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.

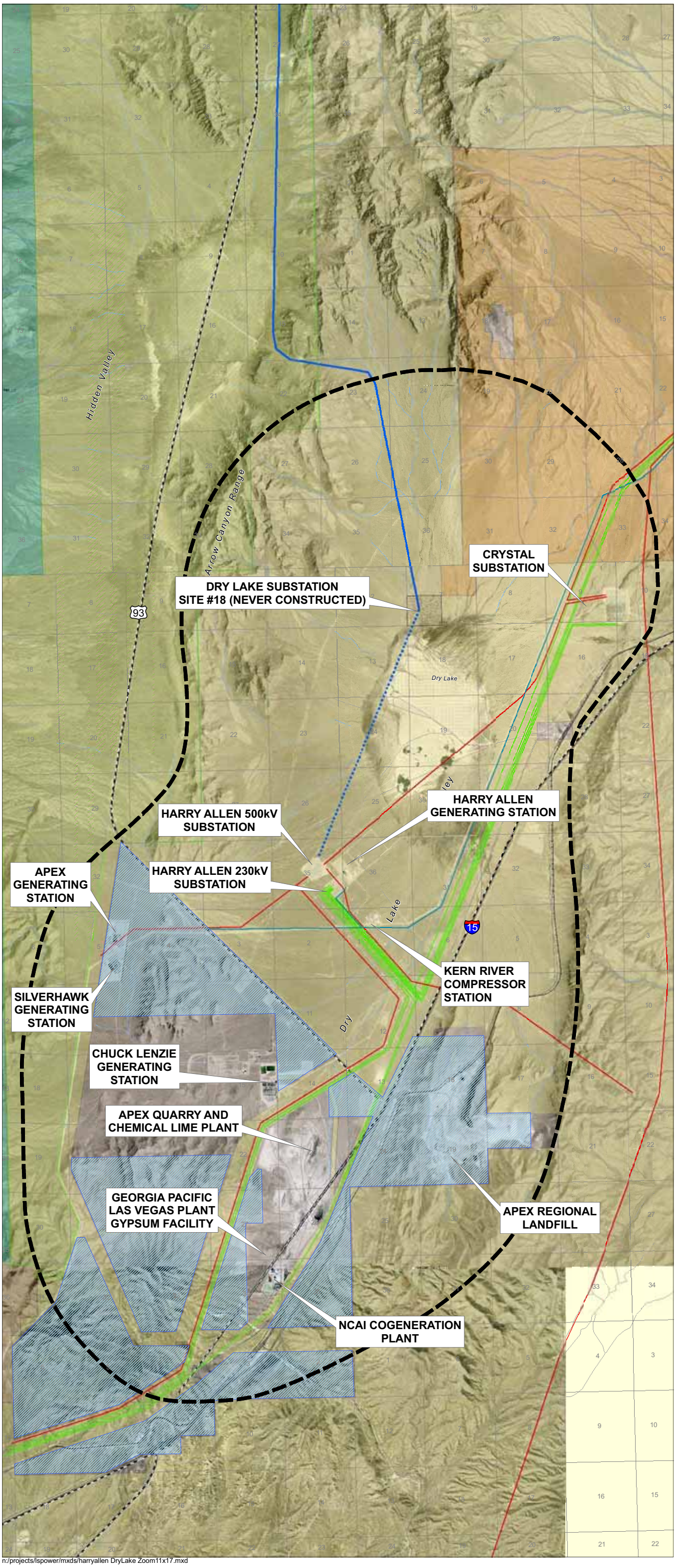
The methodology used to analyze the potential cumulative impacts included identification of the affected environment and environmental consequences associated with each modification individually (presented in Sections 3.0, 4.0, and 5.0 of this EA), and the cumulative effects associated with past, present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



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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

