APPENDIX C

METHODOLOGY FOR QUANTIFYING EXISTING CONDITIONS, RATING IMPACTS, AND CONDUCTING SENSITIVITY ANALYSES

FALCON TO GONDER PROJECT

C.1 METHODOLOGY FOR QUANTIFYING EXISTING CONDITIONS

The following methodology was developed to compare the environmental effects of the five route alternatives for the Falcon to Gonder transmission line project and to identify the preferred alternative. This appendix is provided as supporting background information for the discussion of the route selection methodology summarized in Section 3.20 of this EIS.

Step 1 - The first step was to document existing environmental conditions in the study area. To facilitate this process, the route alternatives were broken down into segments and labeled A through L.

As shown below and in Figure ES-1, many of the segments are shared by several route alternatives.

- Crescent Valley (a) route alternative (Segments A-B-F-G-I-J)
- Crescent Valley (b) route alternative (Segments A-B-F-H-I-J)
- Pine Valley (a) route alternative (Segments A-C-D-F-G-I-J)
- Pine Valley (b) route alternative (Segments A-C-D-F-H-I-J)
- Buck Mountain route alternative (Segments A-C-E-J)

Information about existing conditions along each of the segments was then gathered through field surveys, research of existing maps and relevant documents and interviews (e.g., with Native American tribal representatives). When feasible and appropriate for this analysis, data on existing conditions was plotted and quantified using geographic information systems (GIS) and other techniques. A matrix summary of this data is provided in Figure C-1.

The matrix spreadsheets use mileposts and fill patterns to reflect existing conditions along each of the segments, as well as numeric totals in the far right column. The figure contains a separate matrix[1] for each segment, which shows the total length of the segment, information about existing transmission lines and access roads, and other evaluation factors. The data displayed in the matrices was selected based on its ability to be quantified, as well as its anticipated importance and usefulness in identifying the preferred route alternative.

In most cases, the matrix reflects the number of linear miles that the transmission line would pass directly through a particular resource or land use condition. To capture the line's proximity to sensitive sites that are near, but not on, the proposed centerline (e.g., sage grouse leks) a circle with a defined radius was drawn around each site and the length of the centerline that intersects the circle was measured. For fault and road crossings, the matrix provides the total number and locations of these crossings.

Step 2 - Calculate Miles of Environmental Impacts for Each Route Alternative: The quantitative data for individual segments was tallied to identify the miles of impacts associated with each of the route alternatives. For example, the Pine Valley (a) route alternative consists of Segments A + C + D + F + G + I + J.

Step 3 - Assign Impact Ratings (High-Medium-Low): The next step was to assign an "impact rating" of High, Medium or Low to ensure that the results reflect the fact that some impacts would be

[1] The matrix is divided into ¼-mile increments or "cells". If an environmental resource or condition exists anywhere within that ¼-mile area, the cell is shaded in, similar to the technique of rounding up a decimal number. The numeric totals in the far right column of the matrix, however, reflect accurate measurements in terms of the number of miles that a condition exists along the segment or the total number of sites.

greater than others. To facilitate the quantitative analysis, impact ratings were assigned the following numeric values, as shown in the Impact Rating Score column of the following tables.

Impact Rating	Score
High	3
Medium	2
Low	1

Step 4 - Identify Relative Importance of Impacts: Certain species/sites/resources are more sensitive and afforded higher levels of regulatory protection than others. Therefore, each impact in the following tables received a "relative importance" rating. For example, since sage grouse are listed by the BLM and Nevada Division of Wildlife as a sensitive species and ferruginous hawk are listed by the U.S. Fish and Wildlife Service as a species of concern, impacts to these species were given a higher relative importance rating.

These ratings reflect the relative importance of the impacts compared with others in the same resource category (e.g., wildlife). It does not reflect the relative importance of impacts between different categories (i.e., wildlife impacts are not rated relative to visual impacts).

