5. Cumulative Scenario and Impacts

5.1 Introduction

In accordance with CEQA (CEQA Guidelines Section 15130 et seq.) and NEPA (40 Code of Federal Regulations [CFR] 1508.25(c)), this Environmental Impact Report/Environmental Impact Statement (EIR/EIS) analyzes cumulative impacts of the EITP in conjunction with other developments that affect or could affect the project area. CEQA and NEPA have similar definitions of "cumulative impact." According to CEQA, the term refers to two or more individual effects that are considerable when taken together, or that compound or increase other environmental impacts (CEQA Guidelines Section 15355). CEQA requires the cumulative impacts discussion to reflect the likelihood that the impacts would occur and their severity if they did occur, but allows the discussion to contain less detail than must be provided for individual impacts. According to NEPA, a cumulative impact is the impact on the environment that results from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions (40 CFR Section 1508.7). To comply with both CEQA and NEPA, a cumulative scenario has been developed that identifies and evaluates projects that are reasonably foreseeable or that are already existing within the cumulative study area or that would be constructed or commence operation during the timeframe of activity associated with the proposed project. According to federal requirements, an adequate cumulative impacts analysis must not only describe related projects but must enumerate the environmental effects of those projects. In addition, the analysis must consider the interactions among these multiple activities. To comply with NEPA, an analysis of the aggregation of impacts of existing and reasonably foreseeable future projects in combination with the proposed action is provided.

5.2 Cumulative Projects

The projects that make up the cumulative scenario are located in close proximity to the EITP within the cumulative study area and are (1) completed, (2) approved and under construction, (3) approved but not yet under construction, or (4) proposed but not approved. A project is included in this cumulative analysis if information on the project was available in the BLM's database or identified during agency scoping or in another published cumulative analysis as of December 31, 2009.[1]

The tables below list existing and reasonably foreseeable future projects within or near the Ivanpah and Eldorado valleys, including project status. These projects include renewable energy, transportation, infrastructure improvement, pipelines, and other projects. Table 5-1 lists projects considered in the cumulative analysis within or near the Ivanpah Valley in California, and Table 5-2 lists those within or near the Ivanpah and Eldorado valleys in Nevada. Figure 5-1 shows the locations of these projects. The letters and numbers in the figure correspond to those preceding the names of the projects as shown in Tables 5-1 and 5-2. Numbered projects are existing projects, and lettered projects are proposed projects. For example, "Project 7 – Colosseum Mine" is an existing project and "Project A – First Solar Photovoltaic Project" is a proposed project. Additional available information on each project is presented in Section 5.2.1, "Past and Present Projects/Existing Cumulative Conditions," and Section 5.2.2, "Reasonably Foreseeable Future Projects."

Table 5-3 summarizes the length of construction for projects that would or could overlap with EITP construction, including the size of the anticipated workforce during construction and operation. As discussed in Chapter 3, "Environmental Analysis," some identified impacts would occur only during construction of the EITP and would only contribute to cumulatively considerable impacts if the EITP was constructed concurrently with that project.

[1] The BLM and the CPUC chose this date as a reasonable cutoff to allow completion of this draft analysis.

Table 5-1 List of Projects Considered Within or Near the Ivanpah Valley in California