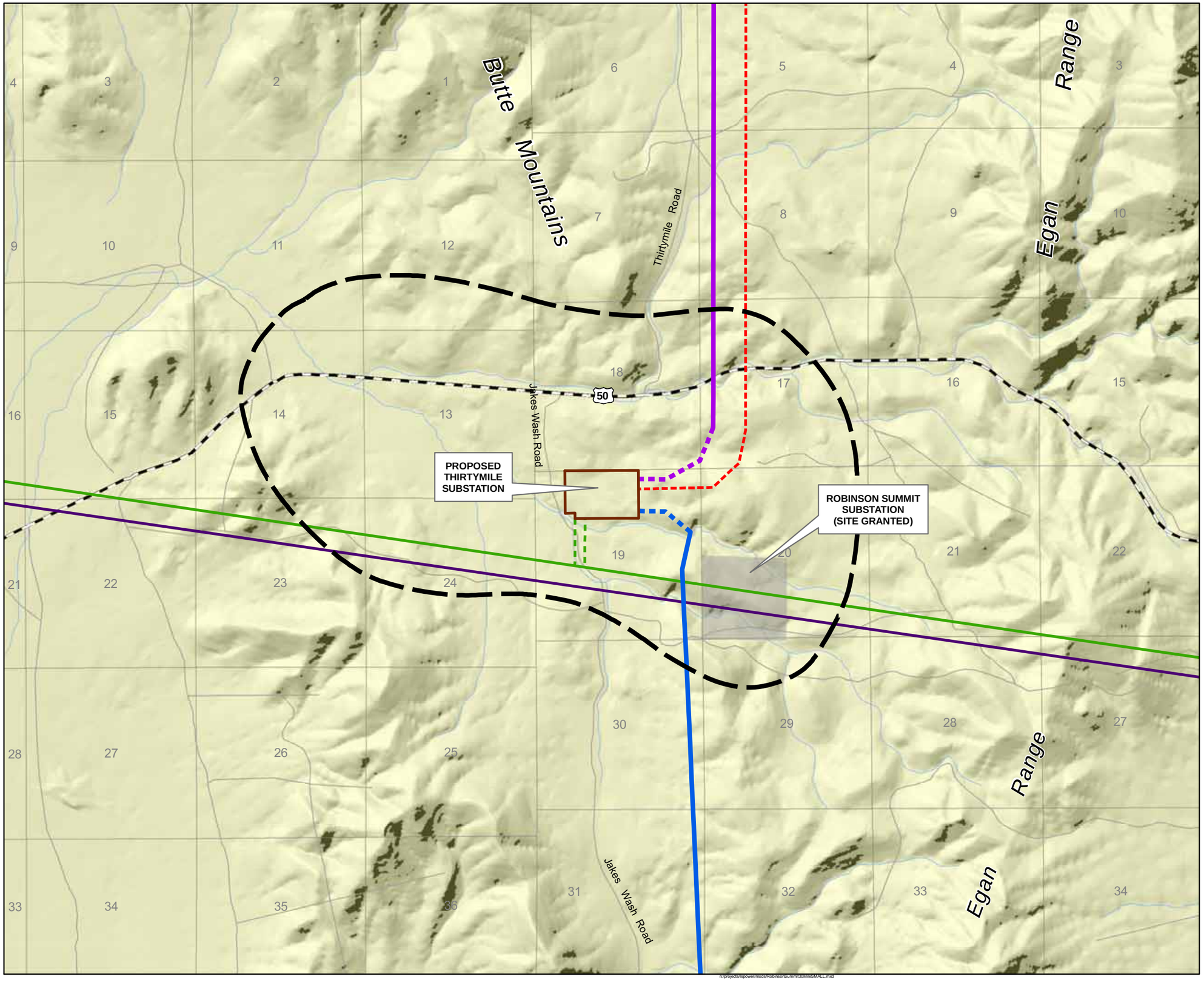
Sources
BLM - Nevada State Office, Land Ownership
USGS, 30 meter Digital Elevation Models
SWIP EIS 1994
Existing transmission lines for general reference only

0 0.5 1 2 Miles

epg

July 2008

Figure 9



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

July 2008

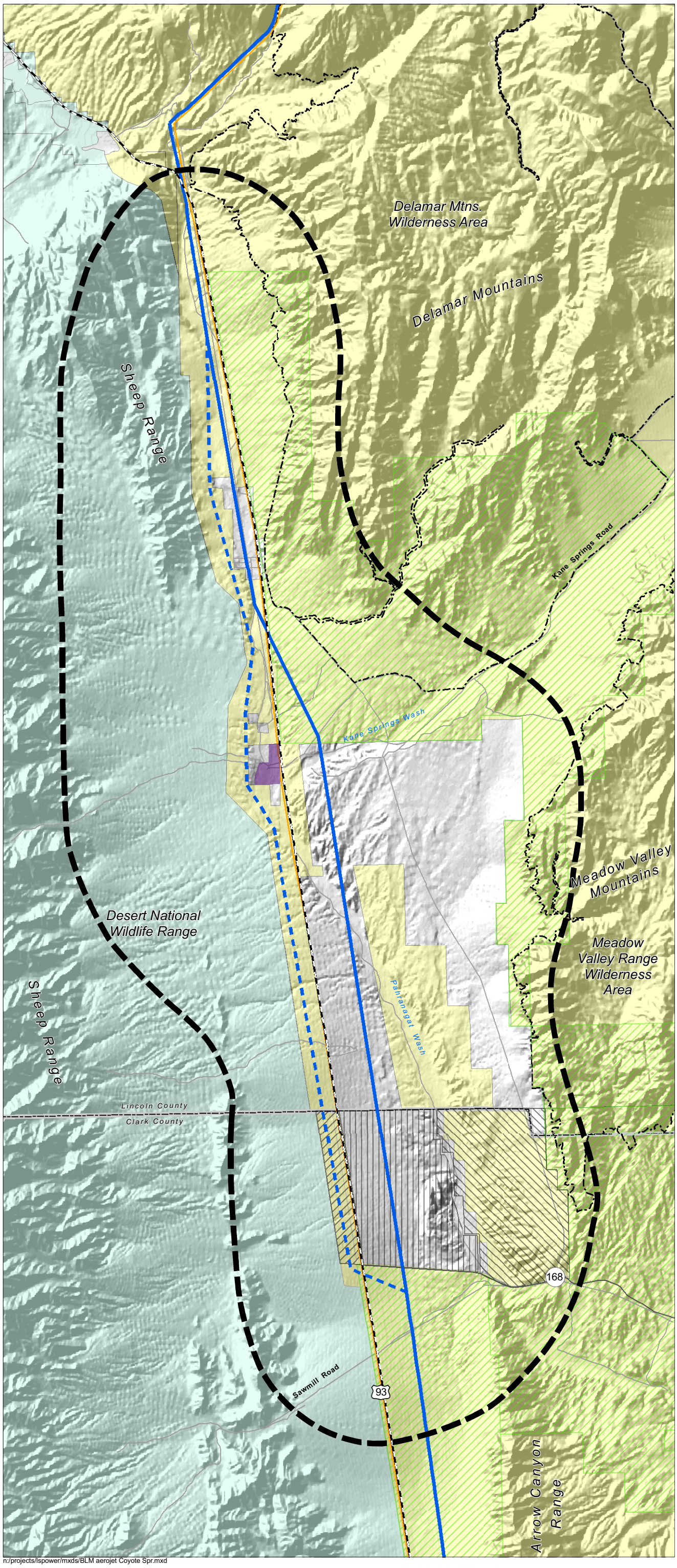
Figure 10

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.