Step 5 - Calculate Scores and Rank Route Alternatives: To identify the environmentally preferred route alternative, scores were calculated by adding the total number of miles of impact for each resource and multiplying that number by the relative importance and impact rating. Tables 3.20-1 through 3.20-5 compare the scores of the five alternatives. For example, Table 3.20-1 indicates that the Pine Valley (b) route would have the greatest impact on mule deer while the Buck Mountain route would have the least.

Then, to obtain an overall picture of how the routes rank within the larger categories (e.g., wildlife resources, invasive weeds, cultural resources, and visual resources), scores for each of the five route alternatives were totaled and ranked from 1 to 5 at the bottom of the tables. This enables an overall ranking to be assigned to identify the route with the fewest impacts (a rating of 1) to the greatest impacts (a rating of 5).

Finally, the rankings for each category are displayed in a summary table for direct comparison. As shown in Table 3.20-5, the Pine Valley (a) alternative has the fewest impacts in three of the four categories. The only category in which another route alternative scores better is invasive weeds. This is largely due to the fact that the two Crescent Valley route alternatives contain more areas of existing noxious weed infestation and existing transmission lines. Consequently, the Crescent Valley route alternatives would have the fewest miles of new disturbances. The Pine Valley (a) alternative is ranked third for invasive weed impacts.

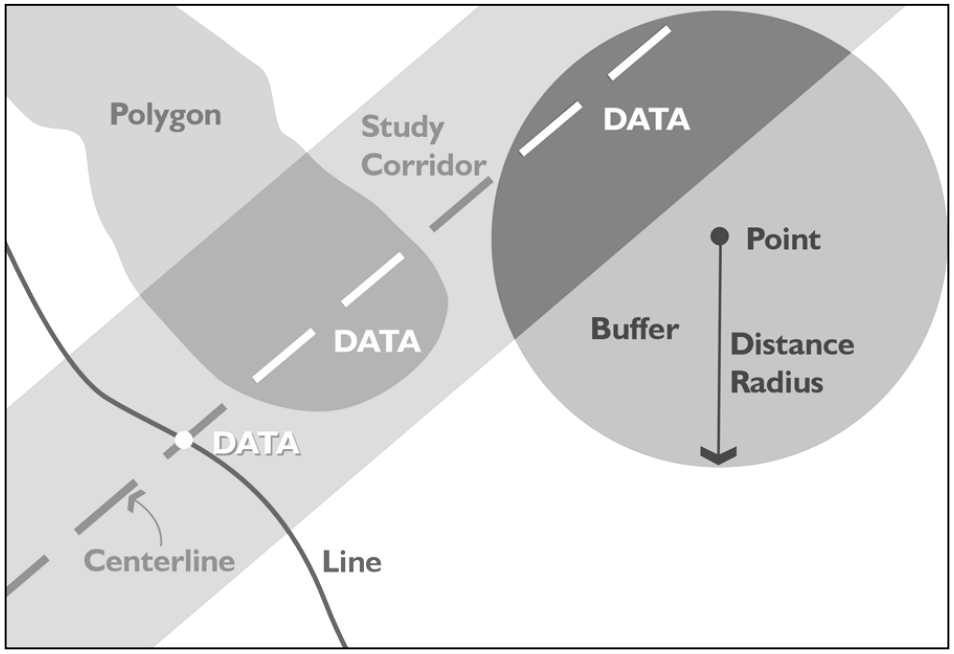
IDENTIFYING THE ENVIRONMENTALLY PREFERRED ROUTE ALTERNATIVE

This methodology leads to the conclusion that **the Pine Valley (a) route alternative is the environmentally preferred alternative.** A number of sensitivity analyses were conducted to test the methodology and the conclusions about the Pine Valley (a) alternative to see if changing the relative importance would change the scores and outcome. As shown in the following section, the sensitivity analyses proved that the methodology is valid and the overall rankings remained largely the same. Tables 3.20-1 through 3.20-5 display the results of the methodology.

QUANTIFYING EXISTING CONDITIONS

The following methods were used to quantify existing conditions along the transmission line routes. This information explains how the corridor data summary in Figure C-1 of the EIS was produced.