Map ID Letter or #, Project Name[3], and Application Number (if applicable)	Location (Distance from EITP and Valley in Which Project is Located)	Owner	Project Description	Project Type	Status
Existing Projects					
3 – Primm Valley Golf Course[1]	3 miles south of the CA/NV state line in California (Approximately 1 mile east of the EITP proposed route centerline at MP 32) Ivanpah Valley	Terrible's Primm Valley Casino Resorts (MGM Mirage)	An approximately 22-parcel (456-acre) golf course located south of the CA/NV border along I-15.	Recreation	Existing. Mitigated Negative Declaration was adopted in 1995. It was constructed in 1996 and 1997[5].
5 – Ivanpah Dry Lake Recreation Area[1]	Ivanpah Dry Lake (EITP crosses the Ivanpah Recreation Area between MP 29 and MP 31) Ivanpah Valley	BLM	The area is managed by the BLM Needles Field Office and used by recreationists for non-motorized recreational activities including, archery, kite buggying, and land sailing[1].	Recreation	Approximately 200 casual use permits are issued for various non-motorized recreational activities. Annually there are approximately 5,000 users for various activities, most of which are nonmotorized[6].
6 – Molycorp[4] Mine[1]	Mountain Pass, Sulphide Queen Property (Approximately 5 miles south/southwest of EITP)	Molycorp Mineral LLC[4]	Open pit rare-earths mining operation.	Mine	Ongoing, expected to continue until mid-2020. Long history of mining. Many releases of radiological contaminants .An EA is being prepared to install additional monitoring wells to determine extent of the groundwater plume[6].
7 – Colosseum Mine[1]	12 miles west of Primm, Nevada (approximately 6 to 7 miles from proposed Ivanpah Substation site)	Lac Minerals	Mining facilities occupy 284 acres on a 3,316 acre private parcel. Located within the East Mojave National Scenic Area and Clark Mountain ACEC. The area was mined for gold in an open pit.	Mine	Mine approved by BLM in 1984. Inactive as of early 1990s and closed in 1994.Remedial action undergone. BLM's Colosseum Mine files were transferred to the Mojave National Preserve in 1994[6].
9 – Molycorp Mine Evaporation Pond (Old and New)[1]	Southeast of the Ivanpah Dry Lake (Approximately 3.25 miles from EITP)	Chevron	Evaporation Pond for wastewater generated at the Molycorp[2,4] rare-earths mining facility.	Evaporation Ponds	Neither pond is in use. Groundwater below the ponds is contaminated and is being monitored[8].
11– SCE Eldorado-Ivanpah 115-kV Transmission Line	Existing route that would be replaced by the proposed project	SCE	115-kV single circuit transmission line	Transmission Line	Existing transmission line in use.
12 – Molycorp[4] Wastewater Pipeline[1]	Runs from Molycorp[2,4] south of I-15, through the Mojave National Desert Preserve to the Evaporation pond (5.5 miles from EITP) Ivanpah Valley	Chevron	13-mile-long wastewater pipeline that runs between the Molycorp[2] mine and the evaporation pond.	Wastewater Pipeline	Entire wastewater pipeline is currently being pulled because it is contaminated internally (contaminating soils). A minimum of 70 releases have occurred from this pipeline. There have been multiple investigations of the pipeline, and there has been a removal of contaminated soils associated with the wastewater discharge. BLM issued the decision record for the Molycorp Waste Discharge Pipeline and Contaminated Soils Removal EA on 3/13/07. National Park Service, Mojave National Preserve issued a Special Use Permit authorizing activity to occur on NPS administered lands as well on 11/5/08[6].

Table 5-1 List of Projects Considered Within or Near the Ivanpah Valley in California

