	33.3	33.4			♦	♦		♦						
669	33.4	33.5			♦	♦								
669	33.5	33.6			♦	♦								
669	33.6	33.7			♦	♦								
669	33.7	33.8			♦	♦								
669	33.8	33.9			♦	♦								
669	33.9	34.0			♦	♦								
669	34.0	34.1			♦	♦		♦						
669	34.1	34.2			♦	♦								
669	34.2	34.3												
669	34.3	34.4												
669	34.4	34.5												
669	34.5	34.6			♦	♦								
669	34.6	34.7			♦	♦								
669	34.7	34.8			♦	♦								
669	34.8	34.9			♦	♦		♦						
669	34.9	35.0			♦	♦								
669	35.0	35.1			♦	♦								
669	35.1	35.2			♦	♦								
669	35.2	35.3			♦	♦								
669	35.3	35.4			♦	♦								
	Total Miles		4.1	16.1	20.4	14.4	0.0	11.0	0.0	0.9	18.6	4.1	15.1	0.0
670	0.0	0.1												
670	0.1	0.2												
670	0.2	0.3												
670	0.3	0.4												
670	0.4	0.5												
670	0.5	0.6												
670	0.6	0.7												
670	0.7	0.8												
670	0.8	0.9												
670	0.9	1.0												
670	1.0	1.1						♦						
670	1.1	1.2												
670	1.2	1.3												
670	1.3	1.4												
670	1.4	1.5												
670	1.5	1.6												
670	1.6	1.7												
670	1.7	1.8						♦						
670	1.8	1.9												
670	1.9	2.0												
670	2.0	2.1												
670	2.1	2.2												
670	2.2	2.3												
670	2.3	2.4												
670	2.4	2.5						♦						
670	2.5	2.6												
670	2.6	2.7												
670	2.7	2.8												
670	2.8	2.9						♦						
670	2.9	3.0												
670	3.0	3.1												
670	3.1	3.2												
670	3.2	3.3												
670	3.3	3.4												
670	3.4	3.5												
670	3.5	3.6												
670	3.6	3.7												
670	3.7	3.8												
670	3.8	3.9						♦						
670	3.9	4.0												
670	4.0	4.1		♦				♦						
670	4.1	4.2												
670	4.2	4.3						♦						
670	4.3	4.4												

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
670	4.4	4.5												
670	4.5	4.6						♦						
670	4.6	4.7												
670	4.7	4.8												
670	4.8	4.9												
670	4.9	5.0												
670	5.0	5.1												
670	5.1	5.2												
670	5.2	5.3												
670	5.3	5.4												
670	5.4	5.5												
670	5.5	5.6												
670	5.6	5.7						♦						
670	5.7	5.8						♦						
670	5.8	5.9												
670	5.9	6.0												
670	6.0	6.1												
670	6.1	6.2												
670	6.2	6.3												
670	6.3	6.4												
670	6.4	6.5												
670	6.5	6.6												
670	6.6	6.7												
670	6.7	6.8												
670	6.8	6.9												
670	6.9	7.0						♦						
670	7.0	7.1						♦						
670	7.1	7.2												
670	7.2	7.3												
670	7.3	7.4												
670	7.4	7.5												
670	7.5	7.6												
670	7.8	7.7												
670	7.7	7.8												
670	7.8	7.9		♦										
670	7.9	8.0												
670	8.0	8.1												
670	8.1	8.2						♦						
670	8.2	8.3						♦						
670	8.3	8.4		♦				♦						
670	8.4	8.5		♦										
670	8.5	8.6		♦										
670	8.6	8.7		♦										
670	8.7	8.8		♦										
670	8.8	8.9		♦				♦						
670	8.9	9.0												
670	9.0	9.1											♦	
670	9.1	9.2											♦	
670	9.2	9.3		♦									♦	
670	9.3	9.4						♦					♦	
670	9.4	9.5											♦	
670	9.5	9.6											♦	
670	9.6	9.7		♦									♦	
670	9.7	9.8		♦									♦	
670	9.8	9.9		♦									♦	
670	9.9	10.0		♦									♦	
670	10.0	10.1		♦										
670	10.1	10.2		♦										
670	10.2	10.3		♦										
670	10.3	10.4						♦						
670	10.4	10.5						♦						
670	10.5	10.6												
670	10.6	10.7												
670	10.7	10.8		♦										
670	10.8	10.9		♦										
670	10.9	11.0		♦										
670	11.0	11.1		♦										
670	11.1	11.2		♦										
670	11.2	11.3		♦										
	Total Miles		0.0	2.2	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	1.0	0.0
672	0.0	0.1		♦										
672	0.1	0.2		♦										
672	0.2	0.3		♦										
672	0.3	0.4		♦										
672	0.4	0.5		♦										
672	0.5	0.6		♦										
672	0.6	0.7		♦				♦						
672	0.7	0.8		♦										
672	0.8	0.9		♦										
672	0.9	1.0		♦				♦						
672	1.0	1.1		♦										

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
672	1.1	1.2		♦										
672	1.2	1.3												
672	1.3	1.4												
672	1.4	1.5												
672	1.5	1.6		♦										
672	1.6	1.7		♦										
672	1.7	1.8		♦										
672	1.8	1.9		♦				♦						
672	1.9	2.0		♦										
672	2.0	2.1		♦				♦						
672	2.1	2.2		♦										
672	2.2	2.3		♦										
672	2.3	2.4		♦										
672	2.4	2.5		♦										
672	2.5	2.6		♦										
672	2.6	2.7		♦										
672	2.7	2.8		♦				♦						
672	2.8	2.9		♦				♦						
672	2.9	3.0		♦										
672	3.0	3.1		♦										
672	3.1	3.2		♦										
672	3.2	3.3		♦										
672	3.3	3.4		♦										
672	3.4	3.5		♦										
672	3.5	3.6		♦										
672	3.6	3.7		♦										
672	3.7	3.8		♦										
672	3.8	3.9		♦										
672	3.9	4.0		♦										
672	4.0	4.1		♦				♦						
672	4.1	4.2		♦										
672	4.2	4.3												
672	4.3	4.4	♦											
672	4.4	4.5												
672	4.5	4.6		♦										
672	4.6	4.7												
672	4.7	4.8												
672	4.8	4.9												
672	4.9	5.0												
672	5.0	5.1												
672	5.1	5.2						♦						
672	5.2	5.3												
672	5.3	5.4												
672	5.4	5.5						♦						
672	5.5	5.6						♦						
672	5.6	5.7						♦						
672	5.7	5.8												
672	5.8	5.9												
672	5.9	6.0												
672	6.0	6.1												
672	6.1	6.2												
672	6.2	6.3												
672	6.3	6.4												
672	6.4	6.5												
672	6.5	6.6												
672	6.6	6.7						♦						
672	6.7	6.8		♦				♦						
672	6.8	6.9		♦										
672	6.9	7.0												
672	7.0	7.1												
672	7.1	7.2												
672	7.2	7.3												
672	7.3	7.4												
672	7.4	7.5												
672	7.5	7.6												
672	7.6	7.7												
672	7.7	7.8												
672	7.8	7.9												
672	7.9	8.0												
672	8.0	8.1		♦	♦						♦			
672	8.1	8.2		♦	♦						♦			
672	8.2	8.3	♦	♦	♦						♦			
672	8.3	8.4	♦								♦			
672	8.4	8.5	♦								♦			
672	8.5	8.6		♦	♦						♦		♦	
672	8.6	8.7		♦	♦						♦		♦	
672	8.7	8.8		♦	♦						♦		♦	
672	8.8	8.9		♦	♦	♦					♦		♦	
672	8.9	9.0		♦	♦						♦		♦	
672	9.0	9.1	♦								♦		♦	
672	9.1	9.2	♦								♦		♦	
672	9.2	9.3	♦								♦		♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
672	9.3	9.4	♦								♦		♦	
672	9.4	9.5	♦								♦		♦	
672	9.5	9.6	♦					♦			♦		♦	
672	9.6	9.7	♦					♦			♦		♦	
672	9.7	9.8	♦					♦			♦		♦	
672	9.8	9.9	♦					♦			♦		♦	
672	9.9	10.0	♦					♦			♦		♦	
672	10.0	10.1		♦	♦			♦			♦		♦	
672	10.1	10.2		♦	♦			♦			♦		♦	
672	10.2	10.3		♦	♦	♦		♦			♦		♦	
672	10.3	10.4		♦	♦			♦			♦		♦	
672	10.4	10.5		♦	♦			♦			♦		♦	
672	10.5	10.6		♦	♦			♦			♦		♦	
672	10.6	10.7	♦					♦			♦		♦	
672	10.7	10.8	♦					♦			♦		♦	
672	10.8	10.9						♦					♦	
672	10.9	11.0		♦	♦			♦			♦		♦	
672	11.0	11.1	♦					♦			♦		♦	
672	11.1	11.2	♦					♦			♦		♦	
672	11.2	11.3	♦					♦			♦		♦	
672	11.3	11.4	♦					♦			♦		♦	
672	11.4	11.5	♦					♦			♦		♦	
672	11.5	11.6	♦								♦			
672	11.6	11.7	♦								♦			
672	11.7	11.8	♦								♦			
672	11.8	11.9	♦								♦			
672	11.9	12.0	♦								♦			
672	12.0	12.1		♦	♦						♦			
672	12.1	12.2		♦	♦						♦			
672	12.2	12.3												
672	12.3	12.4												
672	12.4	12.5												
672	12.5	12.6												
672	12.6	12.7						♦						
672	12.7	12.8												
672	12.8	12.9												
672	12.9	13.0												
672	13.0	13.1		♦	♦						♦			
672	13.1	13.2		♦	♦						♦			
672	13.2	13.3	♦								♦			
672	13.3	13.4	♦					♦			♦			
672	13.4	13.5												
672	13.5	13.6	♦								♦			
672	13.6	13.7		♦	♦						♦			
672	13.7	13.8		♦	♦						♦			
672	13.8	13.9		♦	♦						♦			
672	13.9	14.0	♦								♦			
672	14.0	14.1	♦								♦			
672	14.1	14.2		♦	♦						♦	♦		
672	14.2	14.3		♦	♦						♦	♦		
672	14.3	14.4		♦	♦			♦			♦			
672	14.4	14.5		♦	♦						♦			
672	14.5	14.6		♦	♦						♦			
672	14.6	14.7		♦	♦						♦			
672	14.7	14.8		♦	♦			♦			♦			
672	14.8	14.9		♦	♦						♦			
672	14.9	15.0		♦	♦						♦			
672	15.0	15.1		♦	♦						♦			
672	15.1	15.2		♦	♦						♦			
672	15.2	15.3												
672	15.3	15.4												
672	15.4	15.5												
672	15.5	15.6												
672	15.6	15.7												
672	15.7	15.8												
672	15.8	15.9												
672	15.9	16.0												
672	16.0	16.1												
672	16.1	16.2												
672	16.2	16.3						♦						
672	16.3	16.4						♦						
672	16.4	16.5												
672	16.5	16.6												
672	16.6	16.7												
672	16.7	16.8												
672	16.8	16.9						♦						
672	16.9	17.0												
672	17.0	17.1												
672	17.1	17.2												
672	17.2	17.3												
672	17.3	17.4												
672	17.4	17.5												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
672	17.5	17.6												
672	17.6	17.7												
672	17.7	17.8												
672	17.8	17.9												
672	17.9	18.0		♦		♦							♦	
672	18.0	18.1		♦		♦		♦					♦	
672	18.1	18.2		♦				♦					♦	
672	18.2	18.3		♦									♦	
672	18.3	18.4		♦									♦	
672	18.4	18.5		♦									♦	
672	18.5	18.6												
672	18.6	18.7												
672	18.7	18.8												
672	18.8	18.9		♦									♦	
672	18.9	19.0		♦									♦	
672	19.0	19.1		♦									♦	
672	19.1	19.2		♦				♦					♦	
672	19.2	19.3		♦		♦		♦					♦	
672	19.3	19.4		♦									♦	
672	19.4	19.5		♦									♦	
672	19.5	19.6												
672	19.6	19.7												
672	19.7	19.8												
672	19.8	19.9						♦						
672	19.9	20.0						♦						
672	20.0	20.1												
672	20.1	20.2												
672	20.2	20.3												
672	20.3	20.4												
672	20.4	20.5			♦	♦								
672	20.5	20.6												
672	20.6	20.7						♦						
672	20.7	20.8												
672	20.8	20.9						♦						
672	20.9	21.0												
672	21.0	21.1												
672	21.1	21.2												
672	21.2	21.3												
672	21.3	21.4												
672	21.4	21.5												
672	21.5	21.6			♦	♦								
672	21.6	21.7		♦	♦						♦			
672	21.7	21.8	♦					♦			♦			
672	21.8	21.9	♦					♦			♦			
672	21.9	22.0	♦								♦			
672	22.0	22.1	♦								♦			
672	22.1	22.2	♦								♦			
672	22.2	22.3		♦	♦	♦					♦			
672	22.3	22.4	♦								♦			
672	22.4	22.5	♦								♦			
672	22.5	22.6	♦								♦			
672	22.6	22.7												
672	22.7	22.8												
672	22.8	22.9			♦	♦								
672	22.9	23.0												
672	23.0	23.1												
672	23.1	23.2												
672	23.2	23.3						♦						
672	23.3	23.4												
672	23.4	23.5												
	Total Miles		**3.9**	**9.0**	**3.8**	**0.9**	**0.0**	**5.1**	**0.0**	**0.0**	**7.2**	**0.2**	**4.3**	**0.0**
673	0.0	0.1					♦							
673	0.1	0.2					♦							
673	0.2	0.3					♦							
673	0.3	0.4					♦							
673	0.4	0.5					♦							
673	0.5	0.6					♦	♦						
673	0.6	0.7					♦							
673	0.7	0.8					♦							
673	0.8	0.9					♦							
673	0.9	1.0					♦							
673	1.0	1.1					♦							
673	1.1	1.2					♦							
673	1.2	1.3					♦							
673	1.3	1.4					♦							
673	1.4	1.5					♦							
673	1.5	1.6					♦							
673	1.6	1.7					♦							
673	1.7	1.8					♦	♦						
673	1.8	1.9					♦	♦						
673	1.9	2.0					♦							

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
673	2.0	2.1					♦							
673	2.1	2.2					♦							
673	2.2	2.3				♦	♦							
673	2.3	2.4		♦			♦	♦					♦	
673	2.4	2.5		♦			♦	♦					♦	
673	2.5	2.6		♦			♦	♦					♦	
673	2.6	2.7		♦			♦	♦					♦	
673	2.7	2.8		♦			♦	♦					♦	
673	2.8	2.9		♦			♦	♦					♦	
673	2.9	3.0		♦			♦	♦					♦	
673	3.0	3.1		♦			♦	♦					♦	
673	3.1	3.2		♦			♦	♦					♦	
673	3.2	3.3		♦			♦	♦					♦	
673	3.3	3.4		♦			♦	♦					♦	
673	3.4	3.5		♦			♦	♦					♦	
673	3.5	3.6		♦			♦	♦					♦	
673	3.6	3.7		♦			♦							
673	3.7	3.8		♦	♦		♦	♦			♦			
673	3.8	3.9		♦	♦		♦				♦			
673	3.9	4.0		♦	♦		♦	♦			♦			
673	4.0	4.1		♦	♦	♦	♦				♦			
673	4.1	4.2		♦	♦	♦	♦				♦			
673	4.2	4.3		♦	♦	♦	♦				♦			
673	4.3	4.4		♦	♦	♦	♦				♦			
673	4.4	4.5		♦	♦		♦	♦			♦		♦	
673	4.5	4.6		♦	♦		♦	♦			♦		♦	
673	4.6	4.7		♦	♦		♦	♦			♦		♦	
673	4.7	4.8		♦	♦		♦	♦			♦		♦	
673	4.8	4.9		♦	♦		♦	♦			♦		♦	
673	4.9	5.0	♦	♦	♦		♦	♦			♦		♦	
673	5.0	5.1	♦	♦			♦	♦			♦		♦	
673	5.1	5.2	♦				♦	♦			♦		♦	
673	5.2	5.3					♦	♦					♦	
673	5.3	5.4		♦	♦		♦	♦			♦		♦	
673	5.4	5.5		♦	♦		♦	♦			♦		♦	
673	5.5	5.6		♦	♦		♦	♦			♦		♦	
673	5.6	5.7		♦	♦		♦				♦		♦	
673	5.7	5.8		♦	♦		♦				♦			
673	5.8	5.9		♦	♦	♦	♦				♦		♦	
673	5.9	6.0		♦	♦	♦	♦				♦		♦	
673	6.0	6.1		♦	♦	♦	♦				♦		♦	
673	6.1	6.2		♦	♦	♦	♦				♦		♦	
673	6.2	6.3		♦	♦	♦	♦				♦		♦	
673	6.3	6.4		♦	♦	♦	♦	♦			♦		♦	
673	6.4	6.5		♦	♦	♦	♦	♦			♦		♦	
673	6.5	6.6		♦	♦		♦				♦			
673	6.6	6.7		♦	♦		♦				♦			
673	6.7	6.8		♦	♦		♦				♦			
673	6.8	6.9		♦	♦		♦				♦			
673	6.9	7.0		♦	♦		♦				♦			
673	7.0	7.1					♦							
673	7.1	7.2					♦							
673	7.2	7.3					♦							
673	7.3	7.4					♦							
673	7.4	7.5					♦							
673	7.5	7.6					♦							
673	7.6	7.7					♦							
673	7.7	7.8					♦	♦						
673	7.8	7.9					♦							
673	7.9	8.0					♦							
673	8.0	8.1					♦							
673	8.1	8.2					♦							
673	8.2	8.3					♦							
673	8.3	8.4					♦							
673	8.4	8.5					♦							
673	8.5	8.6					♦	♦						
673	8.6	8.7					♦							
673	8.7	8.8					♦							
673	8.8	8.9					♦							
673	8.9	9.0					♦							
673	9.0	9.1					♦							
673	9.1	9.2					♦							
673	9.2	9.3					♦							
673	9.3	9.4					♦	♦						
673	9.4	9.5					♦							
673	9.5	9.6					♦							
673	9.6	9.7					♦							
673	9.7	9.8					♦							
673	9.8	9.9					♦							
673	9.9	10.0					♦	♦						
673	10.0	10.1					♦	♦						
673	10.1	10.2					♦							

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
673	10.2	10.3					♦							
673	10.3	10.4					♦							
673	10.4	10.5					♦							
673	10.5	10.6					♦							
673	10.6	10.7					♦							
673	10.7	10.8					♦							
673	10.8	10.9					♦							
673	10.9	11.0					♦							
673	11.0	11.1					♦	♦						
673	11.1	11.2					♦							
673	11.2	11.3					♦							
673	11.3	11.4					♦							
673	11.4	11.5					♦							
673	11.5	11.6					♦	♦						
673	11.6	11.7					♦							
673	11.7	11.8					♦							
673	11.8	11.9					♦							
673	11.9	12.0					♦							
673	12.0	12.1		♦			♦						♦	
673	12.1	12.2		♦			♦						♦	
673	12.2	12.3					♦							
673	12.3	12.4					♦							
673	12.4	12.5					♦	♦						
673	12.5	12.6					♦							
673	12.6	12.7					♦							
673	12.7	12.8		♦			♦						♦	
673	12.8	12.9					♦	♦						
673	12.9	13.0		♦			♦						♦	
673	13.0	13.1		♦			♦						♦	
673	13.1	13.2		♦			♦						♦	
673	13.2	13.3		♦			♦						♦	
673	13.3	13.4		♦			♦						♦	
673	13.4	13.5		♦			♦						♦	
673	13.5	13.6		♦			♦						♦	
673	13.6	13.7					♦							
673	13.7	13.8		♦			♦						♦	
673	13.8	13.9		♦			♦						♦	
673	13.9	14.0		♦			♦	♦					♦	
673	14.0	14.1					♦							
673	14.1	14.2		♦			♦						♦	
673	14.2	14.3					♦							
673	14.3	14.4		♦			♦						♦	
673	14.4	14.5		♦			♦						♦	
673	14.5	14.6					♦							
673	14.6	14.7					♦							
673	14.7	14.8					♦							
673	14.8	14.9					♦	♦						
673	14.9	15.0					♦							
673	15.0	15.1					♦							
673	15.1	15.2					♦							
673	15.2	15.3					♦							
673	15.3	15.4					♦							
673	15.4	15.5					♦	♦						
673	15.5	15.6					♦							
673	15.6	15.7					♦							
673	15.7	15.8					♦	♦						
673	15.8	15.9					♦							
673	15.9	16.0					♦							
673	16.0	16.1					♦							
673	16.1	16.2					♦							
673	16.2	16.3					♦							
673	16.3	16.4					♦							
673	16.4	16.5					♦							
673	16.5	16.6					♦	♦						
673	16.6	16.7					♦							
673	16.7	16.8					♦							
673	16.8	16.9					♦							
673	16.9	17.0					♦							
673	17.0	17.1					♦							
673	17.1	17.2					♦							
673	17.2	17.3					♦							
673	17.3	17.4					♦	♦						
673	17.4	17.5					♦							
673	17.5	17.6					♦							
673	17.6	17.7					♦	♦						
673	17.7	17.8					♦							
673	17.8	17.9					♦							
673	17.9	18.0					♦							
673	18.0	18.1					♦							
673	18.1	18.2					♦							
673	18.2	18.3					♦	♦						
673	18.3	18.4					♦							

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
673	18.4	18.5					♦							
673	18.5	18.6					♦	♦						
673	18.6	18.7					♦							
673	18.7	18.8					♦							
673	18.8	18.9					♦							
673	18.9	19.0					♦							
673	19.0	19.1					♦	♦						
673	19.1	19.2					♦							
673	19.2	19.3					♦							
673	19.3	19.4					♦	♦						
673	19.4	19.5					♦							
673	19.5	19.6					♦							
673	19.6	19.7					♦	♦						
673	19.7	19.8					♦							
673	19.8	19.9					♦	♦						
673	19.9	20.0					♦							
673	20.0	20.1					♦							
673	20.1	20.2					♦							
673	20.2	20.3					♦							
673	20.3	20.4					♦	♦						
673	20.4	20.5					♦	♦						
673	20.5	20.6					♦	♦						
673	20.6	20.7					♦	♦						
673	20.7	20.8					♦							
673	20.8	20.9					♦							
673	20.9	21.0					♦							
673	21.0	21.1					♦							
673	21.1	21.2					♦	♦						
673	21.2	21.3					♦	♦						
673	21.3	21.4					♦							
673	21.4	21.5					♦							
673	21.5	21.6					♦	♦						
673	21.6	21.7					♦							
673	21.7	21.8					♦							
673	21.8	21.9					♦							
673	21.9	22.0					♦	♦						
	Total Miles		0.3	6.1	3.0	1.2	21.9	6.2	0.0	0.0	3.2	0.0	4.9	0.0
675	0.0	0.1					♦	♦						
675	0.1	0.2					♦							
675	0.2	0.3					♦							
675	0.3	0.4					♦							
675	0.4	0.5					♦							
675	0.5	0.6					♦	♦						
675	0.6	0.7					♦	♦						
675	0.7	0.8					♦							
675	0.8	0.9					♦							
675	0.9	1.0					♦	♦						
675	1.0	1.1					♦							
675	1.1	1.2					♦							
675	1.2	1.3					♦							
675	1.3	1.4					♦	♦						
675	1.4	1.5					♦							
675	1.5	1.6					♦							
675	1.6	1.7					♦	♦						
675	1.7	1.8					♦	♦						
675	1.8	1.9					♦							
675	1.9	2.0					♦							
675	2.0	2.1					♦	♦						
675	2.1	2.2					♦	♦						
675	2.2	2.3					♦							
675	2.3	2.4					♦							
675	2.4	2.5					♦							
675	2.5	2.6					♦	♦						
675	2.6	2.7					♦							
675	2.7	2.8					♦							
675	2.8	2.9					♦							
675	2.9	3.0					♦							
675	3.0	3.1					♦	♦						
675	3.1	3.2					♦							
675	3.2	3.3					♦	♦						
675	3.3	3.4					♦							
675	3.4	3.5					♦	♦						
675	3.5	3.6					♦							
675	3.6	3.7					♦							
675	3.7	3.8					♦							
675	3.8	3.9					♦	♦						
675	3.9	4.0					♦							
675	4.0	4.1					♦							
675	4.1	4.2					♦	♦						
675	4.2	4.3					♦							
675	4.3	4.4					♦							

APPENDIX D-1. Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
675	4.4	4.5					♦							
675	4.5	4.6					♦							
675	4.6	4.7					♦	♦						
675	4.7	4.8					♦	♦						
675	4.8	4.9					♦							
675	4.9	5.0					♦							
675	5.0	5.1					♦							
675	5.1	5.2					♦							
675	5.2	5.3					♦							
675	5.3	5.4					♦							
675	5.4	5.5					♦	♦						
675	5.5	5.6					♦							
675	5.6	5.7					♦							
675	5.7	5.8					♦							
675	5.8	5.9					♦							
675	5.9	6.0					♦							
675	6.0	6.1					♦							
675	6.1	6.2					♦	♦						
675	6.2	6.3					♦							
675	6.3	6.4					♦	♦						
675	6.4	6.5					♦							
675	6.5	6.6					♦							
675	6.6	6.7					♦	♦						
675	6.7	6.8					♦							
675	6.8	6.9					♦							
675	6.9	7.0					♦							
675	7.0	7.1					♦							
675	7.1	7.2					♦	♦						
675	7.2	7.3					♦							
675	7.3	7.4					♦	♦						
675	7.4	7.5					♦							
675	7.5	7.6					♦	♦						
675	7.6	7.7					♦							
675	7.7	7.8					♦							
675	7.8	7.9					♦							
675	7.9	8.0		♦	♦		♦				♦			
675	8.0	8.1		♦	♦		♦				♦			
675	8.1	8.2		♦	♦		♦	♦			♦			
675	8.2	8.3		♦	♦		♦				♦			
675	8.3	8.4		♦	♦		♦				♦			
675	8.4	8.5		♦	♦		♦				♦			
675	8.5	8.6		♦	♦	♦	♦				♦			
675	8.6	8.7		♦	♦	♦	♦				♦			
675	8.7	8.8		♦	♦	♦	♦				♦			
675	8.8	8.9		♦	♦	♦	♦				♦			
675	8.9	9.0		♦	♦	♦	♦				♦			
675	9.0	9.1		♦	♦	♦	♦				♦			
675	9.1	9.2		♦	♦		♦	♦			♦			
675	9.2	9.3		♦	♦		♦				♦			
675	9.3	9.4					♦							
675	9.4	9.5					♦							
675	9.5	9.6					♦	♦						
675	9.6	9.7					♦							
675	9.7	9.8					♦							
675	9.8	9.9					♦							
675	9.9	10.0					♦							
675	10.0	10.1		♦	♦		♦				♦			
675	10.1	10.2		♦	♦		♦				♦			
675	10.2	10.3		♦	♦		♦				♦			
675	10.3	10.4		♦	♦		♦				♦			
675	10.4	10.5	♦				♦				♦			
675	10.5	10.6	♦				♦				♦			
675	10.6	10.7	♦				♦				♦			
675	10.7	10.8	♦				♦				♦			
675	10.8	10.9					♦							
675	10.9	11.0					♦	♦						
675	11.0	11.1					♦							
675	11.1	11.2					♦							
675	11.2	11.3					♦							
675	11.3	11.4					♦	♦						
675	11.4	11.5					♦							
675	11.5	11.6					♦							
675	11.6	11.7					♦							
675	11.7	11.8					♦							
675	11.8	11.9					♦							
675	11.9	12.0					♦							
675	12.0	12.1					♦							
675	12.1	12.2					♦	♦						
675	12.2	12.3												
675	12.3	12.4												
675	12.4	12.5						♦						
675	12.5	12.6												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
675	12.6	12.7												
675	12.7	12.8												
675	12.8	12.9												
675	12.9	13.0												
675	13.0	13.1												
675	13.1	13.2												
675	13.2	13.3												
675	13.3	13.4												
675	13.4	13.5						♦						
675	13.5	13.6												
675	13.6	13.7												
675	13.7	13.8												
675	13.8	13.9												
675	13.9	14.0												
675	14.0	14.1						♦						
675	14.1	14.2												
675	14.2	14.3												
675	14.3	14.4												
675	14.4	14.5						♦						
675	14.5	14.6												
675	14.6	14.7												
675	14.7	14.8												
675	14.8	14.9						♦						
675	14.9	15.0												
675	15.0	15.1												
675	15.1	15.2												
675	15.2	15.3												
675	15.3	15.4												
675	15.4	15.5						♦						
675	15.5	15.6												
675	15.6	15.7												
675	15.7	15.8												
675	15.8	15.9						♦						
675	15.9	16.0												
675	16.0	16.1												
675	16.1	16.2												
675	16.2	16.3												
675	16.3	16.4						♦						
675	16.4	16.5												
675	16.5	16.6												
675	16.6	16.7						♦						
675	16.7	16.8												
675	16.8	16.9												
675	16.9	17.0						♦						
675	17.0	17.1						♦						
675	17.1	17.2						♦						
675	17.2	17.3												
675	17.3	17.4												
675	17.4	17.5												
675	17.5	17.6												
675	17.6	17.7												
675	17.7	17.8												
675	17.8	17.9						♦						
675	17.9	16.0												
675	18.0	18.1												
675	18.1	16.2						♦						
675	18.2	18.3												
675	18.3	18.4												
675	18.4	18.5												
675	18.5	18.6						♦						
675	18.6	18.7												
675	18.7	16.8												
675	18.8	18.9												
675	18.9	19.0												
675	19.0	19.1					♦							
675	19.1	19.2					♦							
675	19.2	19.3	♦				♦				♦			
675	19.3	19.4	♦				♦	♦			♦			
675	19.4	19.5	♦				♦				♦			
675	19.5	19.6	♦				♦				♦			
675	19.6	19.7	♦				♦				♦			
675	19.7	19.8	♦				♦				♦			
675	19.8	19.9	♦				♦	♦			♦			
675	19.9	20.0					♦							
675	20.0	20.1	♦				♦				♦			
675	20.1	20.2	♦				♦				♦			
675	20.2	20.3	♦				♦	♦			♦			
675	20.3	20.4	♦				♦	♦			♦			
675	20.4	20.5	♦				♦				♦			
675	20.5	20.6	♦				♦				♦			
675	20.6	20.7	♦				♦				♦			
675	20.7	20.8	♦				♦				♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
675	20.8	20.9	♦				♦				♦			
675	20.9	21.0	♦				♦				♦			
675	21.0	21.1	♦				♦	♦			♦			
675	21.1	21.2	♦				♦	♦			♦			
675	21.2	21.3	♦				♦				♦			
675	21.3	21.4	♦				♦	♦			♦			
675	21.4	21.5	♦				♦				♦			
675	21.5	21.6	♦				♦				♦			
675	21.6	21.7	♦				♦	♦			♦			
675	21.7	21.8	♦				♦	♦			♦			
675	21.8	21.9	♦				♦				♦			
675	21.9	22.0	♦				♦				♦			
675	22.0	22.1	♦				♦				♦			
675	22.1	22.2	♦				♦	♦			♦			
675	22.2	22.3	♦				♦			♦	♦	♦		
675	22.3	22.4	♦				♦			♦	♦	♦		
675	22.4	22.5	♦				♦	♦		♦	♦	♦		
675	22.5	22.6	♦				♦			♦	♦	♦		
675	22.6	22.7	♦				♦			♦	♦	♦		
675	22.7	22.8	♦				♦			♦	♦	♦		
675	22.8	22.9	♦				♦				♦			
675	22.9	23.0	♦				♦	♦			♦			
675	23.0	23.1	♦				♦	♦			♦			
675	23.1	23.2	♦				♦	♦			♦			
675	23.2	23.3	♦				♦				♦			
675	23.3	23.4	♦				♦				♦			
675	23.4	23.5	♦				♦				♦			
675	23.5	23.6	♦				♦				♦			
675	23.6	23.7	♦				♦				♦			
675	23.7	23.8	♦				♦				♦			
675	23.8	23.9	♦				♦	♦			♦			
675	23.9	24.0	♦				♦				♦			
675	24.0	24.1	♦				♦				♦			
675	24.1	24.2	♦				♦	♦			♦			
675	24.2	24.3	♦				♦	♦			♦			
675	24.3	24.4	♦				♦	♦			♦			
675	24.4	24.5	♦				♦				♦			
675	24.5	24.6	♦				♦				♦			
675	24.6	24.7	♦				♦	♦			♦			
675	24.7	24.8	♦				♦	♦			♦			
675	24.8	24.9	♦				♦				♦			
675	24.9	25.0	♦				♦	♦			♦			
675	25.0	25.1	♦				♦				♦			
675	25.1	25.2	♦				♦				♦			
675	25.2	25.3	♦				♦				♦			
675	25.3	25.4	♦				♦				♦			
675	25.4	25.5					♦	♦						
675	25.5	25.6	♦				♦	♦			♦			
675	25.6	25.7	♦				♦				♦			
675	25.7	25.8	♦				♦	♦			♦			
675	25.8	25.9	♦				♦	♦			♦			
675	25.9	26.0					♦							
675	26.0	26.1					♦	♦						
675	26.1	26.2					♦							
675	26.2	26.3					♦							
675	26.3	26.4					♦	♦						
675	26.4	26.5					♦							
675	26.5	26.6					♦	♦						
675	26.6	26.7					♦							
675	26.7	26.8					♦							
675	26.8	26.9						♦						
	Total Miles		6.9	1.8	1.8	0.6	20.0	7.4	0.0	0.6	8.7	0.6	0.0	0.0
690	0.0	0.1					♦							
690	0.1	0.2					♦							
690	0.2	0.3					♦	♦						
690	0.3	0.4					♦							
690	0.4	0.5					♦							
690	0.5	0.6					♦	♦						
690	0.6	0.7					♦							
690	0.7	0.8					♦	♦						
690	0.8	0.9					♦							
690	0.9	1.0					♦							
690	1.0	1.1					♦	♦						
690	1.1	1.2					♦	♦						
690	1.2	1.3					♦							
690	1.3	1.4					♦	♦						
690	1.4	1.5					♦	♦						
690	1.5	1.6					♦							
690	1.6	1.7					♦							
690	1.7	1.8					♦							
690	1.8	1.9					♦							

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
690	1.9	2.0					♦							
690	2.0	2.1					♦							
690	2.1	2.2					♦	♦						
690	2.2	2.3					♦							
690	2.3	2.4					♦							
690	2.4	2.5					♦	♦						
690	2.5	2.6					♦							
690	2.6	2.7					♦	♦						
690	2.7	2.8					♦	♦						
690	2.8	2.9					♦							
690	2.9	3.0					♦	♦						
690	3.0	3.1					♦	♦						
690	3.1	3.2					♦	♦						
690	3.2	3.3					♦	♦						
690	3.3	3.4					♦							
690	3.4	3.5					♦	♦						
690	3.5	3.6					♦	♦						
690	3.6	3.7					♦	♦						
690	3.7	3.8					♦	♦						
690	3.8	3.9					♦							
690	3.9	4.0					♦							
690	4.0	4.1					♦	♦						
690	4.1	4.2					♦							
690	4.2	4.3					♦							
690	4.3	4.4					♦	♦						
690	4.4	4.5					♦							
690	4.5	4.6					♦	♦						
690	4.6	4.7					♦	♦						
690	4.7	4.8					♦	♦						
690	4.8	4.9					♦	♦						
690	4.9	5.0					♦							
690	5.0	5.1					♦							
690	5.1	5.2					♦							
690	5.2	5.3					♦							
690	5.3	5.4					♦							
690	5.4	5.5					♦							
690	5.5	5.6					♦							
690	5.6	5.7					♦	♦						
690	5.7	5.8					♦							
690	5.8	5.9					♦							
690	5.9	6.0					♦	♦						
690	6.0	6.1					♦							
690	6.1	6.2					♦							
690	6.2	6.3					♦	♦						
690	6.3	6.4					♦							
690	6.4	6.5					♦							
690	6.5	6.6					♦							
690	6.6	6.7					♦	♦						
690	6.7	6.8					♦							
690	6.8	6.9					♦							
690	6.9	7.0					♦							
690	7.0	7.1					♦	♦						
690	7.1	7.2					♦							
690	7.2	7.3					♦							
690	7.3	7.4					♦	♦						
690	7.4	7.5					♦							
690	7.5	7.6					♦							
690	7.6	7.7					♦							
690	7.7	7.8					♦	♦						
690	7.8	7.9					♦	♦						
690	7.9	8.0					♦							
690	8.0	8.1					♦							
690	8.1	8.2					♦	♦						
690	8.2	8.3					♦							
690	8.3	8.4					♦							
690	8.4	8.5					♦							
690	8.5	8.6					♦							
690	8.6	8.7					♦	♦						
690	8.7	8.8					♦							
690	8.8	8.9					♦	♦						
690	8.9	9.0					♦							
690	9.0	9.1					♦							
690	9.1	9.2					♦	♦						
690	9.2	9.3					♦	♦						
690	9.3	9.4					♦							
690	9.4	9.5					♦	♦						
690	9.5	9.6					♦	♦						
690	9.8	9.7					♦							
690	9.7	9.8					♦	♦						
690	9.8	9.9					♦							
690	9.9	10.0					♦							
690	10.0	10.1					♦							

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
690	10.1	10.2					♦							
690	10.2	10.3					♦							
690	10.3	10.4					♦							
690	10.4	10.5					♦							
690	10.5	10.6					♦							
690	10.6	10.7					♦							
690	10.7	10.8					♦							
690	10.8	10.9					♦							
690	10.9	11.0					♦							
690	11.0	11.1					♦							
690	11.1	11.2					♦							
690	11.2	11.3					♦							
690	11.3	11.4					♦							
690	11.4	11.5					♦							
690	11.5	11.6					♦							
690	11.6	11.7					♦							
690	11.7	11.8					♦							
690	11.8	11.9					♦							
690	11.9	12.0					♦							
690	12.0	12.1					♦							
690	12.1	12.2					♦							
690	12.2	12.3					♦							
690	12.3	12.4					♦							
690	12.4	12.5					♦							
690	12.5	12.6					♦							
690	12.6	12.7					♦							
690	12.7	12.8					♦							
690	12.6	12.9					♦							
690	12.9	13.0					♦							
690	13.0	13.1					♦	♦						
690	13.1	13.2					♦							
690	13.2	13.3					♦							
690	13.3	13.4					♦	♦						
690	13.4	13.5					♦							
690	13.5	13.6					♦							
690	13.6	13.7					♦							
690	13.7	13.8					♦	♦						
690	13.8	13.9					♦							
690	13.9	14.0					♦							
690	14.0	14.1					♦	♦						
690	14.1	14.2					♦							
690	14.2	14.3					♦							
690	14.3	14.4					♦	♦						
690	14.4	14.5					♦							
690	14.5	14.6					♦	♦						
690	14.6	14.7					♦	♦						
690	14.7	14.8					♦	♦						
690	14.8	14.9					♦	♦						
690	14.9	15.0					♦	♦						
690	15.0	15.1					♦							
690	15.1	15.2					♦	♦						
690	15.2	15.3					♦	♦						
690	15.3	15.4					♦							
690	15.4	15.5					♦	♦						
690	15.5	15.6					♦							
690	15.6	15.7					♦							
690	15.7	15.8					♦	♦						
690	15.8	15.9					♦							
690	15.9	16.0					♦	♦						
690	16.0	16.1					♦	♦						
690	16.1	16.2					♦							
690	16.2	16.3					♦	♦						
690	16.3	16.4					♦	♦						
690	16.4	16.5					♦							
690	16.5	16.6					♦	♦						
690	16.6	16.7					♦							
690	16.7	16.8					♦							
690	16.8	16.9					♦	♦						
690	16.9	17.0					♦							
690	17.0	17.1					♦	♦						
690	17.1	17.2					♦							
690	17.2	17.3					♦							
690	17.3	17.4					♦	♦						
690	17.4	17.5					♦							
690	17.5	17.6					♦							
690	17.6	17.7					♦	♦						
690	17.7	17.8					♦							
690	17.8	17.9					♦	♦						
690	17.9	16.0	♦				♦	♦						
690	18.0	18.1	♦				♦	♦						
690	18.1	18.2	♦				♦	♦						
690	18.2	18.3	♦				♦	♦						

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
690	18.3	18.4	♦				♦	♦						
690	18.4	18.5	♦				♦	♦						
690	18.5	18.6	♦				♦	♦						
690	18.6	18.7	♦				♦	♦						
690	18.7	18.8	♦				♦	♦						
690	18.8	18.9	♦				♦	♦						
690	18.9	19.0	♦				♦	♦						
690	19.0	19.1					♦							
690	19.1	19.2					♦							
690	19.2	19.3					♦							
690	19.3	19.4					♦	♦						
690	19.4	19.5					♦							
690	19.5	19.6					♦							
690	19.6	19.7					♦							
690	19.7	19.8	♦				♦	♦			♦			
690	19.8	19.9	♦				♦	♦			♦			
690	19.9	20.0	♦				♦	♦			♦			
690	20.0	20.1	♦								♦			
690	20.1	20.2	♦								♦			
690	20.2	20.3												
690	20.3	20.4	♦								♦			
690	20.4	20.5	♦					♦			♦			
690	20.5	20.6	♦								♦			
690	20.6	20.7	♦								♦			
690	20.7	20.8	♦								♦			
690	20.8	20.9	♦								♦			
690	20.9	21.0	♦								♦			
690	21.0	21.1	♦					♦			♦			
690	21.1	21.2												
690	21.2	21.3	♦								♦			
690	21.3	21.4	♦								♦			
690	21.4	21.5	♦								♦			
690	21.5	21.6	♦								♦			
690	21.6	21.7	♦								♦			
690	21.7	21.8	♦								♦			
690	21.8	21.9	♦								♦			
690	21.9	22.0	♦								♦			
690	22.0	22.1	♦											
690	22.1	22.2	♦								♦			
690	22.2	22.3	♦								♦			
690	22.3	22.4	♦					♦			♦			
690	22.4	22.5	♦								♦			
690	22.5	22.6	♦								♦			
690	22.6	22.7	♦					♦			♦			
690	22.7	22.8	♦								♦			
690	22.8	22.9	♦								♦			
690	22.9	23.0	♦					♦			♦			
690	23.0	23.1	♦								♦			
690	23.1	23.2	♦								♦			
690	23.2	23.3	♦								♦			
690	23.3	23.4	♦								♦			
690	23.4	23.5	♦								♦			
690	23.5	23.6	♦								♦			
690	23.6	23.7	♦								♦			
690	23.7	23.8	♦								♦			
690	23.8	23.9	♦								♦			
690	23.9	24.0	♦								♦			
690	24.0	24.1	♦								♦			
690	24.1	24.2	♦					♦			♦			
690	24.2	24.3	♦								♦			
690	24.3	24.4	♦					♦			♦			
690	24.4	24.5	♦					♦			♦			
690	24.5	24.6	♦					♦			♦			
690	24.6	24.7	♦					♦			♦			
690	24.7	24.8	♦					♦			♦			
690	24.8	24.9	♦					♦			♦			
690	24.9	25.0	♦					♦			♦			
690	25.0	25.1	♦					♦			♦			
690	25.1	25.2	♦					♦						
690	25.2	25.3	♦					♦			♦			
690	25.3	25.4	♦					♦			♦			
690	25.4	25.5	♦					♦			♦			
690	25.5	25.6	♦					♦			♦			
690	25.6	25.7	♦					♦			♦			
690	25.7	25.8	♦					♦			♦			
690	25.8	25.9	♦					♦			♦			
690	25.9	26.0	♦					♦			♦			
690	26.0	26.1	♦					♦			♦			
690	26.1	26.2	♦					♦			♦			
690	26.2	26.3	♦					♦						
690	26.3	26.4	♦					♦						
690	26.4	26.5	♦					♦						

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
690	26 5	26 6	♦					♦						
690	26 6	26 7	♦					♦						
690	26 7	26.8	♦					♦						
690	26 8	26.9	♦					♦						
690	28.9	27.0	♦					♦						
690	27 0	27 1	♦					♦						
690	27 1	27 2	♦					♦			♦			
690	27 2	27.3	♦					♦			♦			
690	27 3	27.4	♦					♦			♦			
690	27 4	27 5	♦					♦			♦			
690	27 5	27 6	♦					♦			♦			
690	27 6	27 7	♦					♦			♦			
690	27 7	27 8	♦					♦			♦			
690	27 8	27 9	♦					♦			♦			
690	27 9	28 0	♦					♦			♦			
690	28 0	28 1	♦					♦			♦			
690	28 1	28 2	♦					♦			♦			
690	28.2	28 3	♦					♦			♦			
690	28.3	28 4	♦					♦			♦			
690	28 4	28 5	♦					♦			♦			
690	28 5	28 6	♦					♦			♦			
690	28 6	28 7	♦					♦			♦			
690	28 7	28 8	♦					♦			♦			
690	28 8	28.9	♦					♦			♦			
690	28.9	29 0	♦					♦			♦			
690	29 0	29 1	♦					♦			♦			
690	29 1	29 2	♦	♦	♦	♦		♦			♦			
690	29 2	29 3	♦					♦			♦			
690	29 3	29 4	♦					♦			♦			
690	29 4	29 5	♦					♦			♦			
690	29 5	29 6	♦					♦			♦			
690	29 6	29 7	♦					♦			♦			
690	29 7	29 8	♦					♦			♦			
690	29 8	29 9	♦					♦			♦			
690	29.9	30 0	♦					♦			♦			
690	30.0	30 1	♦					♦			♦			
690	30 1	30 2	♦					♦			♦			
690	30.2	30 3	♦					♦			♦			
690	30 3	30 4	♦					♦			♦			
690	30 4	30 5	♦					♦			♦			
690	30.5	30 6	♦					♦			♦			
690	30 6	30 7	♦					♦			♦			
690	30.7	30 8	♦					♦			♦			
690	30 8	30 9	♦					♦			♦			
690	30.9	31 0	♦					♦			♦			
690	31 0	31 1	♦					♦			♦			
690	31 1	31 2	♦					♦			♦			
690	31 2	31.3	♦					♦			♦			
690	31 3	31 4	♦					♦			♦			
690	31 4	31.5	♦					♦			♦			
690	31 5	31 6	♦					♦			♦			
690	31.6	31 7	♦					♦			♦			
690	31.7	31.8	♦					♦			♦			
690	31 8	31.9	♦					♦			♦			
690	31 9	32.0	♦					♦			♦			
690	32.0	32.1	♦					♦			♦			
690	32.1	32.2	♦					♦			♦			
690	32.2	32 3	♦					♦			♦			
690	32.3	32 4	♦					♦			♦			
690	32.4	32 5	♦					♦			♦			
690	32.5	32 6	♦					♦			♦			
690	32.6	32 7	♦					♦			♦			
690	32.7	32 8	♦					♦			♦			
690	32 8	32.9	♦					♦			♦			
690	32.9	33 0	♦					♦			♦			
690	33 0	33 1	♦					♦			♦			
690	33 1	33 2	♦					♦			♦			
690	33 2	33 3	♦					♦			♦			
690	33.3	33 4	♦					♦			♦			
690	33 4	33.5	♦					♦			♦			
690	33 5	33 6	♦					♦			♦			
690	33 6	33.7	♦					♦			♦			
690	33 7	33.8	♦					♦			♦			
690	33.8	33.9	♦					♦			♦			
690	33.9	34 0	♦					♦			♦			
690	34.0	34 1	♦					♦			♦			
690	34 1	34 2	♦					♦			♦			
690	34 2	34 3	♦					♦			♦			
690	34 3	34 4	♦					♦			♦			
690	34 4	34 5	♦					♦			♦			
690	34 5	34 6	♦					♦			♦			
690	34 6	34 7	♦					♦			♦			