In most cases, the totals in the right hand column of Figure C-1 reflect the number of linear miles that the transmission line would pass directly through a particular resource or land use condition. To capture the line's proximity to sensitive sites that are near but not on the proposed centerline, a circle with a defined radius was drawn around each site and the length of the centerline that intersects the circle was measured. For fault and road crossings, the right hand column provides the total number and locations of these crossings.



The following describes how each of the evaluation factors in Figure C-1 was measured.

BIOLOGICAL RESOURCES

MULE DEER WINTER RANGE

This evaluation factor is represented by the number of linear miles of mule deer winter range that are crossed by the centerline of the proposed transmission line.

TWO-MILE RADIUS FOR SAGE GROUSE LEKS

Sage grouse leks were identified and mapped from protocol-level surveys done in spring 1999 and spring 2000 for the proposed transmission line. A two-mile radius was mapped around each lek that was sighted during the surveys. This evaluation factor is represented by the number of linear miles that the centerline of the proposed transmission line transects the two-mile radius buffer around a lek.

TWO-MILE RADIUS FOR HISTORICAL SAGE GROUSE LEKS

The NDOW Statewide Digital Database presents sage grouse leks sighted from 1960 to 1994. A two-mile radius was mapped around each lek in the database. This evaluation factor is represented by the number of linear miles that the centerline of the proposed transmission line transects the two-mile radius buffer around a lek.

HALF A MILE RADIUS FOR FERRUGINOUS HAWK NESTS

Ferruginous hawk nests were identified and mapped from wildlife baseline surveys done in spring 1999 for the proposed transmission line. A half-mile radius was mapped around each nest that was sighted during the survey. This evaluation factor is represented by the number of linear miles where each half-mile radius around a ferruginous hawk nest crosses the centerline of the proposed transmission line.

FERRUGINOUS HAWK NESTING TERRITORY

This evaluation factor is represented by the number of linear miles of ferruginous hawk nesting territory (as mapped by Pete Bradley, NDOW) that are crossed by the centerline of the proposed transmission line.

HALF A MILE RADIUS FOR BURROWING OWL BURROWS

Burrowing owl burrows were identified and mapped from wildlife baseline surveys done in spring 1999 and spring 2000 for the proposed transmission line. A half-mile radius was mapped around each burrow that was sighted during the survey. This evaluation factor is represented by the number of linear miles where each half-mile radius around a burrowing owl burrow crosses the centerline of the proposed transmission line.

HALF A MILE RADIUS FOR GOLDEN EAGLE NESTS

Golden eagle nests were identified and mapped from wildlife baseline surveys done in spring 1999 for the proposed transmission line. A half-mile radius was mapped around each nest that was sighted during the survey. This evaluation factor is represented by the number of linear miles where each half-mile radius around a golden eagle nest crosses the centerline of the proposed transmission line.

HALF A MILE RADIUS FOR PYGMY RABBIT BURROWS

Pygmy rabbit burrows were identified and mapped from wildlife baseline surveys done in spring 1999 for the proposed transmission line. A half-mile radius was mapped around each burrow that was sighted during the survey. This evaluation factor is represented by the number of linear miles where each half-mile radius around a pygmy rabbit burrow crosses the centerline of the proposed transmission line.

VEGETATION TYPES

The 13 vegetation types (i.e., basin big sagebrush, mountain big sagebrush, Wyoming big sagebrush, black sagebrush, low sagebrush, salt desert shrub, riparian/wetland, pinyon/juniper woodland, winterfat, greasewood, crested wheatgrass, cultivated, developed/disturbed) and the noxious weeds are considered evaluation factors. For the matrix, the five sagebrush communities were combined based on their similarity. The resulting 10 evaluation factors for vegetation resources are represented by the number of

linear miles of each vegetation group that are crossed by the centerline of the proposed transmission line. The sum of the linear miles for each factor accounts for 100% of the coverage along the proposed route segments. In the matrix's graphic representation of the vegetation groups, there is overlap among some groups. The overlap occurs in order to ensure that small vegetation groups (e.g., riparian/wetland, and noxious weeds) are shown where they occur in ¼ mile segments that are dominated by another vegetation group.