Map ID Letter or #, Project Name[3], and Application Number (if applicable)	Location (Distance from EITP and Valley in Which Project is Located)	Owner	Project Description	Project Type	Status
10 – AT&T Fiber Optic Cable Replacement[1]	Along the west side of the Ivanpah Dry Lake and of I-15 (EITP would cross the buried Fiber-optic cable at MP 32) Ivanpah Valley	AT&T	Existing direct buried fiber-optic cable will be replaced from Nevada border to the Halloran Summit, including a segment adjacent to the ISEGS project to the west of the Ivanpah Dry Lake. to the project uses an existing 10-foot ROW.	Buried Fiber Optic Cable	Completed. This was a replacement in 2009. The EA/MND was completed in 2009[6].
F – Caltrans Temporary Batch plant[1]	Located at Yates Well Road intersection within I-15 ROW (2.1 miles south/southeast of EITP) Ivanpah Valley	Caltrans	Temporary asphalt batch plant.	Asphalt Plant	This plant still exists and is located within freeway ROW[7]. The Temporary Batch Plant area was used for an expansion project and could be used for the Joint of Port Entry project. Contractor and construction workers could use their equipment[7]. There is no environmental documentation for this facility[7].
Foreseeable Projects					
C – DesertXpress	Along the I-15 between Victorville and Las Vegas (EITP would cross the train route at MP 29) Ivanpah Valley	DesertXpress Enterprises	Installation of 180 miles of train tracks for a commercial high-speed electric train that would operate between Victorville, CA and Las Vegas, NV. Construction commencement date TBD.	High Speed Train	Draft EIS was published in March 2009 and the public comment period ended on May 22, 2009. It is not known when the Final EIS or the ROD will be published; therefore, the construction commencement date is unknown[6].
E – Joint Port of Entry (JPOE) (CA-690-EA06-01)[1]	Between Yates Well Road and Nipton Road, San Bernardino County. (2.5 miles south/southeast of the EITP) Ivanpah Valley	Caltrans, California Dept Food and Agriculture	The Joint Port of Entry would include an Agricultural Inspection Facility and a Commercial Vehicle Enforcement Facility located on the north side of I-15 between Nipton Road and Yates Well Road	Inspection Facility	Caltrans submitted a Recreation and Public Purposes Act Lease application to the BLM for the JPOE facility. Temporary Use Permit for Geotechnical Testing and soil sampling is in process. An environmental Negative Declaration is in preparation[7]. Caltrans is reconsidering proposal as a phased project based on funding availability. Re-evaluation of environmental documents (ND and FONSI) are being performed because these approved environmental documents are over 3 years old[7]. Therefore, EA is being processed to re-evaluate the previous environmental documentation; EA has not been completed[7].
Foreseeable Renewable Energy Projects					
A – First Solar Photovoltaic Project (BLM ROW CACA 48669)[2]	Ivanpah, south of CA/NV border T17N/R14E (Intersects the proposed EITP route centerline between MPs 31 and 33) Ivanpah Valley	First Solar Development	300 MW photovoltaic project; 4,160 acres of land requested.	Solar Photovoltaic Plant	A modified application was filed on August 7, 2009. The POD submitted to BLM was inadequate. The length of time that will be required for the environmental review period is not known at this time[6].

Table 5-1 List of Projects Considered Within or Near the Ivanpah Valley in California

Map ID Letter or #, Project Name[3], and Application Number (if applicable)	Location (Distance from EITP and Valley in Which Project is Located)	Owner	Project Description	Project Type	Status
J – Iberdrola Wind Project (BLM ROW CACA 44988)[2]	Between Mineral Mountain and I-15 in California (Approximately 6 miles south of proposed Ivanpah Substation)	Iberdrola Renewables	75 MW wind energy project; 2,330 acres; Military: Red	Wind	ROW issued for 3 MET towers expired December 31, 2009. Cost recovery was finalized for the MET towers on August 12, 2008. The Categorical Exclusion was completed at the Needles Field Office[6].
K – ISEGS Project (BLM ROW 048668, 049502, 049503, 049504, and 049508)[2]	4 miles south of the CA/NV border in CA (Intersects the proposed EITP route centerline between MPs 33 and 34) Ivanpah Valley	Solar Partners I LLC	Ivanpah 2 Project (ISEGS); increased acreage December 14, 2006 (4,073 acres); related files 049502, 049503, 049504	Solar	ROW application pending. The Draft EIS was published. A Supplemental DEIS is was published on April 16,2010[6].

Sources/Notes:

[1] CEC and BLM 2009

[2] BLM 2009

[3] In the absence of a known project name, projects are named according to the owner/developer and the type of facility or structure proposed.

[4] Molycorp is a subsidiary of Chevron-Texaco Corporation.

[5] Williams 2010

[6] Meckfessel 2010

[7] Caltrans 2010

[8] Hunter 2010

Table 5-2 List of Projects Considered Within or Near the Ivanpah and Eldorado Valleys in Nevada