APPENDIX D-1, Committed Mitigation for the Proposed Action - Midpoint to Dry Lake (continued)

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
690	34.7	34.8	♦					♦			♦			
690	34.8	34.9	♦					♦			♦			
690	34.9	35.0	♦					♦			♦			
690	35.0	35.1	♦					♦			♦			
690	35.1	35.2	♦					♦			♦			
690	35.2	35.3	♦					♦			♦			
690	35.3	35.4	♦					♦			♦			
690	35.4	35.5	♦					♦			♦			
690	35.5	35.6	♦					♦			♦			
690	35.6	35.7	♦					♦			♦			
690	35.7	35.8	♦					♦			♦			
690	35.8	35.9	♦					♦			♦			
690	35.9	36.0	♦					♦			♦			
690	36.0	36.1	♦					♦			♦			
690	36.1	36.2	♦					♦			♦			
690	36.2	36.3	♦					♦			♦			
690	36.3	36.4	♦					♦			♦			
690	36.4	36.5	♦					♦			♦			
690	36.5	36.6	♦					♦			♦			
690	36.8	36.7	♦					♦			♦			
690	36.7	36.8	♦					♦			♦			
690	36.8	36.9	♦					♦			♦			
690	36.9	37.0	♦					♦			♦			
690	37.0	37.1	♦					♦			♦			
690	37.1	37.2	♦					♦			♦			
690	37.2	37.3	♦					♦			♦			
690	37.3	37.4	♦					♦			♦			
690	37.4	37.5	♦					♦			♦			
690	37.5	37.6	♦					♦			♦			
690	37.6	37.7	♦					♦			♦			
690	37.7	37.8	♦					♦			♦			
690	37.8	37.9	♦					♦			♦			
690	37.9	38.0	♦					♦			♦			
690	38.0	38.1	♦					♦			♦			
690	38.1	38.2	♦					♦			♦			
690	38.2	38.3	♦					♦			♦			
690	38.3	38.4	♦					♦			♦			
690	38.4	38.5	♦					♦			♦			
690	38.5	38.6	♦					♦			♦			
690	38.6	38.7	♦					♦			♦			
690	38.7	38.8	♦					♦			♦			
690	38.8	38.9	♦					♦			♦			
690	38.9	39.0	♦					♦			♦			
690	39.0	39.1	♦					♦			♦			
690	39.1	39.2	♦					♦			♦			
690	39.2	39.3	♦					♦			♦			
690	39.3	39.4	♦					♦			♦			
690	39.4	39.5	♦					♦			♦			
690	39.5	39.6	♦					♦			♦			
690	39.6	39.7	♦					♦			♦			
690	39.7	39.8	♦					♦			♦			
690	39.8	39.9	♦					♦			♦			
690	39.9	40.0	♦					♦			♦			
690	40.0	40.1	♦					♦			♦			
690	40.1	40.2	♦					♦			♦			
690	40.2	40.3	♦					♦			♦			
690	40.3	40.4	♦					♦			♦			
690	40.4	40.5	♦					♦			♦			
690	40.5	40.6	♦					♦			♦			
690	40.6	40.7	♦					♦			♦			
690	40.7	40.6	♦					♦			♦			
690	40.8	40.9	♦					♦			♦			
690	40.9	41.0	♦					♦			♦			
690	41.0	41.1	♦					♦			♦			
690	41.1	41.2	♦					♦			♦			
690	41.2	41.3	♦					♦			♦			
690	41.3	41.4	♦					♦			♦			
690	41.4	41.5	♦					♦			♦			
690	41.5	41.6	♦					♦			♦			
690	41.6	41.7	♦					♦			♦			
690	41.7	41.8	♦					♦			♦			
690	41.8	41.9	♦					♦			♦			
690	41.9	42.0	♦					♦			♦	♦		
690	42.0	42.1	♦					♦			♦	♦		
690	42.1	42.2	♦				♦	♦			♦	♦		
690	42.2	42.3	♦				♦	♦			♦	♦		
690	42.3	42.4	♦				♦	♦			♦	♦		
690	42.4	42.5	♦				♦	♦			♦			
690	42.5	42.6	♦				♦	♦			♦			
690	42.6	42.7	♦				♦	♦			♦			
690	42.7	42.8	♦				♦	♦			♦			
690	42.8	42.9	♦				♦	♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
690	42 9	43 0	♦				♦	♦			♦			
690	43.0	43 1	♦				♦	♦			♦			
690	43.1	43.2	♦				♦	♦			♦			
690	43.2	43.3	♦				♦	♦			♦			
690	43.3	43 4	♦				♦	♦			♦			
690	43 4	43 5	♦				♦	♦			♦			
690	43 5	43.6	♦				♦	♦			♦			
690	43 6	43 7	♦				♦	♦			♦			
690	43 7	43.6	♦				♦	♦			♦			
690	43.6	43 9	♦				♦	♦		♦	♦	♦		
690	43.9	44.0	♦				♦	♦		♦	♦	♦		
690	44 0	44.1	♦				♦	♦		♦	♦	♦		
	Total Miles		25.3	0.1	0.1	0.1	22.0	28.4	0.0	0.3	23.1	0.8	0.0	0.0
700	0 0	0.1	♦				♦	♦		♦	♦	♦		
700	0 1	0 2	♦				♦	♦		♦	♦	♦		
700	0 2	0 3	♦				♦	♦		♦	♦	♦		
700	0 3	0 4	♦					♦			♦			
700	0 4	0 5	♦					♦			♦			
700	0 5	0.6	♦					♦			♦			
700	0 6	0.7	♦					♦			♦			
700	0 7	0.6	♦					♦			♦			
700	0 8	0.9	♦					♦			♦			
700	0 9	1 0	♦					♦			♦			
700	1.0	1.1	♦					♦			♦			
700	1.1	1 2	♦					♦			♦			
700	1 2	1 3	♦					♦			♦			
700	1 3	1 4	♦					♦			♦			
700	1 4	1 5	♦					♦			♦			
700	1 5	1 6	♦					♦			♦			
700	1 6	1 7	♦					♦			♦			
700	1 7	1 8	♦					♦			♦			
700	1 8	1.9	♦					♦						
700	1 9	2.0	♦					♦			♦			
700	2.0	2.1	♦					♦			♦			
700	2.1	2.2	♦					♦			♦			
700	2.2	2 3	♦					♦			♦			
700	2 3	2 4	♦					♦			♦			
700	2 4	2.5	♦					♦						
700	2 5	2.6	♦					♦			♦			
700	2 6	2.7	♦					♦			♦			
700	2.7	2 8	♦					♦			♦			
700	2.8	2 9	♦					♦			♦			
700	2 9	3.0	♦					♦			♦			
700	3.0	3.1	♦					♦			♦			
700	3 1	3 2	♦					♦			♦			
700	3 2	3 3	♦					♦			♦			
700	3.3	3 4	♦					♦			♦			
700	3.4	3 5	♦					♦			♦			
700	3 5	3 6	♦					♦			♦			
700	3 6	3 7	♦					♦			♦			
700	3 7	3.8	♦					♦			♦			
700	3 8	3.9	♦					♦			♦			
700	3 9	4 0	♦					♦			♦			
700	4.0	4 1	♦					♦			♦			
700	4 1	4 2	♦					♦			♦			
700	4 2	4 3	♦					♦			♦			
700	4.3	4 4	♦					♦			♦			
700	4 4	4 5	♦					♦			♦			
700	4.5	4 6	♦					♦			♦			
700	4.6	4 7	♦					♦			♦			
700	4 7	4 8	♦					♦			♦			
700	4 8	4 9	♦					♦			♦			
700	4 9	5 0	♦					♦			♦			
700	5 0	5.1	♦					♦			♦			
700	5 1	5 2	♦					♦			♦			
700	5.2	5 3	♦					♦			♦			
700	5 3	5 4	♦					♦			♦			
700	5 4	5 5	♦					♦			♦			
700	5 5	5 6	♦					♦			♦			
700	5 6	5 7	♦					♦			♦			
700	5 7	5 8	♦					♦			♦			
700	5 8	5 9	♦					♦			♦			
700	5 9	6 0	♦					♦			♦			
700	6 0	6 1	♦					♦			♦			
700	6 1	6 2	♦					♦			♦			
700	6 2	6.3	♦					♦			♦			
700	6.3	6 4	♦					♦			♦			
700	6.4	6 5	♦					♦			♦			
700	6.5	6.6	♦					♦			♦			
700	8 6	6.7	♦					♦			♦			
700	6 7	6 8	♦					♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
700	6.8	6.9	♦					♦			♦			
700	6.9	7.0	♦					♦			♦			
700	7.0	7.1	♦					♦			♦			
700	7.1	7.2	♦					♦			♦			
700	7.2	7.3	♦					♦			♦			
700	7.3	7.4	♦					♦			♦			
700	7.4	7.5	♦					♦			♦			
700	7.5	7.6	♦					♦			♦			
700	7.6	7.7	♦					♦			♦			
700	7.7	7.8	♦					♦			♦			
700	7.8	7.9	♦					♦			♦			
700	7.9	8.0	♦					♦			♦			
700	8.0	8.1	♦					♦			♦			
700	8.1	8.2	♦					♦			♦			
700	8.2	8.3	♦					♦			♦			
700	8.3	8.4	♦					♦			♦			
700	8.4	8.5	♦					♦			♦			
700	8.5	8.6	♦					♦			♦			
700	8.6	8.7	♦					♦			♦			
700	8.7	8.8	♦					♦			♦			
700	8.8	8.9	♦					♦			♦			
700	8.9	9.0	♦					♦			♦			
700	9.0	9.1	♦					♦			♦			
700	9.1	9.2	♦					♦			♦			
700	9.2	9.3	♦					♦			♦			
700	9.3	9.4	♦					♦			♦			
700	9.4	9.5	♦					♦			♦			
700	9.5	9.6	♦					♦						
700	9.6	9.7	♦					♦			♦			
700	9.7	9.8	♦					♦			♦			
700	9.8	9.9	♦					♦			♦			
700	9.9	10.0	♦					♦			♦			
700	10.0	10.1	♦					♦			♦			
700	10.1	10.2	♦					♦			♦			
700	10.2	10.3	♦					♦			♦			
700	10.3	10.4	♦					♦			♦			
700	10.4	10.5	♦					♦			♦			
700	10.5	10.6	♦					♦			♦			
700	10.6	10.7	♦					♦			♦			
700	10.7	10.8	♦					♦			♦			
700	10.8	10.9	♦					♦			♦			
700	10.9	11.0	♦					♦			♦			
700	11.0	11.1	♦					♦			♦			
700	11.1	11.2	♦					♦			♦			
700	11.2	11.3	♦					♦			♦			
700	11.3	11.4	♦					♦			♦			
700	11.4	11.5	♦					♦			♦			
700	11.5	11.6	♦					♦			♦			
700	11.6	11.7	♦					♦			♦			
700	11.7	11.8	♦					♦			♦			
700	11.8	11.9	♦					♦			♦			
700	11.9	12.0	♦					♦			♦			
700	12.0	12.1	♦					♦			♦			
	Total Miles		12.1	0.0	0.0	0.0	0.3	12.1	0.0	0.3	11.8	0.3	0.0	0.0
720	0.0	0.1	♦					♦			♦			
720	0.1	0.2	♦					♦			♦			
720	0.2	0.3	♦					♦						
720	0.3	0.4	♦					♦			♦			
720	0.4	0.5	♦					♦			♦			
720	0.5	0.6	♦					♦			♦			
720	0.6	0.7	♦					♦			♦			
720	0.7	0.8	♦					♦			♦			
720	0.8	0.9	♦					♦			♦			
720	0.9	1.0	♦					♦			♦			
720	1.0	1.1	♦					♦			♦			
720	1.1	1.2	♦					♦			♦			
720	1.2	1.3	♦					♦			♦			
720	1.3	1.4	♦					♦						
720	1.4	1.5	♦					♦			♦			
720	1.5	1.8	♦					♦			♦			
720	1.6	1.7	♦					♦			♦			
720	1.7	1.6	♦					♦			♦			
720	1.8	1.9	♦					♦			♦			
720	1.9	2.0	♦					♦			♦			
720	2.0	2.1	♦					♦			♦			
720	2.1	2.2	♦					♦			♦			
720	2.2	2.3	♦					♦			♦			
720	2.3	2.4	♦					♦			♦			
720	2.4	2.5	♦					♦			♦			
720	2.5	2.6	♦					♦			♦			
720	2.6	2.7	♦					♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
720	27	28	♦					♦			♦			
720	28	29	♦					♦			♦			
720	29	30	♦					♦			♦			
720	30	31	♦					♦			♦			
720	31	32	♦					♦			♦			
720	32	33	♦					♦			♦			
720	33	34	♦					♦			♦			
720	34	35	♦					♦			♦			
720	35	36	♦					♦			♦			
720	36	37	♦					♦			♦			
720	37	38	♦					♦			♦			
720	38	39	♦					♦			♦			
720	39	40	♦					♦			♦			
720	40	41	♦					♦			♦			
720	41	42	♦					♦			♦			
720	42	43	♦					♦			♦			
720	43	44	♦					♦			♦			
720	44	45	♦					♦			♦			
720	45	46	♦					♦			♦			
720	46	47	♦					♦			♦			
720	47	48	♦					♦			♦			
720	48	49	♦					♦			♦			
720	49	50	♦					♦			♦			
720	50	51	♦					♦						
720	51	52	♦					♦			♦			
720	52	53	♦					♦			♦			
720	53	54	♦					♦			♦			
720	54	55	♦					♦			♦			
720	55	56	♦					♦			♦			
720	56	57	♦					♦						
720	57	58	♦					♦			♦			
720	58	59	♦					♦			♦			
720	59	60	♦					♦			♦			
720	60	61	♦					♦			♦			
720	61	62	♦					♦			♦			
720	62	63	♦					♦			♦			
720	63	64	♦					♦			♦			
720	64	65	♦					♦			♦			
720	65	66	♦					♦			♦			
720	66	67	♦					♦			♦			
720	67	68	♦					♦			♦			
720	68	69	♦					♦			♦			
720	69	70	♦					♦			♦			
720	70	71	♦					♦			♦			
720	71	72	♦					♦			♦			
720	72	73	♦					♦			♦			
720	73	74	♦					♦			♦			
720	74	75	♦					♦			♦			
720	75	76	♦					♦			♦			
720	76	77	♦					♦						
720	77	78	♦					♦			♦			
720	78	79	♦					♦			♦			
720	79	80	♦					♦			♦			
720	80	81	♦					♦			♦			
720	81	82	♦					♦			♦			
720	82	83	♦					♦			♦			
720	83	84	♦					♦			♦			
720	84	85	♦					♦			♦			
720	85	86	♦					♦			♦			
720	86	87	♦					♦			♦			
720	87	88	♦					♦			♦			
720	88	89	♦					♦			♦			
720	89	90	♦					♦			♦			
720	90	91	♦					♦			♦			
720	91	92	♦					♦			♦			
720	92	93	♦					♦			♦			
720	93	94	♦					♦			♦			
720	94	95	♦					♦			♦			
720	95	96	♦					♦			♦			
720	96	97	♦					♦			♦			
720	97	98	♦					♦			♦			
720	98	99	♦					♦			♦			
720	99	100	♦					♦			♦			
720	100	101	♦					♦			♦			
720	101	102	♦					♦			♦			
720	102	103	♦					♦						
720	103	104	♦					♦			♦			
720	104	105	♦					♦			♦			
720	105	106	♦					♦			♦			
720	106	107	♦					♦			♦			
720	107	108	♦					♦						
720	108	109	♦					♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
720	10.9	11.0	♦					♦			♦			
720	11.0	11.1	♦					♦			♦			
720	11.1	11.2	♦					♦			♦			
720	11.2	11.3	♦					♦			♦			
720	11.3	11.4	♦					♦			♦			
720	11.4	11.5	♦					♦			♦			
720	11.5	11.6	♦					♦			♦			
720	11.6	11.7	♦					♦			♦			
720	11.7	11.8	♦					♦			♦			
720	11.8	11.9	♦					♦			♦			
720	11.9	12.0	♦					♦			♦			
720	12.0	12.1	♦					♦			♦			
720	12.1	12.2	♦					♦			♦			
720	12.2	12.3	♦					♦			♦			
720	12.3	12.4	♦					♦			♦			
720	12.4	12.5	♦					♦			♦			
720	12.5	12.6	♦					♦			♦			
720	12.6	12.7	♦								♦			
720	12.7	12.8	♦								♦			
720	12.8	12.9	♦								♦			
720	12.9	13.0	♦								♦			
720	13.0	13.1	♦								♦			
720	13.1	13.2	♦								♦			
720	13.2	13.3	♦								♦			
720	13.3	13.4	♦								♦			
720	13.4	13.5	♦					♦			♦			
720	13.5	13.6	♦					♦			♦			
720	13.6	13.7	♦					♦			♦			
720	13.7	13.8	♦					♦			♦			
720	13.8	13.9	♦					♦			♦			
720	13.9	14.0	♦					♦			♦			
720	14.0	14.1	♦					♦			♦			
720	14.1	14.2	♦					♦			♦			
720	14.2	14.3	♦					♦			♦			
720	14.3	14.4	♦					♦			♦			
720	14.4	14.5	♦					♦			♦			
720	14.5	14.6	♦					♦			♦			
720	14.6	14.7	♦					♦			♦			
720	14.7	14.8	♦					♦			♦			
720	14.8	14.9	♦					♦			♦			
720	14.9	15.0	♦					♦			♦			
720	15.0	15.1	♦					♦			♦			
720	15.1	15.2	♦					♦			♦			
720	15.2	15.3	♦					♦			♦			
720	15.3	15.4	♦					♦			♦			
720	15.4	15.5	♦					♦			♦			
720	15.5	15.6	♦					♦			♦			
720	15.6	15.7	♦					♦			♦			
720	15.7	15.8	♦					♦			♦			
720	15.8	15.9	♦					♦			♦			
720	15.9	16.0	♦					♦			♦			
720	16.0	16.1	♦					♦			♦			
720	16.1	16.2	♦					♦			♦			
720	16.2	16.3	♦					♦			♦			
720	16.3	16.4	♦					♦			♦			
720	16.4	16.5	♦					♦			♦			
720	16.5	16.6	♦					♦			♦			
720	16.6	16.7	♦					♦			♦			
720	16.7	16.8	♦					♦			♦			
720	16.8	16.9	♦					♦						
720	16.9	17.0	♦					♦			♦			
720	17.0	17.1	♦					♦			♦			
720	17.1	17.2	♦					♦			♦			
720	17.2	17.3	♦					♦			♦			
720	17.3	17.4	♦					♦			♦			
720	17.4	17.5	♦					♦			♦			
720	17.5	17.6	♦					♦			♦			
720	17.6	17.7	♦					♦			♦			
720	17.7	17.8	♦					♦			♦			
720	17.8	17.9	♦					♦			♦			
720	17.9	18.0	♦					♦			♦			
720	18.0	18.1	♦					♦			♦			
720	18.1	18.2	♦								♦			
720	16.2	18.3	♦								♦			
720	18.3	18.4	♦								♦			
720	16.4	18.5	♦								♦			
720	18.5	18.6		♦	♦	♦					♦			
720	18.6	18.7		♦	♦	♦					♦			
720	18.7	18.8		♦	♦	♦					♦			
720	18.8	18.9		♦	♦	♦					♦			
720	18.9	19.0		♦	♦	♦					♦			
720	19.0	19.1		♦	♦	♦		♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
720	19.1	19.2		♦	♦	♦		♦			♦			
720	19.2	19.3		♦	♦	♦		♦			♦			
720	19.3	19.4		♦	♦	♦		♦			♦			
720	19.4	19.5		♦	♦	♦		♦			♦			
720	19.5	19.6		♦	♦	♦		♦			♦			
720	19.6	19.7		♦	♦	♦		♦			♦			
720	19.7	19.8		♦	♦	♦		♦			♦			
720	19.8	19.9		♦	♦	♦		♦			♦			
720	19.9	20.0		♦	♦	♦		♦			♦			
720	20.0	20.1		♦	♦	♦		♦			♦			
720	20.1	20.2		♦	♦	♦		♦			♦			
720	20.2	20.3		♦	♦	♦		♦			♦			
720	20.3	20.4		♦	♦	♦		♦			♦			
720	20.4	20.5		♦	♦	♦		♦			♦			
720	20.5	20.6		♦	♦	♦		♦			♦			
720	20.6	20.7		♦		♦		♦						
720	20.7	20.8		♦		♦		♦						
720	20.8	20.9		♦				♦						
720	20.9	21.0		♦				♦						
720	21.0	21.1		♦				♦						
720	21.1	21.2		♦				♦						
720	21.2	21.3	♦					♦						
720	21.3	21.4	♦					♦						
720	21.4	21.5		♦				♦						
720	21.5	21.6		♦				♦						
720	21.6	21.7		♦				♦						
720	21.7	21.8		♦				♦						
720	21.8	21.9		♦				♦						
720	21.9	22.0		♦				♦						
720	22.0	22.1		♦	♦	♦		♦			♦			
720	22.1	22.2		♦	♦	♦		♦			♦			
720	22.2	22.3		♦	♦						♦			
720	22.3	22.4		♦	♦			♦			♦			
720	22.4	22.5		♦	♦						♦			
720	22.5	22.6		♦	♦						♦			
720	22.6	22.7		♦	♦						♦			
720	22.7	22.8		♦	♦						♦			
Total Miles			18.7	4.1	2.9	2.5	0.0	20.6	0.0	0.0	20.6	0.0	0.0	0.0
GRAND TOTAL			137.5	207.1	196.2	164.7	102.9	175.6	0.0	15.1	308.4	35.2	94.4	1.8

APPENDIX D-2

COMMITTED MITIGATION FOR THE PROPOSED ACTION

ELY TO DELTA

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
350	0.0	0.1		♦	♦	♦					♦			
350	0.1	0.2		♦	♦	♦					♦			
350	0.2	0.3		♦	♦	♦					♦			
350	0.3	0.4		♦	♦	♦		♦			♦			
350	0.4	0.5		♦	♦	♦					♦			
350	0.5	0.6		♦	♦	♦					♦			
350	0.6	0.7		♦	♦	♦					♦			
350	0.7	0.8		♦	♦	♦					♦			
350	0.8	0.9		♦	♦	♦					♦			
350	0.9	1.0		♦	♦	♦		♦			♦			
350	1.0	1.1		♦	♦	♦					♦			
350	1.1	1.2		♦	♦	♦					♦			
350	1.2	1.3		♦	♦	♦					♦			
350	1.3	1.4		♦	♦	♦					♦			
350	1.4	1.5	♦								♦			
350	1.5	1.6	♦					♦			♦			
350	1.6	1.7	♦					♦			♦			
350	1.7	1.8	♦								♦			
350	1.8	1.9		♦	♦	♦					♦			
350	1.9	2.0		♦	♦	♦					♦			
350	2.0	2.1		♦	♦	♦					♦			
350	2.1	2.2		♦	♦	♦					♦			
350	2.2	2.3		♦	♦	♦		♦			♦			
350	2.3	2.4		♦	♦	♦		♦			♦			
350	2.4	2.5		♦	♦	♦		♦			♦			
350	2.5	2.6		♦	♦	♦					♦			
350	2.6	2.7		♦	♦	♦					♦			
350	2.7	2.8		♦	♦	♦					♦			
350	2.8	2.9		♦	♦	♦					♦			
350	2.9	3.0		♦	♦	♦		♦			♦			
350	3.0	3.1		♦	♦			♦		♦	♦			
350	3.1	3.2	♦							♦	♦			
350	3.2	3.3	♦							♦	♦			
350	3.3	3.4	♦							♦	♦			
350	3.4	3.5	♦							♦	♦			
350	3.5	3.6		♦	♦	♦					♦			
350	3.6	3.7		♦	♦	♦					♦			
350	3.7	3.8		♦	♦	♦					♦			
350	3.8	3.9		♦	♦	♦		♦			♦			
350	3.9	4.0		♦	♦	♦					♦			
350	4.0	4.1		♦	♦	♦					♦			
350	4.1	4.2		♦	♦	♦					♦			
350	4.2	4.3		♦	♦	♦					♦			
350	4.3	4.4		♦	♦						♦			
350	4.4	4.5		♦	♦	♦		♦			♦			
350	4.5	4.6		♦	♦	♦		♦			♦			
350	4.6	4.7		♦	♦	♦		♦			♦			
350	4.7	4.8		♦	♦	♦					♦			
350	4.8	4.9		♦	♦	♦					♦			
350	4.9	5.0		♦	♦	♦		♦			♦			
350	5.0	5.1			♦	♦		♦						
350	5.1	5.2			♦	♦		♦						
350	5.2	5.3						♦						
350	5.3	5.4						♦						
350	5.4	5.5												
350	5.5	5.6												
350	5.6	5.7	♦					♦			♦			
350	5.7	5.8	♦								♦			
350	5.8	5.9	♦								♦			
350	5.9	6.0		♦	♦	♦					♦			
350	6.0	6.1	♦					♦			♦			
350	6.1	6.2	♦	♦	♦	♦					♦			
350	6.2	6.3		♦	♦	♦					♦			
350	6.3	6.4	♦								♦			
350	6.4	6.5		♦	♦	♦					♦			
350	6.5	6.6		♦	♦	♦					♦			
350	6.6	6.7	♦	♦	♦			♦			♦			
350	6.7	6.8	♦					♦			♦			
350	6.8	6.9	♦								♦			
350	6.9	7.0	♦								♦			
350	7.0	7.1	♦								♦			
350	7.1	7.2		♦	♦	♦		♦			♦			

* Refer to Table 1-5 in this document for Committed Mitigation Measures

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
350	7.2	7.3	♦					♦			♦			
350	7.3	7.4	♦								♦			
350	7.4	7.5	♦								♦			
350	7.5	7.8	♦					♦			♦			
350	7.8	7.7	♦								♦			
350	7.7	7.8		♦	♦	♦					♦			
350	7.8	7.9	♦								♦			
350	7.9	8.0	♦								♦			
350	8.0	8.1												
350	8.1	8.2	♦								♦			
350	8.2	8.3	♦								♦			
350	8.3	8.4	♦								♦			
350	8.4	8.5	♦								♦			
350	8.5	8.6	♦								♦			
350	8.6	6.7	♦								♦			
350	8.7	8.8		♦	♦	♦					♦			
350	8.6	8.9		♦	♦	♦					♦			
350	8.9	9.0		♦	♦	♦					♦			
350	9.0	9.1		♦	♦	♦					♦			
350	9.1	9.2		♦	♦	♦					♦			
350	9.2	9.3		♦	♦	♦					♦			
350	9.3	9.4		♦	♦	♦					♦			
350	9.4	9.5			♦	♦		♦						
350	9.5	9.8			♦	♦								
350	9.6	9.7			♦	♦								
350	9.7	9.6			♦	♦								
350	9.8	9.9			♦	♦								
350	9.9	10.0			♦	♦								
350	10.0	10.1			♦	♦		♦						
350	10.1	10.2			♦	♦		♦						
350	10.2	10.3		♦	♦	♦		♦			♦			
350	10.3	10.4		♦	♦	♦					♦			
350	10.4	10.5		♦	♦	♦		♦			♦			
350	10.5	10.6		♦	♦	♦					♦			
350	10.6	10.7		♦	♦	♦					♦			
350	10.7	10.8		♦	♦	♦		♦			♦			
350	10.8	10.9			♦	♦								
350	10.9	11.0			♦	♦		♦						
350	11.0	11.1	♦								♦			
350	11.1	11.2	♦					♦			♦			
350	11.2	11.3		♦	♦	♦		♦			♦		♦	
350	11.3	11.4		♦	♦	♦		♦			♦		♦	
350	11.4	11.5		♦	♦	♦		♦			♦		♦	
350	11.5	11.6		♦	♦	♦		♦			♦	♦	♦	
350	11.6	11.7		♦	♦	♦		♦			♦	♦	♦	
350	11.7	11.8		♦	♦	♦		♦			♦	♦	♦	
350	11.8	11.9		♦	♦	♦		♦			♦	♦	♦	
350	11.9	12.0		♦	♦	♦		♦			♦	♦	♦	
350	12.0	12.1		♦	♦	♦		♦			♦	♦	♦	
350	12.1	12.2		♦	♦	♦		♦			♦	♦	♦	
350	12.2	12.3		♦	♦	♦		♦			♦	♦	♦	
350	12.3	12.4	♦	♦	♦						♦			
350	12.4	12.5	♦					♦			♦			
350	12.5	12.6					♦	♦			♦			
350	12.6	12.7					♦	♦			♦			
350	12.7	12.8	♦				♦	♦			♦			
350	12.8	12.9					♦	♦			♦			
350	12.9	13.0	♦					♦			♦			
350	13.0	13.1	♦					♦			♦			
350	13.1	13.2	♦								♦			
350	13.2	13.3	♦					♦			♦			
350	13.3	13.4	♦								♦			
350	13.4	13.5	♦					♦			♦			
350	13.5	13.6	♦					♦			♦		♦	
350	13.6	13.7	♦					♦			♦		♦	
350	13.7	13.8	♦					♦			♦		♦	
350	13.8	13.9	♦					♦			♦		♦	
350	13.9	14.0	♦					♦			♦		♦	
	Total Miles		**4.8**	**7.5**	**8.7**	**8.3**	**0.4**	**5.8**	**0.0**	**0.5**	**12.3**	**0.8**	**1.6**	**0.0**
351	0.0	0.1	♦					♦			♦		♦	
351	0.1	0.2	♦					♦			♦		♦	
351	0.2	0.3	♦					♦			♦		♦	
351	0.3	0.4	♦					♦			♦		♦	
351	0.4	0.5	♦					♦			♦		♦	
351	0.5	0.6	♦					♦			♦		♦	
351	0.6	0.7	♦					♦			♦		♦	
351	0.7	0.8	♦					♦			♦		♦	
351	0.8	0.9	♦					♦			♦		♦	
351	0.9	1.0	♦					♦			♦		♦	

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
351	1.0	1.1	♦								♦	♦	♦	
351	1.1	1.2	♦								♦	♦	♦	
351	1.2	1.3	♦								♦	♦	♦	
351	1.3	1.4		♦	♦						♦	♦	♦	
351	1.4	1.5		♦	♦						♦		♦	
351	1.5	1.6		♦	♦						♦		♦	
351	1.6	1.7		♦	♦						♦	♦	♦	
351	1.7	1.8		♦	♦						♦	♦	♦	
351	1.8	1.9	♦								♦	♦	♦	
351	1.9	2.0		♦	♦						♦	♦	♦	
351	2.0	2.1		♦	♦			♦			♦	♦	♦	
351	2.1	2.2		♦	♦			♦			♦		♦	
351	2.2	2.3	♦					♦			♦		♦	
351	2.3	2.4	♦								♦		♦	
351	2.4	2.5	♦	♦	♦						♦		♦	
351	2.5	2.6		♦	♦						♦		♦	
351	2.6	2.7	♦					♦			♦		♦	
351	2.7	2.8	♦								♦		♦	
351	2.8	2.9	♦								♦		♦	
351	2.9	3.0	♦					♦			♦		♦	
351	3.0	3.1	♦								♦		♦	
351	3.1	3.2	♦								♦		♦	
351	3.2	3.3	♦					♦			♦		♦	
351	3.3	3.4	♦					♦			♦		♦	
351	3.4	3.5	♦					♦			♦		♦	
351	3.5	3.6	♦					♦			♦	♦	♦	
351	3.6	3.7	♦					♦			♦	♦	♦	
351	3.7	3.8		♦	♦			♦			♦	♦	♦	
351	3.8	3.9		♦	♦			♦			♦	♦		
351	3.9	4.0		♦	♦			♦			♦		♦	
351	4.0	4.1		♦	♦			♦			♦		♦	
351	4.1	4.2		♦	♦			♦			♦		♦	
351	4.2	4.3		♦	♦			♦			♦		♦	
351	4.3	4.4		♦	♦			♦			♦			
351	4.4	4.5		♦	♦			♦			♦			
	Total Miles		**2.8**	**1.8**	**1.8**	**0.0**	**0.0**	**2.8**	**0.0**	**0.0**	**4.5**	**1.3**	**4.3**	**0.0**
352	0.0	0.1		♦	♦			♦			♦			
352	0.1	0.2		♦	♦			♦		♦	♦	♦		
352	0.2	0.3		♦	♦			♦		♦	♦	♦		
352	0.3	0.4		♦	♦			♦		♦	♦	♦		
352	0.4	0.5		♦	♦			♦		♦	♦	♦		
	Total Miles		**0.0**	**0.5**	**0.5**	**0.0**	**0.0**	**0.5**	**0.0**	**0.4**	**0.5**	**0.4**	**0.0**	**0.0**
370	0.0	0.1	♦							♦	♦	♦		
370	0.1	0.2	♦								♦	♦		
370	0.2	0.3	♦					♦			♦			
370	0.3	0.4	♦								♦			
370	0.4	0.5	♦					♦			♦			
370	0.5	0.6	♦	♦	♦	♦					♦			
370	0.6	0.7	♦								♦			
370	0.7	0.8	♦								♦			
370	0.8	0.9	♦								♦			
370	0.9	1.0	♦					♦			♦			
370	1.0	1.1	♦					♦			♦			
370	1.1	1.2	♦					♦			♦			
370	1.2	1.3	♦					♦			♦		♦	
370	1.3	1.4	♦					♦			♦		♦	
370	1.4	1.5	♦					♦			♦		♦	
370	1.5	1.6	♦					♦			♦		♦	
370	1.6	1.7	♦					♦			♦		♦	
370	1.7	1.8	♦					♦			♦		♦	
370	1.8	1.9	♦					♦			♦		♦	
370	1.9	2.0	♦					♦			♦			
370	2.0	2.1	♦					♦			♦			
370	2.1	2.2	♦								♦			
370	2.2	2.3	♦								♦			
370	2.3	2.4	♦								♦			
370	2.4	2.5	♦								♦			
370	2.5	2.6	♦					♦			♦			
370	2.6	2.7		♦	♦	♦		♦			♦			
370	2.7	2.8						♦						
370	2.8	2.9	♦								♦			
370	2.9	3.0	♦								♦			
370	3.0	3.1	♦								♦			
370	3.1	3.2		♦	♦	♦					♦			
370	3.2	3.3	♦					♦			♦			
370	3.3	3.4	♦					♦			♦			
370	3.4	3.5	♦					♦			♦			
370	3.5	3.6	♦								♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
370	3.6	3.7		♦	♦	♦					♦			
370	3.7	3.8	♦	♦	♦	♦		♦			♦		♦	
370	3.8	3.9	♦					♦			♦		♦	
370	3.9	4.0	♦					♦			♦		♦	
370	4.0	4.1		♦	♦	♦		♦			♦		♦	
370	4.1	4.2		♦	♦	♦		♦			♦		♦	
370	4.2	4.3	♦					♦			♦		♦	
370	4.3	4.4	♦					♦			♦		♦	
370	4.4	4.5	♦					♦			♦		♦	
370	4.5	4.6		♦	♦	♦		♦			♦		♦	
370	4.6	4.7		♦	♦	♦		♦			♦		♦	
370	4.7	4.8	♦					♦			♦		♦	
370	4.8	4.9	♦					♦			♦		♦	
370	4.9	5.0	♦					♦			♦		♦	
370	5.0	5.1	♦					♦			♦		♦	
370	5.1	5.2	♦					♦			♦		♦	
370	5.2	5.3	♦					♦			♦		♦	
370	5.3	5.4		♦	♦	♦		♦			♦			
370	5.4	5.5		♦	♦	♦					♦			
370	5.5	5.6		♦	♦	♦					♦			
370	5.6	5.7	♦					♦			♦			
370	5.7	5.8	♦								♦			
370	5.8	5.9	♦								♦			
370	5.9	6.0		♦	♦	♦		♦			♦			
370	6.0	6.1		♦	♦	♦		♦			♦			
370	6.1	6.2	♦					♦			♦		♦	
370	6.2	6.3	♦					♦			♦		♦	
370	6.3	6.4	♦					♦			♦		♦	
370	6.4	6.5		♦	♦	♦		♦			♦		♦	
370	6.5	6.6		♦	♦	♦		♦			♦		♦	
370	6.6	6.7		♦	♦	♦		♦			♦		♦	
370	6.7	6.8		♦	♦	♦		♦			♦		♦	
370	6.8	6.9	♦					♦			♦		♦	
370	6.9	7.0	♦					♦			♦		♦	
370	7.0	7.1	♦					♦					♦	
370	7.1	7.2	♦					♦					♦	
370	7.2	7.3						♦					♦	
370	7.3	7.4						♦					♦	
370	7.4	7.5						♦					♦	
370	7.5	7.6						♦					♦	
370	7.6	7.7						♦					♦	
370	7.7	7.8						♦					♦	
370	7.8	7.9						♦					♦	
370	7.9	8.0						♦					♦	
370	8.0	8.1						♦					♦	
370	8.1	8.2						♦					♦	
370	8.2	8.3		♦	♦	♦								
370	8.3	8.4		♦										
370	8.4	8.5						♦						
370	8.5	8.6												
370	8.6	8.7												
370	8.7	8.8						♦						
370	8.8	8.9						♦						
370	8.9	9.0	♦					♦			♦			
370	9.0	9.1	♦								♦			
370	9.1	9.2	♦								♦			
370	9.2	9.3	♦								♦			
370	9.3	9.4	♦								♦			
370	9.4	9.5	♦								♦			
370	9.5	9.6	♦					♦			♦			
370	9.6	9.7	♦								♦			
370	9.7	9.8	♦								♦			
370	9.8	9.9	♦					♦			♦		♦	
370	9.9	10.0	♦								♦			
370	10.0	10.1	♦					♦			♦			
370	10.1	10.2	♦					♦			♦		♦	
370	10.2	10.3	♦					♦			♦		♦	
	Total Miles		**6.9**	**2.0**	**1.9**	**1.9**	**0.0**	**7.0**	**0.0**	**0.1**	**8.3**	**0.2**	**4.7**	**0.0**
380	0.0	0.1	♦								♦			
380	0.1	0.2		♦	♦			♦			♦		♦	
380	0.2	0.3		♦	♦	♦		♦			♦		♦	
380	0.3	0.4		♦	♦	♦					♦			
380	0.4	0.5	♦								♦			
380	0.5	0.6	♦					♦			♦			
380	0.8	0.7												
380	0.7	0.8	♦								♦			
380	0.8	0.9	♦								♦			
380	0.9	1.0	♦								♦			
380	1.0	1.1		♦	♦	♦		♦			♦			
380	1.1	1.2		♦	♦	♦		♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
380	1.2	1.3		♦	♦	♦					♦			
380	1.3	1.4		♦	♦	♦					♦			
380	1.4	1.5	♦	♦				♦			♦			
380	1.5	1.6	♦					♦			♦			
380	1.6	1.7	♦					♦			♦			
380	1.7	1.8		♦	♦						♦			
380	1.8	1.9	♦	♦	♦						♦			
380	1.9	2.0	♦	♦	♦					♦	♦	♦		
380	2.0	2.1	♦							♦	♦	♦		
380	2.1	2.2		♦	♦			♦		♦	♦	♦		
380	2.2	2.3		♦	♦					♦	♦	♦		
380	2.3	2.4	♦							♦	♦	♦		
380	2.4	2.5	♦								♦			
380	2.5	2.6	♦								♦			
380	2.6	2.7	♦								♦			
380	2.7	2.8	♦								♦			
380	2.8	2.9		♦	♦			♦			♦			
380	2.9	3.0		♦	♦			♦			♦			
380	3.0	3.1		♦	♦			♦			♦			
380	3.1	3.2		♦	♦						♦			
380	3.2	3.3	♦					♦			♦			
380	3.3	3.4	♦					♦			♦			
380	3.4	3.5	♦					♦			♦			
380	3.5	3.6						♦						
380	3.6	3.7	♦								♦			
380	3.7	3.8	♦								♦			
380	3.8	3.9		♦	♦	♦					♦			
380	3.9	4.0												
380	4.0	4.1		♦	♦	♦					♦			
380	4.1	4.2	♦	♦	♦	♦					♦			
380	4.2	4.3		♦	♦	♦					♦			
380	4.3	4.4	♦								♦			
380	4.4	4.5	♦								♦			
380	4.5	4.6	♦								♦			
380	4.6	4.7		♦	♦	♦					♦			
380	4.7	4.8		♦	♦	♦					♦			
380	4.8	4.9		♦	♦	♦					♦			
380	4.9	5.0		♦	♦	♦					♦			
380	5.0	5.1		♦	♦	♦					♦			
380	5.1	5.2		♦	♦	♦					♦			
380	5.2	5.3		♦	♦	♦					♦			
380	5.3	5.4		♦	♦	♦					♦			
380	5.4	5.5		♦	♦	♦					♦			
380	5.5	5.6		♦	♦	♦					♦			
380	5.6	5.7		♦	♦	♦		♦			♦			
380	5.7	5.8		♦	♦	♦					♦			
380	5.8	5.9		♦	♦	♦					♦			
380	5.9	6.0	♦								♦			
380	6.0	6.1	♦								♦			
380	6.1	6.2	♦								♦			
380	6.2	6.3	♦								♦			
380	6.3	6.4	♦								♦			
380	6.4	6.5	♦								♦			
380	6.5	6.6	♦					♦			♦			
380	6.6	6.7	♦								♦			
380	6.7	6.8	♦								♦			
380	6.8	6.9		♦	♦	♦					♦			
380	6.9	7.0	♦								♦			
380	7.0	7.1	♦	♦	♦	♦					♦			
360	7.1	7.2	♦					♦			♦		♦	
380	7.2	7.3	♦					♦			♦		♦	
380	7.3	7.4		♦	♦	♦		♦			♦		♦	
380	7.4	7.5		♦	♦			♦			♦		♦	
380	7.5	7.6		♦	♦	♦		♦			♦		♦	
360	7.6	7.7	♦					♦			♦		♦	
380	7.7	7.8		♦	♦	♦		♦			♦		♦	
380	7.8	7.9		♦	♦	♦		♦			♦		♦	
380	7.9	8.0		♦	♦	♦		♦			♦		♦	
380	8.0	8.1		♦	♦	♦		♦			♦		♦	
380	8.1	8.2		♦	♦	♦		♦			♦		♦	
380	8.2	8.3		♦	♦	♦		♦			♦		♦	
380	8.3	8.4	♦					♦			♦		♦	
380	8.4	8.5	♦								♦			
380	8.5	8.6	♦								♦			
380	8.6	8.7	♦					♦			♦			
380	8.7	8.8	♦					♦			♦			
380	8.8	8.9	♦								♦			
380	8.9	9.0	♦								♦			
380	9.0	9.1	♦								♦			
380	9.1	9.2		♦	♦	♦					♦			
380	9.2	9.3		♦	♦	♦					♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
380	9.3	9.4		♦	♦	♦					♦			
380	9.4	9.5		♦	♦	♦					♦			
380	9.5	9.6		♦	♦	♦					♦			
380	9.6	9.7		♦	♦	♦					♦			
380	9.7	9.8	♦					♦			♦			
380	9.8	9.9	♦								♦			
380	9.9	10.0	♦								♦			
380	10.0	10.1	♦								♦			
380	10.1	10.2	♦								♦			
380	10.2	10.3	♦								♦			
380	10.3	10.4		♦	♦	♦		♦			♦			
380	10.4	10.5		♦	♦	♦					♦			
380	10.5	10.6		♦	♦	♦					♦			
380	10.6	10.7		♦	♦	♦					♦			
380	10.7	10.8		♦	♦	♦					♦			
380	10.8	10.9		♦	♦	♦					♦			
380	10.9	11.0		♦	♦	♦					♦			
380	11.0	11.1		♦	♦	♦					♦			
380	11.1	11.2		♦	♦	♦					♦			
380	11.2	11.3		♦	♦	♦					♦			
380	11.3	11.4		♦	♦	♦					♦			
380	11.4	11.5		♦	♦	♦					♦			
380	11.5	11.6		♦	♦	♦					♦			
380	11.6	11.7		♦	♦	♦					♦			
380	11.7	11.8		♦	♦	♦					♦			
380	11.8	11.9		♦	♦	♦					♦			
380	11.9	12.0		♦	♦	♦					♦			
380	12.0	12.1		♦	♦	♦					♦			
380	12.1	12.2		♦	♦	♦					♦			
380	12.2	12.3		♦	♦	♦		♦			♦		♦	
380	12.3	12.4		♦	♦	♦		♦			♦		♦	
380	12.4	12.5		♦	♦	♦		♦			♦		♦	
380	12.5	12.6		♦	♦	♦		♦					♦	
380	12.6	12.7	♦					♦					♦	
380	12.7	12.8	♦					♦			♦		♦	
380	12.8	12.9	♦					♦			♦		♦	
380	12.9	13.0		♦	♦	♦		♦					♦	
380	13.0	13.1		♦	♦	♦		♦					♦	
380	13.1	13.2		♦	♦	♦		♦					♦	
380	13.2	13.3		♦	♦	♦		♦					♦	
380	13.3	13.4		♦	♦	♦								
380	13.4	13.5		♦	♦	♦		♦					♦	
380	13.5	13.6		♦				♦					♦	
380	13.6	13.7		♦				♦					♦	
380	13.7	13.8		♦				♦					♦	
380	13.8	13.9		♦	♦	♦		♦					♦	
380	13.9	14.0	♦					♦					♦	
380	14.0	14.1	♦					♦					♦	
380	14.1	14.2	♦					♦					♦	
380	14.2	14.3	♦					♦					♦	
380	14.3	14.4	♦					♦					♦	
380	14.4	14.5	♦					♦					♦	
380	14.5	14.6	♦					♦					♦	
380	14.6	14.7	♦					♦					♦	
380	14.7	14.8	♦					♦					♦	
380	14.8	14.9	♦					♦					♦	
380	14.9	15.0	♦					♦					♦	
380	15.0	15.1	♦					♦					♦	
380	15.1	15.2	♦					♦					♦	
380	15.2	15.3	♦					♦					♦	
380	15.3	15.4	♦					♦					♦	
380	15.4	15.5			♦	♦								
380	15.5	15.6			♦	♦								
380	15.6	15.7			♦	♦								
380	15.7	15.8		♦				♦					♦	
380	15.8	15.9		♦	♦	♦		♦					♦	
380	15.9	16.0		♦				♦					♦	
380	16.0	16.1		♦		♦		♦					♦	
380	16.1	16.2		♦		♦		♦					♦	
380	16.2	16.3		♦		♦		♦					♦	
380	16.3	16.4		♦		♦								
380	16.4	16.5			♦	♦								
380	16.5	16.6		♦		♦								
380	16.6	16.7		♦		♦								
380	16.7	16.8		♦		♦								
380	16.8	16.9		♦		♦								
380	16.9	17.0		♦		♦								
380	17.0	17.1		♦		♦								
380	17.1	17.2		♦										
380	17.2	17.3		♦										
380	17.3	17.4		♦										