BURN AREAS

Burn areas include areas that burned in 1999 and a small area located near the L re-route that likely burned in 1998. Burn areas are considered a separate category because the burn areas are "an overlay" of the plant community types already included in the vegetation evaluation factors previously described. This evaluation factor portrays the linear miles of burn areas that are crossed by the centerline of the proposed transmission line.

SPECIAL-STATUS PLANT

One population of Pennell Draba (*Draba pennellii*) was identified along the proposed transmission line corridor approximately 200 feet north of Segment J at Hercules Gap. This special-status plant population is located within the 500-foot corridor, but it is not located on the centerline. Therefore, it would not be portrayed by the linear miles crossed by the centerline. To account for this special status plant population, it is graphically represented as an occurrence within the 500 foot-wide corridor in the matrix.

CULTURAL RESOURCES

TRADITIONAL CULTURAL PROPERTIES

Traditional Cultural Properties (TCPs) within the 500 ft. study corridor were identified by Penny Rucks, subconsultant to Summit Envirosolutions, in 1999 – 2000. As the boundaries of these potential TCPs have not yet been determined, (and are confidential), no mileage figures for these have been given. Only total numbers of TCPs per segment are available.

SIGNIFICANT OR UNEVALUATED HISTORIC SITES

Significant or unevaluated historic sites within the 500 ft. study corridor were identified by Summit Envirosolutions in 1999 – 2000. While the locations of these historic sites have been mapped in GIS, this information is considered confidential and is therefore not available for publication in the document. Consequently, only total numbers of sites per segment are provided.

SIGNIFICANT OR UNEVALUATED PREHISTORIC SITES

Significant or unevaluated prehistoric sites within the 500 ft. study corridor were identified by Summit Envirosolutions in 1999 – 2000. As with the historic sites, the locations of these prehistoric sites are considered confidential and is therefore not available for publication in the document. Consequently, only total numbers of sites per segment are provided.

SIGNIFICANT CULTURAL SITE

Significant cultural sites being considered in the visual impacts analysis include the Shoshone Wells, Palisades/Eureka Railroad and the Pony Express Trail.

CULTURAL VISUAL IMPACT LEVEL

Of particular concern are cultural resource sites where the integrity of the surrounding landscape is important to the context of the site. In these cases, the influence of the intrusion of the proposed transmission line on the context of the cultural resource site should be an additional consideration in determining visual impacts.

VISUAL RESOURCES

KOP LOCATION

The route was visually inspected from various public roads and vantage points to develop an overall assessment of the potential impacts by segment. In consultation with BLM, 29 Key Observation Points (KOPs) were established to assess the potential project impacts on sensitive visual resources, scenic landscapes, and vistas along the proposed transmission route. KOPs are located (1) Along major or significant travel corridors (e.g., Interstate 80, Highway 50, Highway 306, and Highway 278), (2) At or near cultural, historic, and prehistoric sites (e.g., Pony Express Trail, Eureka-Palisade Railroad, the Geysers); and (3) Near residential areas (e.g., Crescent Valley, Warm Springs Ranch). Locations were selected to be typical views of the proposed transmission line as seen by a casual viewer and to portray potential impacts that could occur along the route.

NUMBER OF MILES LINE IS VISIBLE FROM KOP

This factor represents the number of linear miles of the proposed transmission line that would be visible from the 29 KOPs.

VRM IMPACT LEVEL

This evaluation factor is based on the standard VRM impact assessment process which calls for a contrast rating procedure that evaluates the proposed transmission line against the major features in the existing landscape using the basic design elements of form, line, color, and texture and assigning a level of contrast. The results of which are then compared against the VRM Class objectives to determine a level of impact.

MILES IN SENSITIVE BLM VRM CLASS II

This factor represents the number of linear miles of the proposed transmission that would be located within VRM Class II areas. The objective of this VRM class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Data were obtained from GIS mapping efforts using BLM VRM Classification data.

MILES IN SENSITIVE BLM VRM CLASS III

This factor represents the number of linear miles of the proposed transmission line that would be located within VRM Class III areas. The objective of this VRM class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of he characteristic landscape. Data were obtained from GIS mapping efforts using BLM VRM Classification data.