Map ID Letter or #, Project Name[6], and Application Number (if Applicable)	Location (distance from EITP and Valley in which Project is located)[5]	Owner	Project Description	Project Type	Status
Existing Projects					
1 – Bighorn Electric Generating Station[1]	Primm, NV (Approximately 0.5 miles east of the proposed EITP route centerline at MP 27) Ivanpah Valley	Reliant Energy Wholesale Generation, LLC	Operating 570 MW natural gas power plant; uses dry cooling system	Power Plant	Existing. This facility was constructed in 2004[7].
2 – Primm Casinos: Buffalo Bill's, Primm Valley, Whiskey Pete's[1]	31900 Las Vegas Blvd. South, Primm, NV (Approximately 0.5 miles west of the proposed EITP route centerline at MP 28) Ivanpah Valley	Terrible's Primm Valley Casino Resorts (MGM Mirage)	Two existing resort/casinos and one existing hotel/casino	Casino/Resort	Existing. Whiskey Pete's was constructed in 1977[7]. Buffalo Bill's was constructed in 1994[7]. Primm Valley Casino was constructed in 1998[7].
4 – Primm Outlet Mall[1]	32100 Las Vegas Blvd. South, Primm, NV (Approximately 0.5 miles west of the proposed EITP route centerline at MP 28) Ivanpah Valley	Fashion Outlets (MGM Mirage)	Existing shopping outlet with over 100 stores. Connected to the Primm Casinos by monorail, approximately 359,000 square feet of leasable area and 1,600 parking spaces. More than one million vehicles pass the Outlet Mall per month.	Shopping Mall	Existing. The mall was constructed in 1998[7].
8 – Desert Oasis Apartment Complex[2]	Primm, NV (Immediately adjacent to the north side of the proposed EITP route centerline at MP 28) Ivanpah Valley	MGM Mirage	Gated community comprised of 52 buildings to house 650 Primm casino/resort employees. Includes laundry facilities, a 10,000-square-foot market, clubhouse, swimming pool, fitness facilities, and basketball court.	Residential Units	Existing. The complex was constructed in 2004[7].
13 – Jean/Roach Dry Lake SRMA[12]	The proposed project would cross the Jean/Roach Dry Lake Recreation Area between MPs 10 and 27.5 Ivanpah Valley	BLM	Jean/Roach Dry Lake Recreation Area provides opportunities for casual use and other types of recreation, including motorcycling, all-terrain vehicle and 4 x 4 driving, horseback riding, mountain biking, small-game hunting, and organized racing events.	Recreation	Existing.
14 – Southern Nevada Supplemental Airport (SNSA)[1]	30 miles south of the McCarran International Airport (Less than one mile from the EITP at MP 26) Ivanpah Valley	Clark County Department of Aviation	Site reserved for a new International Airport to supplement the McCarran International Airport in Las Vegas; 5,934-acre site; adjacent to desert tortoise relocation site.	Airport	While the SNSA has not been approved or constructed, the South County Land Use Plan contains policies related to the SNSA, and the land is considered reserved for the future airport. Currently, a Draft EIS is in progress and is expected to begin construction in 2014. The Scoping Report and Draft Alternatives Working Paper are available. Construction is expected to begin 2014[9].
15 – El Dorado Combined Cycle Power Plant	Boulder City, NV (Within 1 mile of the EITP route at	Sempra Energy	480-MW natural gas fired power plant located on 138-acres of land 17 miles	Power Plant	Existing. Operational since May 2000.[11]

Table 5-2 List of Projects Considered Within or Near the Ivanpah and Eldorado Valleys in Nevada

Map ID Letter or #, Project Name[6], and Application Number (if Applicable)	Location (distance from EITP and Valley in which Project is located)[5]	Owner	Project Description	Project Type	Status
	MP 0) Eldorado Valley		southwest of downtown Boulder City and 40 miles southeast of Las Vegas.[11]		
16 – Nevada Solar One Project[3]	Boulder City, NV (Approximately 1.7 miles east of the proposed EITP route centerline at MP 0; approximately 1.6 miles east of Alternative B MP 0) Eldorado Valley	Acciona/ Solargenix Energy	64 MW concentrating solar power (CSP) plant on 400 acres.	Solar	Existing. Operating since June 2007. No environmental review was completed for this project because the site is located on City land, and no federal regulations applied. Therefore, NEPA was not triggered[8].
17 – Kentucky Fried Chicken/Taco Bell[1]	Primm, NV; (Approximately 0.5 miles west of the proposed EITP route centerline at MP 28) Ivanpah Valley	Kentucky Fried Chicken/Taco Bell	Fast food restaurant to be built adjacent to the Primm Outlet Mall 32100 Las Vegas Blvd. South)	Restaurant	Existing. The Design Review application was approved March 2008. Construction was completed in 2009[7].
Foreseeable Projects					
B – SNSA Ivanpah Airport Environs Overlay[1]	30 miles south of the McCarran International Airport (Covers much of the land along the proposed EITP route centerline between Primm and Jean, NV [approximately MPs 18 to 28]) Ivanpah Valley	Clark County Department of Aviation	International Airport to supplement the McCarran International Airport in Las Vegas; 17,000-acre sphere of influence; adjacent to desert tortoise relocation site.	Airport	As stated above, the site of the future SNSA is considered reserved for the project. The additional land for the Ivanpah Airport Environs Overlay is conditional on project approval. Draft EIS in progress and expected to be published in 2013. The Scoping Report and Draft Alternatives Working Paper are available. Construction is expected to begin 2014[9].
S – Calnev Pipeline Expansion Project	Parallel to I-15 (Crosses the proposed EITP route centerline near MP 27) Ivanpah Valley	Kinder Morgan	Expansion of the current pipelines owned and operated by Kinder Morgan that run between Colton, CA and Las Vegas, NV.	Petroleum Product Pipeline	The Calnev Project currently comprises an 8-inch and a 14-inch pipeline. This project is in NEPA analysis stage for the addition of a 16-inch pipeline. Only the SF-299 is available. The NOI was published March 13, 2008. A Draft EIR/EIS is in the process of being completed.