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
380	17.4	17 5		♦										
380	17 5	17 6	♦								♦			
380	17.6	17 7	♦								♦			
380	17.7	17 8	♦								♦			
380	17 8	17 9		♦	♦			♦			♦		♦	
380	17.9	18 0		♦	♦			♦			♦		♦	
380	18 0	18 1		♦	♦			♦			♦		♦	
380	18 1	18 2		♦	♦	♦		♦			♦		♦	
380	18.2	18 3		♦	♦	♦		♦			♦		♦	
380	18 3	18 4		♦	♦			♦			♦		♦	
380	18 4	18.5		♦	♦			♦			♦		♦	
380	18.5	18 6		♦	♦			♦			♦		♦	
380	18 6	18 7		♦	♦			♦			♦		♦	
380	18 7	18 8		♦	♦			♦			♦		♦	
380	18.8	18.9		♦	♦			♦			♦		♦	
380	18.9	19.0	♦					♦			♦		♦	
380	19.0	19 1	♦					♦			♦		♦	
380	19.1	19 2	♦					♦			♦		♦	
380	19.2	19.3		♦	♦			♦			♦		♦	
380	19.3	19 4		♦	♦			♦			♦		♦	
380	19.4	19 5		♦	♦			♦			♦		♦	
380	19 5	19 6		♦	♦			♦			♦		♦	
380	19.6	19.7		♦	♦			♦			♦		♦	
380	19.7	19 8	♦					♦			♦		♦	
380	19.8	19.9	♦					♦			♦		♦	
380	19 9	20.0	♦					♦			♦		♦	
380	20 0	20.1	♦					♦			♦		♦	
380	20 1	20.2	♦					♦			♦		♦	
380	20 2	20.3	♦					♦			♦		♦	
380	20 3	20.4		♦	♦	♦		♦			♦		♦	
380	20 4	20.5		♦	♦	♦		♦		♦	♦		♦	
380	20 5	20.6		♦	♦	♦		♦		♦	♦		♦	
380	20.6	20.7		♦	♦	♦		♦		♦	♦		♦	
380	20.7	20 8		♦	♦	♦		♦		♦	♦		♦	
380	20.8	20 9		♦	♦	♦		♦		♦	♦		♦	
380	20.9	21 0		♦	♦	♦		♦		♦	♦		♦	
380	21.0	21 1		♦	♦	♦		♦			♦	♦	♦	
380	21 1	21 2		♦	♦	♦		♦			♦		♦	
380	21.2	21 3		♦	♦	♦		♦			♦		♦	
380	21.3	21.4		♦	♦	♦		♦			♦		♦	
380	21 4	21.5		♦	♦	♦		♦			♦		♦	
380	21.5	21.6		♦	♦	♦		♦			♦	♦	♦	
380	21 6	21 7		♦	♦	♦		♦			♦	♦	♦	
380	21 7	21 8		♦	♦	♦		♦			♦		♦	
380	21.8	21 9		♦	♦						♦			
380	21.9	22 0		♦	♦	♦		♦			♦			
380	22 0	22.1		♦	♦	♦					♦			
380	22.1	22.2		♦	♦	♦					♦			
	Total Miles		8.4	13.6	12.0	10.4	0.0	11.3	0.0	1.1	17.1	0.8	9.2	0.0
460	0 0	0 1		♦	♦						♦			
460	0 1	0 2		♦	♦						♦			
460	0 2	0.3	♦								♦			
460	0 3	0 4	♦								♦			
460	0 4	0.5	♦								♦			
460	0 5	0 6	♦								♦	♦		
460	0 6	0 7	♦								♦	♦		
460	0 7	0 8	♦								♦			
460	0.8	0.9	♦					♦			♦			
460	0.9	1 0	♦								♦	♦		
460	1 0	1 1	♦								♦			
460	1.1	1.2	♦								♦	♦		
460	1 2	1 3	♦								♦	♦		
460	1.3	1.4	♦								♦	♦		
460	1.4	1 5	♦								♦	♦		
460	1 5	1 6	♦								♦	♦		
460	1 6	1.7	♦								♦	♦		
460	1.7	1 8	♦								♦	♦		
460	1 8	1 9	♦								♦	♦		
460	1 9	2.0	♦								♦	♦		
460	2.0	2 1	♦								♦	♦		
460	2.1	2.2	♦								♦	♦		
460	2.2	2 3	♦								♦	♦		
460	2 3	2 4	♦								♦	♦		
460	2.4	2 5	♦								♦	♦		
460	2.5	2 8	♦								♦	♦		
460	2.6	2 7	♦								♦	♦		
460	2 7	2 8	♦								♦	♦		
460	2 8	2 9	♦								♦	♦		
460	2.9	3 0	♦								♦	♦		
460	3 0	3 1	♦								♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
460	3.1	3.2		♦	♦						♦	♦		
460	3.2	3.3	♦								♦	♦		
460	3.3	3.4	♦								♦	♦		
460	3.4	3.5	♦								♦	♦		
460	3.5	3.6	♦								♦	♦		
460	3.6	3.7	♦								♦	♦		
460	3.7	3.8	♦								♦			
460	3.8	3.9	♦								♦			
460	3.9	4.0		♦	♦						♦			
460	4.0	4.1		♦	♦						♦			
460	4.1	4.2		♦	♦						♦			
	Total Miles		3.6	0.6	0.6	0.0	0.0	0.1	0.0	0.0	4.2	2.8	0.0	0.0
464	0.0	0.1		♦	♦						♦			
464	0.1	0.2		♦	♦						♦			
464	0.2	0.3		♦	♦						♦			
464	0.3	0.4		♦	♦						♦			
464	0.4	0.5		♦	♦						♦			
464	0.5	0.6		♦	♦						♦			
464	0.6	0.7		♦	♦						♦			
464	0.7	0.8		♦	♦						♦			
464	0.8	0.9		♦	♦						♦			
464	0.9	1.0		♦	♦						♦			
464	1.0	1.1		♦	♦						♦			
464	1.1	1.2		♦	♦						♦			
464	1.2	1.3		♦	♦						♦			
464	1.3	1.4		♦	♦						♦			
464	1.4	1.5		♦	♦						♦			
464	1.5	1.6		♦	♦						♦			
464	1.6	1.7		♦	♦						♦			
464	1.7	1.8		♦	♦			♦			♦			
464	1.8	1.9		♦	♦			♦			♦			
464	1.9	2.0		♦	♦			♦			♦			
464	2.0	2.1		♦	♦			♦			♦			
464	2.1	2.2		♦	♦			♦			♦			
464	2.2	2.3		♦	♦			♦			♦			
464	2.3	2.4		♦	♦			♦			♦			
464	2.4	2.5		♦	♦			♦			♦			
464	2.5	2.6	♦	♦	♦			♦			♦			
464	2.6	2.7		♦	♦			♦			♦			
464	2.7	2.8		♦	♦			♦			♦			
464	2.8	2.9	♦					♦			♦	♦		
464	2.9	3.0	♦					♦			♦	♦		
464	3.0	3.1	♦					♦			♦	♦		
464	3.1	3.2	♦					♦			♦			
464	3.2	3.3	♦					♦			♦			
464	3.3	3.4	♦					♦			♦			
464	3.4	3.5	♦					♦			♦			
464	3.5	3.6	♦					♦			♦			
464	3.6	3.7	♦					♦			♦			
464	3.7	3.8	♦					♦			♦			
464	3.8	3.9	♦					♦			♦			
464	3.9	4.0	♦					♦			♦			
464	4.0	4.1	♦								♦			
	Total Miles		1.4	2.8	2.8	0.0	0.0	2.3	0.0	0.0	4.1	0.3	0.0	0.0
466	0.0	0.1	♦					♦			♦			
466	0.1	0.2	♦					♦			♦			
466	0.2	0.3	♦					♦			♦			
466	0.3	0.4	♦					♦			♦			
466	0.4	0.5	♦					♦			♦			
466	0.5	0.6	♦					♦			♦			
	Total Miles		0.6	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6	0.0	0.0	0.0
468	0.0	0.1	♦					♦			♦			
468	0.1	0.2		♦	♦			♦			♦			
468	0.2	0.3		♦	♦			♦			♦			
468	0.3	0.4		♦	♦			♦			♦			
468	0.4	0.5		♦	♦						♦			
468	0.5	0.6		♦	♦						♦			
468	0.6	0.7		♦	♦						♦			
468	0.7	0.8		♦	♦						♦			
468	0.8	0.9		♦	♦						♦			
468	0.9	1.0		♦	♦						♦			
468	1.0	1.1		♦	♦						♦			
468	1.1	1.2		♦	♦						♦			
468	1.2	1.3		♦	♦						♦			
468	1.3	1.4		♦	♦						♦			
468	1.4	1.5		♦	♦						♦			
468	1.5	1.6	♦								♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
468	1.6	1.7						♦						
468	1.7	1.8	♦					♦			♦			
468	1.8	1.9	♦								♦			
468	1.9	2.0	♦								♦			
468	2.0	2.1		♦	♦						♦			
468	2.1	2.2		♦	♦						♦			
468	2.2	2.3		♦	♦						♦			
468	2.3	2.4		♦	♦						♦			
468	2.4	2.5		♦	♦						♦			
468	2.5	2.6		♦	♦						♦			
468	2.6	2.7		♦	♦						♦			
468	2.7	2.8		♦	♦						♦			
468	2.8	2.9		♦	♦						♦			
	Total Miles		0.5	2.3	2.3	0.0	0.0	0.6	0.0	0.0	2.8	0.0	0.0	0.0
471	0.0	0.1		♦	♦						♦			
471	0.1	0.2		♦	♦						♦			
471	0.2	0.3		♦	♦						♦			
471	0.3	0.4		♦	♦						♦			
471	0.4	0.5		♦	♦						♦			
471	0.5	0.6		♦	♦						♦			
471	0.6	0.7		♦	♦						♦			
471	0.7	0.8		♦	♦						♦			
471	0.8	0.9		♦	♦						♦			
471	0.9	1.0												
471	1.0	1.1												
471	1.1	1.2	♦					♦						
471	1.2	1.3												
471	1.3	1.4												
471	1.4	1.5												
471	1.5	1.6												
471	1.6	1.7												
471	1.7	1.8		♦	♦						♦			
471	1.8	1.9		♦	♦						♦			
471	1.9	2.0		♦	♦						♦			
471	2.0	2.1		♦	♦						♦			
471	2.1	2.2		♦	♦						♦			
471	2.2	2.3		♦	♦						♦			
471	2.3	2.4		♦	♦						♦			
471	2.4	2.5	♦								♦			
471	2.5	2.6	♦					♦			♦			
471	2.6	2.7	♦								♦			
471	2.7	2.8	♦								♦			
471	2.8	2.9	♦								♦			
471	2.9	3.0	♦								♦			
471	3.0	3.1	♦								♦			
471	3.1	3.2	♦								♦			
471	3.2	3.3	♦								♦			
471	3.3	3.4		♦	♦			♦			♦			
471	3.4	3.5		♦	♦			♦			♦			
471	3.5	3.6		♦	♦			♦			♦			
471	3.6	3.7		♦	♦			♦			♦			
471	3.7	3.8		♦	♦						♦			
471	3.8	3.9		♦	♦						♦			
471	3.9	4.0		♦	♦						♦			
471	4.0	4.1		♦	♦						♦			
471	4.1	4.2		♦	♦						♦			
471	4.2	4.3		♦	♦						♦			
471	4.3	4.4		♦	♦						♦			
471	4.4	4.5		♦	♦						♦			
471	4.5	4.6		♦	♦						♦			
471	4.6	4.7		♦	♦						♦			
471	4.7	4.8		♦	♦						♦			
471	4.8	4.9		♦	♦						♦			
471	4.9	5.0	♦								♦			
471	5.0	5.1	♦								♦			
471	5.1	5.2	♦								♦			
471	5.2	5.3	♦								♦			
471	5.3	5.4	♦								♦			
471	5.4	5.5	♦								♦			
471	5.5	5.6	♦								♦			
471	5.6	5.7												
471	5.7	5.8												
471	5.8	5.9												
471	5.9	6.0												
471	6.0	6.1												
471	6.1	6.2												
471	6.2	6.3												
471	6.3	6.4												
471	6.4	6.5												
471	6.5	6.6												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
471	6.6	6.7												
471	6.7	6.8												
471	6.8	6.9												
471	6.9	7.0												
471	7.0	7.1												
471	7.1	7.2												
471	7.2	7.3												
471	7.3	7.4												
471	7.4	7.5												
471	7.5	7.6												
471	7.6	7.7												
471	7.7	7.8												
471	7.8	7.9												
471	7.9	8.0												
471	8.0	8.1												
471	8.1	8.2												
471	8.2	8.3												
471	8.3	8.4	♦								♦			
471	8.4	8.5	♦								♦			
471	8.5	8.6	♦								♦			
471	8.6	8.7	♦								♦			
471	8.7	8.8	♦								♦			
471	8.8	8.9	♦								♦			
471	8.9	9.0	♦								♦			
471	9.0	9.1	♦								♦			
471	9.1	9.2	♦								♦			
471	9.2	9.3	♦								♦			
471	9.3	9.4	♦								♦			
471	9.4	9.5		♦	♦						♦			
471	9.5	9.6		♦	♦						♦			
471	9.6	9.7		♦	♦						♦			
471	9.7	9.8		♦	♦						♦			
471	9.8	9.9		♦	♦						♦			
471	9.9	10.0		♦	♦						♦			
471	10.0	10.1		♦	♦						♦			
471	10.1	10.2		♦	♦						♦			
471	10.2	10.3		♦	♦						♦			
471	10.3	10.4		♦	♦						♦			
471	10.4	10.5		♦	♦						♦			
471	10.5	10.6		♦	♦						♦			
471	10.6	10.7		♦	♦						♦			
471	10.7	10.8		♦	♦						♦			
471	10.8	10.9		♦	♦						♦			
471	10.9	11.0		♦	♦						♦			
471	11.0	11.1		♦	♦						♦			
471	11.1	11.2		♦	♦						♦			
471	11.2	11.3		♦	♦						♦			
471	11.3	11.4		♦	♦						♦			
471	11.4	11.5	♦								♦			
471	11.5	11.6	♦								♦			
471	11.6	11.7	♦								♦			
	Total Miles		3.1	5.2	5.2	0.0	0.0	0.6	0.0	0.0	8.2	0.0	0.0	0.0
473	0.0	0.1	♦								♦			
473	0.1	0.2		♦	♦						♦			
473	0.2	0.3		♦	♦						♦			
473	0.3	0.4		♦	♦						♦			
473	0.4	0.5		♦	♦						♦			
473	0.5	0.6		♦	♦						♦			
473	0.6	0.7		♦	♦						♦			
473	0.7	0.8		♦	♦						♦			
473	0.8	0.9		♦	♦						♦	♦		
473	0.9	1.0		♦	♦						♦	♦		
473	1.0	1.1	♦								♦	♦		
473	1.1	1.2	♦								♦			
473	1.2	1.3	♦								♦			
473	1.3	1.4	♦	♦	♦			♦			♦			
	Total Miles		0.5	1.0	1.0	0.0	0.0	0.1	0.0	0.0	1.4	0.3	0.0	0.0
461	0.0	0.1	♦					♦			♦			
461	0.1	0.2	♦					♦			♦			
461	0.2	0.3	♦					♦			♦			
461	0.3	0.4	♦					♦			♦			
461	0.4	0.5	♦					♦			♦			
461	0.5	0.6		♦	♦			♦			♦			
461	0.6	0.7		♦	♦			♦			♦			
461	0.7	0.8		♦	♦			♦			♦			
461	0.8	0.9		♦	♦			♦			♦			
461	0.9	1.0		♦	♦			♦			♦			
481	1.0	1.1		♦	♦			♦			♦			
481	1.1	1.2		♦	♦			♦			♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
461	1.2	1.3		♦	♦			♦			♦			
461	1.3	1.4		♦	♦			♦			♦			
461	1.4	1.5		♦	♦			♦			♦			
461	1.5	1.6	♦					♦			♦			
461	1.6	1.7	♦					♦			♦			
461	1.7	1.8	♦					♦			♦			
461	1.8	1.9	♦					♦			♦			
461	1.9	2.0	♦					♦			♦			
461	2.0	2.1	♦					♦			♦			
461	2.1	2.2	♦					♦			♦			
461	2.2	2.3	♦					♦			♦			
461	2.3	2.4	♦					♦			♦			
461	2.4	2.5		♦	♦			♦			♦			
461	2.5	2.6		♦	♦			♦			♦			
461	2.6	2.7		♦	♦			♦			♦			
461	2.7	2.8		♦	♦			♦			♦			
461	2.8	2.9		♦	♦			♦			♦			
461	2.9	3.0		♦	♦			♦			♦			
461	3.0	3.1		♦	♦			♦			♦			
461	3.1	3.2		♦	♦			♦			♦			
461	3.2	3.3		♦	♦			♦			♦			
461	3.3	3.4		♦	♦			♦			♦			
461	3.4	3.5		♦	♦			♦			♦			
461	3.5	3.6		♦	♦			♦			♦			
461	3.6	3.7		♦	♦			♦			♦			
461	3.7	3.8		♦	♦			♦			♦			
461	3.8	3.9		♦	♦			♦			♦			
461	3.9	4.0		♦	♦			♦			♦			
481	4.0	4.1	♦					♦			♦			
461	4.1	4.2	♦					♦			♦			
461	4.2	4.3						♦						
461	4.3	4.4						♦						
461	4.4	4.5						♦						
461	4.5	4.6		♦	♦			♦			♦			
461	4.6	4.7		♦	♦			♦			♦			
461	4.7	4.8		♦	♦			♦			♦			
461	4.8	4.9		♦	♦			♦			♦			
461	4.9	5.0						♦						
461	5.0	5.1						♦						
461	5.1	5.2						♦						
461	5.2	5.3						♦						
461	5.3	5.4						♦						
461	5.4	5.5						♦						
461	5.5	5.6						♦						
461	5.6	5.7						♦						
461	5.7	5.8						♦						
461	5.8	5.9						♦						
461	5.9	6.0						♦						
461	6.0	6.1						♦						
461	6.1	6.2						♦						
461	6.2	6.3						♦						
461	6.3	6.4						♦						
461	6.4	6.5						♦						
461	6.5	6.6						♦						
461	6.6	6.7						♦						
461	6.7	6.8						♦						
461	6.8	6.9						♦						
461	6.9	7.0						♦						
461	7.0	7.1						♦						
481	7.1	7.2						♦						
461	7.2	7.3						♦						
461	7.3	7.4						♦						
461	7.4	7.5						♦						
461	7.5	7.6						♦						
461	7.6	7.7						♦						
461	7.7	7.8												
461	7.8	7.9												
461	7.9	8.0						♦						
461	8.0	8.1						♦						
461	8.1	8.2						♦						
461	8.2	8.3						♦						
461	8.3	8.4						♦						
461	8.4	8.5						♦						
461	8.5	8.6						♦						
461	8.6	8.7						♦						
461	8.7	8.8						♦						
461	8.8	8.9												
461	8.9	9.0												
461	9.0	9.1												
461	9.1	9.2												
461	9.2	9.3												

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
461	9.3	9.4												
461	9.4	9.5												
461	9.5	9.6												
461	9.6	9.7												
461	9.7	9.8												
461	9.8	9.9						♦						
461	9.9	10.0						♦						
461	10.0	10.1						♦						
461	10.1	10.2						♦						
461	10.2	10.3						♦						
461	10.3	10.4						♦						
461	10.4	10.5						♦						
461	10.5	10.6						♦						
461	10.6	10.7						♦						
461	10.7	10.8						♦						
461	10.8	10.9						♦						
461	10.9	11.0						♦						
461	11.0	11.1						♦						
461	11.1	11.2						♦						
461	11.2	11.3						♦						
461	11.3	11.4						♦						
	Total Miles		1.6	3.0	3.0	0.0	0.0	10.2	0.0	0.0	4.6	0.0	0.0	0.0
462	0.0	0.1		♦		♦		♦						
462	0.1	0.2		♦		♦		♦						
462	0.2	0.3		♦		♦		♦						
462	0.3	0.4			♦	♦		♦						
462	0.4	0.5			♦	♦		♦						
462	0.5	0.6			♦	♦		♦						
462	0.6	0.7		♦		♦		♦						
462	0.7	0.8		♦				♦						
462	0.8	0.9		♦				♦						
462	0.9	1.0		♦				♦						
462	1.0	1.1			♦	♦		♦						
462	1.1	1.2			♦	♦		♦						
462	1.2	1.3		♦				♦						
462	1.3	1.4		♦				♦						
462	1.4	1.5		♦				♦						
462	1.5	1.6						♦						
462	1.6	1.7						♦						
462	1.7	1.8						♦						
462	1.8	1.9						♦						
462	1.9	2.0						♦						
462	2.0	2.1		♦				♦						
462	2.1	2.2		♦				♦						
462	2.2	2.3		♦	♦	♦		♦			♦			
462	2.3	2.4		♦	♦	♦		♦			♦		♦	
462	2.4	2.5		♦	♦	♦		♦			♦		♦	
462	2.5	2.6		♦	♦	♦					♦			
462	2.6	2.7			♦	♦								
462	2.7	2.8	♦					♦					♦	
462	2.8	2.9	♦										♦	
462	2.9	3.0	♦										♦	
462	3.0	3.1			♦	♦							♦	
462	3.1	3.2			♦	♦							♦	
462	3.2	3.3		♦										
462	3.3	3.4		♦										
462	3.4	3.5		♦										
462	3.5	3.6		♦										
462	3.6	3.7		♦										
462	3.7	3.8		♦										
462	3.8	3.9		♦										
462	3.9	4.0		♦										
462	4.0	4.1		♦										
462	4.1	4.2		♦										
462	4.2	4.3		♦				♦						
462	4.3	4.4		♦										
462	4.4	4.5		♦										
462	4.5	4.6		♦										
462	4.6	4.7												
462	4.7	4.8												
462	4.8	4.9			♦	♦								
462	4.9	5.0			♦	♦		♦						
462	5.0	5.1		♦										
462	5.1	5.2		♦										
462	5.2	5.3			♦	♦								
462	5.3	5.4		♦										
462	5.4	5.5		♦										
462	5.5	5.6	♦					♦			♦			
462	5.6	5.7	♦					♦			♦			
462	5.7	5.8	♦								♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
462	58	59												
462	59	60												
462	60	61		♦				♦						
462	61	62	♦		♦	♦		♦					♦	
462	62	63	♦					♦					♦	
462	63	64		♦	♦	♦		♦					♦	
462	64	65	♦					♦					♦	
462	65	66	♦					♦					♦	
462	66	67	♦					♦					♦	
462	67	68	♦					♦					♦	
462	68	69	♦					♦					♦	
462	69	70	♦					♦					♦	
462	70	71			♦	♦		♦						
462	71	72			♦	♦		♦						
462	72	73			♦	♦		♦						
462	73	74			♦	♦		♦						
462	74	75						♦						
462	75	76						♦						
462	76	77						♦						
462	77	78	♦					♦			♦			
462	78	79	♦								♦			
462	79	80	♦								♦			
462	80	81	♦								♦			
462	81	82	♦								♦			
462	82	83		♦	♦	♦		♦			♦		♦	
462	83	84		♦	♦	♦					♦		♦	
462	84	85		♦	♦	♦		♦			♦		♦	
462	85	86		♦	♦	♦		♦			♦		♦	
462	86	87	♦					♦			♦			
462	87	88	♦					♦			♦			
462	88	89	♦					♦			♦			
462	89	90						♦						
462	90	91	♦					♦			♦			
462	91	92	♦	♦	♦	♦		♦			♦		♦	
462	92	93	♦					♦			♦			
462	93	94	♦					♦			♦			
462	94	95	♦					♦			♦			
462	95	96						♦						
462	96	97		♦	♦	♦		♦			♦		♦	
462	97	98		♦	♦	♦		♦			♦		♦	
462	98	99		♦	♦	♦		♦			♦		♦	
462	99	100		♦	♦	♦					♦		♦	
462	100	101		♦	♦	♦		♦			♦		♦	
462	101	102		♦	♦	♦					♦		♦	
462	102	103		♦	♦	♦		♦			♦		♦	
462	103	104	♦								♦			
462	104	105	♦	♦	♦	♦		♦			♦		♦	
462	105	106	♦					♦			♦			
462	106	107	♦					♦			♦			
462	107	108	♦					♦			♦			
462	108	109						♦						
462	109	110	♦					♦			♦			
462	110	111						♦						
462	111	112	♦								♦			
462	112	113						♦						
462	113	114	♦								♦			
462	114	115	♦					♦			♦			
462	115	116	♦					♦			♦			
462	116	117	♦					♦			♦			
462	117	118	♦								♦			
462	118	119												
462	119	120						♦						
462	120	121			♦	♦							♦	
462	121	122	♦	♦	♦			♦			♦		♦	
462	122	123		♦	♦						♦		♦	
462	123	124		♦	♦	♦					♦		♦	
462	124	125		♦	♦	♦	♦				♦		♦	
462	125	126		♦	♦	♦	♦				♦			
462	126	127					♦							
462	127	128					♦							
462	128	129					♦							
462	129	130					♦							
462	130	131			♦	♦	♦							
462	131	132			♦	♦	♦							
462	132	133			♦	♦	♦							
462	133	134			♦	♦	♦	♦						
462	134	135			♦	♦	♦	♦						
462	135	136			♦	♦	♦	♦						
462	136	137			♦	♦	♦	♦						
462	137	138			♦	♦	♦	♦						
462	138	139			♦	♦	♦							

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
462	13.9	14.0			♦	♦	♦	♦						
462	14.0	14.1			♦	♦	♦	♦						
462	14.1	14.2			♦	♦	♦							
462	14.2	14.3			♦	♦	♦	♦						
462	14.3	14.4			♦	♦	♦							
462	14.4	14.5			♦	♦	♦	♦						
462	14.5	14.6			♦	♦	♦							
462	14.6	14.7			♦	♦	♦	♦						
462	14.7	14.8			♦	♦	♦							
462	14.8	14.9		♦		♦	♦	♦						
462	14.9	15.0		♦		♦	♦							
462	15.0	15.1			♦	♦	♦	♦						
462	15.1	15.2			♦	♦	♦							
462	15.2	15.3			♦	♦	♦	♦						
462	15.3	15.4			♦	♦	♦							
462	15.4	15.5			♦	♦	♦	♦						
462	15.5	15.6			♦	♦	♦							
462	15.6	15.7			♦	♦	♦	♦						
462	15.7	15.8			♦	♦	♦							
462	15.8	15.9			♦	♦	♦	♦						
462	15.9	16.0		♦			♦							
462	16.0	16.1		♦			♦	♦						
462	16.1	16.2					♦							
462	16.2	16.3						♦						
462	16.3	16.4												
462	16.4	16.5												
462	16.5	16.6						♦						
462	16.6	16.7												
462	16.7	16.8		♦				♦			♦			
462	16.8	16.9		♦				♦			♦			
462	16.9	17.0		♦							♦			
462	17.0	17.1		♦				♦			♦			
462	17.1	17.2		♦				♦			♦			
462	17.2	17.3		♦				♦			♦			
462	17.3	17.4		♦				♦			♦			
462	17.4	17.5		♦				♦			♦			
462	17.5	17.6		♦				♦			♦			
462	17.6	17.7		♦		♦		♦			♦			
462	17.7	17.8		♦		♦		♦			♦			
462	17.8	17.9		♦				♦			♦			
462	17.9	18.0		♦	♦			♦			♦			
462	18.0	18.1		♦	♦			♦			♦			
462	18.1	18.2		♦	♦			♦			♦			
462	18.2	18.3		♦	♦			♦			♦			
462	18.3	18.4		♦	♦			♦			♦			
462	18.4	18.5		♦	♦			♦			♦			
462	18.5	18.6		♦	♦						♦			
462	18.6	18.7		♦	♦			♦			♦			
462	18.7	18.8		♦	♦						♦			
462	18.8	18.9		♦				♦			♦			
462	18.9	19.0	♦					♦			♦			
462	19.0	19.1	♦					♦			♦			
462	19.1	19.2	♦								♦			
462	19.2	19.3	♦	♦	♦			♦			♦			
462	19.3	19.4	♦								♦			
462	19.4	19.5	♦					♦			♦			
462	19.5	19.6	♦								♦			
462	19.6	19.7	♦								♦			
462	19.7	19.8	♦								♦			
462	19.8	19.9	♦								♦			
462	19.9	20.0	♦	♦	♦	♦					♦			
462	20.0	20.1		♦	♦	♦					♦			
462	20.1	20.2			♦	♦					♦		♦	
462	20.2	20.3		♦	♦	♦					♦	♦	♦	
462	20.3	20.4			♦	♦					♦	♦	♦	
462	20.4	20.5						♦			♦	♦		
462	20.5	20.6	♦								♦	♦		
462	20.6	20.7									♦	♦		
462	20.7	20.8									♦	♦		
462	20.8	20.9		♦	♦	♦					♦	♦	♦	
462	20.9	21.0			♦	♦					♦	♦	♦	
462	21.0	21.1		♦	♦	♦					♦	♦	♦	
462	21.1	21.2		♦	♦	♦					♦	♦	♦	
462	21.2	21.3		♦	♦	♦					♦	♦	♦	
462	21.3	21.4			♦	♦					♦	♦	♦	
462	21.4	21.5		♦	♦	♦					♦	♦	♦	
462	21.5	21.6		♦	♦	♦					♦	♦	♦	
462	21.6	21.7		♦	♦	♦		♦			♦	♦	♦	
462	21.7	21.8		♦	♦	♦		♦			♦	♦	♦	
462	21.8	21.9		♦	♦	♦		♦			♦	♦	♦	
462	21.9	22.0		♦	♦	♦		♦			♦	♦	♦	

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
462	22.0	22.1		♦	♦	♦		♦			♦	♦	♦	
462	22 1	22.2		♦	♦	♦		♦			♦	♦	♦	
462	22.2	22.3		♦	♦	♦		♦			♦	♦	♦	
462	22.3	22 4		♦	♦	♦		♦			♦	♦	♦	
462	22.4	22.5		♦	♦	♦		♦			♦	♦	♦	
462	22 5	22.6		♦	♦	♦		♦			♦	♦	♦	
462	22.6	22.7		♦	♦	♦		♦			♦	♦	♦	
462	22 7	22 8		♦	♦	♦		♦			♦	♦	♦	
462	22.8	22.9		♦	♦	♦		♦			♦	♦	♦	
462	22.9	23.0		♦	♦	♦		♦			♦	♦	♦	
462	23 0	23 1		♦	♦	♦		♦			♦	♦	♦	
462	23.1	23.2		♦	♦	♦		♦			♦	♦	♦	
462	23 2	23.3		♦	♦	♦		♦			♦	♦	♦	
462	23 3	23 4		♦	♦	♦					♦	♦	♦	
462	23.4	23.5		♦	♦	♦		♦			♦	♦	♦	
462	23.5	23 6		♦	♦	♦					♦	♦	♦	
462	23.6	23 7		♦	♦	♦		♦			♦	♦	♦	
462	23 7	23 8		♦	♦	♦					♦	♦	♦	
462	23.8	23.9		♦	♦	♦		♦			♦	♦	♦	
462	23.9	24 0		♦	♦	♦					♦	♦	♦	
462	24 0	24 1	♦					♦			♦	♦		
462	24.1	24.2	♦					♦			♦	♦		
462	24 2	24 3	♦	♦	♦	♦		♦			♦	♦	♦	
462	24 3	24 4	♦								♦	♦		
462	24.4	24 5	♦					♦			♦	♦		
462	24 5	24 6	♦								♦	♦		
462	24.6	24 7	♦					♦			♦	♦		
462	24 7	24 8	♦					♦			♦	♦		
462	24 8	24 9	♦					♦			♦	♦		
462	24 9	25 0	♦					♦			♦	♦		
462	25 0	25 1		♦	♦	♦		♦			♦	♦	♦	
462	25 1	25 2	♦					♦			♦	♦		
462	25 2	25 3	♦					♦			♦	♦		
462	25 3	25 4	♦					♦			♦	♦		
462	25 4	25.5	♦					♦			♦	♦		
462	25.5	25 6	♦								♦	♦		
462	25 6	25.7	♦								♦	♦		
462	25 7	25 8	♦								♦	♦		
462	25 8	25 9	♦								♦	♦		
462	25 9	26 0	♦								♦	♦		
462	26.0	26.1		♦	♦	♦					♦	♦	♦	
462	26 1	26 2			♦	♦					♦	♦	♦	
462	26 2	26 3		♦							♦	♦	♦	
462	26 3	26 4		♦	♦	♦		♦			♦	♦	♦	
462	26 4	26 5		♦				♦			♦	♦	♦	
462	26.5	26 6		♦							♦	♦	♦	
462	26 6	26 7		♦							♦	♦	♦	
462	26 7	26 8		♦							♦	♦	♦	
462	26 8	26 9		♦							♦	♦	♦	
462	26 9	27 0		♦							♦	♦	♦	
462	27 0	27 1			♦	♦					♦	♦	♦	
462	27 1	27 2			♦	♦					♦	♦	♦	
462	27 2	27 3			♦	♦					♦	♦	♦	
462	27 3	27 4			♦	♦					♦	♦	♦	
462	27 4	27 5			♦	♦					♦	♦	♦	
462	27 5	27 6	♦					♦			♦	♦		
462	27 6	27.7	♦								♦	♦		
462	27 7	27 8	♦								♦	♦		
462	27 8	27 9	♦								♦	♦		
	Total Miles		7.5	12.5	12.4	12.0	3.8	15.8	0.0	0.0	16.0	7.7	8.6	0.0
470	0.0	0.1	♦								♦	♦		
470	0.1	0 2	♦								♦	♦		
470	0.2	0.3	♦					♦			♦	♦		
470	0 3	0.4			♦	♦					♦	♦		
470	0.4	0 5		♦	♦	♦					♦	♦		
470	0 5	0.6		♦	♦	♦					♦	♦		
470	0.6	0 7		♦	♦	♦					♦	♦		
470	0 7	0 8		♦	♦	♦					♦	♦		
470	0 8	0.9		♦	♦	♦					♦	♦		
470	0.9	1 0		♦	♦	♦					♦	♦		
470	1 0	1 1		♦	♦	♦					♦	♦		
470	1.1	1 2		♦	♦	♦					♦	♦		
470	1.2	1.3		♦	♦	♦		♦			♦	♦		
470	1 3	1.4		♦	♦	♦					♦	♦		
470	1.4	1 5		♦	♦	♦					♦	♦		
470	1.5	1.6		♦	♦	♦					♦	♦		
470	1.8	1.7		♦	♦						♦			
470	1 7	1.8		♦	♦	♦					♦			
470	1.8	1 9		♦	♦	♦					♦			
470	1.9	2 0		♦	♦	♦					♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
470	2.0	2.1		♦	♦						♦			
470	2.1	2.2		♦	♦						♦			
470	2.2	2.3		♦	♦						♦			
470	2.3	2.4		♦	♦						♦			
470	2.4	2.5		♦	♦			♦			♦			
470	2.5	2.6		♦	♦			♦			♦			
470	2.6	2.7		♦	♦						♦			
470	2.7	2.8		♦	♦						♦			
470	2.8	2.9	♦								♦			
470	2.9	3.0	♦								♦			
470	3.0	3.1	♦								♦			
470	3.1	3.2		♦	♦			♦			♦			
470	3.2	3.3		♦	♦	♦					♦			
470	3.3	3.4		♦	♦	♦					♦			
470	3.4	3.5		♦	♦	♦					♦			
470	3.5	3.6		♦	♦	♦					♦			
470	3.6	3.7		♦	♦	♦					♦			
470	3.7	3.8		♦	♦	♦					♦			
470	3.8	3.9		♦	♦	♦					♦			
470	3.9	4.0		♦	♦	♦		♦			♦			
470	4.0	4.1		♦	♦	♦					♦			
470	4.1	4.2		♦	♦	♦					♦			
470	4.2	4.3	♦								♦			
470	4.3	4.4	♦								♦			
470	4.4	4.5	♦								♦			
470	4.5	4.6		♦	♦	♦					♦			
470	4.6	4.7		♦	♦	♦					♦			
470	4.7	4.8		♦	♦	♦					♦			
470	4.8	4.9		♦	♦	♦					♦			
470	4.9	5.0		♦	♦	♦		♦			♦			
470	5.0	5.1		♦	♦	♦					♦			
470	5.1	5.2		♦	♦	♦					♦			
470	5.2	5.3		♦	♦	♦					♦			
470	5.3	5.4		♦	♦	♦		♦			♦			
470	5.4	5.5		♦	♦	♦					♦			
470	5.5	5.6		♦	♦	♦				♦	♦	♦		
470	5.6	5.7	♦							♦	♦	♦		
470	5.7	5.8	♦							♦	♦	♦		
470	5.8	5.9	♦							♦	♦	♦		
470	5.9	6.0		♦	♦	♦				♦	♦	♦		
470	6.0	6.1		♦	♦	♦				♦	♦	♦		
470	6.1	6.2		♦	♦	♦					♦			
470	6.2	6.3		♦	♦	♦		♦			♦			
470	6.3	6.4		♦	♦	♦					♦			
470	6.4	6.5		♦	♦	♦					♦			
470	6.5	6.6		♦	♦	♦					♦			
470	6.6	6.7		♦	♦	♦					♦			
470	6.7	6.8		♦	♦	♦					♦			
470	6.8	6.9		♦	♦						♦			
470	6.9	7.0		♦	♦			♦			♦			
470	7.0	7.1		♦	♦			♦			♦			
470	7.1	7.2		♦	♦						♦			
470	7.2	7.3		♦	♦						♦			
470	7.3	7.4	♦								♦			
470	7.4	7.5	♦								♦			
470	7.5	7.6	♦								♦			
470	7.6	7.7	♦								♦			
470	7.7	7.8	♦				♦				♦			
470	7.6	7.9	♦				♦	♦			♦			
470	7.9	8.0		♦	♦	♦	♦				♦			
470	8.0	8.1		♦	♦		♦				♦			
470	8.1	8.2		♦	♦	♦	♦				♦			
470	8.2	8.3		♦	♦		♦				♦			
470	8.3	8.4		♦	♦	♦	♦				♦			
470	8.4	8.5		♦	♦	♦	♦				♦			
470	8.5	8.6		♦	♦	♦	♦				♦			
470	8.6	8.7		♦	♦	♦	♦				♦			
470	8.7	8.8		♦	♦	♦	♦				♦			
470	8.8	8.9		♦	♦	♦	♦				♦			
470	8.9	9.0		♦	♦	♦	♦	♦			♦			
470	9.0	9.1		♦	♦	♦	♦	♦			♦			
470	9.1	9.2		♦	♦	♦	♦				♦			
470	9.2	9.3		♦	♦	♦	♦	♦			♦			
470	9.3	9.4		♦	♦	♦	♦				♦			
470	9.4	9.5		♦	♦	♦	♦				♦			
470	9.5	9.6		♦	♦	♦	♦				♦			
470	9.6	9.7		♦	♦	♦	♦				♦			
470	9.7	9.8		♦	♦	♦	♦				♦			
470	9.8	9.9		♦	♦	♦	♦				♦			
470	9.9	10.0		♦	♦	♦	♦				♦			
470	10.0	10.1		♦	♦		♦				♦			

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
470	10.1	10.2		♦	♦		♦	♦			♦			
470	10.2	10.3		♦	♦		♦	♦			♦			
470	10.3	10.4		♦	♦	♦	♦	♦			♦			
470	10.4	10.5		♦	♦		♦				♦			
470	10.5	10.6		♦	♦		♦				♦			
470	10.6	10.7	♦				♦				♦			
470	10.7	10.8	♦				♦				♦			
470	10.8	10.9	♦				♦				♦			
470	10.9	11.0		♦	♦	♦	♦				♦			
470	11.0	11.1		♦	♦		♦				♦			
470	11.1	11.2		♦	♦	♦	♦				♦			
470	11.2	11.3	♦				♦	♦			♦			
470	11.3	11.4	♦								♦			
470	11.4	11.5	♦								♦			
470	11.5	11.6		♦	♦	♦					♦			
470	11.6	11.7		♦	♦						♦			
470	11.7	11.8		♦	♦						♦			
470	11.8	11.9		♦	♦						♦			
470	11.9	12.0	♦	♦	♦			♦			♦			
470	12.0	12.1		♦	♦						♦			
470	12.1	12.2		♦	♦						♦			
470	12.2	12.3		♦	♦						♦			
470	12.3	12.4		♦	♦						♦			
470	12.4	12.5		♦	♦						♦			
470	12.5	12.6		♦	♦						♦			
470	12.6	12.7		♦	♦						♦			
470	12.7	12.8		♦	♦	♦		♦			♦			
470	12.8	12.9		♦	♦	♦					♦			
470	12.9	13.0		♦	♦	♦					♦			
470	13.0	13.1		♦	♦	♦		♦			♦			
470	13.1	13.2		♦	♦	♦					♦			
470	13.2	13.3		♦	♦	♦					♦			
470	13.3	13.4		♦	♦						♦			
470	13.4	13.5		♦	♦						♦			
470	13.5	13.6		♦	♦	♦					♦			
470	13.6	13.7		♦	♦	♦					♦			
470	13.7	13.8	♦								♦			
470	13.8	13.9	♦								♦			
470	13.9	14.0		♦	♦	♦		♦			♦			
470	14.0	14.1		♦	♦	♦					♦			
470	14.1	14.2		♦	♦	♦					♦			
470	14.2	14.3			♦	♦		♦						
470	14.3	14.4		♦		♦		♦						
470	14.4	14.5		♦		♦								
470	14.5	14.6		♦		♦		♦						
470	14.6	14.7		♦		♦		♦						
470	14.7	14.8		♦		♦								
470	14.8	14.9		♦		♦								
470	14.9	15.0		♦		♦		♦						
470	15.0	15.1		♦				♦						
470	15.1	15.2			♦	♦								
470	15.2	15.3			♦	♦		♦						
470	15.3	15.4			♦	♦		♦						
470	15.4	15.5			♦	♦		♦						
470	15.5	15.6			♦	♦								
470	15.6	15.7						♦						
470	15.7	15.8						♦						
470	15.8	15.9												
470	15.9	16.0						♦						
470	16.0	16.1						♦						
470	16.1	16.2		♦										
470	16.2	16.3		♦				♦						
470	16.3	16.4		♦				♦						
470	16.4	16.5		♦				♦						
470	16.5	16.6		♦				♦						
470	16.6	16.7		♦				♦						
470	16.7	16.8		♦				♦						
470	16.8	16.9		♦		♦		♦						
470	16.9	17.0		♦		♦		♦						
470	17.0	17.1			♦	♦								
470	17.1	17.2			♦	♦		♦						
470	17.2	17.3		♦		♦		♦						
470	17.3	17.4		♦		♦								
470	17.4	17.5		♦		♦		♦						
470	17.5	17.6			♦	♦		♦						
470	17.6	17.7			♦	♦								
470	17.7	17.8		♦		♦		♦						
470	17.8	17.9		♦		♦		♦						
470	17.9	18.0		♦		♦		♦						
470	18.0	18.1		♦		♦								
470	18.1	18.2		♦		♦		♦						

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
470	18.2	18.3		♦				♦						
470	18.3	18.4			♦	♦								
470	18.4	18.5			♦	♦		♦						
470	18.5	18.8		♦				♦						
470	18.6	18.7				♦		♦						
470	18.7	18.8						♦						
	Total Miles		**2.7**	**14.2**	**12.8**	**11.0**	**3.6**	**5.7**	**0.0**	**0.6**	**14.2**	**2.2**	**0.0**	**0.0**
540	0.0	0.1												
540	0.1	0.2												
540	0.2	0.3						♦						
540	0.3	0.4			♦	♦		♦						
540	0.4	0.5			♦	♦								
540	0.5	0.6			♦	♦		♦						
540	0.6	0.7			♦	♦		♦						
540	0.7	0.8			♦	♦								
540	0.8	0.9			♦	♦		♦						
540	0.9	1.0			♦	♦		♦						
540	1.0	1.1			♦	♦		♦						
540	1.1	1.2						♦						
540	1.2	1.3						♦						
540	1.3	1.4						♦						
540	1.4	1.5						♦						
540	1.5	1.6			♦	♦		♦						
540	1.6	1.7			♦	♦		♦						
540	1.7	1.8						♦						
540	1.8	1.9						♦						
540	1.9	2.0												
540	2.0	2.1						♦						
540	2.1	2.2						♦						
540	2.2	2.3			♦	♦		♦						
540	2.3	2.4			♦	♦		♦						
540	2.4	2.5		♦				♦						
540	2.5	2.6		♦										
540	2.6	2.7		♦				♦						
540	2.7	2.8		♦		♦		♦						
540	2.8	2.9		♦		♦		♦						
540	2.9	3.0			♦	♦								
540	3.0	3.1			♦	♦		♦						
540	3.1	3.2			♦	♦		♦						
540	3.2	3.3			♦	♦								
540	3.3	3.4			♦	♦		♦						
540	3.4	3.5		♦		♦		♦						
540	3.5	3.6			♦	♦		♦						
540	3.6	3.7				♦		♦						
540	3.7	3.8		♦		♦		♦						
540	3.8	3.9		♦		♦		♦						
540	3.9	4.0		♦		♦								
540	4.0	4.1		♦		♦		♦						
540	4.1	4.2		♦		♦		♦						
540	4.2	4.3		♦		♦		♦						
540	4.3	4.4		♦		♦		♦						
540	4.4	4.5		♦		♦		♦						
540	4.5	4.6		♦		♦		♦						
540	4.6	4.7		♦		♦		♦						
540	4.7	4.8		♦		♦		♦						
540	4.8	4.9		♦		♦		♦						
540	4.9	5.0		♦		♦		♦						
540	5.0	5.1		♦		♦		♦						
540	5.1	5.2		♦		♦								
540	5.2	5.3		♦		♦		♦						
540	5.3	5.4		♦		♦		♦						
540	5.4	5.5		♦		♦		♦						
540	5.5	5.6		♦		♦		♦						
540	5.6	5.7		♦		♦		♦						
540	5.7	5.8		♦		♦		♦						
540	5.8	5.9		♦		♦		♦						
540	5.9	6.0		♦		♦		♦						
540	6.0	6.1		♦		♦		♦						
540	6.1	6.2		♦		♦								
540	6.2	6.3		♦				♦						
540	6.3	6.4		♦				♦						
540	6.4	6.5		♦				♦						
540	6.5	6.6				♦		♦						
540	6.6	6.7												
540	6.7	6.8						♦						
540	6.8	6.9		♦				♦						
	Total Miles		**0.0**	**3.5**	**1.8**	**4.8**	**0.0**	**5.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
571	0.0	0.1		♦				♦	♦					
571	0.1	0.2		♦				♦	♦					