LAND USE

URBAN/RESIDENTIAL

This land use category includes all lands developed and disturbed by humans within the proposed project centerline. This data was obtained from the Developed/Disturbed category from the vegetation survey completed in 1999-2000 by Summit Envirosolutions. Developed or disturbed areas may include rural residences, farm structures and related out-buildings, parking lots, driveways, and back yards. Urban/Residential land uses on three mile-wide study corridor were obtained from US Fish & Wildlife Service GAP database for Nevada.

OCCUPIED HOMES WITHIN 1,000 FEET

This land use category includes all occupied residential uses (ranches houses, mobile homes, and travel trailers) within 1,000 feet of the project centerline. This data was obtained from a Stantec helicopter field survey using GPS (geographic positioning system) technology and analyzed with GIS by EDAW, Inc.

AGRICULTURE

This land use category includes all cultivated lands within the proposed project centerline. This data was obtained from the Cultivated category from the vegetation survey completed in 1999-2000 by Summit Envirosolutions. This category does not include grazing lands as nearly the entire project area is within BLM grazing allotments. Agricultural land uses on three mile-wide study corridor were obtained from US Fish & Wildlife Service GAP database for Nevada.

MINING DISTRICT

Data for mining districts within the proposed project centerline was obtained from the Nevada Bureau of Mines & Geology GIS sources districts in the project area. While mining districts are widespread throughout the region, and may contain active mining claims and active mining operations (open pit mines), no active mining operations would be crossed by the proposed transmission line. These districts primarily represent areas with potential mining prospects, and are policy-based designations. There is no certainty that mining will occur in these areas.

NUMBER OF PAVED ROAD CROSSINGS

Paved roadways are dispersed throughout the project area and provide the main transportation routes in this portion of the state. The proposed project would cross a number of paved roadways, including Interstate I-80 and Highways 50, 93, 306, 278, and 892. Information on paved roadway crossings was obtained from GIS data provided by Stantec.

NUMBER OF DIRT ROAD CROSSINGS

Numerous dirt roads are dispersed throughout the project area. The proposed project would cross a number of improved dirt roads (graded, maintained, partially engineered), as well as unimproved dirt roads (4WD trails, primitive roads). Information on dirt roadway crossings was obtained from GIS data provided by Stantec.

NUMBER OF BLM LAND USE AUTHORIZATIONS CROSSED

The BLM provides a number of authorizations of private uses on public lands. This data was obtained from the BLM Land Records 2000 database (1999 data). BLM land use authorizations crossed by the proposed project would primarily include rights-of-way for federal, state, and local roads, private transmission and telephone lines, and an oil and gas pipeline.

LAND OWNERSHIP

PUBLIC LAND - BLM

Public lands crossed by the proposed project includes lands managed by three BLM field offices in the project area; Ely, Elko, and Battle Mountain Field Offices. Approximately 80% of the land in the project area is managed by the BLM. Data were obtained from Nevada statewide GIS mapping sources for public ownership.

PRIVATE PROPERTY

Private property crossed by the proposed project include any non-BLM managed land owned by individuals or corporations. Approximately 20% of the land in the project area is privately owned. Very little of the private land that would be traversed by the proposed project is developed. Data were obtained from Nevada statewide GIS mapping sources for public ownership.

ACTIVE MINING CLAIMS IN OR NEAR ROW

The proposed project would cross a number of active mining claims. Active claims indicate that there is a legal claim on the land allowing mining activities to occur if recoverable materials exist there, and if it would be economically feasible to recover them. It does not indicate areas of active mining operations. Active claims in or near the ROW were provided by Douglas Hirschman, Independent Mineral Landman, consultant to SPPC.

WATER RESOURCES

NUMBER OF SPRINGS AND WELLS WITHIN ¼ MILE

Springs and wells were identified and their distances to the proposed transmission line were measured from USGS 1:24000 topographic maps. While the mapping of springs is likely to be fairly accurate; the location of new wells or existing wells that have since been abandoned may not be accurately represented.