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
571	0.2	0.3		♦				♦	♦					
571	0.3	0.4		♦					♦					
571	0.4	0.5		♦		♦		♦	♦					
571	0.5	0.6		♦		♦		♦	♦					
571	0.6	0.7		♦		♦		♦	♦					
571	0.7	0.8		♦		♦		♦	♦					
571	0.8	0.9		♦		♦			♦					
571	0.9	1.0		♦				♦	♦					
571	1.0	1.1		♦				♦	♦					
571	1.1	1.2			♦	♦			♦					
571	1.2	1.3			♦	♦		♦	♦					
571	1.3	1.4			♦	♦			♦					
571	1.4	1.5			♦	♦		♦	♦					
571	1.5	1.6						♦	♦					
571	1.6	1.7						♦	♦					
571	1.7	1.8						♦	♦					
571	1.8	1.9						♦	♦					
571	1.9	2.0		♦				♦	♦					
571	2.0	2.1		♦				♦	♦					
571	2.1	2.2		♦				♦	♦					
571	2.2	2.3		♦				♦	♦					
571	2.3	2.4		♦				♦	♦					
571	2.4	2.5		♦				♦	♦					
571	2.5	2.6						♦	♦					
571	2.6	2.7						♦	♦					
571	2.7	2.8						♦	♦					
571	2.8	2.9						♦	♦					
571	2.9	3.0		♦				♦	♦					
571	3.0	3.1		♦				♦	♦					
571	3.1	3.2		♦				♦	♦					
571	3.2	3.3		♦				♦	♦					
571	3.3	3.4		♦				♦	♦					
571	3.4	3.5		♦				♦	♦					
571	3.5	3.6		♦				♦	♦					
571	3.6	3.7						♦	♦					
571	3.7	3.8						♦	♦					
571	3.8	3.9						♦	♦					
571	3.9	4.0						♦	♦					
571	4.0	4.1		♦				♦	♦					
571	4.1	4.2							♦					
571	4.2	4.3						♦	♦					
571	4.3	4.4						♦	♦					
571	4.4	4.5		♦				♦	♦					
571	4.5	4.6		♦					♦					
571	4.6	4.7		♦				♦	♦					
571	4.7	4.8		♦				♦	♦					
571	4.8	4.9		♦					♦					
571	4.9	5.0		♦		♦		♦	♦					
571	5.0	5.1		♦		♦		♦	♦					
571	5.1	5.2		♦		♦		♦	♦					
571	5.2	5.3		♦		♦		♦	♦					
571	5.3	5.4		♦		♦			♦					
571	5.4	5.5		♦		♦		♦	♦					
571	5.5	5.6		♦		♦		♦	♦					
571	5.6	5.7		♦		♦			♦					
571	5.7	5.8		♦		♦		♦	♦					
571	5.8	5.9		♦		♦		♦	♦					
571	5.9	6.0		♦		♦		♦	♦					
571	6.0	6.1		♦		♦		♦	♦					
571	8.1	6.2		♦		♦			♦					
571	6.2	6.3		♦		♦		♦	♦					
571	6.3	6.4		♦		♦		♦	♦					
571	6.4	6.5		♦		♦		♦	♦					
571	6.5	6.6		♦		♦		♦	♦					
571	6.6	6.7		♦		♦		♦	♦					
571	6.7	6.8		♦		♦		♦	♦					
571	6.8	6.9		♦		♦		♦	♦					
571	6.9	7.0		♦		♦			♦					
571	7.0	7.1		♦		♦		♦	♦					
571	7.1	7.2		♦		♦		♦	♦					
571	7.2	7.3		♦		♦		♦	♦					
571	7.3	7.4		♦		♦		♦	♦					
571	7.4	7.5		♦		♦		♦	♦					
571	7.5	7.6		♦		♦		♦	♦					
	Total Miles		0.0	5.7	0.4	3.6	0.0	6.5	7.6	0.0	0.0	0.0	0.0	0.0
572	0.0	0.1		♦		♦		♦						
572	0.1	0.2		♦		♦		♦						
572	0.2	0.3		♦		♦		♦						
572	0.3	0.4						♦						
572	0.4	0.5						♦						

Route Segment	Milepost From	Milepost To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
572	0.5	0.6						♦						
572	0.6	0.7						♦						
572	0.7	0.8						♦						
572	0.8	0.9						♦						
572	0.9	1.0						♦						
572	1.0	1.1												
572	1.1	1.2												
572	1.2	1.3		♦	♦						♦			
572	1.3	1.4		♦	♦						♦			
572	1.4	1.5		♦	♦						♦			
572	1.5	1.6	♦								♦			
572	1.6	1.7	♦								♦			
572	1.7	1.8	♦								♦			
572	1.8	1.9		♦	♦						♦			
572	1.9	2.0		♦	♦			♦			♦			
572	2.0	2.1		♦	♦			♦			♦			
572	2.1	2.2		♦	♦	♦		♦			♦			
572	2.2	2.3		♦	♦	♦		♦			♦			
572	2.3	2.4		♦	♦			♦			♦			
572	2.4	2.5		♦	♦			♦			♦			
572	2.5	2.6		♦	♦			♦			♦			
572	2.6	2.7		♦	♦			♦			♦			
572	2.7	2.8		♦	♦			♦			♦			
572	2.8	2.9		♦	♦			♦			♦			
572	2.9	3.0		♦	♦			♦			♦			
572	3.0	3.1		♦	♦			♦		♦	♦			
572	3.1	3.2	♦	♦	♦			♦		♦	♦			
572	3.2	3.3		♦	♦					♦	♦			
572	3.3	3.4		♦	♦					♦	♦			
572	3.4	3.5		♦	♦					♦	♦			
572	3.5	3.6		♦	♦					♦	♦			
572	3.6	3.7		♦	♦						♦			
572	3.7	3.8		♦	♦						♦			
572	3.8	3.9		♦	♦						♦			
572	3.9	4.0		♦	♦			♦			♦			
	Total Miles		0.4	2.8	2.5	0.5	0.0	2.4	0.0	0.6	2.8	0.0	0.0	0.0
580	0.0	0.1		♦	♦			♦	♦		♦			
580	0.1	0.2		♦	♦			♦	♦		♦			
580	0.2	0.3		♦	♦			♦	♦		♦			
580	0.3	0.4		♦	♦			♦	♦		♦			
580	0.4	0.5		♦	♦			♦	♦		♦			
580	0.5	0.6		♦	♦			♦	♦		♦			
580	0.6	0.7		♦	♦			♦	♦		♦			
580	0.7	0.8		♦	♦			♦	♦		♦			
580	0.8	0.9		♦	♦				♦	♦	♦			
580	0.9	1.0		♦	♦				♦	♦	♦			
580	1.0	1.1	♦						♦	♦	♦			
580	1.1	1.2	♦						♦	♦	♦			
580	1.2	1.3		♦	♦				♦	♦	♦			
580	1.3	1.4		♦	♦				♦	♦	♦			
580	1.4	1.5		♦	♦				♦	♦	♦			
580	1.5	1.6		♦	♦				♦	♦	♦			
580	1.6	1.7		♦	♦				♦		♦			
580	1.7	1.8		♦	♦				♦		♦			
560	1.8	1.9		♦	♦				♦		♦			
580	1.9	2.0		♦	♦				♦		♦			
580	2.0	2.1	♦					♦	♦		♦			
580	2.1	2.2	♦					♦	♦		♦			
580	2.2	2.3	♦					♦	♦		♦			
580	2.3	2.4	♦					♦	♦		♦			
580	2.4	2.5		♦	♦			♦	♦		♦			
580	2.5	2.6		♦	♦			♦	♦		♦			
580	2.6	2.7		♦	♦			♦	♦		♦			
560	2.7	2.8		♦	♦			♦	♦		♦			
580	2.8	2.9		♦	♦				♦		♦			
580	2.9	3.0		♦	♦				♦		♦			
580	3.0	3.1		♦	♦				♦		♦			
580	3.1	3.2	♦						♦		♦			
580	3.2	3.3	♦						♦		♦			
580	3.3	3.4	♦						♦		♦			
580	3.4	3.5		♦	♦				♦		♦			
580	3.5	3.6		♦	♦				♦		♦			
580	3.6	3.7		♦	♦				♦		♦			
580	3.7	3.8		♦	♦				♦		♦			
580	3.8	3.9		♦	♦				♦		♦			
580	3.9	4.0		♦	♦			♦	♦		♦			
580	4.0	4.1		♦	♦			♦	♦		♦			
580	4.1	4.2		♦	♦			♦	♦		♦			
580	4.2	4.3		♦	♦			♦	♦		♦			
580	4.3	4.4		♦	♦			♦	♦		♦			

Route Segment	Milepost From	To	Mitigation Measure* 1	2	3	4	5	6	7	8	9	10	11	12
580	4.4	4.5		♦	♦			♦	♦		♦			
580	4.5	4.6		♦	♦			♦	♦	♦	♦			
580	4.6	4.7		♦	♦			♦	♦	♦	♦			
580	4.7	4.8	♦	♦	♦			♦	♦	♦	♦			
580	4.8	4.9		♦	♦				♦	♦	♦			
580	4.9	5.0		♦	♦				♦	♦	♦			
580	5.0	5.1	♦						♦	♦	♦			
580	5.1	5.2		♦	♦				♦	♦	♦			
580	5.2	5.3	♦						♦	♦	♦			
580	5.3	5.4	♦						♦	♦	♦			
580	5.4	5.5		♦	♦				♦		♦			
	Total Miles		1.3	4.3	4.3	0.0	0.0	2.5	5.5	1.7	5.5	0.0	0.0	0.0
581	0.0	0.1		♦	♦				♦		♦			
581	0.1	0.2		♦	♦				♦		♦			
581	0.2	0.3		♦	♦				♦		♦			
581	0.3	0.4		♦	♦				♦		♦			
581	0.4	0.5		♦	♦				♦		♦			
581	0.5	0.6		♦	♦			♦	♦	♦	♦			
581	0.6	0.7		♦	♦			♦	♦	♦	♦			
581	0.7	0.8		♦	♦			♦	♦	♦	♦			
581	0.8	0.9		♦	♦			♦	♦	♦	♦			
581	0.9	1.0		♦	♦			♦	♦	♦	♦			
581	1.0	1.1		♦	♦			♦	♦		♦			
581	1.1	1.2		♦	♦				♦		♦			
581	1.2	1.3		♦	♦				♦		♦			
581	1.3	1.4		♦	♦				♦		♦			
581	1.4	1.5		♦	♦				♦		♦			
581	1.5	1.6		♦	♦				♦		♦			
581	1.6	1.7		♦	♦				♦		♦			
581	1.7	1.8		♦	♦				♦		♦			
581	1.8	1.9		♦	♦				♦		♦			
581	1.9	2.0		♦	♦				♦		♦			
581	2.0	2.1		♦	♦				♦		♦			
581	2.1	2.2		♦	♦				♦		♦			
581	2.2	2.3	♦					♦	♦		♦			
581	2.3	2.4	♦					♦	♦		♦			
581	2.4	2.5		♦	♦			♦	♦		♦	♦		
581	2.5	2.6		♦	♦				♦		♦	♦		
581	2.6	2.7		♦	♦				♦		♦	♦		
581	2.7	2.8	♦						♦		♦	♦		
581	2.8	2.9		♦	♦				♦		♦			
581	2.9	3.0	♦						♦		♦			
581	3.0	3.1	♦						♦		♦			
581	3.1	3.2	♦	♦	♦				♦		♦			
581	3.2	3.3	♦					♦	♦		♦			
	Total Miles		0.7	2.7	2.7	0.0	0.0	1.0	3.3	0.5	3.3	0.4	0.0	0.0
562	0.0	0.1	♦						♦		♦	♦		
562	0.1	0.2	♦						♦		♦	♦		
	Total Miles		0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.0	0.0
	GRAND TOTAL		47.0	86.0	76.7	52.5	7.8	81.5	16.6	5.5	110.6	17.4	28.4	0.0

APPENDIX E

DATA TABLES SACRAMENTO PASS MITIGATION REROUTE

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Legend for Reading Data Tables

Column 1 indicates the beginning of the milepost for the indicated link

Column 2 indicates the ending of the milepost description for the indicated link

Column 3 indicates the length of each description

Column 4 describes the resource along each length indicated in columns 1-3

Column 5 indicates the potential ground disturbance/access level (refer to pages 2-35 and 2-36 of the DEIS/DPA.

Column 6 indicates the initial impact (i.e., impact before specific mitigation was committed). 1 = No-identifiable Impact; 2 = Low Impact; 3 = Moderate Impact; 4 = High Impact (refer to page 4-2 of the DEIS/DPA for a description of the impact levels).

Column 7 indicates the specific mitigation measure applied to reduce the initial impacts (refer to Table 1-5 of this document).

Column 8 indicates the residual impact (i.e., the impact expected to remain following the application of mitigation measures). 1 = No-identifiable Impact; 2 = Low Impact; 3 = Moderate Impact; 4 = High Impact (refer to page 4-2 of the DEIS/DPA for a description of the impact levels).

TABLE 1
EARTH RESOURCES

Ground Disturbance Impacts to Soils

MILE POST FROM	TO	LENGTH	SOIL RESOURCES	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
0 2	0.3	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
0.3	0 8	0.5	HIGH HAZARD WATER EROSION	LEVEL 2	2	0	2
0 8	0 9	0.1	HIGH HAZARD WATER EROSION	LEVEL 3	3	2.	2
0 9	3 1	2 2	HIGH HAZARD WATER EROSION	LEVEL 2	2	0	2
3 1	4 0	0 8	HIGH HAZARD WATER EROSION	LEVEL 4	4	24.	2
4.0	4 0	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24.	2
4 0	4.2	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
Link 461.							
0 0	0 0	0 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0 0	0 5	0 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
0 5	1.5	1 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
1 5	2 4	1 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
2 4	4 0	1 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
4 0	4 5	0 5	LOW/MDD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
4 5	4 8	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2.	0	2
4 8	4 9	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
4 9	7.0	2 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
7 0	7 4	0 4	HIGH HAZARD WATER EROSION	LEVEL 3	3	2	2
7 4	7.7	0.3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
7 7	7 9	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
7 9	8 0	0 1	HIGH HAZARD WATER EROSION	LEVEL 3	3	2	2
8.0	8 1	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
8 1	8.2	0 1	HIGH HAZARD WATER EROSION	LEVEL 3	3	2.	2
8 2	8 5	0 3	HIGH HAZARD WATER EROSION	LEVEL 4	4	24	2
8 5	8 8	0 4	HIGH HAZARD WATER EROSION	LEVEL 3	3	2	2
8 8	9.4	0 6	HIGH HAZARD WATER EROSION	LEVEL 4	4	24	2
9 4	9 8	0 4	HIGH HAZARD WATER EROSION	LEVEL 3	3	2	2
9 8	9 9	0 1	HIGH HAZARD WATER EROSION	LEVEL 2	2	0	2
9 9	10 5	0.7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
10.5	11 4	0 9	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
Link 463.							
0 0	0 2	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0 2	0 7	0 6	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24.	2
0 7	1 0	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
1 0	1 0	0 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3.	24.	2
1 0	1 1	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
1 1	2 8	1 7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24.	2
2 8	4 5	1 7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
4 5	4 8	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
Link 464.							
0 0	0 1	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0 1	2.5	2 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
2.5	2 5	0 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
2.5	2 8	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2.	0	2
2 8	4 0	1.2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
Link 465.							
0 0	0 1	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0.	2
0 1	0 4	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0 4	0 6	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
0 6	1 3	0 7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2.	0.	2
1 3	1 6	0 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24.	2
1 6	1 8	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
1 8	2 0	0 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2

TABLE 1 - Ground Disturbance Impacts to Soils (Continued)

MILE POST FROM	TO	LENGTH	SOIL RESOURCES	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 466.							
0 0	0 6	0 6	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
Link 467.							
0 0	0 5	0 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0.	2
0 5	1 8	1 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
1 8	2 5	0 7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
2.5	4 2	1 7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
4 2	4 7	0 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2.
4 7	5 6	0 9	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
5 6	6 5	0 9	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
6 5	11 0	4 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
11 0	11 2	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
11 2	11 3	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 1	2	0	2
11 3	11 6	0 4	PRIME FARMLAND	LEVEL 1	2	0	2
11 6	11 8	0.2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
11 8	11 9	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 1	2	0	2
11 9	12 3	0 4	PRIME FARMLAND	LEVEL 1	2	0	2
12 3	12 6	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 1	2	0	2
12 6	13 0	0 4	PRIME FARMLAND	LEVEL 1	2	0	2
13 0	13 6	0 7	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0.	2
Link 468.							
0.0	0 1	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2.	0	2
0 1	1 5	1 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
1 5	2 3	0 9	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
2 3	2 9	0 6	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
Link 469.							
0 0	0.0	0 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
0 0	1 5	1 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
1 5	2 1	0 6	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
2 1	2 5	0 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
Link 471.							
0 0	0 1	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
0 1	0.9	0 8	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0 9	1 4	0 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
1 4	2.4	1 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
2.4	2.7	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
2 7	3.7	1 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
3 7	4 9	1 2	LOW/MOD WIND/WAT EROS HAZ	LEVEL 4	3	24	2
4 9	9 4	4 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
9 4	11 4	2 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
11 4	11 8	0 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0.	2
Link 472.							
0 0	0 0	0 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
0 0	0 3	0 3	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0.3	0 7	0 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0.	2
0 7	0 7	0 1	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0	2
0 7	1 2	0 5	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2
Link 473.							
0 0	0 0	0 0	LOW/MOD WIND/WAT EROS HAZ	LEVEL 3	2	0.	2
0 0	1 4	1 4	LOW/MOD WIND/WAT EROS HAZ	LEVEL 2	2	0	2

TABLE 2
EARTH RESOURCES

Ground Disturbance Impacts to Water Resources

MILE POST FROM	TO	LENGTH	WATER RESOURCES	CONT/GR DIST	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460.								
00	02	02	ALL OTHER AREAS	LEVEL 4	1	0	1.	
02	08	06	ALL OTHER AREAS	LEVEL 2	1	0	1	
08	09	01	INTERMIT STREAM	LEVEL 3	2	6	2.	
09	31	22	ALL OTHER AREAS	LEVEL 2	1	0	1	
31	40	09	ALL OTHER AREAS	LEVEL 4	1	0	1.	
40	42	01	ALL OTHER AREAS	LEVEL 3	1	0	1	
Link 461.								
00	00	00	SHALLOW GROUNDWATER	LEVEL 3	1	0	1.	
00	05	04	SHALLOW GROUNDWATER	LEVEL 2	1	0	1	
05	15	10	SHALLOW GROUNDWATER	LEVEL 3	1	0	1	
15	21	07	SHALLOW GROUNDWATER	LEVEL 2	1	0.	1	
21	24	03	ALL OTHER AREAS	LEVEL 2	1	0	1	
24	40	15	ALL OTHER AREAS	LEVEL 3	1	0.	1	
40	45	05	ALL OTHER AREAS	LEVEL 2	1	0	1	
45	48	03	ALL OTHER AREAS	LEVEL 3	1	0	1	
48	49	02	ALL OTHER AREAS	LEVEL 4	1	0	1	
49	70	20	ALL OTHER AREAS	LEVEL 2	1	0	1	
70	74	04	ALL OTHER AREAS	LEVEL 3	1	0	1	
74	77	03	ALL OTHER AREAS	LEVEL 2	1	0	1	
77	82	05	ALL OTHER AREAS	LEVEL 3	1	0	1	
82	85	03	ALL OTHER AREAS	LEVEL 4	1	0	1	
85	88	04	ALL OTHER AREAS	LEVEL 3	1	0	1	
88	94	06	ALL OTHER AREAS	LEVEL 4	1	0	1	
94	98	04	ALL OTHER AREAS	LEVEL 3	1	0	1	
98	105	08	ALL OTHER AREAS	LEVEL 2	1	0	1	
105	114	09	ALL OTHER AREAS	LEVEL 3	1	0	1	
Link 463.								
00	02	02	ALL OTHER AREAS	LEVEL 3	1	0	1	
02	07	06	ALL OTHER AREAS	LEVEL 4	1	0	1	
07	10	03	ALL OTHER AREAS	LEVEL 2	1	0	1	
10	10	00	ALL OTHER AREAS	LEVEL 4	1	0	1	
10	11	01	ALL OTHER AREAS	LEVEL 2	1	0	1	
11	28	17	ALL OTHER AREAS	LEVEL 4	1	0	1	
28	29	01	ALL OTHER AREAS	LEVEL 3	1	0	1	
29	30	00	INTERMIT STREAM	LEVEL 3	2	6	2	
30	42	13	ALL OTHER AREAS	LEVEL 3	1	0	1	
42	43	01	INTERMIT STREAM	LEVEL 3	2	6	2	
43	45	02	ALL OTHER AREAS	LEVEL 3	1	0	1	
45	48	03	ALL OTHER AREAS	LEVEL 4	1	0	1	
Link 464.								
00	01	01	ALL OTHER AREAS	LEVEL 3	1	0	1	
01	25	24	ALL OTHER AREAS	LEVEL 4	1	0	1	
25	25	0.0	ALL OTHER AREAS	LEVEL 2	1	0	1	
25	28	0.2	PERENNIAL STREAM	LEVEL 3	4	21	2	WEAVER CREEK
28	40	12	INTERMIT STREAM	LEVEL 4	3	6	2	
Link 465.								
00	01	0.1	ALL OTHER AREAS	LEVEL 2	1	0	1	
01	03	02	ALL OTHER AREAS	LEVEL 3	1	0	1	
03	04	01	PERENNIAL STREAM	LEVEL 3	4	21	2	WEAVER CREEK
04	06	02	INTERMIT STREAM	LEVEL 4	3	6	2	
06	07	01	INTERMIT STREAM	LEVEL 3	2	6	2	
07	13	06	ALL OTHER AREAS	LEVEL 3	1	0	1	
13	16	04	ALL OTHER AREAS	LEVEL 4	1	0	1	
16	18	02	ALL OTHER AREAS	LEVEL 3	1	0	1	
18	20	02	ALL OTHER AREAS	LEVEL 4	1	0	1	

TABLE 2 - Ground Disturbance Impacts to Water Resources (Continued)

MILE POST FROM	TO	LENGTH	WATER RESOURCES	CONT/GR DIST	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 466.								
0 0	0 6	0 6	ALL OTHER AREAS	LEVEL 2	1	0	1	
Link 467.								
0 0	0 5	0 5	ALL OTHER AREAS	LEVEL 2	1	0	1	
0 5	0 6	0 0	PERENNIAL STREAM	LEVEL 3	4	21	2	WEAVER CREEK
0.6	1 8	1.3	ALL OTHER AREAS	LEVEL 3	1	0	1	
1.8	2 5	0 7	ALL OTHER AREAS	LEVEL 2	1	0	1	
2 5	3 1	0.6	ALL OTHER AREAS	LEVEL 3	1	0	1	
3 1	3 1	0 1	INTERMIT STREAM	LEVEL 3	2	6.	2	
3 1	4 2	1 1	ALL OTHER AREAS	LEVEL 3	1	0	1	
4 2	4 7	0 5	ALL OTHER AREAS	LEVEL 4	1	0.	1	
4 7	5 1	0 3	ALL OTHER AREAS	LEVEL 2	1.	0	1	
5 1	5 2	0 1	PERENNIAL STREAM	LEVEL 2	4	20	2.	SILVER CREEK
5 2	5.6	0 5	ALL OTHER AREAS	LEVEL 2	1	0.	1	
5 6	6 5	0 9	ALL OTHER AREAS	LEVEL 3	1	0	1	
6.5	9 7	3 2	INTERMIT STREAM	LEVEL 2	3	6	2	
9 7	1 1 0	1 4	ALL OTHER AREAS	LEVEL 2	1	0	1	
1 1 0	1 1 2	0 1	ALL OTHER AREAS	LEVEL 3	1	0	1	
1 1 2	1 1 6	0 5	ALL OTHER AREAS	LEVEL 1	1	0	1	
1 1 6	1 1 8	0 2	ALL OTHER AREAS	LEVEL 2	1	0	1	
1 1 8	1 2 6	0 7	ALL OTHER AREAS	LEVEL 1	1	0	1	
1 2 6	1 3 0	0 4	SHALLOW GROUNDWATER	LEVEL 1	1	0	1	
1 3 0	1 3 6	0 7	SHALLOW GROUNDWATER	LEVEL 2	1	0	1	
Link 468.								
0 0	0 1	0 1	ALL OTHER AREAS	LEVEL 2	1	0	1	
0 1	0 1	0 0	ALL OTHER AREAS	LEVEL 3	1	0	1	
0 1	0 2	0 1	INTERMIT STREAM	LEVEL 3	2	6	2	
0 2	0 4	0 2	PERENNIAL STREAM	LEVEL 3	4.	21	2	WEAVER CREEK
0 4	1 5	1 0	ALL OTHER AREAS	LEVEL 3	1	0	1	
1 5	1 6	0 2	ALL OTHER AREAS	LEVEL 2	1.	0	1	
1 6	1 8	0 2	INTERMIT STREAM	LEVEL 2	3	6.	2	
1 8	2 3	0 5	ALL OTHER AREAS	LEVEL 2	1	0	1	
2 3	2 9	0 6	ALL OTHER AREAS	LEVEL 4	1	0	1	
Link 469.								
0 0	0 0	0 0	ALL OTHER AREAS	LEVEL 4	1	0	1	
0.0	1 5	1 5	ALL OTHER AREAS	LEVEL 3	1	0	1	
1 5	1 6	0 1	INTERMIT STREAM	LEVEL 2	3	6	2	
1 6	2 1	0.5	ALL OTHER AREAS	LEVEL 2	1	0	1	
2 1	2 5	0 4	INTERMIT STREAM	LEVEL 3	2	6	2	
Link 471.								
0 0	0 1	0 1	ALL OTHER AREAS	LEVEL 4	1	0	1	
0 1	0 9	0 8	ALL OTHER AREAS	LEVEL 3	1	0	1	
0.9	1 1	0.2	ALL OTHER AREAS	LEVEL 2	1	0.	1.	
1 1	1 2	0 1	PERENNIAL STREAM	LEVEL 2	4.	20	2	SILVER CREEK
1 2	1 4	0 2	ALL OTHER AREAS	LEVEL 2	1.	0	1	
1 4	2 4	1 0	ALL OTHER AREAS	LEVEL 3	1	0	1	
2.4	2 5	0 1	ALL OTHER AREAS	LEVEL 2	1	0	1.	
2 5	2.6	0 1	INTERMIT STREAM	LEVEL 2	3	6	2	
2.6	2 7	0 1	ALL OTHER AREAS	LEVEL 2	1	0	1.	
2 7	3 3	0 6	ALL OTHER AREAS	LEVEL 3	1	0	1	
3 3	3 7	0 5	INTERMIT STREAM	LEVEL 3	2	6	2	
3 7	4 9	1 2	ALL OTHER AREAS	LEVEL 4	1	0	1.	
4 9	9 4	4 5	ALL OTHER AREAS	LEVEL 2	1.	0	1	
9 4	1 1 4	2 0	ALL OTHER AREAS	LEVEL 3	1	0	1	
1 1 4	1 1 8	0 4	SHALLOW GROUNDWATER	LEVEL 2	1	0	1	
Link 472.								
0 0	0 0	0 0	SHALLOW GROUNDWATER	LEVEL 2	1	0	1	
0 0	0 3	0 3	SHALLOW GROUNDWATER	LEVEL 3	1	0	1	
0 3	0.7	0 4	SHALLOW GROUNDWATER	LEVEL 2	1	0	1	
0 7	0 7	0 1	SHALLOW GROUNDWATER	LEVEL 3	1	0.	1.	
0 7	1 2	0 5	SHALLOW GROUNDWATER	LEVEL 2	1	0	1	

TABLE 2 - Ground Disturbance Impacts to Water Resources (Continued)

MILE POST FROM	TO	LENGTH	WATER RESOURCES	CONT/GR DIST	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 473.								
0 0	0 0	0 0	SHALLOW GROUNDWATER LEVEL 3		1	0	1	
0 0	1 4	1 4	SHALLOW GROUNDWATER LEVEL 2		1	0	1	

TABLE 3
BIOLOGICAL RESOURCES

Ground Disturbance Impacts to Sensitive Animal Species

MILE POST FROM	TO	LENGTH	WILDLIFE RESOURCES	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	FERRUGINOUS HAWK HABITAT	LEVEL 4	3	4	2.
0 2	0 8	0 6	FERRUGINOUS HAWK HABITAT	LEVEL 2	2	0	2
0 8	0 9	0 1	FERRUGINOUS HAWK HABITAT	LEVEL 3	3.	2.	2
0 9	1 1	0 2	FERRUGINOUS HAWK HABITAT	LEVEL 2	2	0	2
1 1	1 1	0 0	BACKGROUND	LEVEL 2	1.	0	1
1 1	1 2	0 1	FERRUGINOUS HAWK HABITAT	LEVEL 2	2	0	2
1 2	3 1	1 9	BACKGROUND	LEVEL 2	1	0	1
3 1	4 0	0 9	BACKGROUND	LEVEL 4	1	0	1
4 0	4 2	0 1	BACKGROUND	LEVEL 3	1	0	1
Link 461.							
0 0	0 0	0 0	PRONGHORN ANTELOPE	LEVEL 3	3	2.	2
0 0	0 5	0 4	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
0 5	1 5	1 0	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
1 5	2 4	1 0	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
2 4	4 0	1 5	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
4 0	4 5	0 5	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
4 5	4 8	0 3	43,3 COMBINATION	LEVEL 3	3	22	2
4 8	4 9	0 2	43,3 COMBINATION	LEVEL 4	3	28.	2
4 9	7 0	2 0	43,3 COMBINATION	LEVEL 2	2	0	2
7 0	7 4	0 4	43,3 COMBINATION	LEVEL 3	3.	22.	2.
7 4	7 7	0 3	43,3 COMBINATION	LEVEL 2	2	0	2
7 7	7 8	0 1	43,3 COMBINATION	LEVEL 3	3.	22	2
7 8	8 2	0 4	43,95 COMBINATION	LEVEL 3	4	22	3.
8 2	8 5	0 3	43,95 COMBINATION	LEVEL 4	4	28	3
8 5	8 8	0 3	43,95 COMBINATION	LEVEL 3	4	22	3
8 8	8 9	0 1	43,95 COMBINATION	LEVEL 4	4	28	3
8 9	9 4	0 5	CRITICAL PRONGHORN HABITAT	LEVEL 4	4	4	3
9 4	9 8	0 4	CRITICAL PRONGHORN HABITAT	LEVEL 3	4	2	3
9 8	10 5	0 8	95,29 COMBINATION	LEVEL 2	3	20	2
10 5	11 4	0 9	CRITICAL PRONGHORN HABITAT	LEVEL 3	4	2	3
Link 463.							
0 0	0 2	0 2	BACKGROUND	LEVEL 3	1	0	1
0 2	0 7	0 6	BACKGROUND	LEVEL 4	1	0	1
0 7	1 0	0 3	BACKGROUND	LEVEL 2	1	0	1
1 0	1 0	0 0	BACKGROUND	LEVEL 4	1	0	1
1 0	1 1	0 1	BACKGROUND	LEVEL 2	1	0	1
1 1	2 8	1 7	BACKGROUND	LEVEL 4	1	0.	1
2 8	3 0	0 2	BACKGROUND	LEVEL 3	1	0	1.
3 0	4 5	1 5	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
4 5	4 8	0 3	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
Link 464.							
0 0	0 1	0 1	BACKGROUND	LEVEL 3	1	0	1
0 1	2 5	2 4	BACKGROUND	LEVEL 4	1	0	1
2 5	2 5	0 0	BACKGROUND	LEVEL 2	1	0	1
2 5	2 8	0 2	BACKGROUND	LEVEL 3	1	0	1
2 8	4 0	1 2	BACKGROUND	LEVEL 4	1	0.	1
Link 465.							
0 0	0 1	0 1	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
0 1	0 4	0 3	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
0 4	0 6	0 2	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
0 6	1 3	0 7	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
1 3	1 6	0 4	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
1 6	1 8	0 2	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
1 8	2 0	0 2	PRONGHORN ANTELOPE	LEVEL 4	3	4	2

TABLE 3 - Ground Disturbance Impacts to Sensitive Animal Species (Continued)

MILE POST FROM	TO	LENGTH	WILDLIFE RESOURCES	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 466.							
0 0	0 6	0 6	PRONGHORN ANTELOPE	LEVEL 2	2.	0	2
Link 467.							
0 0	0 5	0 5	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
0 5	1 8	1 3	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
1 8	2 5	0.7	PRONGHORN ANTELOPE	LEVEL 2	2.	0	2
2.5	4 2	1 7	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
4 2	4 7	0.5	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
4 7	5 6	0 9	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
5 6	6 5	0 9	ANTELOPE KIDDING GROUND	LEVEL 3	4	22	3
6.5	11 0	4 5	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
11 0	11 2	0 1	CRITICAL PRONGHORN HABITAT	LEVEL 3	4	2	3
11 2	11 6	0 5	CRITICAL PRONGHORN HABITAT	LEVEL 1	2	0	2
11 6	11 8	0 2	CRITICAL PRONGHORN HABITAT	LEVEL 2	3	1	2
11 8	13 0	1 1	CRITICAL PRONGHORN HABITAT	LEVEL 1	2	0	2
13 0	13 6	0 7	CRITICAL PRONGHORN HABITAT	LEVEL 2	3	1	2
Link 468.							
0 0	0 1	0.1	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
0 1	1 5	1.4	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
1 5	2.3	0 9	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
2 3	2 9	0.6	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
Link 469.							
0 0	0 0	0 0	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
0 0	1 5	1 5	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
1 5	2 1	0 6	PRONGHORN ANTELOPE	LEVEL 2	2.	0	2
2 1	2.5	0 4	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
Link 471.							
0 0	0 1	0.1	PRONGHORN ANTELOPE	LEVEL 4	3	4	2
0 1	0 9	0 8	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
0 9	1 4	0.5	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
1 4	2 4	1 0	ANTELOPE KIDDING GROUND	LEVEL 3	4.	22	3
2 4	2 7	0 3	ANTELOPE KIDDING GROUND	LEVEL 2	4	11	2
2 7	3 7	1 0	ANTELOPE KIDDING GROUND	LEVEL 3	4.	22	3
3 7	4 9	1 2	ANTELOPE KIDDING GROUND	LEVEL 4	4	28	2
4 9	6 6	1 7	ANTELOPE KIDDING GROUND	LEVEL 2	4	11	2
6 6	9.4	2 8	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
9 4	11 4	2 0	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
11 4	11 8	0 4	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
Link 472.							
0 0	0 0	0 0	CRITICAL PRONGHORN HABITAT	LEVEL 2	3	1	2
0,0	0 3	0 3	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
0 3	0 7	0.4	PRONGHORN ANTELOPE	LEVEL 2	2	0	2.
0 7	0 7	0.1	PRONGHORN ANTELOPE	LEVEL 3	3	2	2
0 7	1 2	0 5	PRONGHORN ANTELOPE	LEVEL 2	2	0	2
Link 473.							
0,0	0 0	0 0	CRITICAL PRONGHORN HABITAT	LEVEL 3	4	2	3
0 0	1 4	1 4	PRONGHORN ANTELOPE	LEVEL 2	2	0	2

TABLE 4
BIOLOGICAL RESOURCES

Public Access Impacts to Sensitive Animal Species

MILE POST FROM	TO	LENGTH	WILDLIFE RESOURCES	CHANGE IN ACCESS	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	FERRUGINOUS HAWK HABITAT	0-20 % 3-5	2	0	2
0 2	1 1	0 9	FERRUGINOUS HAWK HABITAT	0-20 % 2	2	0	2
1 1	1 1	0 0	BACKGROUND	0-20 % 2	1	0	1.
1 1	1 2	0 1	FERRUGINOUS HAWK HABITAT	0-20 % 2	2	0.	2
1 2	3 1	1 9	BACKGROUND	0-20 % 2	1	0	1
3 1	4 2	1 1	BACKGROUND	0-20 % 3-5	1	0	1
Link 461.							
0 0	0 0	0 0	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
0 0	0 5	0.4	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
0 5	1 5	1 0	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
1 5	2 4	1 0	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
2 4	2.9	0 4	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
2 9	3 6	0 7	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
3 6	3 7	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
3 7	4 0	0 3	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
4 0	4 2	0 3	PRONGHORN ANTELOPE	0-20 % 2	2	0.	2
4 2	4 3	0 1	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
4 3	4 9	0 6	43,3 COMBINATION	0-20 % 3-5	2	0	2
4 9	7 0	2 0	43,3 COMBINATION	0-20 % 2	2	0	2
7 0	7 4	0 4	43,3 COMBINATION	0-20 % 3-5	2	0	2
7 4	7 7	0 3	43,3 COMBINATION	0-20 % 2	2	0.	2
7 7	7 8	0 1	43,3 COMBINATION	0-20 % 3-5	2	0	2
7 8	8.6	0 7	43,95 COMBINATION	0-20 % 3-5	2	0	2
8 6	8 7	0 1	43,95 COMBINATION	40-50 % 3-5	4	4	3
8 7	8 9	0 3	43,95 COMBINATION	50 + % 3-5	4	4	3
8 9	9 4	0 5	CRITICAL PRONGHORN HABITAT	50 + % 3-5	4	4	3
9.4	9 5	0 1	CRITICAL PRONGHORN HABITAT	20-40 % 3-5	3	2	2
9 5	9 8	0 3	95,29 COMBINATION	0-20 % 3-5	3	2	2
9 8	10 1	0 3	95,29 COMBINATION	0-20 % 2	3	1	2
10.1	10 3	0 1	95,29 COMBINATION	0-20 % 3-5	3	2	2
10 3	10 5	0 3	95,29 COMBINATION	0-20 % 2	3	1	2
10 5	10 8	0.3	CRITICAL PRONGHORN HABITAT	0-20 % 3-5	2	0	2
10 8	10 9	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
10 9	11 4	0.5	PRONGHORN ANTELOPE	50 + % 3-5	3.	4	2
Link 463.							
0.0	0 5	0 5	BACKGROUND	0-20 % 3-5	1	0.	1
0 5	0 7	0 2	BACKGROUND	20-40 % 3-5	1	0	1
0 7	2 3	1 5	BACKGROUND	0-20 % 2	1	0	1
2 3	2 4	0 1	BACKGROUND	20-40 % 3-5	1	0	1
2 4	2 5	0 1	BACKGROUND	50 + % 3-5	1	0	1
2 5	2.6	0.1	BACKGROUND	40-50 % 3-5	1	0	1
2 6	2 9	0 3	BACKGROUND	50 + % 3-5	1	0	1
2 9	2 9	0 1	BACKGROUND	20-40 % 3-5	1	0	1
2 9	3.0	0 0	BACKGROUND	0-20 % 3-5	1	0	1
3 0	3 8	0 8	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
3 8	4 4	0 6	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2.
4 4	4 8	0 4	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
Link 464.							
0 0	2.5	2 5	BACKGROUND	0-20 % 3-5	1	0	1
2 5	2 5	0 0	BACKGROUND	0-20 % 2	1	0	1
2.5	4 0	1 4	BACKGROUND	0-20 % 3-5	1	0	1
Link 465.							
0 0	0 1	0 1	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
0 1	1 2	1 0	PRONGHORN ANTELOPE	0-20 % 3-5	2.	0	2
1 2	1 3	0 1	PRONGHORN ANTELOPE	40-50 % 3-5	3	4	2
1 3	2 0	0 7	PRONGHORN ANTELOPE	50 + % 3-5	3	4.	2

TABLE 4 - Public Access Impacts to Sensitive Animal Species (Continued)

MILE POST FROM	TO	LENGTH	WILDLIFE RESOURCES	CHANGE IN ACCESS	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 466.							
0 0	0 6	0 6	PRONGHORN ANTELOPE	0-20 % 2	2.	0	2
Link 467.							
0 0	0 5	0 5	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
0.5	1 8	1 3	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
1 8	2 5	0 7	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
2 5	3 0	0 5	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
3 0	3.1	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
3 1	4 1	1 0	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
4 1	4 2	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
4 2	4 7	0 5	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
4 7	5 3	0 5	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
5 3	5 3	0 0	PRONGHORN ANTELOPE	0-20 % 3-5	2.	0	2
5 3	5 6	0 4	ANTELOPE KIDOING GROUND	0-20 % 3-5	3	2	2
5 6	5 7	0 1	ANTELOPE KIDOING GROUND	40-50 % 3-5	4.	4	3
5.7	6 0	0 3	ANTELOPE KIDDING GROUND	50 + % 3-5	4	4	3
6.0	6 5	0 5	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
6.5	6 9	0 4	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
6 9	7 5	0 6	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
7 5	8 3	0 9	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
8 3	8 4	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
8 4	9 6	1 1	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
9 6	9 8	0 3	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
9 8	10 1	0 2	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
10 1	10 9	0 8	PRONGHORN ANTELOPE	0-20 % 2	2	0.	2
10 9	11 0	0 1	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
11.0	11 2	0 2	CRITICAL PRONGHORN HABITAT	0-20 % 3-5	2	0	2
11 2	11 6	0.5	CRITICAL PRONGHORN HABITAT	0-20 % 1	2	0	2
11 6	11 8	0 2	CRITICAL PRONGHORN HABITAT	0-20 % 2	2	0	2
11 8	13 0	1 1	CRITICAL PRONGHORN HABITAT	0-20 % 1	2.	0.	2
13 0	13 6	0 7	CRITICAL PRONGHORN HABITAT	0-20 % 2	2	0	2
Link 468.							
0 0	0 1	0 1	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
0 1	1.5	1.4	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
1 5	2.5	1.1	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
2 5	2.6	0 0	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
2.6	2 9	0.4	PRONGHORN ANTELOPE	50 + % 3-5	3.	4	2
Link 469.							
0 0	0 8	0 8	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
0 8	0 9	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
0 9	1 5	0 7	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
1 5	1 9	0 4	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
1 9	2 3	0 4	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
2 3	2.5	0 2	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
Link 471.							
0 0	0.3	0.3	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
0 3	0.4	0 1	PRONGHORN ANTELOPE	40-50 % 3-5	3	4	2.
0.4	0 9	0 6	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2.
0 9	1 4	0 5	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
1 4	1 8	0 4	ANTELOPE KIDDING GROUND	0-20 % 3-5	3.	2	2
1 8	2 0	0 3	ANTELOPE KIDDING GROUND	40-50 % 3-5	4	4	3
2 0	2 1	0 1	ANTELOPE KIDDING GROUND	20-40 % 3-5	3	2	2
2 1	2 4	0 3	ANTELOPE KIDDING GROUND	0-20 % 3-5	3	2	2
2 4	2 7	0 3	ANTELOPE KIDDING GROUND	0-20 % 2	3	1	2
2 7	3 3	0 6	ANTELOPE KIDDING GROUND	0-20 % 3-5	3	2	2
3 3	4 3	1 0	ANTELOPE KIDDING GROUND	50 + % 3-5	4	4	3
4 3	4 4	0 1	ANTELOPE KIDDING GROUND	20-40 % 3-5	3.	2	2
4 4	4 9	0.6	ANTELOPE KIDDING GROUND	0-20 % 3-5	3	2	2
4 9	5 4	0 5	ANTELOPE KIDDING GROUND	0-20 % 2	3	1	2
5 4	5 5	0 1	ANTELOPE KIDDING GROUND	0-20 % 3-5	3	2	2
5 5	5 8	0.3	ANTELOPE KIDDING GROUND	0-20 % 2	3	1	2
5 8	6 4	0.7	ANTELOPE KIDDING GROUND	0-20 % 3-5	3	2	2
6 4	6 6	0 2	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2.
6 6	6 9	0 3	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
6 9	8 3	1 4	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
8.3	8 6	0 3	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
8 6	9.0	0.5	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
9 0	9 1	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2

TABLE 4 - Public Access Impacts to Sensitive Animal Species (Continued)

MILE POST FROM	TO	LENGTH	WILDLIFE RESOURCES	CHANGE IN ACCESS	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
9 1	10 1	0 9	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
10 1	10 2	0 1	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
10 2	10 7	0 5	PRONGHORN ANTELOPE	50 + % 3-5	3	4	2
10 7	11 4	0 7	PRONGHORN ANTELOPE	20-40 % 3-5	2	0	2
11 4	11 8	0 4	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
Link 472.							
0 0	0 0	0 0	CRITICAL PRONGHORN HABITAT	0-20 % 2	2	0	2
0 0	0 3	0 3	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
0 3	0 7	0 4	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
0 7	0 7	0 1	PRONGHORN ANTELOPE	0-20 % 3-5	2	0	2
0 7	1 2	0 5	PRONGHORN ANTELOPE	0-20 % 2	2	0	2
Link 473.							
0 0	0 0	0 0	CRITICAL PRONGHORN HABITAT	0-20 % 3-5	2	0	2
0 0	1 4	1 4	PRONGHORN ANTELOPE	0-20 % 2	2	0	2

TABLE 5
BIOLOGICAL RESOURCES

Ground Disturbance to Sensitive Plant Species

MILE POST FROM	TO	LENGTH	SENSITIVE SPECIES	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
0 2	0 8	0 6	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0 8	0 9	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 9	3 1	2.2	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
3 1	4 0	0.9	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0.	1
4 0	4 2	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
Link 461.							
0 0	0 0	0 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 0	0 5	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0.5	1 5	1 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
1 5	2 4	1 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
2 4	4 0	1 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
4 0	4 5	0 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1.
4 5	4 8	0 3	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
4 8	4 9	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
4 9	7 0	2.0	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
7 0	7 4	0.4	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
7 4	7 7	0 3	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
7 7	8 2	0 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
8 2	8 5	0 3	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
8 5	8 8	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
8 8	9 4	0 6	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
9 4	9 8	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
9 8	10 5	0 8	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
10 5	11 4	0 9	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0.	1
Link 463.							
0 0	0 2	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 2	0 7	0 6	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1.
0 7	1 0	0.3	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
1 0	1 0	0 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
1.0	1 1	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
1.1	2.8	1 7	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
2.8	3 5	0 7	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
3 5	4 5	1 0	CYMOPTERUS BASALTICUS	LEVEL 3	3	21.	2
4 5	4 7	0 2	CYMOPTERUS BASALTICUS	LEVEL 4	4	27	2
4 7	4 8	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
Link 464.							
0 0	0 1	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 1	2 5	2 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
2 5	2 5	0 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
2 5	2.8	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
2 8	4 0	1 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
Link 465.							
0 0	0 1	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0 1	0 4	0 3	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 4	0 6	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
0 6	1 3	0 7	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
1.3	1 6	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
1 6	1 8	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
1 8	2 0	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1.	0	1
Link 466.							
0 0	0 6	0 6	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1

TABLE 5 - Ground Disturbance to Sensitive Plant Species (Continued)

MILE POST FROM	TO	LENGTH	SENSITIVE SPECIES	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 467.							
0 0	0 5	0 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0 5	1 8	1 3	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
1 8	2 5	0 7	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
2 5	4 2	1 7	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1.	0.	1
4.2	4 7	0.5	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1.
4 7	5 6	0 9	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1.
5.6	6 5	0 9	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1.	0	1.
6 5	11 0	4 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
11 0	11 2	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
11 2	11 6	0 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 1	1	0	1.
11 6	11 8	0 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1.
11 8	13 0	1 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 1	1	0	1
13 0	13 6	0 7	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1.
Link 468.							
0 0	0 1	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0 1	1 5	1 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
1 5	2 3	0 9	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
2 3	2 9	0 6	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
Link 469.							
0 0	0 0	0 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
0 0	1 5	1 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
1 5	2 1	0 6	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
2 1	2 5	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
Link 471.							
0 0	0 1	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
0 1	0 9	0 8	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0.	1
0 9	1 4	0 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
1 4	2 4	1 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
2 4	2 7	0.3	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
2 7	3 7	1 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
3 7	4.9	1 2	NO SENSITIVE SPECIES/BACKGR	LEVEL 4	1	0	1
4 9	9 4	4 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
9 4	11 4	2 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
11 4	11 8	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
Link 472.							
0.0	0 0	0 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0 0	0 3	0 3	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 3	0 7	0 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
0 7	0 7	0 1	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 7	1 2	0 5	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1
Link 473.							
0 0	0 0	0 0	NO SENSITIVE SPECIES/BACKGR	LEVEL 3	1	0	1
0 0	1 4	1 4	NO SENSITIVE SPECIES/BACKGR	LEVEL 2	1	0	1

TABLE 6
BIOLOGICAL RESOURCES

Public Access Impacts to Sensitive Plant Species

MILE POST FROM	TO	LENGTH	SENSITIVE SPECIES	CHANGE IN ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	4 2	4 2	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
Link 461.							
0 0	2 9	2 9	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
2 9	3 6	0 7	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
3 6	3 7	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
3 7	8 6	4 9	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
8 6	8 7	0 1	NO SENSITIVE SPECIES/BACKGR	40 - 50 %	1	0	1
8 7	9 4	0 8	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
9 4	9 5	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
9 5	10 8	1 3	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
10.8	10 9	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0.	1
10 9	11 4	0 5	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
Link 463.							
0 0	0 5	0 5	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
0 5	0 6	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1.	0	1
0 6	2 3	1 6	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
2.3	2 4	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
2 4	2 4	0 1	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
2 4	2.5	0 0	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
2.5	2.6	0 1	NO SENSITIVE SPECIES/BACKGR	40 - 50 %	1	0	1
2 6	2.9	0 3	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
2 9	2 9	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
2 9	3 5	0 5	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1.	0	1
3 5	3 8	0 4	CYMOPTERUS BASALTICUS	0 - 20 %	2	0.	2
3 8	4 4	0 6	CYMOPTERUS BASALTICUS	20 - 40 %	2	0	2
4 4	4 8	0.4	CYMOPTERUS BASALTICUS	50 -100 %	3	4	2
Link 464.							
0 0	4 0	4 0	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
Link 465.							
0 0	1 2	1.2	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
1 2	1 3	0 1	NO SENSITIVE SPECIES/BACKGR	40 - 50 %	1	0	1
1 3	2 0	0 7	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
Link 466.							
0 0	0 6	0 6	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
Link 467.							
0 0	3 0	3 0	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
3 0	3 1	0.1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
3 1	4 1	1 0	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
4 1	4 2	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0.	1
4 2	5 6	1 4	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0.	1
5 6	5 7	0 1	NO SENSITIVE SPECIES/BACKGR	40 - 50 %	1	0	1
5 7	6.0	0 3	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
6 0	7 5	1 4	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
7 5	8 3	0 9	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
8 3	8 4	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
8 4	13 6	5.2	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
Link 468.							
0 0	2 5	2 5	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
2 5	2.6	0 0	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
2 6	2.9	0 4	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1

TABLE 6 - Public Access Impacts to Sensitive Plant Species (Continued)

MILE POST FROM	TO	LENGTH	SENSITIVE SPECIES	CHANGE IN ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 469.							
0 0	0 8	0 8	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
0 8	0 9	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
0 9	2 3	1 4	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
2 3	2 5	0 2	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
Link 471.							
0 0	0 3	0 3	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
0 3	0 4	0 1	NO SENSITIVE SPECIES/BACKGR	40 - 50 %	1	0	1
0 4	1 8	1 4	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
1 8	2 0	0 3	NO SENSITIVE SPECIES/BACKGR	40 - 50 %	1	0	1
2 0	2 1	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
2 1	3 3	1 2	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
3 3	4 3	1 0	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
4 3	4 4	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
4 4	9 0	4 7	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
9 0	9 1	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
9 1	10 1	0 9	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
10 1	10 2	0 1	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
10 2	10 7	0 5	NO SENSITIVE SPECIES/BACKGR	50 -100 %	1	0	1
10 7	10 9	0 2	NO SENSITIVE SPECIES/BACKGR	20 - 40 %	1	0	1
10 9	11 8	0 9	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
Link 472.							
0 0	1 2	1 2	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1
Link 473.							
0 0	1 4	1 4	NO SENSITIVE SPECIES/BACKGR	0 - 20 %	1	0	1

TABLE 7
LAND USE RESOURCES

Ground Disturbance Impacts to Parks, Recreation & Preservation Areas

MILE POST FROM	TO	LENGTH	FEATURE	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460.								
0 0	0.2	0 2	BACKGROUND	LEVEL 4	1	0	1	
0 2	0 8	0 6	BACKGROUND	LEVEL 2	1	0	1	
0 8	0 9	0 1	BACKGROUND	LEVEL 3	1	0	1	
0 9	3 1	2 2	BACKGROUND	LEVEL 2	1	0	1	
3 1	4 0	0 9	BACKGROUND	LEVEL 4	1	0	1	
4 0	4 2	0 1	BACKGROUND	LEVEL 3	1	0	1	
Link 461.								
0 0	0 0	0 0	BACKGROUND	LEVEL 3	1	0	1	
0 0	0 5	0 4	BACKGROUND	LEVEL 2	1	0	1	
0 5	1.5	1 0	BACKGROUND	LEVEL 3	1	0	1.	
1 5	2 4	1 0	BACKGROUND	LEVEL 2	1	0	1	
2 4	4.0	1.5	BACKGROUND	LEVEL 3	1	0	1	
4 0	4 5	0 5	BACKGROUND	LEVEL 2	1	0	1	
4 5	4 8	0 3	BACKGROUND	LEVEL 3	1	0	1	
4 8	4 9	0 2	BACKGROUND	LEVEL 4	1	0	1	
4 9	7 0	2.0	BACKGROUND	LEVEL 2	1	0	1	
7 0	7 4	0 4	BACKGROUND	LEVEL 3	1	0.	1	
7 4	7 7	0 3	BACKGROUND	LEVEL 2	1	0	1	
7 7	8 2	0 5	BACKGROUND	LEVEL 3	1	0	1	
8 2	8 5	0 3	BACKGROUND	LEVEL 4	1	0	1	
8 5	8 8	0 4	BACKGROUND	LEVEL 3	1	0	1	
8 8	9 4	0 6	BACKGROUND	LEVEL 4	1	0	1	
9 4	9 8	0.4	BACKGROUND	LEVEL 3	1	0	1	
9 8	10 5	0 8	BACKGROUND	LEVEL 2	1	0	1	
10 5	11 4	0 9	BACKGROUND	LEVEL 3	1	0	1	
Link 463.								
0 0	0 2	0 2	BACKGROUND	LEVEL 3	1	0	1	
0 2	0 7	0 6	BACKGROUND	LEVEL 4	1	0	1	
0 7	1 0	0.3	BACKGROUND	LEVEL 2	1	0	1	
1.0	1 0	0 0	BACKGROUND	LEVEL 4	1	0	1	
1 0	1 1	0 1	BACKGROUND	LEVEL 2	1	0	1	
1 1	2.8	1 7	BACKGROUND	LEVEL 4	1	0	1	
2 8	4 5	1 7	BACKGROUND	LEVEL 3	1	0	1	
4 5	4 8	0.3	BACKGROUND	LEVEL 4	1	0	1	
Link 464.								
0 0	0 1	0 1	BACKGROUND	LEVEL 3	1	0	1	
0 1	1 7	1 6	BACKGROUND	LEVEL 4	1	0	1	
1 7	2 5	0 8	BLM PROPOSED CAMPGRND/PIC	LEVEL 4	4	6	1	SACRAMENTO PASS RECREATION AREA
2.5	2 5	0 0	BLM PROPOSED CAMPGRND/PIC	LEVEL 2	4	6	1	SACRAMENTO PASS RECREATION AREA
2.5	2 8	0 2	BLM PROPOSED CAMPGRND/PIC	LEVEL 3	4	6	1	SACRAMENTO PASS RECREATION AREA
2.8	4 0	1 2	BLM PROPDSED CAMPGRNO/PIC	LEVEL 4	4	6	1	SACRAMENTD PASS RECREATIDN AREA
Link 465.								
0 0	0 1	0 1	BACKGROUND	LEVEL 2	1	0	1	
0 1	0 4	0 3	BACKGROUND	LEVEL 3	1	0	1	
0 4	0 6	0 2	BACKGROUND	LEVEL 4	1	0	1	
0.6	1 3	0 7	BACKGROUND	LEVEL 3	1	0	1	
1 3	1 6	0 4	BACKGROUND	LEVEL 4	1	0	1	
1 6	1 8	0 2	BACKGROUND	LEVEL 3	1	0	1	
1 8	2 0	0 2	BACKGROUND	LEVEL 4	1	0	1	

TABLE 7 - Ground Disturbance Impacts to Parks, Recreation & Preservation Areas (Continued)

MILE POST FROM	TO	LENGTH	FEATURE	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 466.								
0.0	0.6	0.6	BACKGROUND	LEVEL 2	1	0	1	
Link 467.								
0.0	0.5	0.5	BACKGROUND	LEVEL 2	1	0	1	
0.5	1.8	1.3	BACKGROUND	LEVEL 3	1	0	1	
1.8	2.5	0.7	BACKGROUND	LEVEL 2	1	0	1	
2.5	4.2	1.7	BACKGROUND	LEVEL 3	1	0	1	
4.2	4.7	0.5	BACKGROUND	LEVEL 4	1	0	1	
4.7	5.6	0.9	BACKGROUND	LEVEL 2	1	0	1	
5.6	6.5	0.9	BACKGROUND	LEVEL 3	1	0	1	
6.5	11.0	4.5	BACKGROUND	LEVEL 2	1	0	1	
11.0	11.2	0.1	BACKGROUND	LEVEL 3	1	0	1	
11.2	11.6	0.5	BACKGROUND	LEVEL 1	1	0	1	
11.6	11.8	0.2	BACKGROUND	LEVEL 2	1	0	1	
11.8	13.0	1.1	BACKGROUND	LEVEL 1	1	0	1	
13.0	13.6	0.7	BACKGROUND	LEVEL 2	1	0.	1.	
Link 468.								
0.0	0.1	0.1	BACKGROUND	LEVEL 2	1	0.	1.	
0.1	1.5	1.4	BACKGROUND	LEVEL 3	1	0.	1	
1.5	2.3	0.9	BACKGROUND	LEVEL 2	1	0	1	
2.3	2.9	0.6	BACKGROUND	LEVEL 4	1	0.	1	
Link 469.								
0.0	0.0	0.0	BACKGROUND	LEVEL 4	1	0	1	
0.0	1.5	1.5	BACKGROUND	LEVEL 3	1	0	1	
1.5	2.1	0.6	BACKGROUND	LEVEL 2	1	0	1	
2.1	2.5	0.4	BACKGROUND	LEVEL 3	1	0	1	
Link 471.								
0.0	0.1	0.1	BACKGROUND	LEVEL 4	1	0	1	
0.1	0.9	0.8	BACKGROUND	LEVEL 3	1	0	1	
0.9	1.4	0.5	BACKGROUND	LEVEL 2	1	0	1	
1.4	2.4	1.0	BACKGROUND	LEVEL 3	1	0	1	
2.4	2.7	0.3	BACKGROUND	LEVEL 2	1	0	1	
2.7	3.7	1.0	BACKGROUND	LEVEL 3	1	0	1	
3.7	4.9	1.2	BACKGROUND	LEVEL 4	1	0	1	
4.9	9.4	4.5	BACKGROUND	LEVEL 2	1	0	1	
9.4	11.4	2.0	BACKGROUND	LEVEL 3	1	0	1	
11.4	11.8	0.4	BACKGROUND	LEVEL 2	1	0	1	
Link 472.								
0.0	0.0	0.0	BACKGROUND	LEVEL 2	1	0	1	
0.0	0.3	0.3	BACKGROUND	LEVEL 3	1	0	1	
0.3	0.7	0.4	BACKGROUND	LEVEL 2	1	0	1	
0.7	0.7	0.1	BACKGROUND	LEVEL 3	1	0	1	
0.7	1.2	0.5	BACKGROUND	LEVEL 2	1	0	1	
Link 473.								
0.0	0.0	0.0	BACKGROUND	LEVEL 3	1	0	1	
0.0	1.4	1.4	BACKGROUND	LEVEL 2	1	0	1.	

TABLE 8
LAND USE RESOURCES

Existing & Planned Landuse

MILE POST FROM	TO	LENGTH	FEATURE	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460.								
0 0	0.2	0 2	BACKGROUND	LEVEL 4	1	0	1	
0.2	0 8	0.6	BACKGROUND	LEVEL 2	1	0	1	
0 8	0 9	0 1	BACKGROUND	LEVEL 3	1	0	1	
0 9	3 1	2 2	BACKGROUND	LEVEL 2	1	0	1	
3 1	4 0	0 9	BACKGROUND	LEVEL 4	1	0	1.	
4 0	4 2	0 1	BACKGROUND	LEVEL 3	1	0	1	
Link 461.								
0 0	0 0	0 0	230KV TRANSLINE	LEVEL 3	4	6	1.	
0 0	0 5	0 4	230KV TRANS LINE	LEVEL 2	4	6	1	
0 5	1 5	1 0	230KV TRANS LINE	LEVEL 3	4	6	1	
1 5	2 4	1 0	230KV TRANS LINE	LEVEL 2	4	6	1	
2 4	4 0	1 5	230KV TRANS LINE	LEVEL 3	4	6	1	
4 0	4 5	0 5	230KV TRANS LINE	LEVEL 2	4	6	1	
4.5	4 8	0 3	230KV TRANS LINE	LEVEL 3	4	6	1	
4 8	4 9	0 2	230KV TRANS LINE	LEVEL 4	4	6	1	
4 9	7 0	2.0	230KV TRANS LINE	LEVEL 2	4	6	1	
7 0	7 4	0 4	230KV TRANS LINE	LEVEL 3	4	6	1	
7 4	7 7	0 3	230KV TRANS LINE	LEVEL 2	4	6	1	
7 7	7 9	0 2	BACKGROUND	LEVEL 3	1	0	1	
7 9	8 2	0 3	230KV TRANS LINE	LEVEL 3	4	6	1	
8 2	8 5	0 3	230KV TRANS LINE	LEVEL 4	4	6.	1	
8 5	8 8	0 4	230KV TRANS LINE	LEVEL 3	4	6	1.	
8 8	9 4	0 6	BACKGROUND	LEVEL 4	1	0	1	
9 4	9 8	0 4	BACKGROUND	LEVEL 3	1	0	1.	
9 8	10 5	0 8	230KV TRANS LINE	LEVEL 2	4	6	1	
10.5	11.4	0 9	230KV TRANS LINE	LEVEL 3	4.	6	1	
Link 463.								
0 0	0 2	0 2	BACKGROUND	LEVEL 3	1	0	1	
0 2	0 7	0 6	BACKGROUND	LEVEL 4	1	0	1	
0 7	1 0	0 3	BACKGROUND	LEVEL 2	1	0	1	
1 0	1 0	0 0	BACKGROUND	LEVEL 4	1	0	1	
1 0	1 1	0 1	BACKGROUND	LEVEL 2	1	0	1	
1 1	2 8	1 7	BACKGROUND	LEVEL 4	1	0	1	
2 8	4 5	1 7	BACKGROUND	LEVEL 3	1	0	1	
4 5	4 8	0 3	BACKGROUND	LEVEL 4	1	0	1	
Link 464.								
0 0	0 1	0 1	BACKGROUND	LEVEL 3	1.	0	1	
0 1	2 5	2 4	BACKGROUND	LEVEL 4	1	0	1	
2 5	2 5	0 0	BACKGROUNO	LEVEL 2	1.	0.	1.	
2 5	2 8	0.2	BACKGROUNO	LEVEL 3	1	0	1	
2 8	4 0	1 2	BACKGROUND	LEVEL 4	1	0.	1	
Link 465.								
0 0	0 1	0.1	230KV TRANS LINE	LEVEL 2	4	6	1	
0 1	0 4	0 3	BACKGROUND	LEVEL 3	1	0	1	
0.4	0 6	0 2	BACKGROUND	LEVEL 4	1.	0	1	
0 6	1.3	0.7	BACKGROUND	LEVEL 3	1.	0	1	
1 3	1 6	0 4	BACKGROUND	LEVEL 4	1	0	1	
1 6	1.8	0 2	BACKGROUND	LEVEL 3	1	0	1	
1 8	2.0	0 2	BACKGROUND	LEVEL 4	1	0.	1	
Link 466.								
0 0	0 6	0.6	230KV TRANS LINE	LEVEL 2	4	6	1.	

TABLE 8 - Existing & Planned Landuse (Continued)

MILE POST FROM	TO	LENGTH	FEATURE	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 467.								
0 0	0.5	0 5	230KV TRANS LINE	LEVEL 2	4	6.	1	
0 5	1 8	1 3	230KV TRANS LINE	LEVEL 3	4	6	1	
1.8	2 5	0 7	230KV TRANS LINE	LEVEL 2	4	6	1	
2 5	3 1	0 6	230KV TRANS LINE	LEVEL 3	4	6.	1	
3 1	3.1	0 1	BACKGROUND	LEVEL 3	1.	0	1	
3 1	4 2	1 1	230KV TRANS LINE	LEVEL 3	4	6	1	
4 2	4 2	0 0	230KV TRANS LINE	LEVEL 4	4	6	1.	
4 2	4 7	0 5	BACKGROUND	LEVEL 4	1	0	1	
4 7	5 6	0 9	BACKGROUND	LEVEL 2	1	0	1	
5 6	6 5	0 9	BACKGROUNO	LEVEL 3	1.	0	1	
6.5	9 6	3 1	BACKGROUND	LEVEL 2	1	0	1	
9 6	9 8	0 2	230KV TRANS LINE	LEVEL 2	4	6.	1	
9 8	10 1	0 3	BACKGROUND	LEVEL 2	1	0	1	
10 1	11 0	1 0	230KV TRANS LINE	LEVEL 2	4	6	1	
11 0	11 2	0 1	BACKGROUND	LEVEL 3	1	0	1	
11 2	11 3	0 1	BACKGROUND	LEVEL 1	1	0	1	
11 3	11 6	0 3	230KV TRANS LINE	LEVEL 1	4	6	1	
11 6	11 8	0.2	230KV TRANS LINE	LEVEL 2	4	6	1	
11 8	12 2	0 4	230KV TRANS LINE	LEVEL 1	4.	6	1	
12.2	12.5	0 3	BACKGROUND	LEVEL 1	1	0.	1	
12 5	13 0	0.5	230KV TRANS LINE	LEVEL 1	4	6.	1	
13 0	13 6	0 7	230KV TRANS LINE	LEVEL 2	4	6.	1	
Link 468.								
0.0	0 1	0 1	230KV TRANS LINE	LEVEL 2	4	6	1	
0 1	0.2	0 1	BACKGROUND	LEVEL 3	1	0	1	
0 2	0 3	0 1	230KV TRANS LINE	LEVEL 3	4	6	1	
0 3	1 5	1 2	BACKGROUND	LEVEL 3	1	0.	1	
1 5	2 3	0 9	BACKGROUND	LEVEL 2	1	0.	1	
2 3	2 9	0 6	BACKGROUND	LEVEL 4	1	0	1	
Link 469.								
0 0	0 0	0 0	BACKGROUND	LEVEL 4	1	0	1	
0 0	1 5	1 5	BACKGROUND	LEVEL 3	1	0	1	
1 5	2 1	0.6	BACKGROUND	LEVEL 2	1	0	1	
2 1	2 5	0.4	BACKGROUND	LEVEL 3	1	0	1	
Link 471.								
0 0	0 1	0 1	BACKGROUND	LEVEL 4	1.	0	1	
0 1	0 9	0 8	BACKGROUND	LEVEL 3	1	0	1	
0 9	1 4	0.5	BACKGROUND	LEVEL 2	1	0	1	
1 4	2 4	1 0	BACKGROUND	LEVEL 3	1	0.	1	
2 4	2 7	0 3	BACKGROUND	LEVEL 2	1	0	1	
2 7	3.7	1 0	BACKGROUND	LEVEL 3	1	0	1	
3 7	4 9	1 2	BACKGROUND	LEVEL 4	1	0	1	
4 9	9 4	4 5	BACKGROUND	LEVEL 2	1.	0	1	
9 4	11 4	2 0	BACKGROUND	LEVEL 3	1	0.	1	
11 4	11.8	0 4	BACKGROUND	LEVEL 2	1	0	1.	
Link 472.								
0 0	0 0	0 0	230KV TRANS LINE	LEVEL 2	4	6	1.	
0 0	0.3	0 3	230KV TRANS LINE	LEVEL 3	4	6	1	
0 3	0 7	0 4	230KV TRANS LINE	LEVEL 2	4	6	1	
0 7	0 7	0 1	230KV TRANS LINE	LEVEL 3	4	6	1	
0 7	1 2	0 5	230KV TRANS LINE	LEVEL 2	4.	6	1	
Link 473.								
0 0	0 0	0 0	BACKGROUND	LEVEL 3	1	0	1.	
0 0	1 3	1 3	BACKGROUND	LEVEL 2	1	0	1	
1 3	1 4	0 1	230KV TRANS LINE	LEVEL 2	4	6	1	

TABLE 9
LAND USE RESOURCES

Landuse Jurisdiction

MILE FROM	TO	LENGTH	STATE & COUNTY	OWNER/ADMIN.	DISTRICT OFFICE	RESOURCE AREA
Link 460.						
0 0	0 4	0 4	NEVADA - WHITE PINE	BLM	Ely District	Schell
0 4	0.5	0 1	NEVADA - WHITE PINE	PRIVATE	Ely District	Schell
0.5	0 6	0 1	NEVADA - WHITE PINE	BLM	Ely District	Schell
0 6	1 7	1 1	NEVADA - WHITE PINE	PRIVATE	Ely District	Schell
1 7	4 2	2 5	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 461.						
0 0	4 7	4.7	UTAH - MILLARD	BLM	Richfield District	Warm Springs
4 7	5 1	0 4	UTAH - MILLARD	STATE	Richfield District	Warm Springs
5 1	11 4	6 3	UTAH - MILLARD	BLM	Richfield District	Warm Springs
Link 463.						
0 0	4 8	4 8	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 464.						
0 0	4 0	4 0	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 465.						
0.0	2 0	2 0	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 466.						
0 0	0 6	0 6	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 467.						
0.0	0 7	0 7	NEVADA - WHITE PINE	BLM	Ely District	Schell
0 7	1 3	0 6	NEVADA - WHITE PINE	PRIVATE	Ely District	Schell
1 3	4 9	13 6	NEVADA - WHITE PINE	BLM	Ely District	Schell
4 9	5 3	13 6	NEVADA - WHITE PINE	PRIVATE	Ely District	Schell
5 3	11 3	13 6	NEVADA - WHITE PINE	BLM	Ely District	Schell
11 3	11 9	13.6	UTAH - MILLARD	PRIVATE	Warm Springs District	Warm Springs RA
11 9	12 0	13 6	UTAH - MILLARD	BLM	Warm Springs District	Warm Springs RA
12.0	13 2	13.6	UTAH - MILLARD	PRIVATE	Warm Springs District	Warm Springs RA
13 2	13 6	13 6	UTAH - MILLARD	BLM	Warm Springs District	Warm Springs RA
Link 468.						
0 0	2 9	2 9	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 469.						
0.0	2 5	2 5	NEVADA - WHITE PINE	BLM	Ely District	Schell
Link 471.						
0.0	8 7	8 7	NEVADA - WHITE PINE	BLM	Ely District	Schell
8 7	10 6	1 9	UTAH - MILLARD	BLM	Warm Springs	Warm Springs RA
10 6	11 5	0 9	UTAH - MILLARD	STATE	Warm Springs	Warm Springs RA
11.5	11 8	0 3	UTAH - MILLARD	BLM	Warm Springs	Warm Springs RA
Link 472.						
0 0	1 2	1 2	UTAH - MILLARD	BLM	Richfield District	Warm Springs
Link 473.						
0 0	1 4	1 4	UTAH - MILLARD	BLM	Richfield District	Warm Springs

TABLE 10
LAND USE RESOURCES

Impacts to Military Operating Areas

MILE POST FROM	TO	LENGTH	AREA	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0.0	4 2	4 2	BACKGROUND	1	0	1	
Link 461.							
0.0	11 4	11 4	MOA - SEVIER A	2.	0	2	
Link 463.							
0 0	4 8	4 8	BACKGROUND	1	0	1	
Link 464.							
0 0	4 0	4 0	BACKGROUND	1	0	1	
Link 465.							
0 0	2 0	2.0	BACKGROUND	1	0	1	
Link 466.							
0 0	0 6	0 6	BACKGROUND	1	0	1	
Link 467.							
0 0	13 6	13 6	BACKGROUND	1	0	1	
Link 468.							
0.0	2.9	2 9	BACKGROUND	1	0	1	
Link 469.							
0 0	2 5	2.5	BACKGROUND	1	0	1	
Link 471.							
0 0	11 8	11 8	BACKGROUND	1	0.	1	
Link 472.							
0 0	0.3	0.3	BACKGROUND	1	0	1	
0.3	1.2	0 9	MOA - SEVIER A	2	0	2	
Link 473.							
0.0	0 0	0 0	BACKGROUND	1	0	1	
0 0	1 4	1 4	MOA - SEVIER A	2	0	2	

TABLE 11
VISUAL RESOURCES

Visual Impacts to Residences

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ DISTANCE ZONE	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0.2	SELDOM SEEN	MOD / 3-5	1.	0	1
0 2	0 3	0 1	SELDOM SEEN	WEAK / 2	1	0.	1
0 3	0 5	0 2	SELDOM SEEN	MOD / 2	1	0	1
0 5	0 5	0 0	SELDOM SEEN	WEAK / 2	1	0.	1
0 5	0 8	0 3	SELDOM SEEN	MOD / 2	1	0	1.
0 8	0 9	0 1	SELDOM SEEN	WEAK / 2	1.	0	1
0 9	1 1	0 2	SELDOM SEEN	MOD / 2	1	0	1
1 1	1 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1.
1 1	1 4	0 3	SELDOM SEEN	MOD / 2	1.	0	1
1 4	1 4	0 0	SELDOM SEEN	WEAK / 2	1.	0	1
1 4	1 7	0.3	SELDOM SEEN	MOD / 2	1	0.	1.
1 7	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1
1 7	2 0	0 3	SELDOM SEEN	MOD / 2	1	0	1
2 0	2.0	0 0	SELDOM SEEN	WEAK / 2	1	0	1
2.0	2 3	0 4	SELDOM SEEN	MOD / 2	1	0	1
2 3	2 5	0 2	BEYOND 3 MILES	MOD / 2	2	0	2
2 5	2 6	0 0	BEYOND 3 MILES	WEAK / 2	2	0.	2
2 6	3 0	0 4	BEYOND 3 MILES	MOD / 2	2	0	2
3 0	3 0	0 0	BEYOND 3 MILES	WEAK / 2	2	0	2
3 0	3 1	0 1	BEYOND 3 MILES	MOD / 2	2	0	2
3 1	3 2	0 1	1 - 3 MILES	MOD / 3-5	3	33	2.
3 2	3 6	0 4	1 - 3 MILES	MOD / 2	3	31	2
3 6	3 8	0 2	BEYOND 3 MILES	MOD / 2	2.	0.	2
3 8	3 9	0 1	1 - 3 MILES	MOD / 2	3	31	2
3 9	4 0	0 1	1 - 3 MILES	MOD / 3-5	3	33	2
4.0	4.2	0 2	BEYOND 3 MILES	MOD / 3-5	2	0	2
Link 461.							
0 0	0.0	0 0	25 MI - 1 MILE	MOD / 3-5	4	33.	3
0 0	0 5	0 4	25 MI - 1 MILE	MOD / 2	4	31.	3
0 5	1 5	1 0	25 MI - 1 MILE	MOD / 3-5	4	33	3
1 5	1 7	0 2	25 MI - 1 MILE	MOD / 2	4.	31	3.
1 7	1 7	0 0	.25 MI - 1 MILE	WEAK / 2	3.	31	2
1 7	2 0	0 4	25 MI - 1 MILE	MOD / 2	4	31.	3
2 0	2 1	0 0	25 MI - 1 MILE	WEAK / 2	3	31	2
2 1	2.3	0 3	.25 MI - 1 MILE	MOD / 2	4	31	3
2 3	2 4	0 1	1 - 3 MILES	MOD / 2	3	31	2
2 4	4.0	1 5	1 - 3 MILES	MOD / 3-5	3	33	2
4 0	4.2	0 3	1 - 3 MILES	MOD / 2	3.	31	2
4.2	4 5	0 3	1 - 3 MILES	WEAK / 2	2	0.	2
4 5	4 9	0 4	1 - 3 MILES	MOD / 3-5	3	33	2
4 9	5.1	0.2	BEYOND 3 MILES	MOD / 2	2	0	2
5.1	5.2	0.2	BEYOND 3 MILES	WEAK / 2	2	0	2
5 2	5 6	0 3	BEYOND 3 MILES	MOD / 2	2.	0.	2
5 6	6 3	0 7	BEYOND 3 MILES	WEAK / 2	2	0	2
6.3	6 5	0 2	SELDOM SEEN	WEAK / 2	1	0.	1.
6.5	6.6	0 2	SELDOM SEEN	MOD / 2	1	0	1
6 6	7 0	0 3	SELDOM SEEN	WEAK / 2	1	0	1
7 0	7 1	0 1	SELDOM SEEN	MOD / 3-5	1	0	1
7 1	7.4	0 3	SELDOM SEEN	WEAK / 2	1	0	1
7 4	7.7	0 3	SELDOM SEEN	MOD / 2	1	0.	1
7 7	9 8	2 1	SELDOM SEEN	MOD / 3-5	1	0	1
9 8	10 1	0 3	SELDOM SEEN	MOD / 2	1	0	1
10 1	10 3	0 2	SELDOM SEEN	WEAK / 2	1	0	1
10 3	10 5	0 3	SELDOM SEEN	MOD / 2	1	0	1
10.5	11 4	0 9	SELDOM SEEN	MOD / 3-5	1.	0.	1
Link 463.							
0 0	0.3	0.3	BEYOND 3 MILES	MOD / 3-5	2	0	2
0 3	0 7	0 4	BEYOND 3 MILES	WEAK / 3-5	2	0	2
0 7	1.1	0 4	BEYOND 3 MILES	MOD / 2	2	0	2.
1 1	2.2	1.1	BEYOND 3 MILES	STRONG/ 3-5	2	0.	2
2 2	2 6	0 4	1 - 3 MILES	STRONG/ 3-5	3	33	2.

TABLE 11 - Visual Impacts to Residences (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ DISTANCE ZONE	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
26	27	01	BEYOND 3 MILES	STRONG/ 3-5	2	0	2
27	29	03	1 - 3 MILES	STRONG/ 3-5	3	33	2
29	44	15	1 - 3 MILES	MOD / 3-5	3	33	2
44	48	04	BEYOND 3 MILES	STRONG/ 3-5	2	0	2
Link 464.							
00	25	2.5	BEYOND 3 MILES	MOD / 3-5	2	0.	2
25	25	00	1 - 3 MILES	WEAK / 2	2	0	2
25	28	03	1 - 3 MILES	MOD / 3-5	3	33	2
28	40	11	1 - 3 MILES	MOD / 2	3	31.	2
Link 465.							
00	01	01	1 - 3 MILES	MOD / 2	3	31	2
01	02	01	1 - 3 MILES	MOD / 3-5	3	33	2
02	04	02	SELDOM SEEN	MOD / 3-5	1	0	1
04	05	01	SELDOM SEEN	STRONG/ 3-5	1	0	1
05	12	07	1 - 3 MILES	STRONG/ 3-5	3	33	2
12	12	00	1 - 3 MILES	MOD / 3-5	3	33	2
12	20	08	1 - 3 MILES	STRONG/ 3-5	3	33	2
Link 466.							
00	06	06	1 - 3 MILES	MOD / 2	3	31	2
Link 467.							
00	05	05	.25 MI - 1 MILE	MOD / 2	4	31	3
05	18	13	.25 MI - 1 MILE	MOD / 3-5	4	33	3
18	19	00	1 - 3 MILES	MOD / 2	3	31	2
19	25	06	1 - 3 MILES	WEAK / 2	2.	0	2
25	47	22	1 - 3 MILES	MOD / 3-5	3.	33	2
47	48	00	0 - .25 MI	WEAK / 2	4	32	4
48	51	03	0 - .25 MI	MOD / 2	4	32	4
51	56	06	.25 MI - 1 MILE	MOD / 2	4	31	3
56	65	09	.25 MI - 1 MILE	MOD / 3-5	4	33	3
65	68	03	1 - 3 MILES	MOD / 2	3	31	2
68	68	00	1 - 3 MILES	WEAK / 2	2	0	2
68	97	29	1 - 3 MILES	MOD / 2	3	31	2
97	97	00	1 - 3 MILES	WEAK / 2	2	0	2
97	101	04	1 - 3 MILES	MOD / 2	3.	31	2
101	101	00	1 - 3 MILES	WEAK / 2	2	0	2
101	105	04	.25 MI - 1 MILE	MOD / 2	4	31	3
105	105	00	.25 MI - 1 MILE	WEAK / 2	3.	31.	2
105	109	04	.25 MI - 1 MILE	MOD / 2	4	31	3
109	110	02	.25 MI - 1 MILE	WEAK / 2	3	31	2
110	112	01	0 - .25 MI	MOD / 3-5	4	34	4
112	113	01	.25 MI - 1 MILE	MOD / 1	4	9	3
113	114	00	.25 MI - 1 MILE	WEAK / 1	3	9	2
114	116	02	.25 MI - 1 MILE	MOD / 1	4	9	3
116	116	01	0 - .25 MI	MOD / 1	4	35	4
116	118	02	0 - .25 MI	MOD / 2	4	32	4
118	122	04	.25 MI - 1 MILE	MOD / 1	4	9	3
122	122	00	.25 MI - 1 MILE	WEAK / 1	3	9	2
122	127	04	.25 MI - 1 MILE	MOD / 1	4	9	3
127	130	03	1 - 3 MILES	MOD / 1	3	9	2
130	136	07	1 - 3 MILES	MOD / 2	3	31	2
Link 468.							
00	01	01	.25 MI - 1 MILE	MOD / 2	4	31	3
01	08	08	.25 MI - 1 MILE	MOD / 3-5	4	33	3
08	11	03	1 - 3 MILES	MOD / 3-5	3	33	2
11	12	02	1 - 3 MILES	STRONG/ 3-5	3	33	2
12	13	00	1 - 3 MILES	MOD / 3-5	3	33	2
13	15	02	1 - 3 MILES	STRONG/ 3-5	3	33	2
15	15	00	1 - 3 MILES	WEAK / 2	2	0	2
15	16	02	1 - 3 MILES	MOD / 2	3	31	2
16	17	00	1 - 3 MILES	WEAK / 2	2	0	2
17	18	01	1 - 3 MILES	MOD / 2	3	31	2
18	18	00	1 - 3 MILES	WEAK / 2	2	0	2
18	20	02	1 - 3 MILES	MOD / 2	3	31	2
20	20	00	1 - 3 MILES	WEAK / 2	2	0	2
20	24	04	1 - 3 MILES	STRONG/ 3-5	3	33	2
24	29	06	BEYOND 3 MILES	STRONG/ 3-5	2	0	2

TABLE 11 - Visual Impacts to Residences (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ DISTANCE ZONE	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 469.							
0 0	0.6	0.6	1 - 3 MILES	STRONG/ 3-5	3	33	2
0.6	1 5	0 9	1 - 3 MILES	MOD / 3-5	3	33	2
1.5	1 7	0 2	SELDOM SEEN	MOD / 2	1	0	1
1 7	2 5	0 7	BEYOND 3 MILES	MOD / 2	2	0	2
Link 471.							
0 0	0.9	0 9	BEYOND 3 MILES	STRONG/ 3-5	2	0	2
0 9	1.7	0 7	SELDOM SEEN	MOD / 2	1	0	1
1 7	2 4	0 7	1 - 3 MILES	MOD / 3-5	3	33	2
2 4	3.3	0 9	1 - 3 MILES	MOD / 2	3	31	2
3 3	4 9	1 6	1 - 3 MILES	STRONG/ 3-5	3	33	2
4 9	5 6	0 7	1 - 3 MILES	MOD / 2	3	31	2
5.6	8.3	2 7	BEYOND 3 MILES	MOD / 2	2	0	2
8.3	9 4	1 1	1 - 3 MILES	MOD / 2	3	31	2
9 4	9 5	0 1	1 - 3 MILES	STRONG/ 3-5	3.	33	2
9 5	11 4	1 9	1 - 3 MILES	MOD / 3-5	3	33	2
1 4	11 7	0 3	1 - 3 MILES	MOD / 2	3	31	2
1 7	11 8	0 1	1 - 3 MILES	WEAK / 2	2	0	2
Link 472.							
0 0	0 0	0.0	1 - 3 MILES	MOD / 2	3.	31	2
0 0	0 3	0 3	1 - 3 MILES	MOD / 3-5	3	33	2
0 3	0 3	0 0	.25 MI - 1 MILE	WEAK / 2	3	31	2
0 3	0 7	0 4	.25 MI - 1 MILE	MOD / 2	4.	31.	3.
0 7	0 7	0 1	.25 MI - 1 MILE	MOD / 3-5	4	33	3
0 7	0 8	0 0	.25 MI - 1 MILE	WEAK / 2	3	31.	2
0 8	1 2	0 4	.25 MI - 1 MILE	MOD / 2	4	31.	3
Link 473.							
0 0	0 0	0 0	1 - 3 MILES	STRONG/ 3-5	3	33	2
0 0	0 1	0 1	.25 MI - 1 MILE	MOD / 2	4	31	3
0 1	0 8	0 7	.25 MI - 1 MILE	MOD / 3-5	4	33	3
0 8	1 0	0.2	0 - .25 MI	MOD / 3-5	4	34	4
1 0	1 1	0 1	0 - .25 MI	MOD / 2	4	32.	4
1 1	1 1	0 0	.25 MI - 1 MILE	WEAK / 2	3	31.	2
1 1	1 2	0.1	.25 MI - 1 MILE	MOD / 2	4	31	3
1 2	1 3	0 0	.25 MI - 1 MILE	WEAK / 2	3.	31.	2
1 3	1 3	0 1	.25 MI - 1 MILE	MOD / 2	4	31	3
1 3	1 4	0 1	.25 MI - 1 MILE	MOD / 3-5	4	33	3

TABLE 12
VISUAL RESOURCES

Visual Impacts to Recreation Viewsheds (High Sensitivity)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460.								
0 0	0 2	0 2	BEYOND 3 MILES	MOD / 3-5	2	0	2	Osceola Geologic Area
0 2	0 3	0 1	BEYOND 3 MILES	WEAK / 2	2	0	2	Osceola Geologic Area
0.3	0 5	0 2	1 - 3 MILES	MOD / 2	3	31	2.	Osceola Geologic Area
0 5	0 5	0 0	1 - 3 MILES	WEAK / 2	2	0	2	Osceola Geologic Area
0.5	0.8	0 3	1 - 3 MILES	MOD / 2	3	31.	2	Osceola Geologic Area
0 8	0 9	0 1	SELDOM SEEN	WEAK / 2	1	0	1	
0 9	1 1	0 2	SELDOM SEEN	MOD / 2	1	0	1	
1 1	1 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 1	1 4	0 3	SELDOM SEEN	MOD / 2	1	0	1	
1 4	1.4	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 4	1 7	0 3	SELDOM SEEN	MOD / 2	1	0	1	
1 7	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 7	2.0	0 3	SELDOM SEEN	MOD / 2	1	0	1	
2.0	2 0	0 0	SELDOM SEEN	WEAK / 2	1.	0	1	
2.0	2.3	0 3	SELDOM SEEN	MOD / 2	1	0	1	
2 3	2 5	0 3	BEYOND 3 MILES	MOD / 2	2	0.	2	Proposed GBNP Interpretive Site
2.5	2 6	0 0	BEYOND 3 MILES	WEAK / 2	2	0	2.	Proposed GBNP Interpretive Site
2 6	2.6	0 1	BEYOND 3 MILES	MOD / 2	2	0.	2	Proposed GBNP Interpretive Site
2.6	3 0	0 3	1 - 3 MILES	MOD / 2	3	31	2	Great Basin National Park
3.0	3 0	0 0	1 - 3 MILES	WEAK / 2	2	0	2	Great Basin National Park
3 0	3 1	0 1	1 - 3 MILES	MOD / 2	3.	31	2	Great Basin National Park
3.1	3 2	0 1	1 - 3 MILES	MOD / 3-5	3	33	2	Great Basin National Park
3 2	3 9	0 7	1 - 3 MILES	MOD / 2	3	31	2.	Great Basin National Park
3 9	4 2	0 3	1 - 3 MILES	MOD / 3-5	3.	33	2	Great Basin National Park
Link 461.								
0 0	0 0	0 0	SELDOM SEEN	MOD / 3-5	1	0	1	
0 0	0.5	0 4	SELDOM SEEN	MOD / 2	1.	0	1	
0.5	1 5	1 0	SELDOM SEEN	MOD / 3-5	1	0	1	
1 5	1.7	0.2	SELDOM SEEN	MOD / 2	1	0	1	
1 7	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 7	2 0	0 4	SELDOM SEEN	MOD / 2	1	0	1	
2 0	2 1	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
2 1	2.4	0 4	SELDOM SEEN	MOD / 2	1.	0	1	
2 4	4 0	1 5	SELDOM SEEN	MOD / 3-5	1	0	1	
4 0	4 2	0.3	SELDOM SEEN	MOD / 2	1	0	1	
4 2	4.5	0 3	SELDOM SEEN	WEAK / 2	1	0	1	
4.5	4 9	0 4	SELDOM SEEN	MOD / 3-5	1	0	1	
4 9	5 1	0 2	SELDOM SEEN	MOD / 2	1	0	1	
5 1	5 2	0 2	SELDOM SEEN	WEAK / 2	1	0	1.	
5 2	5 6	0 3	SELDOM SEEN	MOD / 2	1	0	1	
5.6	6.5	0 9	SELDOM SEEN	WEAK / 2	1.	0	1	
6.5	6.6	0.2	SELDOM SEEN	MOD / 2	1	0	1	
6.6	7 0	0 3	SELDOM SEEN	WEAK / 2	1	0	1	
7 0	7 1	0.1	SELDOM SEEN	MOD / 3-5	1	0	1	
7 1	7 4	0.3	SELDOM SEEN	WEAK / 2	1	0	1	
7 4	7 7	0.3	SELDOM SEEN	MOO / 2	1	0	1	
7 7	9 8	2 1	SELDOM SEEN	MOD / 3-5	1	0	1	
9 8	10.1	0 3	SELDOM SEEN	MOD / 2	1	0	1	
10.1	10 3	0.2	SELDOM SEEN	WEAK / 2	1	0	1	
10.3	10 5	0 3	SELDOM SEEN	MOD / 2	1	0	1	
10 5	11 4	0 9	SELDOM SEEN	MOD / 3-5	1	0	1	
Link 463.								
0.0	0.3	0 3	1 - 3 MILES	MOD / 3-5	3	33	2	Sacramento Pass Recreation Area
0 3	0 7	0 4	1 - 3 MILES	WEAK / 3-5	2	0	2.	Sacramento Pass Recreation Area
0.7	1 1	0 4	25 MI - 1 MILE	MOD / 2	4	31	3	Sacramento Pass Recreation Area
1 1	2.5	1 4	25 MI - 1 MILE	STRONG/ 3-5	4	34	3	Sacramento Pass Recreation Area
2 5	2 7	0.2	0 - 25 MI	STRONG/ 3-5	4	34	4.	Sacramento Pass Recreation Area
2 7	2 9	0.3	25 MI - 1 MILE	STRONG/ 3-5	4	34	3	Sacramento Pass Recreation Area
2 9	4.1	1 1	25 MI - 1 MILE	MOD / 3-5	4	33	3	Sacramento Pass Recreation Area
4 1	4 4	0 3	1 - 3 MILES	MOD / 3-5	3	33	2	Sacramento Pass Recreation Area
4 4	4 8	0.4	1 - 3 MILES	STRONG/ 3-5	3	33	2.	Sacramento Pass Recreation Area