FLOOD INUNDATION RISK

Areas susceptible to flood inundation were identified primarily through GIS using NRCS soil series attribute data where annual inundation may occur for at least 1 week on an occasional basis or at least 2 days on a frequent basis. The generalized assessment of inundation risk using the soils data was supplemented by interpretations of general geomorphological conditions using USGS 1:24,000 scale topographic maps. Such interpretations identify natural flood plain areas of watercourses where flood inundation can be recognized as a hazard.

FLASH FLOOD HAZARD

Flash flood hazards were identified through interpretation of physiographic conditions using USGS topographic maps at the 1:24,000 scale. Areas with the proximity of a high mountain range drained by steep gradient tributary water courses that join together in the main stem at lower altitude were considered to be potentially vulnerable to flash flooding.

SOILS

HIGH WATER ERODIBILITY

The matrix expresses the number of linear miles that the centerline of the proposed transmission corridor crosses soils with a high erosion potential. For the purposes of this analysis, an evaluation of erosion was limited to water, where water erosion potential was considered to greater than 8, based on NRCS established ratings (see Section 3.2 Soils).

NO RECLAMATION CONSTRAINTS

The matrix presents the linear miles of soils with no constraints (see Section 3.2 Soils) that are crossed by the centerline of the proposed transmission line. Areas with no soil constraints are likely to be suitable for reclamation with minimal mitigation.

STEEP SLOPES

The matrix presents the linear miles of soils with steep slopes (greater than 15%) that are crossed by the centerline of the proposed transmission line. Areas with steep slopes generally have higher potential for soil erosion, mass wasting, and slope instability, which can present constraints during construction and reclamation.

MAJOR FAULT CROSSING

Major faults crossed by the proposed transmission line were identified primarily from a 1:100,000 mapping source provided by the Nevada Bureau of Mines & Geology GIS data. Information was confirmed and, in certain cases, supplemented by the 1:250,000 scale sources published for each of the local area

C.2 RATING IMPACTS

The following assumptions were used to formulate the impact ratings used in Section 3.20 of the EIS, *Comparison of Route Alternatives*. Please refer to Tables 3.20-1 through 3.20-5.

C.2.1 WILDLIFE

Mule Deer Winter Range: If the transmission line would cross mule deer winter range, the impact is considered "Low" after mitigation.

Sage Grouse Leks (Sighted in 1999 and 2000 surveys): If the transmission line would cross within a two-mile radius of sage grouse leks (sighted in the 1999 and 2000 surveys), the impact is considered "Low" after mitigation.

Sensitive Sage Grouse Leks (Sighted in 1999 and 2000 surveys): Those surveyed leks that would be within a direct line of sight of the proposed transmission line are designated as "sensitive," and the impact is considered "Medium" after mitigation.

Historical Sage Grouse Leks: If the transmission line would cross within a two-mile radius of historical sage grouse leks, the impact is considered "Low" after mitigation.

Ferruginous Hawk Nests: If the transmission line would cross within a half-mile radius of ferruginous hawk nests, the impact is considered "Low" after mitigation.

Ferruginous Hawk Nesting Territory: If the transmission line would cross ferruginous hawk nesting territory, the impact is considered "Low" after mitigation.

Burrowing Owl Burrows: If the transmission line would cross within a half-mile radius of burrowing owl burrows, the impact is considered "Low" after mitigation.

Golden Eagle Nests: If the transmission line would cross within a half-mile radius of golden eagle nests, the impact is considered "Low" after mitigation.

Pygmy Rabbit Burrows: If the transmission line would cross within a half-mile radius of pygmy rabbit burrows, the impact is considered "Low" after mitigation.

C.2.2 INVASIVE NONNATIVE SPECIES

The following factors are representative of potential noxious weed and cheatgrass impact areas. They best characterize areas in terms of the potential spread of existing infestations or vulnerability to new introductions following disturbance to soil or vegetation.

Existing Noxious Weed Infestation: Where the transmission line corridor and associated facilities sites are located in infested areas, impacts from construction, operations, and maintenance activities are considered "Low" after mitigation and reclamation.