TABLE 12 - Visual Impacts to Recreation Viewsheds (High Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 464								
0.0	2.5	2.5	1 - 3 MILES	MOD / 3-5	3	33	2	Sacramento Pass Recreation Area
2.5	2.5	0.0	.25 MI - 1 MILE	WEAK / 2	3	31	2	Sacramento Pass Recreation Area
2.5	2.8	0.3	.25 MI - 1 MILE	MOD / 3-5	4	33	3	Sacramento Pass Recreation Area
2.8	3.1	0.3	0 - .25 MI	MOD / 2	4	32	4	Sacramento Pass Recreation Area
3.1	4.0	0.8	.25 MI - 1 MILE	MOD / 2	4	31	3	Sacramento Pass Recreation Area
4.0	4.0	0.0	1 - 3 MILES	MOD / 2	3	31	2	Sacramento Pass Recreation Area
Link 465								
0.0	0.1	0.1	1 - 3 MILES	MOD / 2	3	31	2	Sacramento Pass Rec Area & GBNP
0.1	0.4	0.3	1 - 3 MILES	MOD / 3-5	3	33	2	Sacramento Pass Rec Area & GBNP
0.4	1.2	0.7	1 - 3 MILES	STRONG/ 3-5	3	33	2	Sacramento Pass Rec. Area & GBNP
1.2	1.2	0.0	1 - 3 MILES	MOD / 3-5	3	33	2	Sacramento Pass Rec. Area & GBNP
1.2	2.0	0.8	1 - 3 MILES	STRONG/ 3-5	3	33	2.	Sacramento Pass Rec Area & GBNP
Link 466								
0.0	0.6	0.6	1 - 3 MILES	MOD / 2	3	31	2.	Sacramento Pass Rec Area & GBNP
Link 467								
0.0	0.5	0.5	1 - 3 MILES	MOD / 2	3	31	2	Residence
0.5	1.8	1.3	1 - 3 MILES	MOD / 3-5	3	33	2	Residence
1.8	1.9	0.0	BEYOND 3 MILES	MOD / 2	2	0	2	Residence
1.9	2.5	0.6	BEYOND 3 MILES	WEAK / 2	2	0	2	Residence
2.5	3.1	0.6	SELDOM SEEN	MOD / 3-5	1	0	1	Residence
3.1	3.3	0.1	BEYOND 3 MILES	MOD / 3-5	2	0	2	Residence
3.3	4.7	1.5	SELDOM SEEN	MOD / 3-5	1	0	1	
4.7	4.8	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
4.8	5.6	0.9	SELDOM SEEN	MOD / 2	1	0	1	
5.6	6.5	0.9	SELDOM SEEN	MOD / 3-5	1	0	1	
6.5	6.8	0.3	SELDOM SEEN	MOD / 2	1	0	1	
6.8	6.8	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
6.8	9.7	2.9	SELDOM SEEN	MOD / 2	1	0	1	
9.7	9.7	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
9.7	10.1	0.4	SELDOM SEEN	MOD / 2	1	0	1	
10.1	10.1	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
10.1	10.5	0.4	SELDOM SEEN	MOD / 2	1	0	1	
10.5	10.5	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
10.5	10.9	0.4	SELDOM SEEN	MOD / 2	1	0	1	
10.9	11.0	0.2	SELDOM SEEN	WEAK / 2	1	0	1	
11.0	11.2	0.1	SELDOM SEEN	MOD / 3-5	1	0	1	
11.2	11.3	0.1	SELDOM SEEN	MOD / 1	1	0	1	
11.3	11.4	0.0	SELDOM SEEN	WEAK / 1	1	0	1	
11.4	11.6	0.3	SELDOM SEEN	MOD / 1	1	0	1	
11.6	11.8	0.2	SELDOM SEEN	MOD / 2	1	0	1	
11.8	12.2	0.4	SELDOM SEEN	MOD / 1	1	0	1	
12.2	12.2	0.0	SELDOM SEEN	WEAK / 1	1	0	1	
12.2	13.0	0.7	SELDOM SEEN	MOD / 1	1	0	1	
13.0	13.6	0.7	SELDOM SEEN	MOD / 2	1	0	1	
Link 468								
0.0	0.1	0.1	1 - 3 MILES	MOD / 2	3	31	2	Sacramento Pass Recreation Area
0.1	1.1	1.0	1 - 3 MILES	MOD / 3-5	3	33	2.	Sacramento Pass Recreation Area
1.1	1.2	0.2	1 - 3 MILES	STRONG/ 3-5	3	33	2.	Sacramento Pass Recreation Area
1.2	1.3	0.0	1 - 3 MILES	MOD / 3-5	3	33	2	Sacramento Pass Recreation Area
1.3	1.5	0.2	1 - 3 MILES	STRONG/ 3-5	3	33	2	Sacramento Pass Recreation Area
1.5	1.5	0.0	1 - 3 MILES	WEAK / 2	2	0	2	Sacramento Pass Recreation Area
1.5	1.6	0.2	1 - 3 MILES	MOD / 2	3	31	2	Sacramento Pass Recreation Area
1.6	1.7	0.0	BEYOND 3 MILES	WEAK / 2	2	0	2	Sacramento Pass Recreation Area
1.7	1.8	0.1	BEYOND 3 MILES	MOD / 2	2	0	2	Sacramento Pass Recreation Area
1.8	1.8	0.0	BEYOND 3 MILES	WEAK / 2	2	0	2	Sacramento Pass Recreation Area
1.8	2.0	0.2	BEYOND 3 MILES	MOD / 2	2	0	2	Sacramento Pass Recreation Area
2.0	2.0	0.0	BEYOND 3 MILES	WEAK / 2	2	0	2	Sacramento Pass Recreation Area
2.0	2.2	0.2	BEYOND 3 MILES	STRONG/ 3-5	2	0	2	Sacramento Pass Recreation Area
2.2	2.9	0.7	SELDOM SEEN	STRONG/ 3-5	1	0	1	Sacramento Pass Recreation Area
2.9	2.9	0.0	BEYOND 3 MILES	STRONG/ 3-5	2	0	2	Sacramento Pass Recreation Area
Link 469								
0.0	0.6	0.6	1 - 3 MILES	STRONG/ 3-5	3	33	2	Residence
0.6	1.5	0.9	1 - 3 MILES	MOD / 3-5	3	33	2	Residence
1.5	2.5	0.9	SELDOM SEEN	MOD / 2	1	0	1	
Link 471								
0.0	0.9	0.9	BEYOND 3 MILES	STRONG/ 3-5	2	0	2	Sacramento Pass Recreation Area
0.9	1.7	0.7	SELDOM SEEN	MOD / 2	1	0	1	
1.7	2.4	0.7	SELDOM SEEN	MOD / 3-5	1	0	1	
2.4	3.3	0.9	SELDOM SEEN	MOD / 2	1	0	1	
3.3	4.9	1.6	SELDOM SEEN	STRONG/ 3-5	1	0	1	

TABLE 12 - Visual Impacts to Recreation Viewsheds (High Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
4 9	9 4	4 5	SELDOM SEEN	MOD / 2	1	0.	1	
9.4	9 5	0.1	SELDOM SEEN	STRONG/ 3-5	1	0	1	
9 5	11 4	1 9	SELDOM SEEN	MOD / 3-5	1	0.	1	
11 4	11 7	0 3	SELDOM SEEN	MOD / 2	1	0	1	
11 7	11 8	0 1	SELDOM SEEN	WEAK / 2	1	0.	1	
Link 472								
0 0	0 0	0 0	SELDOM SEEN	MOD / 2	1	0	1	
0 0	0 3	0 3	SELDOM SEEN	MOD / 3-5	1	0	1	
0 3	0 3	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
0 3	0 7	0 4	SELDOM SEEN	MOD / 2	1	0	1	
0 7	0 7	0 1	SELDOM SEEN	MOD / 3-5	1	0	1	
0 7	0 8	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
0 8	1 2	0.4	SELDOM SEEN	MOD / 2	1	0	1	
Link 473								
0 0	0 0	0 0	SELDOM SEEN	STRONG/ 3-5	1	0	1	
0 0	0 1	0 1	SELDOM SEEN	MOD / 2	1	0	1	
0 1	1 0	0 9	SELDOM SEEN	MOD / 3-5	1	0	1	
1 0	1 1	0 1	SELDOM SEEN	MOD / 2	1	0	1	
1 1	1 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 1	1 2	0 1	SELDOM SEEN	MOD / 2	1	0.	1	
1 2	1 3	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 3	1 3	0 1	SELDOM SEEN	MOD / 2	1	0	1	
1 3	1 4	0 1	SELDOM SEEN	MOD / 3-5	1	0	1	

TABLE 13
VISUAL RESOURCES

Visual Impacts to Recreation Viewsheds (Moderate Sensitivity)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460.								
0.0	0.2	0.2	SELDOM SEEN	MOD / 3-5	1	0	1	
0.2	0.3	0.1	SELDOM SEEN	WEAK / 2	1	0	1	
0.3	0.4	0.1	SELDOM SEEN	MOD / 2	1	0	1	
0.4	0.5	0.1	25 MI - 1 MILE	MOD / 2	3	31	2	
0.5	0.5	0.0	0 - 25 MI	WEAK / 2	3	31	2	
0.5	0.8	0.3	0 - 25 MI	MOD / 2	4	31	3	
0.8	0.9	0.1	0 - 25 MI	WEAK / 2	3	31	2	
0.9	1.0	0.1	0 - 25 MI	MOD / 2	4	31	3	
1.0	1.1	0.1	25 MI - 1 MILE	MOD / 2	3	31	2	
1.1	1.1	0.0	25 MI - 1 MILE	WEAK / 2	2	0	2.	
1.1	1.4	0.3	25 MI - 1 MILE	MOD / 2	3	31	2	
1.4	1.4	0.0	25 MI - 1 MILE	WEAK / 2	2	0	2	
1.4	1.7	0.3	25 MI - 1 MILE	MOD / 2	3	31	2.	
1.7	1.7	0.0	25 MI - 1 MILE	WEAK / 2	2	0	2.	
1.7	2.0	0.3	1 - 3 MILES	MOD / 2	2	0	2	
2.0	2.0	0.0	1 - 3 MILES	WEAK / 2	2	0	2	
2.0	2.5	0.6	1 - 3 MILES	MOD / 2	2	0	2	
2.5	2.6	0.0	1 - 3 MILES	WEAK / 2	2	0	2	
2.6	3.0	0.4	1 - 3 MILES	MOD / 2	2	0	2	
3.0	3.0	0.0	1 - 3 MILES	WEAK / 2	2	0	2	
3.0	3.1	0.1	SELDOM SEEN	MOD / 2	1	0	1	
3.1	3.2	0.1	SELDOM SEEN	MOD / 3-5	1	0	1	
3.2	3.9	0.7	SELDOM SEEN	MOD / 2	1	0	1	
3.9	4.2	0.3	SELDOM SEEN	MOD / 3-5	1	0	1	
Link 461.								
0.0	0.0	0.0	SELDOM SEEN	MOD / 3-5	1	0	1	
0.0	0.5	0.4	SELDOM SEEN	MOD / 2	1	0	1	
0.5	1.5	1.0	SELDOM SEEN	MOD / 3-5	1	0	1	
1.5	1.7	0.2	SELDOM SEEN	MOD / 2	1	0	1	
1.7	1.7	0.9	SELDOM SEEN	WEAK / 2	1	0	1	
1.7	2.0	0.4	SELDOM SEEN	MOD / 2	1	0	1	
2.0	2.1	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
2.1	2.4	0.4	SELDOM SEEN	MOD / 2	1	0	1	
2.4	4.0	1.5	SELDOM SEEN	MOD / 3-5	1	0	1	
4.0	4.2	0.3	SELDOM SEEN	MOD / 2	1	0	1	
4.2	4.5	0.3	SELDOM SEEN	WEAK / 2	1	0	1	
4.5	4.9	0.4	SELDOM SEEN	MOD / 3-5	1	0.	1	
4.9	5.1	0.2	SELDOM SEEN	MOD / 2	1	0	1	
5.1	5.2	0.2	SELDOM SEEN	WEAK / 2	1	0	1	
5.2	5.6	0.3	SELDOM SEEN	MOD / 2	1	0.	1	
5.6	6.5	0.9	SELDOM SEEN	WEAK / 2	1	0	1	
6.5	6.6	0.2	SELDOM SEEN	MOD / 2	1	0	1	
6.6	7.0	0.3	SELDOM SEEN	WEAK / 2	1	0	1	
7.0	7.1	0.1	SELDOM SEEN	MOD / 3-5	1	0	1	
7.1	7.4	0.3	SELDOM SEEN	WEAK / 2	1	0.	1	
7.4	7.7	0.3	SELDOM SEEN	MOD / 2	1	0	1	
7.7	9.8	2.1	SELDOM SEEN	MOD / 3-5	1	0	1	
9.8	10.1	0.3	SELDOM SEEN	MOD / 2	1	0	1	
10.1	10.3	0.2	SELDOM SEEN	WEAK / 2	1	0	1	
10.3	10.5	0.3	SELDOM SEEN	MOD / 2	1	0	1	
10.5	11.4	0.9	SELDOM SEEN	MOD / 3-5	1	0	1	
Link 463.								
0.0	0.3	0.3	SELDOM SEEN	MOD / 3-5	1	0	1	
0.3	0.7	0.4	SELDOM SEEN	WEAK / 3-5	1	0.	1	
0.7	1.1	0.4	SELDOM SEEN	MOD / 2	1	0	1	
1.1	2.9	1.8	SELDOM SEEN	STRONG/ 3-5	1	0	1	
2.9	4.4	1.5	SELDOM SEEN	MOD / 3-5	1	0	1	
4.4	4.8	0.4	SELDOM SEEN	STRONG/ 3-5	1	0	1	

TABLE 13 - Visual Impacts to Recreation Viewsheds (Moderate Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 464.								
0.0	2.5	2.5	SELDOM SEEN	MOD / 3-5	1	0	1	
2.5	2.5	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
2.5	2.8	0.3	SELDOM SEEN	MOD / 3-5	1	0	1	
2.8	4.0	1.1	SELDOM SEEN	MOD / 2	1	0	1	
Link 465.								
0.0	0.1	0.1	SELDOM SEEN	MOD / 2	1	0	1	
0.1	0.4	0.3	SELDOM SEEN	MOD / 3-5	1	0	1	
0.4	1.2	0.7	SELDOM SEEN	STRONG/ 3-5	1	0.	1	
1.2	1.2	0.0	SELDOM SEEN	MOD / 3-5	1	0	1	
1.2	2.0	0.8	SELDOM SEEN	STRONG/ 3-5	1	0	1	
Link 466.								
0.0	0.6	0.6	SELDOM SEEN	MOD / 2	1	0	1	
Link 467.								
0.0	0.5	0.5	SELDOM SEEN	MOD / 2	1	0.	1	
0.5	1.8	1.3	SELDOM SEEN	MOD / 3-5	1	0	1	
1.8	1.9	0.0	SELDOM SEEN	MOD / 2	1	0	1	
1.9	2.5	0.6	SELDOM SEEN	WEAK / 2	1	0	1	
2.5	4.7	2.2	SELOOM SEEN	MOD / 3-5	1	0	1	
4.7	4.8	0.0	SELOOM SEEN	WEAK / 2	1	0.	1	
4.8	5.6	0.9	SELDOM SEEN	MOD / 2	1	0	1	
5.6	6.5	0.9	SELDOM SEEN	MOD / 3-5	1	0	1	
6.5	6.8	0.3	SELDOM SEEN	MOD / 2	1	0	1	
6.8	6.8	0.0	SELDDM SEEN	WEAK / 2	1	0	1	
6.8	9.7	2.9	SELDOM SEEN	MOD / 2	1	0	1	
9.7	9.7	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
9.7	10.1	0.4	SELDOM SEEN	MOD / 2	1	0	1	
10.1	10.1	0.0	SELDOM SEEN	WEAK / 2	1	0	1.	
10.1	10.5	0.4	SELDOM SEEN	MOD / 2	1	0.	1	
10.5	10.5	0.0	SELDOM SEEN	WEAK / 2	1.	0	1	
10.5	10.9	0.4	SELDOM SEEN	MOD / 2	1	0	1	
10.9	11.0	0.2	SELDOM SEEN	WEAK / 2	1	0	1	
11.0	11.2	0.1	SELDOM SEEN	MOD / 3-5	1	0	1	
11.2	11.3	0.1	SELDOM SEEN	MOD / 1	1	0	1	
11.3	11.4	0.0	SELDOM SEEN	WEAK / 1	1	0	1	
11.4	11.6	0.3	SELDOM SEEN	MOD / 1	1	0	1	
11.6	11.8	0.2	SELDOM SEEN	MOD / 2	1	0	1	
11.8	12.2	0.4	SELDOM SEEN	MOD / 1	1	0	1	
12.2	12.2	0.0	SELDOM SEEN	WEAK / 1	1	0.	1	
12.2	13.0	0.7	SELDOM SEEN	MOD / 1	1	0	1	
13.0	13.6	0.7	SELDOM SEEN	MOD / 2	1	0	1	
Link 468.								
0.0	0.1	0.1	SELDOM SEEN	MOD / 2	1	0	1	
0.1	1.1	1.0	SELDOM SEEN	MOD / 3-5	1	0	1	
1.1	1.2	0.2	SELDOM SEEN	STRONG/ 3-5	1	0	1	
1.2	1.3	0.0	SELDOM SEEN	MOD / 3-5	1	0	1	
1.3	1.5	0.2	SELDOM SEEN	STRONG/ 3-5	1	0	1	
1.5	1.5	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
1.5	1.6	0.2	SELDOM SEEN	MOD / 2	1	0	1	
1.6	1.7	0.0	SELDOM SEEN	WEAK / 2	1	0	1.	
1.7	1.8	0.1	SELDOM SEEN	MOD / 2	1	0.	1	
1.8	1.8	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
1.8	2.0	0.2	SELDOM SEEN	MOD / 2	1	0	1	
2.0	2.0	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
2.0	2.9	0.9	SELDOM SEEN	STRONG/ 3-5	1	0	1	
Link 469.								
0.0	0.6	0.6	SELDOM SEEN	STRONG/ 3-5	1	0	1	
0.6	1.5	0.9	SELDOM SEEN	MOD / 3-5	1	0	1	
1.5	2.5	0.9	SELOOM SEEN	MOD / 2	1	0	1	
Link 471.								
0.0	0.9	0.9	SELDOM SEEN	STRONG/ 3-5	1	0	1	
0.9	1.7	0.7	SELDOM SEEN	MOD / 2	1	0	1	
1.7	2.4	0.7	SELDOM SEEN	MOD / 3-5	1	0	1	
2.4	3.3	0.9	SELDOM SEEN	MOD / 2	1	0	1	

TABLE 13 - Visual Impacts to Recreation Viewsheds (Moderate Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
3 3	4 9	1 6	SELDOM SEEN	STRONG/ 3-5	1	0	1	
4 9	9 4	4 5	SELDOM SEEN	MOD / 2	1	0	1.	
9 4	9 5	0 1	SELDOM SEEN	STRONG/ 3-5	1	0	1	
9 5	1 1 4	1 9	SELDOM SEEN	MOD / 3-5	1	0	1	
1 1 4	1 1 7	0 3	SELDOM SEEN	MOD / 2	1	0	1	
1 1 7	1 1 8	0 1	SELDOM SEEN	WEAK / 2	1	0	1	
Link 472.								
0 0	0 0	0 0	SELDOM SEEN	MOO / 2	1	0	1	
0 0	0 3	0.3	SELDOM SEEN	MOD / 3-5	1	0	1	
0 3	0 3	0.0	SELDOM SEEN	WEAK / 2	1	0	1	
0 3	0 7	0 4	SELDOM SEEN	MOD / 2	1	0	1	
0 7	0 7	0 1	SELDOM SEEN	MOD / 3-5	1	0.	1	
0 7	0 8	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
0 8	1 2	0 4	SELDOM SEEN	MOD / 2	1	0	1	
Link 473.								
0 0	0 0	0 0	SELDOM SEEN	STRONG/ 3-5	1	0	1	
0 0	0 1	0 1	SELDOM SEEN	MOD / 2	1	0	1	
0 1	1 0	0 9	SELDOM SEEN	MOD / 3-5	1	0	1	
1 0	1 1	0 1	SELDOM SEEN	MOD / 2	1.	0	1	
1 1	1 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 1	1 2	0 1	SELDOM SEEN	MOD / 2	1	0.	1.	
1 2	1 3	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 3	1 3	0.1	SELDOM SEEN	MOD / 2	1.	0	1	
1 3	1 4	0 1	SELDOM SEEN	MOD / 3-5	1	0	1	

TABLE 14
VISUAL RESOURCES

Visual Impacts to Transportation Viewsheds (High Sensitivity)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460								
0 0	0 2	0 2	SELDOM SEEN	MOD / 3-5	1	0	1	
0 2	0 3	0 1	SELDOM SEEN	WEAK / 2	1	0	1	
0 3	0 5	0.2	SELDOM SEEN	MOD / 2	1	0	1	
0 5	0 5	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
0 5	0 8	0 3	SELDOM SEEN	MOD / 2	1	0	1	
0 8	0 9	0 1	SELDOM SEEN	WEAK / 2	1	0	1	
0 9	1 1	0 2	SELDOM SEEN	MOD / 2	1	0	1	
1 1	1 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 1	1 4	0 3	SELDOM SEEN	MOD / 2	1	0	1	
1 4	1 4	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 4	1 7	0 3	SELDOM SEEN	MOD / 2	1	0.	1	
1 7	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 7	2 0	0 3	SELDOM SEEN	MOD / 2	1	0	1	
2 0	2 0	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
2 0	2 5	0 6	SELDOM SEEN	MOD / 2	1	0	1	
2 5	2 6	0 0	BEYOND 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
2.6	3 0	0 4	BEYOND 3 MILES	MOD / 2	2	0	2	US Highway 6/50
3 0	3 0	0 0	BEYOND 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
3 0	3 1	0 1	BEYOND 3 MILES	MOD / 2	2	0	2	US Highway 6/50
3 1	3 2	0 1	BEYOND 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
3 2	3 9	0 7	BEYOND 3 MILES	MOD / 2	2	0	2	US Highway 6/50
3 9	4 2	0 3	BEYOND 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
Link 461								
0 0	0.0	0.0	SELDOM SEEN	MOD / 3-5	1	0	1	
0 0	0 5	0 4	SELDOM SEEN	MOD / 2	1	0	1	
0.5	1 5	1 0	SELDOM SEEN	MOD / 3-5	1	0	1	
1.5	1 7	0 2	SELDOM SEEN	MOD / 2	1	0	1	
1 7	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 7	2 0	0 4	SELDOM SEEN	MOD / 2	1	0	1	
2 0	2 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
2 1	2 4	0 4	SELDOM SEEN	MOD / 2	1	0	1	
2.4	4 0	1 5	SELDOM SEEN	MOD / 3-5	1	0	1	
4 0	4 2	0 3	SELDOM SEEN	MOD / 2	1	0	1	
4 2	4 5	0.3	SELDOM SEEN	WEAK / 2	1	0	1	
4.5	4 9	0 4	SELDOM SEEN	MOD / 3-5	1	0	1	
4 9	5 1	0 2	SELDOM SEEN	MOD / 2	1	0	1	
5 1	5 2	0 2	SELDOM SEEN	WEAK / 2	1	0	1	
5 2	5 6	0 3	SELDOM SEEN	MOD / 2	1	0	1	
5 6	6.5	0 9	SELDOM SEEN	WEAK / 2	1	0	1	
6 5	6 6	0 2	SELDOM SEEN	MOD / 2	1	0	1	
6 6	7 0	0 3	SELDOM SEEN	WEAK / 2	1	0	1	
7.0	7 1	0 1	SELDOM SEEN	MOD / 3-5	1	0	1	
7 1	7 4	0 3	SELDOM SEEN	WEAK / 2	1	0	1	
7 4	7 7	0 3	SELDOM SEEN	MOD / 2	1	0	1	
7 7	9 8	2 1	SELDOM SEEN	MOD / 3-5	1	0	1	
9 8	10 1	0.3	SELDOM SEEN	MOD / 2	1	0	1	
10 1	10 3	0 2	SELDOM SEEN	WEAK / 2	1	0	1.	
10 3	10 5	0 3	SELDOM SEEN	MOD / 2	1	0	1.	
10 5	11 4	0 9	SELDOM SEEN	MOD / 3-5	1	0	1	
Link 463								
0 0	0 3	0 3	BEYOND 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
0 3	0 7	0 4	1 - 3 MILES	WEAK / 3-5	2	0	2	US Highway 6/50
0 7	1 1	0 4	1 - 3 MILES	MOD / 2	3	33	2	US Highway 6/50
1 1	2 9	1 8	1 - 3 MILES	STRONG/ 3-5	3	33	2	US Highway 6/50
2 9	3 1	0 1	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
3 1	3 7	0 6	25 MI - 1 MILE	MOD / 3-5	4	33	3	US Highway 6/50
3 7	3 8	0 1	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
3 8	4 1	0 3	SELDOM SEEN	MOD / 3-5	1	0	1	US Highway 6/50
4 1	4 4	0 3	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
4 4	4 8	0 4	1 - 3 MILES	STRONG/ 3-5	3	33	2	US Highway 6/50

TABLE 14 - Visual Impacts to Transportation Viewsheds (High Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 464								
0 0	2 5	2 5	BEYOND 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
2 5	2 5	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
2 5	2 6	0 0	SELDOM SEEN	MOD / 3-5	1	0	1	
2 6	2 8	0 2	BEYOND 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
2 8	2 8	0 1	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
2 8	3 1	0 3	1 - 3 MILES	MOD / 2	3	31	2	US Highway 6/50
3 1	3 2	0 1	BEYOND 3 MILES	MOD / 2	2	0	2	US Highway 6/50
3.2	4.0	0 8	1 - 3 MILES	MOD / 2	3	31	2.	US Highway 6/50
Link 465								
0 0	0 1	0 1	1 - 3 MILES	MOD / 2	3	31	2	US Highway 6/50
0 1	0 4	0 3	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
0.4	1 2	0 7	1 - 3 MILES	STRONG/ 3-5	3	33	2.	US Highway 6/50
1 2	1 2	0 0	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
1 2	2 0	0 8	1 - 3 MILES	STRONG/ 3-5	3	33	2	US Highway 6/50
Link 466								
0 0	0 6	0 6	1 - 3 MILES	MOD / 2	3	31	2	US Highway 6/50
Link 467								
0 0	0 5	0 5	1 - 3 MILES	MOD / 2	3	31	2	
0 5	1 8	1 3	BEYOND 3 MILES	MOD / 3-5	2	0	2	
1 8	1 9	0.0	1 - 3 MILES	MOD / 2	3	31	2	
1 9	2 5	0 6	1 - 3 MILES	WEAK / 2	2	0	2	
2 5	4 7	2 2	1 - 3 MILES	MOD / 3-5	3	33	2	
4 7	4 8	0 0	1 - 3 MILES	WEAK / 2	2	0	2	
4 8	5 1	0.3	1 - 3 MILES	MOD / 2	3	31	2	
5 1	5 6	0 6	25 MI - 1 MILE	MOD / 2	4	31	3	
5 6	6 5	0 9	25 MI - 1 MILE	MOD / 3-5	4	33	3	
6 5	6 8	0 3	0 - 25 MI	MOD / 2	4	32	4	
6 8	6 8	0 0	0 - 25 MI	WEAK / 2	4	32	4	
6 8	9 6	2 8	0 - 25 MI	MOD / 2	4	32	4.	
9 6	9 7	0 1	1 - 3 MILES	MOD / 2	3	31	2.	
9 7	9 7	0 0	1 - 3 MILES	WEAK / 2	2	0	2	
9 7	10 1	0 4	1 - 3 MILES	MOD / 2	3	31	2	
10 1	10 1	0 0	1 - 3 MILES	WEAK / 2	2	0	2	
10 1	10 5	0.4	1 - 3 MILES	MOD / 2	3	31	2.	
10 5	10 5	0 0	1 - 3 MILES	WEAK / 2	2	0	2	
10 5	10 7	0 2	1 - 3 MILES	MOD / 2	3	31	2	
10 7	10 9	0 2	BEYOND 3 MILES	MOD / 2	2	0	2	
10 9	11 0	0 2	BEYOND 3 MILES	WEAK / 2	2	0	2	
11 0	11 2	0 1	BEYOND 3 MILES	MOD / 3-5	2	0	2	
11 2	11 3	0 1	BEYOND 3 MILES	MOD / 1	2	0	2	
11 3	11 4	0 0	BEYOND 3 MILES	WEAK / 1	2	0	2	
11 4	11 6	0 3	BEYOND 3 MILES	MOD / 1	2	0	2	
11 6	11 8	0 2	BEYOND 3 MILES	MOD / 2	2	0	2	
11 8	12 2	0 4	BEYOND 3 MILES	MOD / 1	2.	0	2	
12 2	12 2	0 0	BEYOND 3 MILES	WEAK / 1	2	0	2	
12 2	13 0	0 7	BEYOND 3 MILES	MOD / 1	2	0	2	
13 0	13 5	0 6	BEYOND 3 MILES	MOD / 2	2	0	2	
13 5	13 6	0 1	SELDOM SEEN	MOD / 2	1	0	1	
Link 468								
0 0	0 1	0 1	1 - 3 MILES	MOD / 2	3.	31	2.	US Highway 6/50
0 1	0 2	0 1	1 - 3 MILES	MOD / 3-5	3	33	2	US Highway 6/50
0 2	1 1	0 9	BEYOND 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
1 1	1 2	0 2	SELDOM SEEN	STRONG/ 3-5	1	0	1	
1 2	1 3	0 0	SELDOM SEEN	MOD / 3-5	1	0	1	
1 3	1 5	0 2	SELDOM SEEN	STRONG/ 3-5	1	0	1	
1 5	1 6	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 6	1 6	0 1	SELDOM SEEN	MOD / 2	1	0	1	
1 6	1 6	0 1	BEYOND 3 MILES	MOD / 2	2	0	2	Road to Mt. Moriah Wilderness
1 6	1 7	0 0	BEYOND 3 MILES	WEAK / 2	2	0	2	Road to Mt. Moriah Wilderness
1 7	1 8	0 1	BEYOND 3 MILES	MOD / 2	2	0	2	Road to Mt. Moriah Wilderness
1 8	1 8	0 0	1 - 3 MILES	WEAK / 2	2	0	2	Road to Mt. Moriah Wilderness
1 8	2 0	0 2	1 - 3 MILES	MOD / 2	3	31	2	Road to Mt. Moriah Wilderness
2 0	2 0	0 0	1 - 3 MILES	WEAK / 2	2	0	2	Road to Mt. Moriah Wilderness
2 0	2 8	0 8	1 - 3 MILES	STRONG/ 3-5	3	33	2	Road to Mt. Moriah Wilderness

TABLE 14 - Visual Impacts to Transportation Viewsheds (High Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
2.8	2 9	0 1	BEYOND 3 MILES	STRONG/ 3-5	2	0	2	Road to Mt. Moriah Wilderness
2 9	2 9	0 1	1 - 3 MILES	STRONG/ 3-5	3	33	2	Road to Mt. Moriah Wilderness
Link 469								
0 0	0 6	0 6	1 - 3 MILES	STRONG/ 3-5	3	33	2	Road to Mt Moriah Wilderness
0 6	1 5	0 9	1 - 3 MILES	MOD / 3-5	3	33	2	Road to Mt. Moriah Wilderness
1.5	2.5	0 9	1 - 3 MILES	MOO / 2	3	31	2	Road to Mt. Moriah Wilderness
Link 471								
0 0	0 9	0 9	1 - 3 MILES	STRONG/ 3-5	3	33	2	Road to Mt. Moriah Wilderness
0 9	1 7	0 7	BEYOND 3 MILES	MOD / 2	2	0	2	Road to Mt Moriah Wilderness
1 7	2 4	0 7	1 - 3 MILES	MOO / 3-5	3	33	2	Road to Mt. Moriah Wilderness
2 4	3 3	0 9	1 - 3 MILES	MOD / 2	3	31	2	Road to Mt. Moriah Wilderness
3 3	4.9	1 6	1 - 3 MILES	STRONG/ 3-5	3	33	2	Road to Mt Moriah Wilderness
4 9	5 2	0 3	1 - 3 MILES	MOD / 2	3	31	2	Road to Mt. Moriah Wilderness
5 2	6 6	1 4	25 MI - 1 MILE	MOO / 2	4	31	3	Road to Mt. Moriah Wilderness
6 6	8 3	1 7	0 - 25 MI	MOD / 2	4	32	4	Crossing of road into Mt Moriah Wilderness
8 3	9 4	1 1	1 - 3 MILES	MOD / 2	3	31	2	Road to Mt Moriah Wilderness
9 4	9 5	0 1	1 - 3 MILES	STRONG/ 3-5	3	33	2	Road to Mt Moriah Wilderness
9 5	10 4	0 9	1 - 3 MILES	MOD / 3-5	3	33	2	Road to Mt. Moriah Wilderness
10 4	11.4	1 0	BEYOND 3 MILES	MOD / 3-5	2	0	2	Road to Mt Moriah Wilderness
11 4	11 7	0.3	BEYOND 3 MILES	MOD / 2	2	0	2	Road to Mt. Moriah Wilderness
11 7	11 8	0 1	BEYDND 3 MILES	WEAK / 2	2	0	2	Road to Mt Moriah Wilderness
Link 472								
0.0	0 0	0 0	SELDOM SEEN	MOD / 2	1	0	1	
0 0	0 3	0.3	SELDOM SEEN	MOD / 3-5	1	0	1	
0 3	0.3	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
0 3	0 7	0.4	SELDOM SEEN	MOD / 2	1	0	1	
0 7	0 7	0 1	SELDOM SEEN	MDD / 3-5	1	0	1	
0 7	0.8	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
0 8	1 2	0 4	SELDOM SEEN	MOD / 2	1	0	1	
Link 473								
0 0	0 0	0 0	BEYOND 3 MILES	STRONG/ 3-5	2	0	2	
0 0	0 1	0 1	BEYOND 3 MILES	MOD / 2	2.	0	2	
0 1	0 6	0 5	BEYOND 3 MILES	MOD / 3-5	2	0.	2	
0 6	1 0	0 4	SELDOM SEEN	MOD / 3-5	1.	0	1	
1 0	1 1	0 1	SELDOM SEEN	MOD / 2	1.	0.	1	
1 1	1 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 1	1.2	0 1	SELDOM SEEN	MDD / 2	1	0	1	
1 2	1.3	0 0	SELDOM SEEN	WEAK / 2	1	0	1	
1 3	1.3	0 1	SELDOM SEEN	MDD / 2	1	0	1	
1.3	1 4	0 1	SELDOM SEEN	MOD / 3-5	1	0	1	

TABLE 15
VISUAL RESOURCES

Visual Impacts to Transportation Viewsheds (Moderate Sensitivity)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
Link 460.								
0 0	0 2	0.2	1 - 3 MILES	MOD / 3-5	2	0.	2	US Highway 6/50
0.2	0 3	0 1	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
0 3	0 5	0 2	1 - 3 MILES	MOD / 3	2.	0	2	US Highway 6/50
0 5	0 5	0 0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
0 5	0 8	0 3	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
0 8	0 9	0 1	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
0 9	1 1	0 2	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1 1	1 1	0 0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
1 1	1.4	0 3	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1 4	1 4	0.0	1 - 3 MILES	WEAK / 2	2	0	2.	US Highway 6/50
1.4	1 7	0 3	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1 7	1 7	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
1 7	1 8	0 1	1 - 3 MILES	MOD / 2	2.	0.	2.	US Highway 6/50
1 8	2 0	0.2	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
2 0	2 0	0 0	BEYOND 3 MILES	WEAK / 2	1	0.	1	US Highway 6/50
2 0	2 5	0 6	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
2 5	2 6	0 0	BEYOND 3 MILES	WEAK / 2	1	0	1	US Highway 6/50
2 6	3 0	0 4	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
3 0	3 0	0 0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
3 0	3 1	0 1	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
3 1	3 2	0 1	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
3 2	3 9	0.7	1 - 3 MILES	MOD / 2	2	0.	2	US Highway 6/50
3 9	4 2	0 3	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
Link 461.								
0 0	0.0	0 0	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
0 0	0 5	0 4	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
0 5	1 5	1 0	1 - 3 MILES	MOD / 3-5	2	0.	2	US Highway 6/50
1 5	1 5	0 0	BEYOND 3 MILES	MOD / 3-5	1	0.	1	US Highway 6/50
1 5	1 7	0 2	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
1 7	1 7	0 0	BEYOND 3 MILES	WEAK / 2	1	0.	1.	US Highway 6/50
1 7	2 0	0 4	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
2 0	2 1	0.0	BEYOND 3 MILES	WEAK / 2	1.	0	1	US Highway 6/50
2 1	2 4	0 4	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
2 4	4 0	1 5	BEYOND 3 MILES	MOD / 3-5	1	0.	1.	US Highway 6/50
4 0	4 2	0 3	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
4 2	4 5	0 3	BEYOND 3 MILES	WEAK / 2	1	0	1	US Highway 6/50
4 5	4 9	0.4	BEYOND 3 MILES	MOD / 3-5	1	0	1	US Highway 6/50
4 9	5 1	0 2	SELDOM SEEN	MOD / 2	1	0.	1	
5 1	5 2	0 2	SELDOM SEEN	WEAK / 2	1	0	1	
5 2	5 6	0 3	SELDOM SEEN	MOD / 2	1.	0	1.	
5 6	6 5	0 9	SELDOM SEEN	WEAK / 2	1	0	1	
6 5	6 6	0.2	SELDOM SEEN	MOD / 2	1	0	1.	
6 6	7 0	0 3	SELDOM SEEN	WEAK / 2	1	0.	1	
7 0	7 1	0 1	SELDOM SEEN	MOD / 3-5	1	0	1	
7 1	7 4	0 3	SELDOM SEEN	WEAK / 2	1	0	1	
7.4	7 7	0 3	SELDOM SEEN	MOD / 2	1	0	1	
7 7	9 8	2 1	SELDOM SEEN	MOD / 3-5	1	0	1	
9 8	10 1	0 3	SELDOM SEEN	MOD / 2	1	0	1	
10 1	10 3	0 2	SELDOM SEEN	WEAK / 2	1	0	1	
10 3	10 5	0 1	SELDOM SEEN	MOD / 2	1	0	1	
10 5	11 4	0 9	SELDOM SEEN	MOD / 3-5	1	0	1	
Link 463.								
0 0	0 3	0 3	1 - 3 MILES	MOD / 3-5	2.	0	2	US Highway 6/50
0 3	0 7	0 4	1 - 3 MILES	WEAK / 3-5	2	0	2	US Highway 6/50
0 7	1 1	0 4	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1 1	2 4	1 3	1 - 3 MILES	STRONG/ 3-5	2	0	2	US Highway 6/50
2 4	2 9	0 6	25 MI - 1 MILE	STRONG/ 3-5	3	33	2.	US Highway 6/50
2 9	3 2	0 3	25 MI - 1 MILE	MOD / 3-5	3	33.	2	US Highway 6/50

TABLE 15 - Visual Impacts to Transportation Viewsheds (Moderate Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
3.2	3.7	0.4	0 - 25 MI	MOD / 3-5	4	33	3	Crossing of US Highway 6/50
3.7	4.4	0.7	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
4.4	4.8	0.4	25 MI - 1 MILE	STRONG/ 3-5	3	33	2	US Highway 6/50
Link 464.								
0.0	2.5	2.5	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
2.5	2.5	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
2.5	2.8	0.3	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
2.8	3.2	0.4	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
3.2	4.0	0.8	25 MI - 1 MILE	MOD / 2	3	31	2	US Highway 6/50
Link 465.								
0.0	0.1	0.1	25 MI - 1 MILE	MOD / 2	3	31	2	US Highway 6/50
0.1	0.3	0.2	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
0.3	0.4	0.1	0 - 25 MI	MOD / 3-5	4	33	3	Crossing US Highway 6/50
0.4	1.0	0.6	0 - 25 MI	STRONG/ 3-5	4	34	3	Crossing US Highway 6/50
1.0	1.2	0.2	25 MI - 1 MILE	STRONG/ 3-5	3	33	2	US Highway 6/50
1.2	1.2	0.0	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
1.2	1.8	0.7	25 MI - 1 MILE	STRONG/ 3-5	3	33	2	US Highway 6/50
1.8	2.0	0.2	1 - 3 MILES	STRONG/ 3-5	2	0	2	US Highway 6/50
Link 466.								
0.0	0.6	0.6	25 MI - 1 MILE	MOD / 2	3	31	2	US Highway 6/50
Link 467.								
0.0	0.5	0.5	0 - 25 MI	MOD / 2	4	31	3	Crossing US Highway 6/50
0.5	1.8	1.3	0 - 25 MI	MOD / 3-5	4	33	3	Crossing US Highway 6/50
1.8	1.9	0.0	25 MI - 1 MILE	MOD / 2	3	31	2	US Highway 6/50
1.9	2.5	0.6	25 MI - 1 MILE	WEAK / 2	2	0	2	US Highway 6/50
2.5	2.5	0.0	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
2.5	4.7	2.2	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
4.7	4.8	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
4.8	5.6	0.9	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
5.6	6.5	0.9	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
6.5	6.8	0.3	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
6.8	6.8	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
6.8	9.7	2.9	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
9.7	9.7	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
9.7	10.1	0.4	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
10.1	10.1	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
10.1	10.5	0.4	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
10.5	10.5	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
10.5	10.7	0.2	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
10.7	10.9	0.2	25 MI - 1 MILE	MOD / 2	3	31	2	US Highway 6/50
10.9	11.0	0.2	25 MI - 1 MILE	WEAK / 2	2	0	2	US Highway 6/50
11.0	11.2	0.1	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
11.2	11.3	0.1	25 MI - 1 MILE	MOD / 1	3	9	2	US Highway 6/50
11.3	11.4	0.0	25 MI - 1 MILE	WEAK / 1	2	0	2	US Highway 6/50
11.4	11.5	0.1	25 MI - 1 MILE	MOD / 1	3	9	2	US Highway 6/50
11.5	11.6	0.2	0 - 25 MI	MOD / 1	4	9	3	Crossing US Highway 6/50
11.6	11.8	0.2	0 - 25 MI	MOD / 2	4	31	3	Crossing US Highway 6/50
11.8	11.9	0.1	0 - 25 MI	MOD / 1	4	9	3	Crossing US Highway 6/50
11.9	12.2	0.3	25 MI - 1 MILE	MOD / 1	3	9	2	US Highway 6/50
12.2	12.2	0.0	25 MI - 1 MILE	WEAK / 1	2	0	2	US Highway 6/50
12.2	12.7	0.4	25 MI - 1 MILE	MOD / 1	3	9	2	US Highway 6/50
12.7	13.0	0.3	1 - 3 MILES	MOD / 1	2	0	2	US Highway 6/50
13.0	13.6	0.7	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
Link 468.								
0.0	0.1	0.1	0 - 25 MI	MOD / 2	4	31	3	Crossing US Highway 6/50
0.1	0.7	0.6	0 - 25 MI	MOD / 3-5	4	33	3	Crossing US Highway 6/50
0.7	1.1	0.4	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
1.1	1.2	0.2	25 MI - 1 MILE	STRONG/ 3-5	3	33	2	US Highway 6/50
1.2	1.3	0.0	25 MI - 1 MILE	MOD / 3-5	3	33	2	US Highway 6/50
1.3	1.5	0.2	25 MI - 1 MILE	STRONG/ 3-5	3	33	2	US Highway 6/50
1.5	1.5	0.0	25 MI - 1 MILE	WEAK / 2	2	0	2	US Highway 6/50
1.5	1.6	0.2	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1.6	1.7	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
1.7	1.8	0.1	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1.8	1.8	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
1.8	2.0	0.2	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
2.0	2.0	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50

TABLE 15 - Visual Impacts to Transportation Viewsheds (Moderate Sensitivity) (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT	COMMENTS
2.0	2.4	0.4	1 - 3 MILES	STRONG/ 3-5	2	0	2	US Highway 6/50
2.4	2.9	0.5	BEYOND 3 MILES	STRONG/ 3-5	1	0.	1	US Highway 6/50
2.9	2.9	0.0	1 - 3 MILES	STRONG/ 3-5	2	0	2	US Highway 6/50
Link 469.								
0.0	0.6	0.6	1 - 3 MILES	STRONG/ 3-5	2	0	2	US Highway 6/50
0.6	1.5	0.9	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
1.5	2.5	0.9	SELDOM SEEN	MOD / 2	1	0	1	
Link 471.								
0.0	0.9	0.9	1 - 3 MILES	STRONG/ 3-5	2	0	2	US Highway 6/50
0.9	1.7	0.7	SELDOM SEEN	MOD / 2	1	0	1	US Highway 6/50
1.7	2.4	0.7	BEYOND 3 MILES	MOD / 3-5	1	0	1	US Highway 6/50
2.4	3.3	0.9	BEYOND 3 MILES	MOD / 2	1	0	1	US Highway 6/50
3.3	4.9	1.6	BEYOND 3 MILES	STRONG/ 3-5	1.	0	1	Rural Road
4.9	6.6	1.7	BEYOND 3 MILES	MOD / 2	1	0	1	Rural Road
6.6	9.4	2.8	1 - 3 MILES	MOD / 2	2	0	2	Rural Road
9.4	9.5	0.1	0 - 25 MI	STRONG/ 3-5	4	34	3.	Crossing of Rural Road
9.5	9.9	0.7	0 - 25 MI	MOD / 3-5	4	33	3	Crossing of Rural Road
9.9	10.8	1.0	25 MI - 1 MILE	MOD / 3-5	3	33.	2	Rural Road
10.8	11.4	0.6	1 - 3 MILES	MOD / 3-5	2	0	2	Rural Road
11.4	11.7	0.3	1 - 3 MILES	MOD / 2	2	0	2	Rural Road
11.7	11.8	0.1	1 - 3 MILES	WEAK / 2	2	0	2	Rural Road
Link 472.								
0.0	0.0	0.0	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
0.0	0.3	0.3	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
0.3	0.3	0.0	1 - 3 MILES	WEAK / 2	2	0.	2	US Highway 6/50
0.3	0.7	0.4	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
0.7	0.7	0.1	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
0.7	0.8	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
0.8	1.2	0.4	1 - 3 MILES	MOD / 2	2	0	2.	US Highway 6/50
Link 473.								
0.0	0.0	0.0	1 - 3 MILES	STRONG/ 3-5	2	0	2.	US Highway 6/50
0.0	0.1	0.1	1 - 3 MILES	MOD / 2	2	0	2.	US Highway 6/50
0.1	1.0	0.9	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50
1.0	1.1	0.1	1 - 3 MILES	MOD / 2	2	0.	2	US Highway 6/50
1.1	1.1	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
1.1	1.2	0.1	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1.2	1.3	0.0	1 - 3 MILES	WEAK / 2	2	0	2	US Highway 6/50
1.3	1.3	0.1	1 - 3 MILES	MOD / 2	2	0	2	US Highway 6/50
1.3	1.4	0.1	1 - 3 MILES	MOD / 3-5	2	0	2	US Highway 6/50

TABLE 16
VISUAL RESOURCES

Visual Impacts to Scenic Quality

MILE POST FROM	TO	LENGTH	SCENIC QUALITY	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0.0	0.2	0.2	CLASS C	MOO / 3-5	2	0	2
0.2	0.3	0.1	CLASS B	WEAK / 2	2	0	2
0.3	0.5	0.2	CLASS B	MOD / 2	3	31	2
0.5	0.5	0.0	CLASS B	WEAK / 2	2	0	2
0.5	0.8	0.3	CLASS B	MOD / 2	3	31	2
0.8	0.9	0.1	CLASS B	WEAK / 2	2	0	2
0.9	1.1	0.2	CLASS B	MOD / 2	3	31	2
1.1	1.1	0.0	CLASS B	WEAK / 2	2.	0	2.
1.1	1.4	0.3	CLASS B	MOD / 2	3	31	2
1.4	1.4	0.0	CLASS B	WEAK / 2	2	0	2
1.4	1.7	0.3	CLASS B	MOD / 2	3	31	2
1.7	1.7	0.0	CLASS B	WEAK / 2	2	0	2
1.7	2.0	0.3	CLASS B	MOD / 2	3	31	2
2.0	2.0	0.0	CLASS B	WEAK / 2	2	0	2
2.0	2.5	0.6	CLASS B	MOD / 2	3	31	2
2.5	2.6	0.0	CLASS B	WEAK / 2	2	0	2
2.6	3.0	0.4	CLASS B	MOD / 2	3	31	2
3.0	3.0	0.0	CLASS B	WEAK / 2	2	0	2
3.0	3.1	0.1	CLASS B	MOD / 2	3	31	2
3.1	3.2	0.1	CLASS B	MOD / 3-5	3	33	2
3.2	3.9	0.7	CLASS B	MOD / 2	3	31	2
3.9	4.2	0.3	CLASS B	MOD / 3-5	3.	33	2
Link 461.							
0.0	0.0	0.0	CLASS C	MOD / 3-5	2	0	2
0.0	0.5	0.4	CLASS C	MOD / 2	2	0	2
0.5	1.5	1.0	CLASS C	MOD / 3-5	2	0	2
1.5	1.7	0.2	CLASS C	MOD / 2	2	0	2
1.7	1.7	0.0	CLASS C	WEAK / 2	2	0	2
1.7	2.0	0.4	CLASS C	MOD / 2	2	0	2
2.0	2.1	0.0	CLASS C	WEAK / 2	2	0	2
2.1	2.4	0.4	CLASS C	MOD / 2	2	0	2
2.4	4.0	1.5	CLASS C	MOD / 3-5	2	0	2
4.0	4.2	0.3	CLASS C	MOD / 2	2	0	2
4.2	4.5	0.3	CLASS C	WEAK / 2	2	0.	2
4.5	4.9	0.4	CLASS C	MOD / 3-5	2	0	2
4.9	5.1	0.2	CLASS C	MOD / 2	2	0	2
5.1	5.2	0.2	CLASS C	WEAK / 2	2	0	2
5.2	5.6	0.3	CLASS C	MOD / 2	2	0	2
5.6	5.8	0.2	CLASS C	WEAK / 2	2	0	2
5.8	6.1	0.3	CLASS B	WEAK / 2	2	0	2
6.1	6.3	0.2	CLASS C	WEAK / 2	2	0	2
6.3	6.5	0.2	CLASS B	WEAK / 2	2	0	2
6.5	6.6	0.2	CLASS B	MOD / 2	3	31	2
6.6	7.0	0.3	CLASS B	WEAK / 2	2	0	2
7.0	7.1	0.1	CLASS B	MOD / 3-5	3	33	2
7.1	7.4	0.3	CLASS B	WEAK / 2	2	0	2.
7.4	7.7	0.3	CLASS B	MOD / 2	3	31	2
7.7	9.8	2.1	CLASS B	MOD / 3-5	3.	33	2
9.8	10.1	0.3	CLASS B	MOD / 2	3	31	2
10.1	10.3	0.2	CLASS B	WEAK / 2	2	0	2
10.3	10.5	0.3	CLASS B	MOD / 2	3	31	2
10.5	10.6	0.1	CLASS B	MOO / 3-5	3.	33	2
10.6	11.4	0.8	CLASS C	MOD / 3-5	2	0	2.
Link 463.							
0.0	0.3	0.3	CLASS B	MOD / 3-5	3	33.	2
0.3	0.7	0.4	CLASS B	WEAK / 3-5	2.	0	2
0.7	1.1	0.4	CLASS B	MOD / 2	3	31	2
1.1	2.9	1.8	CLASS B	STRONG/ 3-5	3	33.	2
2.9	4.4	1.5	CLASS C	MOD / 3-5	2.	0	2
4.4	4.8	0.4	CLASS C	STRONG/ 3-5	2	0	2

TABLE 16 - Visual Impacts to Scenic Quality (Continued)

FROM	TO	LENGTH	VISUAL CONTRAST WITH SCENIC	CONT/GR DIST	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 464.							
0 0	2 5	2 5	CLASS B	MOD / 3-5	3	33	2
2 5	2 5	0 0	CLASS B	WEAK / 2	2	0.	2
2 5	2 8	0 2	CLASS B	MOD / 3-5	3	33	2
2 8	2 8	0 1	CLASS C	MOD / 3-5	2	0	2
2 8	4 0	1 1	CLASS C	MOD / 2	2	0	2
Link 465.							
0 0	0 1	0 1	CLASS C	MOD / 2	2	0	2
0 1	0 4	0 3	CLASS C	MOD / 3-5	2	0	2
0 4	1 2	0 7	CLASS C	STRONG/ 3-5	2	0	2
1 2	1 2	0.0	CLASS C	MOD / 3-5	2	0	2.
1 2	2 0	0 8	CLASS C	STRONG/ 3-5	2	0	2
Link 466.							
0 0	0 6	0 6	CLASS C	MOD / 2	2	0	2
Link 467.							
0 0	0 5	0 5	CLASS C	MOD / 2	2	0.	2.
0 5	1 8	1.3	CLASS C	MOD / 3-5	2	0	2
1 8	1 9	0 0	CLASS C	MOD / 2	2	0.	2
1 9	2 5	0 6	CLASS C	WEAK / 2	2	0	2
2 5	4 7	2 2	CLASS C	MOD / 3-5	2	0	2
4 7	4 8	0.0	CLASS C	WEAK / 2	2	0	2
4 8	5 6	0 9	CLASS C	MDD / 2	2	0.	2
5 6	6 5	0 9	CLASS C	MOD / 3-5	2	0	2
6 5	6 8	0 3	CLASS C	MOD / 2	2	0	2
6 8	6 8	0 0	CLASS C	WEAK / 2	2	0	2
6 8	9 7	2 9	CLASS C	MOD / 2	2	0.	2
9 7	9 7	0 0	CLASS C	WEAK / 2	2	0	2
9 7	10 1	0 4	CLASS C	MOD / 2	2	0	2
10 1	10 1	0 0	CLASS C	WEAK / 2	2	0	2
10 1	10 5	0.4	CLASS C	MOD / 2	2	0.	2
10 5	10 5	0 0	CLASS C	WEAK / 2	2	0.	2
10 5	10 9	0 4	CLASS C	MOD / 2	2	0	2
10 9	11 0	0 2	CLASS C	WEAK / 2	2	0	2
11 0	11 2	0 1	CLASS C	MOD / 3-5	2	0	2
11 2	11 3	0.1	AGRICULTURAL LANDS	MOD / 1	3	9	2
11 3	11 4	0 0	AGRICULTURAL LANDS	WEAK / 1	2	0	2
11 4	11.6	0 3	AGRICULTURAL LANDS	MOD / 1	3	9	2
11 6	11 8	0 2	AGRICULTURAL LANDS	MOD / 2	3	9	2
11 8	12 2	0 4	AGRICULTURAL LANDS	MOD / 1	3	9	2
12 2	12 2	0 0	AGRICULTURAL LANDS	WEAK / 1	2	0	2.
12.2	13 0	0 7	AGRICULTURAL LANDS	MOD / 1	3	9	2
13 0	13 6	0 7	CLASS C	MOD / 2	2	0	2
Link 468.							
0 0	0 1	0 1	CLASS C	MOD / 2	2	0	2
0 1	1 1	1 0	CLASS C	MOD / 3-5	2	0	2
1 1	1 2	0 2	CLASS C	STRONG/ 3-5	2	0.	2
1 2	1 3	0 0	CLASS C	MOD / 3-5	2	0	2.
1 3	1 5	0 2	CLASS C	STRONG/ 3-5	2	0.	2
1 5	1 5	0 0	CLASS C	WEAK / 2	2	0	2
1 5	1 6	0 2	CLASS C	MOD / 2	2.	0	2
1 6	1 7	0 0	CLASS C	WEAK / 2	2	0	2
1 7	1 8	0 1	CLASS C	MOD / 2	2.	0.	2
1 8	1 8	0 0	CLASS C	WEAK / 2	2.	0	2
1 8	2 0	0.2	CLASS C	MOD / 2	2.	0	2
2 0	2 0	0 0	CLASS C	WEAK / 2	2.	0	2
2 0	2 9	0 9	CLASS C	STRONG/ 3-5	2.	0	2.
Link 469.							
0 0	0 6	0 6	CLASS C	STRONG/ 3-5	2.	0	2
0 6	1 5	0.9	CLASS C	MOD / 3-5	2.	0	2
1 5	2 5	0 9	CLASS C	MOD / 2	2.	0	2

TABLE 16 - Visual Impacts to Scenic Quality (Continued)

FROM	TO	LENGTH	VISUAL CONTRAST WITH SCENIC	CONT/GR DIST	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 471.							
0 0	0 9	0 9	CLASS C	STRONG/ 3-5	2	0	2
0 9	1 7	0 7	CLASS C	MOD / 2	2	0	2
1 7	2 4	0 7	CLASS C	MOD / 3-5	2	0	2
2 4	3 3	0 9	CLASS C	MOD / 2	2	0	2
3 3	4 9	1 6	CLASS C	STRONG/ 3-5	2	0	2
4 9	9 4	4 5	CLASS C	MOD / 2	2	0	2
9.4	9 5	0 1	CLASS C	STRONG/ 3-5	2	0	2.
9 5	11 4	1 9	CLASS C	MOD / 3-5	2	0	2
11 4	11 7	0 3	CLASS C	MOD / 2	2	0	2
11 7	11 8	0 1	CLASS C	WEAK / 2	2.	0	2
Link 472.							
0 0	0 0	0 0	CLASS C	MOD / 2	2	0	2
0 0	0 3	0 3	CLASS C	MOD / 3-5	2	0	2
0 3	0 3	0 0	CLASS C	WEAK / 2	2.	0	2
0.3	0 7	0 4	CLASS C	MOD / 2	2	0	2
0 7	0 7	0 1	CLASS C	MOD / 3-5	2	0	2
0 7	0 8	0 0	CLASS C	WEAK / 2	2	0	2
0.8	1.2	0 4	CLASS C	MOD / 2	2	0	2
Link 473.							
0 0	0 0	0 0	CLASS C	STRONG/ 3-5	2	0	2
0 0	0 1	0 1	CLASS C	MOD / 2	2	0	2
0 1	1 0	0 9	CLASS C	MOD / 3-5	2	0	2
1 0	1 1	0 1	CLASS C	MOD / 2	2	0	2
1 1	1 1	0 0	CLASS C	WEAK / 2	2	0	2
1 1	1 2	0 1	CLASS C	MOD / 2	2	0	2
1 2	1 3	0 0	CLASS C	WEAK / 2	2	0	2
1 3	1 3	0 1	CLASS C	MOD / 2	2	0	2
1 3	1 4	0 1	CLASS C	MOD / 3-5	2	0	2

TABLE 17
VISUAL RESOURCES

Compliance with Agency Visual Management

MILE POST FROM	TO	LENGTH	VISUAL MANAGEMENT	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
00	02	02	CLASS IV	MOD / 3-5	1	0	1
02	03	01	CLASS IV	WEAK / 2	1	0	1
03	05	02	CLASS IV	MOD / 2	1	0	1
05	05	00	CLASS IV	WEAK / 2	1	0	1
05	08	03	CLASS IV	MOD / 2	1	0	1
08	09	01	CLASS IV	WEAK / 2	1	0	1
09	11	02	CLASS IV	MOD / 2	1	0	1
11	11	00	CLASS IV	WEAK / 2	1	0	1
11	14	03	CLASS IV	MOD / 2	1	0	1
14	14	00	CLASS IV	WEAK / 2	1	0	1
14	17	03	CLASS IV	MOD / 2	1	0	1
17	17	00	CLASS IV	WEAK / 2	1	0	1
17	20	03	CLASS IV	MOD / 2	1	0	1
20	20	00	CLASS IV	WEAK / 2	1	0	1
20	25	06	CLASS IV	MOD / 2	1	0	1
25	26	00	CLASS IV	WEAK / 2	1	0	1
26	30	04	CLASS IV	MOD / 2	1	0	1
30	30	00	CLASS IV	WEAK / 2	1	0	1
30	31	01	CLASS IV	MOD / 2	1	0	1
31	32	01	CLASS IV	MOD / 3-5	1	0	1
32	39	07	CLASS IV	MOD / 2	1	0	1
39	42	03	CLASS IV	MOD / 3-5	1	0	1
Link 461.							
00	00	00	CLASS IV	MOD / 3-5	1	0	1
00	05	04	CLASS IV	MOD / 2	1	0	1
05	15	10	CLASS IV	MOD / 3-5	1	0	1
15	17	02	CLASS IV	MOD / 2	1	0	1
17	17	00	CLASS IV	WEAK / 2	1	0	1
17	20	04	CLASS IV	MOD / 2	1	0	1
20	21	00	CLASS IV	WEAK / 2	1	0	1
21	24	04	CLASS IV	MOD / 2	1	0	1
24	40	15	CLASS IV	MOD / 3-5	1	0	1
40	42	03	CLASS IV	MOD / 2	1	0	1
42	45	03	CLASS IV	WEAK / 2	1	0	1
45	49	04	CLASS IV	MOD / 3-5	1	0	1
49	51	02	CLASS IV	MOD / 2	1	0	1
51	52	02	CLASS IV	WEAK / 2	1	0	1
52	56	03	CLASS IV	MOD / 2	1	0	1
56	65	09	CLASS IV	WEAK / 2	1	0	1
65	66	02	CLASS IV	MOD / 2	1	0	1
66	70	03	CLASS IV	WEAK / 2	1	0	1
70	71	01	CLASS IV	MOD / 3-5	1	0	1
71	74	03	CLASS IV	WEAK / 2	1	0	1
74	77	03	CLASS IV	MOD / 2	1	0	1
77	98	21	CLASS IV	MOD / 3-5	1	0	1
98	101	03	CLASS IV	MOD / 2	1	0	1
101	103	02	CLASS IV	WEAK / 2	1	0	1
103	105	03	CLASS IV	MOD / 2	1	0	1
105	114	09	CLASS IV	MOD / 3-5	1	0	1
Link 463.							
00	03	03	CLASS IV	MOD / 3-5	1	0	1
03	07	04	CLASS IV	WEAK / 3-5	1	0	1
07	11	04	CLASS IV	MOD / 2	1	0	1
11	20	09	CLASS IV	STRONG/ 3-5	1	0	1
20	29	09	CLASS III	STRONG/ 3-5	2	33	1
29	44	15	CLASS III	MOD / 3-5	1	0	1
44	48	04	CLASS IV	STRONG/ 3-5	1	0	1

TABLE 17 - Compliance with Agency Visual Management (Continued)

MILE POST FROM	TO	LENGTH	VISUAL MANAGEMENT	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 464.							
0.0	2.5	2.5	CLASS IV	MOD / 3-5	1	0	1
2.5	2.5	0.0	CLASS IV	WEAK / 2	1	0	1
2.5	2.8	0.3	CLASS IV	MOD / 3-5	1	0	1
2.8	3.2	0.4	CLASS IV	MOD / 2	1	0	1
3.2	4.0	0.8	CLASS III	MOD / 2	1	0	1
Link 465.							
0.0	0.1	0.1	CLASS III	MOD / 2	1	0	1
0.1	0.4	0.3	CLASS III	MOD / 3-5	1	0	1
0.4	1.2	0.7	CLASS III	STRONG/ 3-5	2	33	1
1.2	1.2	0.0	CLASS III	MDD / 3-5	1	0	1
1.2	2.0	0.8	CLASS III	STRONG/ 3-5	2	33	1
Link 466.							
0.0	0.6	0.6	CLASS III	MOD / 2	1	0	1
Link 467.							
0.0	0.5	0.5	CLASS III	MOD / 2	1	0	1
0.5	1.8	1.3	CLASS III	MOD / 3-5	1	0	1
1.8	1.9	0.0	CLASS III	MOD / 2	1	0	1
1.9	2.5	0.6	CLASS III	WEAK / 2	1	0	1
2.5	4.7	2.2	CLASS III	MOD / 3-5	1	0	1
4.7	4.8	0.0	CLASS III	WEAK / 2	1	0	1
4.8	5.6	0.9	CLASS III	MOD / 2	1	0.	1
5.6	6.5	0.9	CLASS III	MOD / 3-5	1	0	1
6.5	6.8	0.3	CLASS IV	MOD / 2	1	0	1
6.8	6.8	0.0	CLASS IV	WEAK / 2	1	0	1
6.8	9.7	2.9	CLASS IV	MOD / 2	1	0	1
9.7	9.7	0.0	CLASS IV	WEAK / 2	1	0	1
9.7	10.1	0.4	CLASS IV	MOD / 2	1	0	1
10.1	10.1	0.0	CLASS IV	WEAK / 2	1	0	1
10.1	10.5	0.4	CLASS IV	MOD / 2	1	0	1
10.5	10.5	0.0	CLASS IV	WEAK / 2	1	0	1
10.5	10.9	0.4	CLASS IV	MOD / 2	1	0	1
10.9	11.0	0.2	CLASS IV	WEAK / 2	1	0	1
11.0	11.2	0.1	CLASS IV	MOD / 3-5	1	0	1
11.2	11.3	0.1	CLASS IV	MOD / 1	1.	0	1
11.3	11.4	0.0	CLASS IV	WEAK / 1	1	0	1
11.4	11.6	0.3	CLASS IV	MOD / 1	1	0	1
11.6	11.8	0.2	CLASS IV	MOD / 2	1	0	1
11.8	12.2	0.4	CLASS IV	MOD / 1	1	0	1
12.2	12.2	0.0	CLASS IV	WEAK / 1	1	0	1
12.2	13.0	0.7	CLASS IV	MOD / 1	1	0	1
13.0	13.6	0.7	CLASS IV	MOD / 2	1	0	1
Link 468.							
0.0	0.1	0.1	CLASS III	MOD / 2	1	0	1
0.1	1.1	1.0	CLASS III	MOD / 3-5	1	0	1
1.1	1.2	0.2	CLASS III	STRONG/ 3-5	2	33	1
1.2	1.3	0.0	CLASS III	MOD / 3-5	1	0	1
1.3	1.5	0.2	CLASS III	STRONG/ 3-5	2	33	1
1.5	1.5	0.0	CLASS III	WEAK / 2	1	0.	1
1.5	1.6	0.2	CLASS III	MOD / 2	1	0	1
1.6	1.7	0.0	CLASS III	WEAK / 2	1	0	1
1.7	1.8	0.1	CLASS III	MDD / 2	1	0	1
1.8	1.8	0.0	CLASS III	WEAK / 2	1	0	1
1.8	2.0	0.2	CLASS III	MOD / 2	1	0	1
2.0	2.0	0.0	CLASS III	WEAK / 2	1	0	1
2.0	2.9	0.9	CLASS III	STRONG/ 3-5	2	33	1
Link 469.							
0.0	0.6	0.6	CLASS III	STRONG/ 3-5	2	33	1
0.6	1.5	0.9	CLASS III	MOD / 3-5	1	0	1
1.5	2.5	0.9	CLASS III	MOD / 2	1	0	1

TABLE 17 - Compliance with Agency Visual Management (Continued)

MILE POST FROM	TO	LENGTH	VISUAL MANAGEMENT	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 471.							
00	09	09	CLASS III	STRONG/ 3-5	2.	33.	1
09	17	07	CLASS III	MOD / 2	1	0	1
17	24	07	CLASS III	MOD / 3-5	1	0	1
24	33	09	CLASS III	MOD / 2	1	0	1
33	49	16	CLASS IV	STRONG/ 3-5	1	0	1
49	94	45	CLASS IV	MOD / 2	1	0	1
94	95	01	CLASS IV	STRONG/ 3-5	1	0	1
95	114	19	CLASS IV	MOD / 3-5	1.	0	1
114	117	03	CLASS IV	MOD / 2	1	0	1
117	118	01	CLASS IV	WEAK / 2	1	0	1
Link 472.							
00	00	00	CLASS IV	MOD / 2	1	0	1
00	03	03	CLASS IV	MOD / 3-5	1	0	1
03	03	00	CLASS IV	WEAK / 2	1	0	1
03	07	04	CLASS IV	MOD / 2	1	0	1
07	07	01	CLASS IV	MOD / 3-5	1	0	1
07	08	00	CLASS IV	WEAK / 2	1	0	1
08	12	04	CLASS IV	MOD / 2	1	0	1
Link 473.							
00	00	00	CLASS IV	STRONG/ 3-5	1	0	1
00	01	01	CLASS IV	MOD / 2	1	0	1
01	10	09	CLASS IV	MOD / 3-5	1	0	1
10	11	01	CLASS IV	MOD / 2	1	0	1
11	11	00	CLASS IV	WEAK / 2	1	0	1
11	12	01	CLASS IV	MOD / 2	1	0	1
12	13	00	CLASS IV	WEAK / 2	1	0	1
13	13	01	CLASS IV	MOD / 2	1	0	1
13	14	01	CLASS IV	MOD / 3-5	1	0	1

TABLE 18
CULTURAL RESOURCES

Ground Disturbance Impacts to Cultural Resources

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
0 2	0 8	0 6	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 8	0 9	0 1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 9	1 1	0 2	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
1 1	1 5	0 4	SENSITIVITY LEVEL 1	LEVEL 2	2	0	2.
1 5	3 1	1.6	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
3 1	4 0	0 9	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
4 0	4 2	0 1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
Link 461.							
0 0	0 0	0 0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 0	0 5	0 4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 5	1 5	1 0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1 5	2 4	1 0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
2 4	4 0	1 5	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4 0	4 5	0 5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
4 5	4 8	0 3	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4 8	4 9	0 2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
4 9	7 0	2 0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
7 0	7 4	0 4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
7 4	7 7	0 3	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
7 7	8 2	0 5	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
8 2	8.5	0 3	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
8 5	8 8	0.4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
8 8	9 4	0 6	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
9 4	9.8	0 4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
9 8	10 5	0 8	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
10 5	11 4	0 9	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
Link 463.							
0 0	0 2	0 2	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0.2	0 7	0 6	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
0 7	1 0	0 3	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
1 0	1 0	0 0	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
1 0	1 1	0 1	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
1 1	2.8	1 7	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
2 8	4 5	1 7	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4 5	4 8	0 3	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
Link 464.							
0 0	0 1	0 1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 1	2 0	1 9	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
2 0	2 5	0 5	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3.
2.5	2 5	0 0	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
2 5	2 8	0 2	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
2.8	4 0	1 2	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
Link 465.							
0 0	0 1	0 1	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 1	0 4	0 3	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 4	0 6	0.2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
0 6	1 3	0 7	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1 3	1 6	0 4	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
1 6	1 8	0 2	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1 8	2 0	0.2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
Link 466.							
0 0	0 6	0 6	BACKGROUND (NO SITE)	LEVEL 2	1	0	1

TABLE 18 - Ground Disturbance Impacts to Cultural Resources (Continued)

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 467.							
0.0	0.5	0.5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0.5	1.8	1.3	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1.8	2.5	0.7	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
2.5	4.2	1.7	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4.2	4.7	0.5	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
4.7	5.6	0.9	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
5.6	6.5	0.9	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
6.5	11.0	4.5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
11.0	11.2	0.1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
11.2	11.6	0.5	BACKGROUND (NO SITE)	LEVEL 1	1	0	1
11.6	11.8	0.2	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
11.8	13.0	1.1	BACKGROUND (NO SITE)	LEVEL 1	1	0	1
13.0	13.6	0.7	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
Link 468.							
0.0	0.1	0.1	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0.1	1.5	1.4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1.5	2.3	0.9	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
2.3	2.9	0.6	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
Link 469.							
0.0	0.0	0.0	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
0.0	1.5	1.5	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1.5	2.1	0.6	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
2.1	2.5	0.4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
Link 471.							
0.0	0.1	0.1	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
0.1	0.9	0.8	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0.9	1.4	0.5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
1.4	2.4	1.0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
2.4	2.7	0.3	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
2.7	3.7	1.0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
3.7	4.9	1.2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
4.9	9.4	4.5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
9.4	11.4	2.0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
11.4	11.8	0.4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
Link 472.							
0.0	0.0	0.0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0.0	0.3	0.3	BACKGROUND (NO SITE)	LEVEL 3	1	0.	1
0.3	0.7	0.4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0.7	0.7	0.1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0.7	1.2	0.5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
Link 473.							
0.0	0.0	0.0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0.0	1.4	1.4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1

TABLE 19
CULTURAL RESOURCES

Public Access Impacts to Cultural Resources

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	CHANGE IN ACCESS	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	1 1	1 1	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
1 1	1 5	0 4	SENSITIVITY LEVEL 1	0 - 20 %	2	0	2
1 5	4 2	2 7	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
Link 461.							
0 0	2 9	2 9	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
2 9	3 6	0 7	BACKGROUND (NO SITE)	50 -100 %	1	0	1
3 6	3 7	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
3 7	8 6	4 9	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
8 6	8 7	0 1	BACKGROUND (NO SITE)	40 - 50 %	1	0	1
8 7	9 4	0 8	BACKGROUND (NO SITE)	50 -100 %	1	0	1
9 4	9 5	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
9 5	10 8	1 3	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
10.8	10 9	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
10.9	11 4	0 5	BACKGROUND (NO SITE)	50 -100 %	1	0	1
Link 463.							
0 0	0 5	0 5	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
0 5	0 6	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
0 6	2 3	1 6	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
2 3	2 4	0.1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
2 4	2 4	0.1	BACKGROUND (NO SITE)	50 -100 %	1	0	1
2 4	2 5	0 0	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
2 5	2 6	0 1	BACKGROUND (NO SITE)	40 - 50 %	1	0	1
2 6	2 9	0 3	BACKGROUND (NO SITE)	50 -100 %	1	0	1
2 9	2 9	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
2 9	3 8	0 9	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
3 8	4 4	0 6	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
4 4	4 8	0 4	BACKGROUND (NO SITE)	50 -100 %	1	0	1
Link 464.							
0 0	2 0	2.0	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
2 0	4 0	2.0	SENSITIVITY LEVEL 5	0 - 20 %	2	0	2
Link 465.							
0 0	1 2	1 2	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
1 2	1 3	0 1	BACKGROUND (NO SITE)	40 - 50 %	1	0	1
1 3	2 0	0 7	BACKGROUND (NO SITE)	50 -100 %	1	0	1
Link 466.							
0 0	0 6	0 6	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
Link 467.							
0 0	3 0	3 0	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
3 0	3 1	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
3 1	4 1	1 0	BACKGROUND (NO SITE)	50 -100 %	1	0	1
4 1	4 2	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
4 2	5 6	1 4	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
5 6	5 7	0 1	BACKGROUND (NO SITE)	40 - 50 %	1	0	1
5 7	6 0	0 3	BACKGROUND (NO SITE)	50 -100 %	1	0	1
6 0	7 5	1 4	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
7 5	8 3	0 9	BACKGROUND (NO SITE)	50 -100 %	1	0	1
8 3	8 4	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
8 4	13 6	5 2	BACKGROUND (NO SITE)	0 - 20 %	1	0	1

TABLE 19 - Public Access Impacts to Cultural Resources (Continued)

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	CHANGE IN ACCESS	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 468.							
0.0	2 5	2 5	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
2 5	2 6	0 0	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
2 6	2.9	0 4	BACKGROUND (NO SITE)	50 -100 %	1	0	1
Link 469.							
0 0	0 8	0 8	BACKGROUND (NO SITE)	50 -100 %	1	0	1
0 8	0 9	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
0 9	2 3	1 4	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
2.3	2 5	0 2	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
Link 471.							
0 0	0 3	0 3	BACKGROUND (NO SITE)	50 -100 %	1	0	1
0 3	0 4	0 1	BACKGROUND (NO SITE)	40 - 50 %	1	0	1
0 4	1 8	1 4	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
1 8	2 0	0 3	BACKGROUND (NO SITE)	40 - 50 %	1	0	1
2 0	2 1	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
2 1	3 3	1 2	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
3 3	4 3	1 0	BACKGROUND (NO SITE)	50 -100 %	1	0	1
4 3	4 4	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
4 4	9 0	4 7	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
9 0	9 1	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
9 1	10 1	0 9	BACKGROUND (NO SITE)	0 - 20 %	1	0	1
10 1	10.2	0 1	BACKGROUND (NO SITE)	20 - 40 %	1	0	1
10 2	10 7	0 5	BACKGROUND (NO SITE)	50 -100 %	1	0	1
10 7	10 9	0 2	BACKGROUND (NO SITE)	20 - 40 %	1	0.	1
10 9	11 8	0 9	BACKGROUND (NO SITE)	0 - 20 %	1	0	1.
Link 472.							
0 0	1 2	1 2	BACKGROUND (NO SITE)	0 - 20 %	1	0	1.
Link 473.							
0 0	1 4	1 4	BACKGROUND (NO SITE)	0 - 20 %	1.	0	1

TABLE 20
CULTURAL RESOURCES

Ground Disturbance Impacts to Predicted Cultural Resources Sensitivity Zones

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1.
0 2	0 8	0 6	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 8	0 9	0 1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 9	1 9	1 0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
1 9	2 3	0 4	SENSITIVITY LEVEL 1	LEVEL 2	2	0	2
2 3	3 0	0 7	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
3.0	3 1	0 1	SENSITIVITY LEVEL 10	LEVEL 2	3	0	3
3 1	3 9	0 7	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
3 9	4 0	0 1	SENSITIVITY LEVEL 10	LEVEL 4	3	0	3
4 0	4 0	0 1	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
4 0	4 2	0 1	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
Link 461.							
0 0	0 0	0 0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 0	0 5	0.4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 5	1 5	1 0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
1.5	2 4	1 0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
2 4	4 0	1 5	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4 0	4 5	0 5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
4 5	4 8	0 3	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4 8	4 9	0 2	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
4 9	7 0	2 0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
7 0	7 4	0 4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
7 4	7 7	0 3	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
7 7	8 2	0 5	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
8 2	8 5	0 3	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
8.5	8 8	0 4	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
8 8	9 4	0 6	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
9 4	9 8	0 4	BACKGROUND (NO SITE)	LEVEL 3	1	0.	1
9 8	10 5	0.8	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
10 5	11 4	0 9	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
Link 463.							
0 0	0 2	0 2	SENSITIVITY LEVEL 5	LEVEL 3	2.	0	2
0.2	0 7	0 6	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
0 7	1 0	0 3	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
1 0	1 0	0 0	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
1 0	1 1	0 1	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
1 1	2 5	1 4	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
2.5	2 7	0 2	SENSITIVITY LEVEL 1	LEVEL 4	2	0	2
2.7	2 8	0 1	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
2 8	3 5	0 7	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
3 5	4 5	1 0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
4 5	4 8	0 3	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
Link 464.							
0 0	0 1	0 1	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
0 1	1 1	0 9	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
1 1	2 5	1 5	SENSITIVITY LEVEL 10	LEVEL 4	3	0	3
2 5	2 5	0 0	SENSITIVITY LEVEL 10	LEVEL 2	3	0	3
2.5	2 8	0 2	SENSITIVITY LEVEL 10	LEVEL 3	3	0	3
2 8	4 0	1 2	SENSITIVITY LEVEL 10	LEVEL 4	3	0	3

TABLE 20 - Ground Disturbance Impacts to Predicted Cultural Resources Sensitivity Zones (Continued)

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 465.							
00	01	01	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
01	04	03	SENSITIVITY LEVEL 10	LEVEL 3	3	0	3
04	06	02	SENSITIVITY LEVEL 10	LEVEL 4	3	0	3
06	07	01	SENSITIVITY LEVEL 10	LEVEL 3	3	0	3
07	10	03	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
10	13	03	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
13	13	01	SENSITIVITY LEVEL 1	LEVEL 4	2	0	2
13	16	03	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
16	18	02	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
18	20	02	BACKGROUND (NO SITE)	LEVEL 4	1	0.	1
Link 466.							
00	06	06	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
Link 467.							
00	05	05	SENSITIVITY LEVEL 10	LEVEL 2	3	0	3
05	18	13	SENSITIVITY LEVEL 10	LEVEL 3	3	0	3
18	25	07	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
25	26	01	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
26	32	06	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
32	42	10	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
42	47	05	SENSITIVITY LEVEL 5	LEVEL 4	3	0	3
47	56	09	SENSITIVITY LEVEL 10	LEVEL 2	3	0	3
56	65	09	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
65	110	45	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
110	112	01	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
112	116	05	BACKGROUND (NO SITE)	LEVEL 1	1	0	1
116	118	02	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
118	130	11	BACKGROUND (ND SITE)	LEVEL 1	1	0	1
130	13.6	07	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
Link 468.							
00	01	01	SENSITIVITY LEVEL 10	LEVEL 2	3	0	3
01	07	07	SENSITIVITY LEVEL 10	LEVEL 3	3.	0	3
07	11	03	SENSITIVITY LEVEL 5	LEVEL 3	2.	0	2
11	15	04	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
15	23	09	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
23	28	04	BACKGROUND (NO SITE)	LEVEL 4	1	0	1.
28	29	02	SENSITIVITY LEVEL 1	LEVEL 4	2	0	2
Link 469.							
00	00	00	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
00	04	04	BACKGROUND (NO SITE)	LEVEL 3	1.	0	1
04	08	04	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
08	13	05	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
13	14	02	SENSITIVITY LEVEL 10	LEVEL 3	3	0	3
14	15	01	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
15	18	03	SENSITIVITY LEVEL 5	LEVEL 2	2	0	2
18	21	03	SENSITIVITY LEVEL 1	LEVEL 2	2	0	2
21	25	04	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
Link 471.							
00	01	01	SENSITIVITY LEVEL 1	LEVEL 4	2	0	2
01	05	04	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
05	09	05	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
09	14	05	SENSITIVITY LEVEL 10	LEVEL 2	3	0	3
14	22	08	SENSITIVITY LEVEL 10	LEVEL 3	3	0	3
22	24	02	SENSITIVITY LEVEL 1	LEVEL 3	2	0	2
24	27	03	BACKGROUND (NO SITE)	LEVEL 2	1	0	1.
27	37	10	BACKGROUND (NO SITE)	LEVEL 3	1	0.	1
37	49	12	BACKGROUND (NO SITE)	LEVEL 4	1	0	1
49	83	34	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
83	94	11	SENSITIVITY LEVEL 1	LEVEL 2	2	0	2
94	114	20	SENSITIVITY LEVEL 5	LEVEL 3	2	0	2
114	118	04	BACKGROUND (NO SITE)	LEVEL 2	1	0	1

TABLE 20 - Ground Disturbance Impacts to Predicted Cultural Resources Sensitivity Zones (Continued)

MILE POST FROM	TO	LENGTH	SENSITIVITY LEVEL	ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 472.							
0 0	0 0	0 0	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 0	0.3	0 3	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 3	0.7	0 4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
0 7	0 7	0 1	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 7	1 2	0 5	BACKGROUND (NO SITE)	LEVEL 2	1	0	1
Link 473.							
0 0	0 0	0 0	BACKGROUND (NO SITE)	LEVEL 3	1	0	1
0 0	1.4	1 4	BACKGROUND (NO SITE)	LEVEL 2	1	0	1

TABLE 21
CULTURAL RESOURCES

Visual Impacts to Sensitive Cultural Resources

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 460.							
0 0	0 2	0 2	25 MI - 1 MILE	MOD / 3-5	4	33	3
0 2	0 3	0 1	25 MI - 1 MILE	WEAK / 2	3	31.	2
0 3	0 5	0 2	25 MI - 1 MILE	MOD / 2	4	31.	3
0 5	0 5	0 0	25 MI - 1 MILE	WEAK / 2	3	31	2
0 5	0 7	0 2	0 - 25 MI	MOD / 2	4	32	4
0 7	0 8	0 1	25 MI - 1 MILE	MOD / 2	4	31	3
0 8	0 9	0 1	25 MI - 1 MILE	WEAK / 2	3	31	2
0 9	1 0	0 1	0 - 25 MI	MOD / 2	4	32	4
1 0	1 1	0 1	25 MI - 1 MILE	MOD / 2	4	31	3
1 1	1 1	0 0	25 MI - 1 MILE	WEAK / 2	3	31	2
1 1	1 4	0 3	0 - 25 MI	MOD / 2	4	32	4
1 4	1 4	0 0	25 MI - 1 MILE	WEAK / 2	3	31	2.
1 4	1 7	0 3	0 - 25 MI	MOD / 2	4	32	4
1 7	1 7	0 0	0 - 25 MI	WEAK / 2	4	32	4
1 7	2 0	0 3	0 - 25 MI	MOD / 2	4	32.	4
2 0	2 0	0 0	0 - 25 MI	WEAK / 2	4	32	4
2 0	2 5	0 6	0 - 25 MI	MOD / 2	4	32	4
2 5	2,6	0 0	0 - .25 MI	WEAK / 2	4	32.	4
2 6	3 0	0 4	0 - 25 MI	MOD / 2	4.	32	4
3 0	3 0	0 0	25 MI - 1 MILE	WEAK / 2	3.	31	2
3,0	3 1	0 1	25 MI - 1 MILE	MOD / 2	4	31	3
3 1	3 2	0 1	0 - 25 MI	MOD / 3-5	4	34	4.
3 2	3 7	0 5	0 - 25 MI	MOD / 2	4	32	4
3,7	3 9	0 2	25 MI - 1 MILE	MOD / 2	4	31	3
3 9	4 2	0 3	25 MI - 1 MILE	MOD / 3-5	4	33	3
Link 461.							
0 0	0.0	0 0	SELDOM SEEN	MOD / 3-5	1	0	1
0 0	0 5	0 4	SELDOM SEEN	MOD / 2	1	0	1
0 5	1 5	1 0	SELDOM SEEN	MOD / 3-5	1	0	1
1 5	1 7	0 2	SELDOM SEEN	MOD / 2	1	0	1
1 7	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1
1 7	2 0	0 4	SELDOM SEEN	MOD / 2	1	0	1
2 0	2 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1
2 1	2 4	0 4	SELDOM SEEN	MOD / 2	1	0	1.
2 4	4 0	1 5	SELDOM SEEN	MOD / 3-5	1	0	1
4 0	4 2	0.3	SELDOM SEEN	MOD / 2	1	0	1
4 2	4 5	0 3	SELDOM SEEN	WEAK / 2	1	0	1
4 5	4 9	0 4	SELDOM SEEN	MOD / 3-5	1	0	1
4 9	5 1	0 2	SELOOM SEEN	MOD / 2	1	0	1
5 1	5 2	0 2	SELDOM SEEN	WEAK / 2	1	0	1
5 2	5 6	0 3	SELOOM SEEN	MOD / 2	1	0	1
5 6	6 5	0 9	SELDOM SEEN	WEAK / 2	1	0	1
6 5	6 6	0 2	SELDOM SEEN	MOD / 2	1	0	1
6 6	7 0	0 3	SELDOM SEEN	WEAK / 2	1	0.	1
7 0	7 1	0 1	SELDOM SEEN	MOD / 3-5	1	0	1
7 1	7 4	0.3	SELDOM SEEN	WEAK / 2	1	0	1
7 4	7 7	0 3	SELDOM SEEN	MOD / 2	1	0	1
7 7	9 8	2.1	SELDOM SEEN	MOD / 3-5	1	0	1
9 8	10 1	0.3	SELDOM SEEN	MOD / 2	1	0	1
10 1	10 3	0 2	SELDOM SEEN	WEAK / 2	1	0	1
10 3	10 5	0 3	SELDOM SEEN	MOD / 2	1	0	1
10 5	11 4	0 9	SELDOM SEEN	MOD / 3-5	1	0	1
Link 463.							
0 0	0 3	0 3	25 MI - 1 MILE	MOD / 3-5	4	33	3
0 3	0 7	0 4	25 MI - 1 MILE	WEAK / 3-5	3	33	2
0 7	1 1	0 4	1 - 3 MILES	MOD / 2	3	31	2
1	2 5	1 4	1 - 3 MILES	STRONG/ 3-5	3	33	2.
2 5	2 9	0 5	BEYOND 3 MILES	STRONG/ 3-5	2	0	2
2 9	4 4	1 5	BEYOND 3 MILES	MOD / 3-5	2	0	2
4 4	4 8	0.4	BEYOND 3 MILES	STRONG/ 3-5	2	0	2

TABLE 21 - Visual Impacts to Sensitive Cultural Resources (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 464.							
0 0	2 5	2 5	25 MI - 1 MILE	MOD / 3-5	4	33	3
2 5	2 5	0 0	1 - 3 MILES	WEAK / 2	2	0	2
2 5	2 7	0 1	1 - 3 MILES	MOD / 3-5	3	33	2
2 7	2 8	0 2	BEYOND 3 MILES	MOD / 3-5	2	0	2
2 8	4 0	1 1	BEYOND 3 MILES	MOD / 2	2	0	2
Link 465.							
0 0	0 1	0 1	BEYOND 3 MILES	MOD / 2	2	0	2
0 1	0 4	0 3	BEYOND 3 MILES	MOD / 3-5	2	0	2.
0 4	1 2	0 7	BEYOND 3 MILES	STRONG/ 3-5	2	0	2
1 2	1 2	0 0	BEYOND 3 MILES	MOD / 3-5	2	0	2
1 2	1.6	0 5	BEYOND 3 MILES	STRONG/ 3-5	2	0	2
1 6	2 0	0 4	SELDOM SEEN	STRONG/ 3-5	1	0	1
Link 466.							
0 0	0 6	0 6	BEYOND 3 MILES	MOD / 2	2	0	2
Link 467.							
0 0	0 5	0 5	BEYOND 3 MILES	MOD / 2	2	0	2
0 5	1 8	1 3	SELDOM SEEN	MOD / 3-5	1	0	1
1 8	1 9	0 0	SELDOM SEEN	MOD / 2	1	0	1
1 9	2 5	0 6	SELDOM SEEN	WEAK / 2	1	0	1
2 5	4 7	2 2	SELDOM SEEN	MOD / 3-5	1	0	1
4 7	4 8	0 0	SELDOM SEEN	WEAK / 2	1	0	1
4 8	5 6	0 9	SELDOM SEEN	MOD / 2	1	0	1
5 6	6 5	0.9	SELDOM SEEN	MOD / 3-5	1	0	1
6 5	6 8	0 3	SELDOM SEEN	MOD / 2	1	0	1
6 8	6 8	0 0	SELDOM SEEN	WEAK / 2	1	0	1
6 8	9 7	2 9	SELDOM SEEN	MOD / 2	1	0	1
9 7	9 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1
9 7	10.1	0 4	SELDOM SEEN	MOD / 2	1	0	1
10 1	10 1	0 0	SELDOM SEEN	WEAK / 2	1	0	1
10 1	10.5	0 4	SELDOM SEEN	MOD / 2	1	0	1
10 5	10 5	0 0	SELDOM SEEN	WEAK / 2	1	0	1
10 5	10 9	0 4	SELDOM SEEN	MOD / 2	1	0	1
10 9	11 0	0 2	SELDOM SEEN	WEAK / 2	1	0	1
11 0	11 2	0 1	SELDOM SEEN	MOD / 3-5	1	0	1
11 2	11 3	0 1	SELDOM SEEN	MOD / 1	1	0	1
11 3	11 4	0 0	SELDOM SEEN	WEAK / 1	1	0	1
11 4	11 6	0 3	SELDOM SEEN	MOD / 1	1	0	1
11 6	11 8	0 2	SELDOM SEEN	MOD / 2	1	0	1
11 8	12 2	0 4	SELDOM SEEN	MOD / 1	1	0	1
12 2	12 2	0 0	SELDOM SEEN	WEAK / 1	1	0	1
12 2	13 0	0 7	SELDOM SEEN	MOD / 1	1	0	1
13 0	13 6	0 7	SELDOM SEEN	MOD / 2	1	0	1
Link 468.							
0 0	0 1	0 1	BEYOND 3 MILES	MOD / 2	2	0	2
0 1	0 1	0 0	BEYOND 3 MILES	MOD / 3-5	2	0	2
0 1	1 1	1 0	SELDOM SEEN	MOD / 3-5	1	0	1
1 1	1.2	0 2	SELDOM SEEN	STRONG/ 3-5	1	0	1
1 2	1 3	0 0	SELDOM SEEN	MOD / 3-5	1	0	1
1 3	1 5	0 2	SELDOM SEEN	STRONG/ 3-5	1	0	1
1 5	1 5	0 0	SELDOM SEEN	WEAK / 2	1	0	1
1 5	1 6	0 2	SELDOM SEEN	MOD / 2	1	0	1
1 6	1 7	0 0	SELDOM SEEN	WEAK / 2	1	0	1
1 7	1 8	0 1	SELDOM SEEN	MOD / 2	1	0	1
1 8	1 8	0 0	SELDOM SEEN	WEAK / 2	1	0	1
1 8	2 0	0 2	SELDOM SEEN	MOD / 2	1	0	1
2 0	2 0	0 0	SELDOM SEEN	WEAK / 2	1	0	1
2 0	2 9	0 9	SELDOM SEEN	STRONG/ 3-5	1	0	1
Link 469.							
0 0	0 6	0 6	SELDOM SEEN	STRONG/ 3-5	1	0	1
0 6	1 5	0 9	SELDOM SEEN	MOD / 3-5	1	0	1
1 5	2 5	0 9	SELDOM SEEN	MOD / 2	1	0	1

TABLE 21 - Visual Impacts to Sensitive Cultural Resources (Continued)

MILE POST FROM	TO	LENGTH	VISIBILITY DISTANCE ZONE	CONTRAST/ ACCESS LEVEL	INITIAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Link 471.							
0.0	0.9	0.9	SELDOM SEEN	STRONG/ 3-5	1	0	1
0.9	1.7	0.7	SELDOM SEEN	MOD / 2	1.	0	1
1.7	2.4	0.7	SELDOM SEEN	MOD / 3-5	1	0	1
2.4	3.3	0.9	SELDOM SEEN	MOD / 2	1.	0	1
3.3	4.9	1.6	SELDOM SEEN	STRONG/ 3-5	1.	0	1
4.9	9.4	4.5	SELDOM SEEN	MOD / 2	1	0	1
9.4	9.5	0.1	SELDOM SEEN	STRONG/ 3-5	1.	0	1
9.5	11.4	1.9	SELDOM SEEN	MOD / 3-5	1	0	1
11.4	11.7	0.3	SELDOM SEEN	MOD / 2	1	0	1
11.7	11.8	0.1	SELDOM SEEN	WEAK / 2	1	0	1
Link 472.							
0.0	0.0	0.0	SELDOM SEEN	MOD / 2	1	0	1
0.0	0.3	0.3	SELDOM SEEN	MOD / 3-5	1.	0	1
0.3	0.3	0.0	SELDOM SEEN	WEAK / 2	1	0	1
0.3	0.7	0.4	SELDOM SEEN	MOD / 2	1	0	1
0.7	0.7	0.1	SELDOM SEEN	MOD / 3-5	1	0	1
0.7	0.8	0.0	SELDOM SEEN	WEAK / 2	1	0	1
0.8	1.2	0.4	SELDOM SEEN	MOD / 2	1	0	1
Link 473.							
0.0	0.0	0.0	SELDOM SEEN	STRONG/ 3-5	1	0	1
0.0	0.1	0.1	SELDOM SEEN	MOD / 2	1	0	1
0.1	1.0	0.9	SELDOM SEEN	MOD / 3-5	1	0	1
1.0	1.1	0.1	SELDOM SEEN	MOD / 2	1	0	1
1.1	1.1	0.0	SELDOM SEEN	WEAK / 2	1	0	1
1.1	1.2	0.1	SELDOM SEEN	MOD / 2	1	0	1
1.2	1.3	0.0	SELDOM SEEN	WEAK / 2	1	0	1
1.3	1.3	0.1	SELDOM SEEN	MOD / 2	1	0	1
1.3	1.4	0.1	SELDOM SEEN	MOD / 3-5	1	0	1

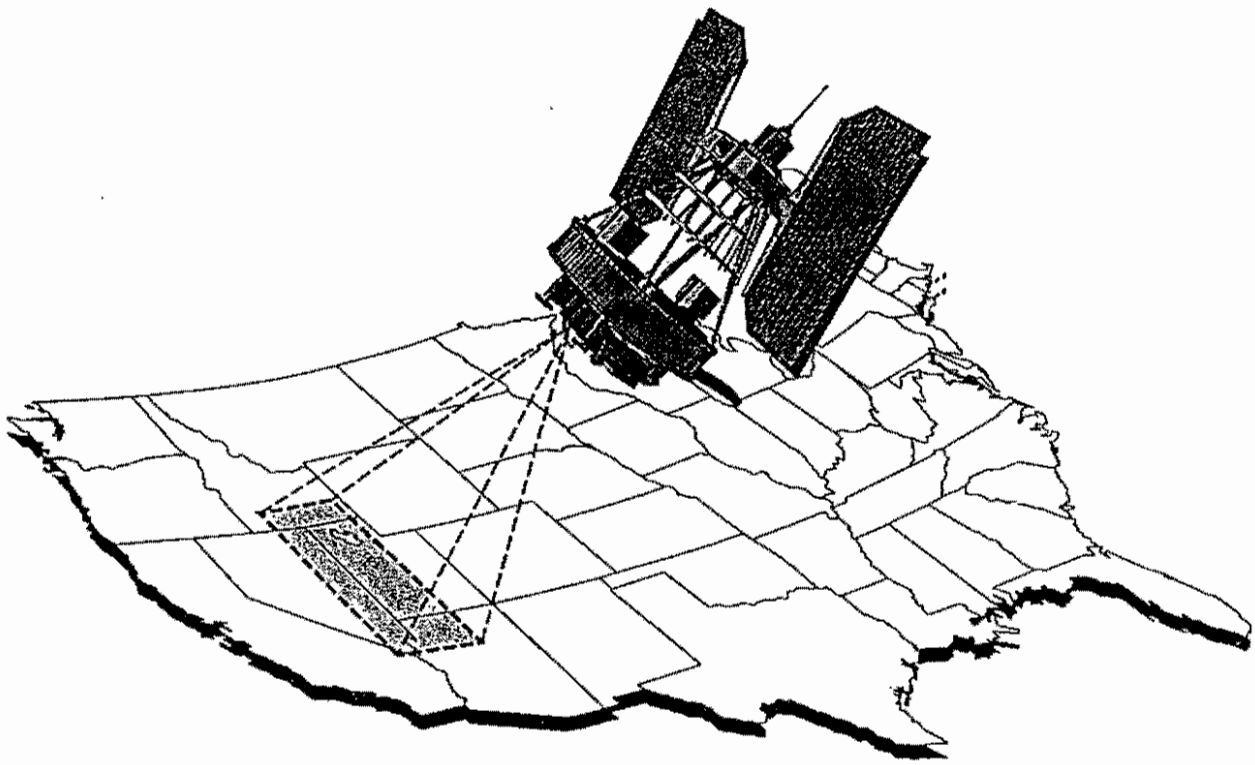
MISSION STATEMENT

"The Bureau of Land Management is responsible for the balanced management of the Public Lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American People. Management is based upon the principles of multiple-use and sustained yield; a combination of uses that takes into account the long term needs of future generations for renewable and non-renewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values."