Burned areas: If the transmission line centerline would cross recently (1999) burned areas, the impact is considered "Low" after mitigation and reclamation.

Undisturbed areas: Undisturbed areas include those areas characterized by all vegetation types (see "Vegetation Types" in Section A, above) other than "crested wheatgrass", "cultivated", and "developed/disturbed". If the transmission line centerline would cross undisturbed areas, the impact is considered "Low" after mitigation and reclamation.

New Non-parallel alignment: If the transmission line is in an area without an existing transmission line within 1,000 feet of the proposed new line, the impact is considered "Low" after mitigation and reclamation.

New centerline and spur road construction: If the transmission line is in an area in which new centerline or spur roads would be required, the impact is considered "Low" after mitigation and reclamation.

Access road improvements required: If the transmission line is in an area in which access road improvements would be required, the impact is considered "Low" after mitigation and reclamation.

C.2.3 VISUAL RESOURCES*

If the visual contrast of the proposed transmission line exceeds the VRM Class guidelines for an area, it would result in a "high" visual impact.

If the visual contrast of the proposed transmission line is fully at, but not, exceed the VRM Class guidelines for that area it would result in a "medium" visual impact.

If the visual contrast of the proposed transmission line is clearly less than the VRM Class guidelines for the area it would result in a "low" visual impact.

*Note: These ratings reflect the level of visual impacts before mitigation.

C.2.4 CULTURAL RESOURCES AND PALEONTOLOGY

Areas of Concern to Western Shoshone (within approximately 2 miles): The effects of the proposed transmission line on TCPs largely depend on the nature of the TCP itself. If the transmission line would substantially affect the character of a TCP site that is eligible for the NRHP for its spiritual qualities, the impact is considered "High."

If the transmission line would substantially affect a TCP site that is eligible for the NRHP for its traditional resource values but it would still be considered usable by the practitioners (e.g., a Rabbit Drive Area), or if the visible intrusion at a spiritual site is at some distance, the impact is considered "Medium."

If the transmission line were to be constructed in a location where the viewshed has been compromised by other modern intrusions and the transmission line would be only slightly visible from an NRHP-eligible TCP or other location of religious importance (considering topography and distance), the impact is considered "Low."

Significant or Unevaluated Prehistoric Sites Within the 500 ft Corridor: Impacts to prehistoric sites would be considered "High" if the sites are: 1) located on or near angle point towers, 2) larger than 1,000 feet long, and 3) located in areas of low access. Because angle point towers are difficult to relocate, sites larger than 1,000 feet are difficult to span, and sites within low access areas tend to have the highest

integrity, these sites would likely be directly impacted from project construction, and are therefore considered a "High" impact.

All other significant or unevaluated prehistoric sites within the 500 ft. corridor have the potential for indirect impacts and are therefore considered "Medium." Indirect impacts include greater access and potential for looting.

Significant or Unevaluated Historic Sites Within the 500 ft Corridor: Impacts to historic sites are primarily concerned with the effect to the historic setting due to the visual intrusion of the transmission line. Impacts to historic sites would be rated "High" or "Medium" based on the same criteria as listed above for prehistoric sites. Also, if the transmission line would affect the site's setting such that it would be rendered ineligible for listing in the NRHP (i.e. if the project would significantly change the characteristics that qualify the site for listing in the NRHP), the impact is considered "High." It would also be considered a "High" impact if a historic site is within 150 feet of a tower location or 45 feet from an access route, because of the potential for construction impacts. In addition, effects to historical archaeological sites eligible under criterion D would be considered "High" if these effects significantly compromise the site's data potential.

If the transmission line would have a moderate effect on the qualities that qualify the site for listing in the NRHP under criteria A, B, or C, but is not likely to render it ineligible, the impact is considered "Medium."

If the transmission line would have a slight visual effect on a site, but would not disqualify it for listing in the NRHP, the impact is considered "Low."

Visibility from Eureka-Palisade Railroad: If the transmission line would be relatively close to the Eureka-Palisade Railroad and would be visible due to local topography (i.e. flat landscape), the impact is considered "High."

If the transmission line would be relatively close to the Eureka-Palisade Railroad but would be separated by a hill or other topography that would block many of the views of the line, the impact is considered "Medium." Or if the transmission line is relatively far away but within a flat landscape, the impact would also be considered "Medium."

If the transmission line would be blocked by local topography and would be relatively far away, the impact is considered "Low."

Historic Ranches Within 2 Miles: If the transmission line would be visible from within 2 miles of an historic ranch, the impact is considered "Medium."

C.3 SENSITIVITY ANALYSES

To test the validity of the methodology for identifying the preferred route (as explained in Chapter 3.0), a series of sensitivity analyses was performed by the BLM ID Team at a workshop held on October 3 and 4, 2000. The objective was to determine to what degree the relative importance ratings would need to be changed to alter the final rankings of the alternative routes. The following eight sensitivity analyses were performed to test the methodology:

Test 1 - Wildlife: Treat all wildlife relative importance as 1. Result: This scenario puts sensitive sage grouse leks on a par with other resources. When all wildlife categories are given the same relative importance rating, the number of linear miles through the wildlife habitats determines the results. Since the

Buck Mountain route is the shortest of all the alternatives, it rises to number one in the rankings. However, for reasons discussed in the Wildlife and Special-Status Species sections of the EIS, this scenario does not provide a true reflection of the environmentally preferred route, as Buck Mountain contains the most pristine and least fragmented habitat of all the routes. Therefore, this scenario was rejected.

Test 2 - Wildlife: Treat all wildlife relative importance as 1, but sensitive sage grouse leks as 8. Result: Increasing the relative importance of sensitive sage grouse leks identified in 1999 and 2000 field surveys to a rating of 8 and lowering the relative importance of other wildlife to 1 does not change the outcome dramatically. Pine Valley (a) still scores the best among all routes. However, Pine Valley (b) and Buck Mountain rankings switch. This scenario essentially confirms the original findings.

Test 3 - Wildlife: Treat all wildlife relative importance as 1, but sensitive leks and other leks identified during the 1999 and 2000 field surveys as 8. Result: This test produces the same results as Test 2.

Tests 4 - Noxious Weeds: Increase the relative importance of burned areas to 50. Result: No change in overall ranking of the routes, but Buck Mountain scores even worse than before.

Test 5 - Noxious Weeds: Increase undisturbed category to a relative importance of 3. Result: This test does not dramatically alter the results, except that Pine Valley (b) and Buck Mountain switch places, ranking 5th and 4th respectively. However, because burned areas and new non-parallel lines could also potentially play a role in the spread of cheatgrass, the ID Team decided to increase the relative importance of burned areas to 20 and new non-parallel lines to 50 in the table used in the EIS (see Table 3-2 in Chapter 3.0).

Test 6 - Elevate the relative importance of Traditional Cultural Properties (TCPs) from 3 to 6. Result: No change in overall ranking of the routes, but Crescent Valley routes score even worse. Also, regulations do not support assigning TCPs a greater relative importance than the other cultural resources. Thus, the original scenario was deemed most appropriate.

Test 7 – Show the miles of new non-parallel transmission line as part of the visual resources test. Result: It was decided that this was a useful factor for evaluating visual impacts in concert with the VRM class ratings. A decision was made to combine the 75/25% rankings to produce an integrated visual resources ranking, as shown in Figure 3.20-4 in the EIS.

Test 8 - Private ownership of properties along the routes. Result: Buck Mountain would have the fewest number of private owners (i.e., about 40) directly affected by right-of-way easements (personal communication with John Berdrow, Sierra Pacific Power Company, October 4, 2000). Pine Valley (a) would have the next fewest, while Crescent Valley (b) would have the most (about 70). Because the numbers are so close and private property owners would be compensated by the utility for the easements, it was determined that this information was not highly useful as a distinguishing characteristic in the route comparison. It is, however, provided in the EIS and RMP Amendments under Section 3.13 *Land Use and Access.*

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INSERT FIGURE C-1