BLM-ID-PT-93-09-4410

SOUTHWEST INTERTIE PROJECT

RECORD OF DECISION
and
APPROVED LAND USE PLAN AMENDMENT



Prepared by the:

U.S. Department of the Interior
Bureau of Land Management
Burley, Shoshone, and Boise District Offices, Idaho
Elko, Ely, and Las Vegas District Offices, Nevada
Richfield District Office, Utah

In Cooperation with:

U.S. Department of Agriculture
Forest Service
Intermountain Region, R-4

U.S. Department of Interior
National Park Service
Pacific Northwest, Rocky Mountain, and Western Regions

U.S. Department of Interior
Bureau of Indian Affairs
Cedar City, Utah

U.S. Department of Interior
Bureau of Reclamation
Pacific Northwest, Upper Colorado and Lower Colorado Regions

November 1994

SOUTHWEST INTERTIE PROJECT
RECORD OF DECISION

SUMMARY

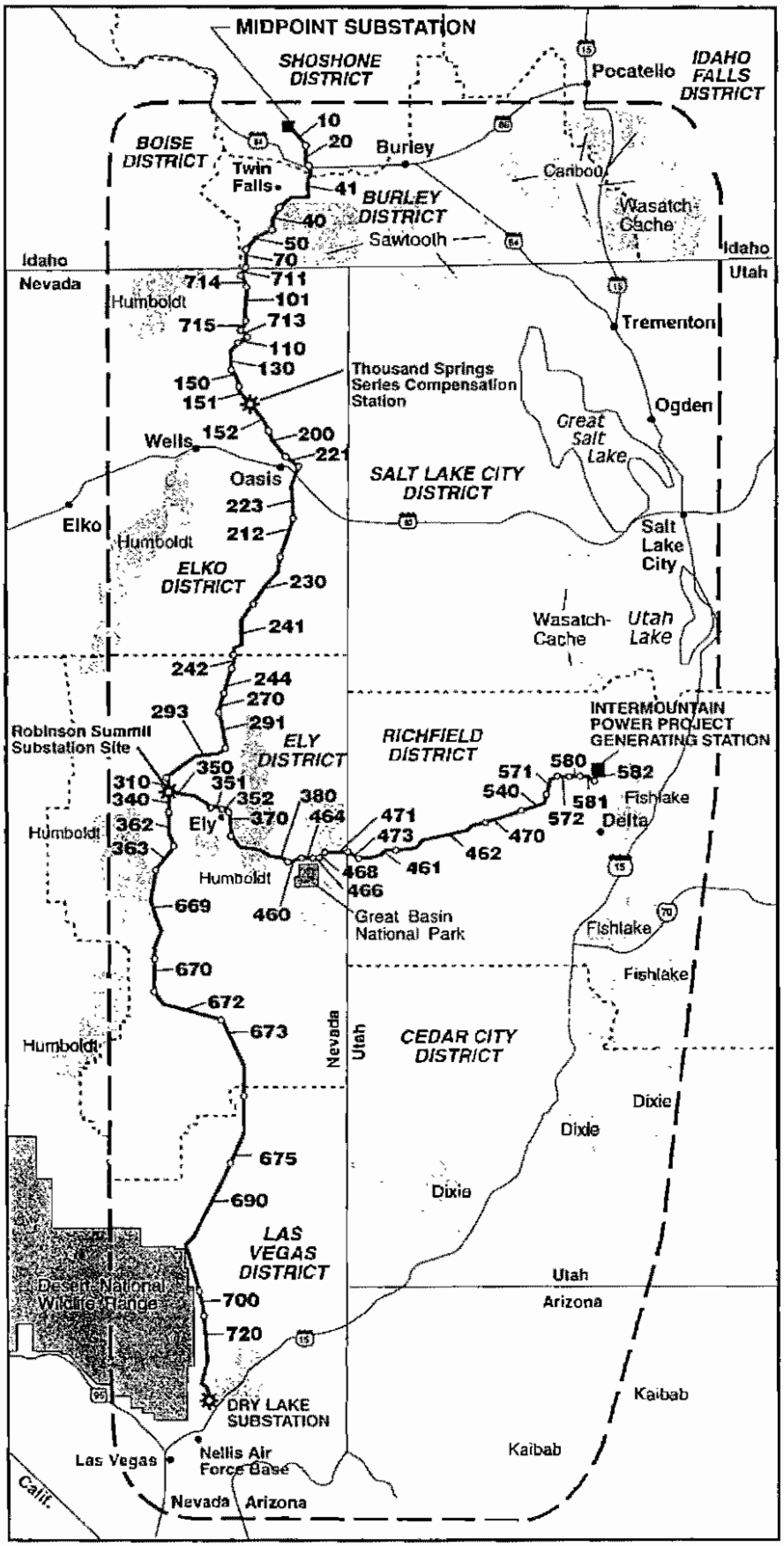
The Southwest Intertie Project (SWIP) Record of Decision (ROD) permits the granting of a public land right-of-way (R/W) to **Idaho Power Company, Boise, Idaho** for the construction, operation, maintenance, and termination of the Southwest Intertie 500 kilovolt (kV) electrical transmission line project (SWIP). The entire R/W on public land includes a 200 foot wide (100 feet each side of center) by approximately 540 mile long linear R/W, three substation sites, each approximately 80 acres in size, two series compensation station sites, each approximately 15 to 20 acres is size and 8 microwave communication sites, each approximately 1/4 acre in size (refer to the Location Map on the following page). Within the 200 foot wide transmission line R/W, the ROD allows the installation of a fiber optic communication cable within the grounding shield wires on top of the transmission line towers.

As the right-of-way decision routes the SWIP in some locations that are outside of BLM designated or planning corridors, the ROD amends affected land use plans to show the new or modified transmission line corridors. No amendments are necessary in Idaho as the Proposed Action is in conformance with the present land use plans. In Nevada and Utah, the ROD amends the appropriate land use plans.

Two public land right-of-way grants will be issued to Idaho Power Company for the SWIP. One grant will be for the Midpoint, Idaho to Dry Lake, Nevada segment (approximately 406 miles long) and one grant will be for the Ely, Nevada to Delta, Utah segment (approximately 134 miles long). This will be done to facilitate the assignment of the Ely to Delta right-of-way segment from Idaho Power Company to the Los Angeles Department of Water and Power. The Los Angeles Department of Water and Power will construct, operate, and maintain this segment of the SWIP (See page 1-1 of the SWIP Final Environmental Impact Statement and Proposed Plan Amendment).

The ROD identifies the Agency Preferred Alternative as the route that the transmission line will follow. It describes this route by link designation as identified in the Southwest Intertie Project Final Environmental Impact Statement and Proposed Plan Amendment (FEIS/PPA) document dated July, 1993. The substation sites, series compensation station sites and microwave communication sites, are also identified in the ROD. The transmission line route and associated facilities are described for each segment of the project, the Midpoint to Dry Lake segment and the Ely to Delta segment.

The ROD identifies the various alternatives, including the Proposed Action, that were assessed, outlines the management considerations that were made in making the decision, and summarizes the public involvement during the EIS process. In addition, the mitigation measures identified as part of the Proposed Action are discussed. These measures include generic mitigation measures that would be incorporated throughout the SWIP route as well as selectively committed measures that Idaho Power Company would implement to mitigate adverse impact in specific instances. The terms, conditions, and stipulations that will be included in the right-of-way grants are also identified.



LEGEND

———	SELECTED ROUTE
462	Link #'s (see EIS)
.....	BLM District Boundaries
▭	USFS Boundaries
✲	Selected Substation Site

Note:
Selected microwave communication sites are not shown on this illustration

Southwest Intertie Project

SOUTHWEST INTERTIE PROJECT
RECORD OF DECISION

DECISION

Right-Of-Way Grant

The Decision is to grant a public land right-of-way (R/W) to **Idaho Power Company, Boise, Idaho** for the construction, operation, maintenance, and termination of the Southwest Intertie 500kV electrical transmission line project (SWIP). The entire R/W on public land includes a 200 foot wide (100 feet each side of center) by approximately 540 mile long linear R/W, three substation sites, each approximately 80 acres in size, two series compensation station sites, each approximately 15 to 20 acres in size and 8 microwave communication sites, each approximately 1/4 acre in size. The ROD also allows the installation of a fiber optic communication cable within the grounding shield wires on top of the transmission line towers.

Use of the fiber optic ground wire by a commercial communications company(s) would be allowed upon completion of all appropriate environmental requirements and upon obtaining a R/W grant from the Bureau of Land Management (BLM). A separate R/W application would be required and a separate, site specific, environmental document may be required to analyze impacts that would be associated with the construction, operation, maintenance, and termination of the associated regeneration stations, electrical service lines, or other ancillary facilities that would be associated with the fiber optic communication system.

Two public land right-of-way grants will be issued to Idaho Power Company for the SWIP. One grant will be for the Midpoint, Idaho to Dry Lake, Nevada segment (approximately 406 miles long) and one grant will be for Ely, Nevada to Delta, Utah segment (approximately 134 miles long). This will be done to facilitate the assignment of the Ely to Delta segment right-of-way from Idaho Power Company to the Los Angeles Department of Water and Power. The Los Angeles Department of Water and Power will construct, operate, and maintain this segment of the SWIP (See page 1-1 of the Southwest Intertie Project Final Environmental Impact Statement and Proposed Plan Amendment, July 1993 (FEIS/PPA)).

The two public land rights-of-way will be issued simultaneously with the ROD. The decision to grant the rights-of-way is an appealable action. The decision, unless a petition for a stay is approved, remains in full force and effect pending the completion of the appeal process (43 Code of Federal Regulations (CFR) 2804.1(b)).

Should an appeal be taken, it must be made in accordance with the regulations contained in 43 CFR Part 4. The appeal must be filed with the Idaho State Director within 30 days from the date of this decision. The appeal must identify which SWIP right-of-way, Midpoint to Dry Lake, Ely to Delta, or both, is the subject of the appeal.

The SWIP transmission line will follow the Agency Preferred Route described below by Link designation as identified in the SWIP FEIS/PPA document dated July, 1993. The substation sites, series compensation station sites, and microwave communication sites, also described in this document, will be constructed in the locations noted below. The transmission line route and associated facilities are described separately for each segment of the project, the Midpoint to Dry Lake segment and the Ely to Delta segment.

Midpoint To Dry Lake Segment

Transmission Line Route

Beginning at Idaho Power Company's Midpoint Substation near Shoshone, Idaho, the SWIP transmission line, Midpoint, Idaho to Dry Lake, Nevada Segment, will follow the route shown on the attached map and identified as links 10, 20, 40, 41, 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.

Substation Sites

The following substation sites have been selected as part of the decision for the Midpoint to Dry Lake Segment:

- Midpoint Substation site near Shoshone, Idaho (existing substation on private land - no public land R/W required)
- Site 10 at the Robinson Summit Substation siting area northwest of Ely, Nevada
- Site 17, 18, or 20 at the Dry Lake Substation siting area, northeast of Las Vegas, Nevada

The final site selected from either sites 17, 18, or 20 may 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 proposed site would be either Site 17 or 18. If the MAT is routed south and east of the Dry Lake Mountain Range, the proposed site would be either Site 18 or 20.

Series Compensation Station Sites

The following series compensation station sites have been selected as part of this decision:

- Nevada - Site 4 at the Thousand Springs Series Compensation Station Siting Area as shown on the Alternative Routes Map, Panel 2, found in the Map Volume that accompanied the SWIP Draft Environmental Impact Statement and Draft Plan Amendment.
- Nevada - Delamar Valley Series Compensation Station Siting Area

If a series compensation station facility is required in the Delamar Valley, the specific location will be determined later and a separate environmental assessment, tiering from the SWIP EIS, would be prepared prior to construction.

Communication Sites

The selected communication sites include

- Idaho - Hansen Butte and Cottonwood sites
- Nevada - the Ellen D (L&D), Rocky Point, Six Mile, Spruce Mountain, Long Valley, Copper, Cave Mountain, Mount Wilson, Highland Peak, and Glendale sites
- Utah - Beaver Dam Mountain site

Ely To Delta Segment

Transmission Line Route

Beginning at Site 10 of the proposed Robinson Summit Substation site, the Ely, Nevada to Delta, Utah segment of the SWIP transmission line will follow the route shown on the attached map and identified as links 350, 351, 352, 370, 380, 460, 464, 466, 468, 471, 473, 461, 462, 470, 540, 571, 572, 580, 581, and 582. Links 350 through 471 describe the Nevada portion of this segment. Links 473 through 582 describe the Utah portion of this segment.

Substation Sites

The following substation sites have been selected as part of the decision for the Ely to Delta Segment:

- Site 10 at the Robinson Summit Substation siting area northwest of Ely, Nevada
- Site 14 at the Intermountain Substation siting area near Delta, Utah

Series Compensation Station Sites

No series compensation stations are required for the Ely to Delta segment.

Communication Sites

No new communication facilities are required for the Ely to Delta segment.

Land Use Plan Amendments

As the right-of-way decision routes the SWIP in some locations that are outside of BLM designated or planning corridors, the Decision is to amend the following land use plans as indicated below.

Idaho

Shoshone District

There is no land use plan amendment required. The public lands crossed by the proposed SWIP transmission line route in the Shoshone District are managed in accordance with the Monument Resource Management Plan (RMP) which was approved on April 27, 1985. This plan, while not specifically designating R/W corridors, provides that public lands may be considered for the installation of public utilities, except where expressly prohibited by law or regulation.

The proposal is determined to be in conformance with the existing management plan and no amendment to that plan is necessary.

Burley District

There is no land use plan amendment required. The public lands crossed by the SWIP proposed transmission line route in the Burley District are managed in accordance with the Twin Falls Management Framework Plan (MFP) which was approved on January 21, 1988. This plan states that future transmission lines are to be confined to corridors where existing transmission lines are located. The proposed SWIP transmission line would parallel the Midpoint-Valmy 345kV transmission line route in the Burley District.

The proposal is determined to be in conformance with the existing management plan and no amendment to that plan is necessary.

Nevada

Elko District

The public lands crossed by the SWIP proposed transmission line route in the Elko District are managed in accordance with the Wells RMP which was approved on July 16, 1985. This plan states that new transmission facilities will be placed in designated corridors on existing rights-of-way whenever possible, or located in identified planning corridors.

The proposed SWIP transmission line either overlaps, adjoins, or parallels numerous existing rights-of-way within Designated and Planning corridors throughout its length in the Elko District except for portions of links 150, 152, and 200 as shown on Figure 1-2 of the FEIS/PPA. In these areas, site specific environmental considerations for this large transmission facility guided its location to the least visually intrusive area. In these three areas, the SWIP transmission line required a location outside the boundaries of existing corridor designations.

The plan amendment involves adding to the existing designated corridors system and map (Wells RMP/EIS Record of Decision - Map 3) the strip of land 1/4 mile on each side of the "assumed centerline" as drawn on the project maps for the above described portions of links 150, 152, and 200. These lands will become Designated corridors and will be considered for future right-of-way dedications as provided for in the Wells RMP.

Ely District

This amendment includes Links 293 and 362 as amendments to the corridor designated in the Egan RMP and Links 468, 471, 672, 673, and 675 as amendments to the corridor designated in the Schell MFP. As these are amendments to existing designated corridors, plan amendments are required by the selection of these Links as the Agency Preferred Route.

With the signing of the SWIP ROD, the Egan RMP (dated February 3, 1987) and the Schell MFP (dated June 1, 1983), will be amended to include Links 293 and 362 as parts of the Egan RMP corridor and Links 468, 471, 672, 673, and 675 as parts of the existing Schell MFP corridor.

Las Vegas District

The land use plans that would be affected by this action are the Caliente Resource Area MFP dated February, 1982, and the Clark County MFP dated September 16, 1983.

For the Caliente MFP Lands Recommendation 3.1, the decision states that: "Major utility systems (69kV [+] powerlines, pipelines, etc.) should follow the corridors shown on the MFP 3 overlay when possible. It is recognized that due to engineering problems and project design that deviations would probably be necessary to allow the construction and maintenance of future facilities. However, every effort should be made to utilize existing corridors to limit disturbance."

The inference in the existing Caliente MFP is that although a planning corridor exists and should be used, there is the caveat that consideration will be given to any necessary deviations resulting from engineering problems and project design. The segment of the SWIP 500kV powerline outside the existing planning corridor from Milepost 20 in Township 1 North, Range 65 East, Section 8 to Milepost 10 in Township 2 South, Range 65 East, Section 8, was analyzed and is determined to be an acceptable location. Selection of the Agency Preferred Route is in conformance with the Caliente MFP.

The SWIP transmission line route along Link 720 was analyzed and determined to be an acceptable location. The Clark County MFP did not designate any utility corridors. However, the selection of

the Agency Preferred Route is in conformance with the Clark County MFP Lands Objective 3.0 and subsequent decision: "Provide public lands in Clark County for transportation, energy transmission, communications, related facilities and systems through appropriate authority."

Utah

Richfield District

The land use plans in the Richfield District that would be affected by this action are the Warm Springs RMP (April, 1987), and the House Range RMP (October, 1987). The selection of the Agency Preferred Route includes the Sacramento Pass Subroute 3 (refer to the SWIP FEIS/PPA) which leaves the 230kV corridor route for only a few miles until it crosses into Nevada. This subroute would be under the Warm Springs Resource Management Plan which states that new rights-of-way will be restricted to designated utility corridors wherever feasible. Since the proposed SWIP transmission line route does not totally meet this condition, the Warm Springs RMP is amended as shown on Figure 1-2 of the SWIP FEIS/PPA.

ALTERNATIVES INCLUDING PROPOSED ACTION

Six alternatives were evaluated to meet the Southwest Intertie Project's need to provide economical energy to the west and to increase transmission and system reliability. The alternatives that were considered but eliminated included general system alternatives as follows: 1) energy conservation and load management, 2) new generation sources, 3) alternative transmission systems, and 4) alternative transmission technologies. These alternatives, discussed on pages 2-2 through 2-10 of the SWIP Draft Environmental Impact Statement/Draft Plan Amendment (DEIS/DPA), were considered, but eliminated because they do not meet the purpose and need for the proposed action. The no-action alternative and the proposed action to construct a transmission line on one of several routing alternatives was discussed and analyzed in detail.

Nine routing alternatives including an utility and an agency preferred alternative were evaluated. The Midpoint to Dry Lake segment included alternative routes A through G, the Utility Preferred Route and the Agency Preferred Route. Alternative A was identified in the SWIP DEIS/DPA as the environmentally preferred route. The Ely to Delta segment included the Direct Route, Cutoff Route, 230kV Corridor Route, and the Southern Route. The 230kV Route was identified in the DEIS/DPA as the environmentally preferred route. These various routing alternatives are discussed below by state and district.

Idaho

Shoshone District

In addition to the No Action Alternative, two basic routing alternatives were evaluated in the Shoshone District. One route, Route F (Link 61 in the Shoshone District) went west toward Hagerman, Idaho and one route went south along the Midpoint-Valmy 345kV transmission line route (Links 10, 20, and 30). The Midpoint-Valmy route (Links 10 and 20), with the exception of link 30, is selected as the Agency Preferred Route. This route is also the environmentally preferred route.

There are no deviations from the environmentally preferred route in the Shoshone District.

All practicable methods to reduce environmental harm have been adopted. This includes the adoption of the Generic Mitigation Measures as well as the Selectively Committed Mitigation Measures listed in Table 1-5 and Table 1-6 of the SWIP FEIS/PPA (See Attachment 1) and the decision to require the preparation and approval by BLM of a detailed Construction, Operation and Maintenance (COM) Plan prior to granting a notice to proceed with construction.

Burley District

In addition to the No Action Alternative, three basic routing alternatives were evaluated in the Burley District. One route (Link 64) parallels the Upper Salmon to Wells 138kV transmission line which is on the extreme western edge of the district and also parallels Salmon Falls Creek. Another route parallels the Midpoint-Valmy 345kV transmission line (Links 40 and 41) to a point northeast of Rogerson, Idaho where it splits off and goes south through Shoshone Basin (Link 81). The third route, which is also the environmentally preferred route (Links 40, 41, 50, and 70), parallels the Midpoint-Valmy 345kV route in its entirety through the Burley District. This route is selected as the Agency Preferred Route.

There are no deviations from the environmentally preferred route in the Burley District.

All practicable methods to reduce environmental harm have been adopted. This includes the adoption of the Generic Mitigation Measures as well as the Selectively Committed Mitigation Measures (Table 1-5 and Table 1-6 of the SWIP FEIS/PPA and Attachment 1) and the decision to require the preparation and approval by BLM of a detailed COM Plan prior to granting a notice to proceed with coustruction.

Nevada

Elko District

Nine routing alternatives, including the agency and environmentally preferred alternatives, were analyzed. The alternatives typically included routing options through the various north-south trending valleys in the Elko District. Alternatives traversed areas with designated corridors, such as Goshute Valley, with minimal existing facilities (Nevada Northern Railroad) and Salmon Falls Creek Drainage, with extensive existing facilities (345kV, 138kV, U.S. Highway 93) as well as, areas with no existing facilities or corridors such as Trout Creek Valley, the east flank of the Goshute Mountains, and Thousand Springs Valley. See page 2-36 to 2-44 of the SWIP DEIS/DPA for a complete description of the specific routes.

The Agency Preferred Alternative and the Environmentally Preferred Alternative (as described in the SWIP DEIS/DPA) for the Elko District 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.

The first difference occurs in the area of Jackpot, Nevada where Link 72 is part of the environmentally preferred alternative 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 part of the environmentally preferred alternative because it would parallel the Midpoint-Valmy 345kV transmission line reducing visual impacts associated with structure contrast, and would minimize visual impacts to residences in the Contact area. The Agency Preferred Alternative in this area utilizes Links 715 and 713 because terrain at 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 to 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 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. 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 and shorter duration of visibility from the trail.

A fourth difference occurs in the vicinity of Oasis, Nevada. During the formal public meetings for the SWIP DEIS/DPA in Wells, Nevada on August 4, 1992, residents of Oasis opposed the preferred

alternative 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. Link 211 had been preferred because it would be a less visually intrusive crossing of Interstate 80. Interstate 80 generally forms the centerline of a low visibility corridor designated by the Elko District of the BLM and is managed as Visual Resource Management (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.

In response to the public comments and in consideration of 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 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.

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 miles of moderate impacts to pronghorn antelope, long-billed curlew, and sandhill crane habitat. The Agency Preferred Alternative would use Links 241, 242, and 245 because they are within the BLM designated utility corridor in accordance with the Wells Resource Management Plan and would provide the least visually intrusive means for this and future projects to traverse the area.

All practicable methods to reduce environmental harm have been adopted. This includes the adoption of the Generic Mitigation Measures as well as the Selectively Committed Mitigation Measures (refer to Table 1-5 and Table 1-6 of the SWIP FEIS/PPA and Attachment 1) and the decision to require the preparation and approval by BLM of a detailed COM Plan prior to granting a notice to proceed with construction.

Ely District

Ely to Delta Segment

While the Direct Route would be shorter, the 230kV Route would be almost entirely within an existing transmission line corridor. This alternative best satisfies Section 503 of the Federal Land Policy and Management Act (FLPMA) of 1976 mandate to utilize existing corridors when feasible. Although the transmission line would extend for many miles across Snake Valley, visual impacts to views from within the Great Basin National Park would be insignificant because of the great distance between the transmission line and the viewpoints. Utilizing non-specular conductors and the proposed dulling of the galvanized metal towers would mitigate visual impacts.

Construction of the project along the Direct Route would impact a previously undisturbed landscape. The existing 230kV corridor, as amended, is the selected route, the environmentally preferred route, the Agency Preferred Route and the Utility Preferred Route.

Privately owned lands are located between the east side of the Snake Range and the Utah border, and are crossed by the existing 230kV corridor. Concern has been repeatedly expressed by local property owners about having yet another major transmission line across the private lands. As it is possible to route the SWIP line totally upon the public lands without additional adverse impacts, an amendment to the Schell MFP to include Links 468 and 471 is required to allow for a distance of greater than one-quarter mile from the highway center line or the existing 230kV rights-of-way.

The Southern Route is the longest route and has higher impacts than the other routes. It is therefore the least environmentally preferred route.

Midpoint to Dry Lake Segment

In addition to the No Action Alternative, three routing alternatives were evaluated within the Ely District.

- Route A, the environmentally preferred route, including the Goshute Valley-Lages Station-Steptoe Valley-Dry Canyon Range-Dry Lake.
- Route B, Wendover-Lages Station-Steptoe Valley-Antone Pass-Egan Range-Dry Lake.
- Route G, the Utility Preferred Route, Goshute Valley-Steptoe Valley Antone Pass-Egan Range-Dry Lake.

The Agency Preferred Route is a combination of routes A and G, bypassing Lages Station and crossing the Egan Range south of Antone Pass at Dry Canyon.

The Agency Preferred Route deviates from the environmentally preferred route near the Elko-White Pine county line. In this area Links 250, 259, and 261 are environmentally preferred because they would cause fewer miles of moderate impacts to pronghorn antelope, long-billed curlew and sandhill crane habitat. The Agency Preferred Route would use Links 241, 242, and 244 because this route is within a designated corridor, will avoid most private residences at Lages Station, and will have less visual impact on the Highway 93 corridor. Links 672, 673, and 675 will reach the Utah-Nevada Transmission Project corridor by the shortest route thus lessening impacts to private lands and visual impacts to Highway 93. This route avoids conflicts with military flight operations within the existing Military Operating Areas (MOA) of Nellis Air Force Base. The rest of the Agency Preferred Route within the Ely District does not deviate from the environmentally preferred route, including the proposed plan amendments.

All practicable methods to reduce environmental harm have been adopted. Mitigation measures included in the SWIP FEIS/PPA will be made a part of the detailed COM Plan. Actual construction may not proceed until after the completion of the COM Plan and the issuance of a notice to proceed. The actual construction will be closely monitored by the Agency or its designated representative.

Las Vegas District

As outlined on page 8 and in the SWIP DEIS/DPA, six general alternatives to meet the SWIP system needs were evaluated:

- Energy conservation and load management
- New generation sources
- Alternative transmission systems
- Alternative transmission technologies
- Proposed action
- No action

Idaho Power Company developed and implemented energy conservation and load management programs in the past. Conservation could not be considered an alternative action that would meet the stated need for the project.

The first four of these alternatives were eliminated from further consideration because they did not meet the system requirements or the stated purpose and need.

Alternative generation sources were eliminated because they would not meet the goal of deferring new generation, providing for seasonal exchanges, diversifying fuel resources, and the other stated purposes of the project. Other alternative routes were eliminated for a number of reasons, including environmental conflicts, public and agency opposition, and system planning/performance criteria.

To minimize the public issues and management concerns to visual resources; biological resources, cultural resources, Wilderness Study Areas, to maximize the use of public lands, and to use existing transmission line corridors where possible, the Agency Preferred Route was selected. The Agency Preferred Alternative and the environmentally preferred route are the same.

All practicable methods to reduce environmental harm have been adopted. This includes the adoption of the Generic Mitigation Measures as well as the Selectively Committed Mitigation Measures (refer to Attachment 1 and Tables 1-5 and 1-6 in the SWIP FEIS/PPA) and the decision to require the preparation and approval by BLM of a comprehensive COM Plan prior to granting a notice to proceed for construction.

Utah

The following are the routing alternatives evaluated in the SWIP FEIS/PPA:

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

The Direct Route would be the shortest route for the Ely to Delta segment. One major concern for this route is that it would cross lands with restricted military airspace. There are also concerns for protecting the undisturbed landscape and a sensitive wetland area (Leland Harris Spring Complex). Because of these concerns, it is one of the least environmentally preferred route.

The Cutoff Route would utilize the 230kV corridor for about half of its length. The remainder would be in an area of undisturbed landscape without other existing transmission lines. There would be a restriction of tower height due to the location in a military operating area (MOA) of the Utah Training and Testing Range.

While the Direct Route would be shorter, the 230kV Corridor Route would be almost entirely within an existing transmission corridor. This route best satisfies Section 503 of the FLPMA mandate to utilize existing corridors when feasible. This route also crosses the MOA. Although the transmission line would extend for many miles across Snake Valley, visual impacts to views from within the Great Basin National Park would be insignificant because of the great distance between the transmission line and the viewpoints. Utilizing non-specular conductors and the proposed dulling of galvanized metal towers would mitigate visual impacts. Privately owned lands are located between the east side of the Snake Valley and the Utah border. However, they are avoided by the selected 230kV corridor with the Sacramento Pass Subroute 3 modification (refer to the SWIP FEIS/PPA). Concern has been repeatedly expressed by local property owners about having yet another major transmission line across the private lands. The 230kV Route is the environmentally preferred route, the Agency Preferred Route, and the Utility Preferred Route.

The Southern Route is the longest route and has higher impacts than the other routes. It is the least environmentally preferred route.

All practicable methods to reduce environmental harm have been adopted. This includes the adoption of the Generic Mitigation Measures as well as the Selectively Committed Mitigation Measures (Table 1-5 and Table 1-6 of the SWIP FEIS/PPA and Attachment 1) and the decision to require the preparation and approval by BLM of a detailed COM Plan prior to granting a notice to proceed with construction.

MANAGEMENT CONSIDERATIONS

Idaho

Shoshone District - The primary management consideration within the Shoshone District is to be in conformance with district land use plans. In addition, consideration was given to the various natural resources to determine if they are either not present, or, if present, that the impacts caused from the Proposed Action would be adequately mitigated. One minor routing alternative, Link 30, was dropped from further consideration so that the transmission line would not cross a private livestock feedlot and some metal buildings. The selection of Links 10 and 20 within the Shoshone District constituted conformance with the Monument RMP, and the selection is consistent with the environmentally preferred route.

Selection of the No Action Alternative would result in no change in the current situation, but would reduce the capabilities to meet expanding demands for electricity and increased economic growth opportunities.

Burley District - The primary management consideration in the Burley District is to minimize environmental impact by routing future transmission lines within existing utility corridors. The selection of Links 40, 41, 50, and 70 accomplished conformance to the land use plan by confining future lines to existing R/W corridors, maintained the Shoshone Basin as an area free of transmission lines, and routed the line away from close proximity to the Salmon Falls Creek Wilderness Study area. This route selection best meets the mandate of Section 503 of the FLPMA to utilize existing utility corridors when feasible. The selection of this route is also consistent with the environmentally preferred route.

Selection of the No Action Alternative would result in no change in the current situation, but would reduce the capabilities to meet expanding demands for electricity and increased economic growth opportunities.

Nevada

Elko District - The primary management consideration in the Elko District is to minimize environmental impacts including those caused by the proliferation of rights-of-way through the utilization of Designated and Planning corridors. Long term visual concern was the overriding factor for all corridor deviations as well as most deviations from the Environmentally Preferred Alternative. The one exception to this was the selection of links 221 and 223 in the vicinity of Oasis, Nevada. The change was made to minimize impacts to significant portions of the planned developments of CSY Investments and Northern Holdings, Inc.

Selection of the No Action Alternative would result in no change in the current situation, but would reduce the capabilities to meet expanding demands for electricity and increased economic growth opportunities.

Ely District - The primary management consideration of the Ely District is to keep total cumulative environmental impacts to a minimum. This is best accomplished by the selection during the planning process and utilization of utility corridors wherever practicable and feasible. This is also required by Section 503 of the FLPMA. Links 293, 362, 468, 471, 672, 673 and 675 are adjustments to existing corridors and are being adopted to meet specific management objectives. Links 241, 242, and 244 are required to avoid private residences and impacts to the visual resource along Highway 93. Link 293 is required to avoid a sage grouse lek, and Link 362 is required to avoid a ferrugineous hawk nesting area. Links 468 and 471 adjust the Ely to Delta segment to avoid needlessly crossing private land. Links 672, 673 and 675 are required to attach to the Utah-Nevada Transmission Project by the shortest route thus lessening impacts to private property and visual impacts to highway 93. Impacts to raptor nesting areas and crucial deer winter range and migration corridors will be mitigated to insignificant levels. The placement of new lines in existing corridors will minimize adverse impacts to specific resource values while maintaining the open space values of previously undeveloped areas.

Other alternative routes were eliminated for a number of reasons, including environmental concerns relating to biological, cultural, land uses, visual resources, public and agency opposition, and system performance criteria.

Selection of the No Action Alternative would result in no change in the current situation, but would reduce the capabilities of the industry to meet expanding demands for electricity and increased economic growth opportunities.

Las Vegas District - The segment of the SWIP 500kV powerline outside the existing planning corridor in the Caliente MFP described as being from Milepost 20 in Township 1 North, Range 65 East, Section 8, to Milepost 10 in Township 2 South, Range 65 East, Section 8, was analyzed and was determined to be an acceptable location. There were no environmental conflicts along this segment; it meets the purpose and need of the SWIP 500kV powerline project since it extends from the Ely District portion of the project to intersect the existing planning corridor and onto the Dry Lake Valley substation site to be determined as part of the Marketplace-Allen Transmission Project study. Therefore, due to the potential of engineering problems and overall project design, this segment was determined to be an acceptable location.

Utah

Richfield District - The selected routing alternative is the 230kV Corridor Route, with the Sacramento Pass Subroute 3 modification (refer to the SWIP FEIS/PPA). As stated, this is the environmentally preferred route, the Agency Preferred Route, and the Utility Preferred Route. This route selection best meets the mandate of Section 503 of the FLPMA to utilize existing utility corridors when feasible. It would utilize an existing utility corridor in accordance with BLM policy and the Warm Springs RMP which encourage efforts to utilize existing corridors, whether designated or not, for new linear right-of-way construction whenever practical and feasible.

Other selection criteria were based on the total potential cumulative environmental effects, which were less significant than in the other alternative routes. Comments from the public generally expressed favor for placement of new lines in existing corridors to minimize adverse impacts and to maintain open space values in previously undeveloped areas.

Other alternative routes were eliminated for a number of reasons, including environmental concerns relating to biological, cultural, land uses, and visual resources, public and agency opposition, and system/performance criteria.

MITIGATION AND MONITORING

The committed mitigation measures and related monitoring and enforcement activities included in the SWIP FEIS/PPA are identified below.

The Generic Mitigation measures found in Table 1-6 of the FEIS/PPA and Attachment 1 of this document will be implemented via incorporation into the COM Plan. Preparation and approval of this plan by BLM will be required before a notice to proceed with construction will be issued.

The Selectively Committed Mitigation measures found in Table 1-5 of the FEIS/PPA and Attachment 1 of this document will be implemented via incorporation into the COM Plan. Preparation and approval of this plan by BLM will be required before a notice to proceed with construction will be issued.

The SWIP may be built in phases. The R/W holder, however, must obtain a notice to proceed from the authorized officer before construction on any phase may begin. The portion of the SWIP from Midpoint Substation to Ely, Nevada (Midpoint to Dry Lake segment) may be the first phase constructed. The Ely to Delta segment may be another phase, and finally, the Ely to Dry Lake segment may be the final phase.

The SWIP will terminate at the new proposed Dry Lake Valley Substation site northeast of Las Vegas, Nevada. From this substation, Idaho Power Company would connect the SWIP with the proposed Marketplace Allen Transmission Project. This project would connect the proposed Dry Lake Valley Substation to the McCullough Marketplace Substation. The Marketplace Allen project is not dependent on the SWIP nor is the SWIP dependent on the Marketplace Allen project. If the Marketplace Allen project is not constructed, the Ely to Dry Lake segment of the SWIP transmission line would be operated at a lower capacity and/or voltage. Energy transactions among several regional utility companies would occur at the Dry Lake substation.

The terms and conditions and stipulations that will become part of the right-of-way grant are identified below.

The right-of-way will be granted subject to the preparation and approval by the BLM of a detailed COM Plan. This plan will include, but will not be limited to, performance bonding requirements, tower siting specifications, access plan, cultural resource clearances, Threatened or Endangered plant and animal species inventory, and site specific reclamation, mitigation and monitoring measures. It will use the mitigation measures identified above as well as the standard R/W stipulations found in BLM's Right of Way Plans of Development & Grants Handbook, H-2801-1. The COM Plan may include new stipulations or mitigation measures that would be developed on a site specific basis and need. The COM Plan will direct the construction, operation, maintenance and termination of the SWIP. The COM Plan will also have appropriate monitoring measures to track the success of the various mitigation measures in minimizing environmental impacts and to monitor rehabilitation measures. Only after the approval by the BLM of the SWIP COM Plan will a notice to proceed with construction be issued.

The mitigation measures listed in the formal Section 7 Consultation and Biological Opinion document prepared by the U.S. Fish and Wildlife Service dated May 12, 1993, and subsequent Biological Opinion document for Mojave Desert Tortoise Critical Habitat dated March 23, 1994 will be incorporated into the COM Plan. Approval of this plan by BLM will be required before a notice to proceed with construction will be issued.

The R/W will be granted subject to the stipulations identified in the Cultural Resources Programmatic Agreement accepted by the Advisory Council on Historic Preservation on June 13, 1990.

Use of the fiber optic ground wire by a commercial communications company(s) would be allowed upon completion of all appropriate environmental requirements and upon obtaining a R/W grant from the BLM. A separate R/W application would be required and a separate, site specific, environmental document may be required to analyze impacts that would be associated with the construction, operation, maintenance, and termination of the associated regeneration stations, electrical service lines, or other ancillary facilities that would be associated with the fiber optic communication system.

The holder shall not initiate any construction or other surface disturbing activities on the R/W without the prior written authorization of the authorized officer. Such authorization shall be a written notice to proceed issued by the authorized officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.

Appropriate performance bonds would be required of the R/W holder to assure compliance to the terms and conditions of the R/W grant.

In accordance with 43 CFR 2803.4(c), failure of the R/W holder to use the R/W for the purpose for which the authorization was issued for any continuous five-year period shall constitute a presumption of abandonment. If the holder fails to prove to the satisfaction of the authorized officer that his failure to use the R/W was due to circumstances not within his control, the R/W could be canceled.

Prior to the issuance of a notice to proceed, Idaho Power Company will, to the satisfaction of the BLM, show that SWIP would be placed in a location along Links 700 and 720 which will allow sufficient room for the construction of anticipated future transmission lines identified in the SWIP FEIS/PPA (two 500kV White Pine Power Project Lines and the 500kV Utah-Nevada Transmission Project transmission line).

Except where the SWIP transmission line parallels the approved Utah-Nevada Transmission Project 500kV transmission line (Links 675, 690, 700,720), the centerline of the SWIP will be located within 200 feet of the centerline of any other transmission line it parallels. Because of reliability requirements, where the SWIP parallels the Utah-Nevada Transmission Project transmission line (Links 675, 690, 700, and 720), a maximum 2000 foot separation, centerline to centerline, between the two lines will be allowed, subject to the same restraints identified previously.

When the SWIP is constructed, Idaho Power Company will furnish the BLM an "as built" survey of the transmission line route, substation sites, series compensation station sites, communication sites, and any related facilities. The "as built" survey will become the official right-of-way grant map.

The right-of-way will be granted subject to the condition that the BLM will notify the holders of existing rights-of-way, leases, or permits that would be impacted by the SWIP. Idaho Power Company must resolve, to the holders satisfaction, any conflicts or concerns about their authorized uses related to the construction, operation and maintenance of the SWIP.

PUBLIC INVOLVEMENT

The public involvement process in the SWIP EIS and land use plan amendment process has been extensive. The process included extensive public affairs work, public scoping meetings, public workshops, and formal public meetings. During the course of the project 12 newsletters, fact sheets, and project updates were published to inform the interested parties about the environmental process, the project status, and opportunities to participate. The mailing list, including individuals, organizations, and agencies included over 3,000 entities. The notice of all the public meetings and availability of the DEIS/DPA and the FEIS/PPA were published in the Federal Register and in local newspapers that served the various communities along the various routing alternatives in Idaho, Nevada, and Utah.

Public scoping meetings were held during the initial stages of the project. These meetings were held in March of 1989. Meetings were held in the communities of Twin Falls, Idaho, Wells, Ely, Caliente and Las Vegas, Nevada, and Delta, Utah. The purpose of the scoping meetings was to:

- inform the public of the project and solicit their participation in the project planning process
- obtain public and agency input on significant issues of concern that should be addressed
- obtain public comment on concerns about adjustments to alternatives being considered
- focus the scope of the future detailed environmental resource studies for the DEIS/DPA

As a result of the expansion of the SWIP south to an endpoint in the vicinity of Las Vegas, Nevada, three additional public scoping meetings were held in June 1990. These meetings were held in Ely, Caliente, and Las Vegas to inform the public of changes to the project description and to solicit comments on issues of concern in areas affected by the expansion.

Public workshops were held in January and February of 1991 in the same locations as the scoping meetings to give the public an opportunity to review and discuss inventory data and environmental assessment work prior to writing the DEIS/DPA. These workshops were held to:

- report results of the environmental studies for the various routing alternatives
- present the preliminary alternative transmission line routes
- gain public input on the acceptability of the preliminary alternative transmission line routes

Meetings were also held with the various county commissioners of each of the potentially affected counties in Idaho, Nevada, and Utah. The purpose of the meetings was to disseminate information regarding the project, including issues and the location of alternative routes and substations, and to discuss any county permitting requirements. Agencies and organizations having jurisdiction and/or specific project interest within the study area were contacted to inform them of SWIP, to verify the status and availability of existing environmental data, and to solicit their input to the study process.

When the SWIP DEIS/DPA was completed, it was mailed to the mailing list of 675 interested parties who had requested a copy. In addition, formal public meetings were held in the same communities noted above during August of 1992. The purpose of these formal meetings was to receive public views and comments regarding the accuracy and adequacy of the SWIP DEIS/DPA.

Testimony was recorded verbatim at these meetings. The public was also invited to submit written comments on the DEIS/DPA during a 90 day comment period.

In July, 1993 the SWIP FEIS/PPA was mailed out to the mailing list of 675 individuals, organizations, and agencies who had requested a copy. The public was informed of the 30 day protest period for the plan amendment portion of the EIS and the Governor of each affected state (Idaho, Nevada, and Utah) were allowed 60 days for the required consistency review. Notice of the availability of the document was also published in the Federal Register and in local newspapers serving the communities within the affected areas of Idaho, Nevada, and Utah. A protest to the SWIP FEIS/PPA was received from five organizations that had participated in the EIS and land use plan amendment process. The protests involved concerns about visual impacts to the California National Historic Trail and the Great Basin National Park, impacts to desert bighorn sheep, impacts to desert tortoise, concerns about the SWIP R/W corridor being used for future water projects, concerns about the procedures used in preparing the SWIP FEIS/PPA, as well as concerns about the prupose and need for the project, mitigation measures, economic feasibility, regional impacts of the SWIP, and the relationship between the SWIP and the Marketplace Allen Transmission Project. These protests were reviewed, analyzed, and a response to each issue prepared. On June 28, 1994, a decision letter was sent by the BLM Director to each protesting party. The BLM Director concluded that the BLM Idaho, Nevada, and Utah State Directors followed the applicable planning procedures, laws, regulations, policies, and resource considerations in developing the SWIP FEIS/PPA and that the protests did not warrant a change to the SWIP FEIS/PPA.

This extensive public participation program was done in an effort to seek and obtain public views throughout the Environmental Impact Statement process.

SIGNATURES

The Decision and supporting information as presented above constitutes our Record of Decision for the Southwest Intertie Project Final Environmental Impact Statement and Proposed Plan Amendment.

State Director, Idaho — Date: 12/8/94

State Director, Nevada — Date: 11-23-94

State Director, Utah — Date: 12/5/94

ATTACHMENT 1

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.

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).

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 predisturbed 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 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 jnrisdiction 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.

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.