Table 5-2 List of Projects Considered Within or Near the Ivanpah and Eldorado Valleys in Nevada

Map ID Letter or #, Project Name[6], and Application Number (if Applicable)	Location (distance from EITP and Valley in which Project is located)[5]	Owner	Project Description	Project Type	Status
Foreseeable Renewable Energy Projects					
Q – NextLight Silver State Solar Project (BLM ROW NVN 085077 and NVN 085801)[4]	Approximately 1 mile east of Primm, NV (NVN 085801 bisects the proposed EITP route centerline near MP 26 and NVN 085077 is approximately 1 mile southeast of the EITP centerline nearest to MP 27) Ivanpah Valley	NextLight Renewable Power LLC	Silver State Solar Project NVN 085077: 500 MW photovoltaic power plant on 4,700 acres. NVN 085801: 200 MW photovoltaic power plant on 2,560 acres with an additional 600 acres producing 50 MW to be added with ROW grant.	Solar	Revised POD combining NVN 085077 and NVN 085801 submitted in November 2009. The ROW grant application is pending. The Draft EIS will be published in Spring 2010.
T – Table Mountain Wind Project (BLM ROW NVN-083041 and BLM ROW NVN-073726)[4]	Approximately 3 miles east of Sandy Valley near Goodsprings, NV (Approximately 8 miles northwest of the proposed EITP route centerline at MP 21) Ivanpah Valley	Table Mountain Wind Co LLC	Installation and operation of 10 MET towers on 11,570 acres to gather data for a potential wind generation site. Total project footprint approximately 30 acres.	Wind	ROW issued for 10 MET towers through December 31, 2010. The EA for the MET towers was completed 1998. The construction of the MET towers was completed in 1998. EIS was completed in 2002 but no ROD was adopted.[9] Supplemental EIS is required before ROD can be adopted.[10]
Z – Oak Creek Energy System Project (BLM ROW NVN-082729)[4]	Approximately 5 – 10 miles west of US Hwy 95 along CA/NV border (Approximately 9 miles southeast of the proposed EITP route centerline at MP 26) Eldorado Valley	Oak Creek Energy Systems	Installation and operation of two MET towers on 34,456 acres to gather data for a potential wind generation site. Project footprint is approximately 6 acres. Project will take place through December 31, 2012 when current ROW expires.	Wind	ROW issued for MET towers, expires 12/31/2012. Currently an EA is being completed for the construction of 2 MET Towers[9].
CC – Searchlight Wind Project (BLM ROW NVN-082648 and 084626)[4]	Within 1 mile of Searchlight, NV (Approximately 19 miles southwest of the proposed EITP route centerline at MP 7) Eldorado Valley	Searchlight Wind Energy Corp	Installation and operation of five MET towers on a 24,382 acre ROW to gather data for a potential wind generation site. Project footprint would be approximately 15 acres. Project would take place through July 1, 2010 when current ROW expires.	Wind	The POD review for the project (Site Type 3 application) and not the MET Towers, was completed in August 14, 2009[9]. ROW issued for 5 MET towers expires July 1, 2010. A Draft EIS in scheduled to be published in May 2010[9].
DD – Bull Frog Green Energy Solar Project (BLM ROW NVN 085117)[4]	East of US Hwy 95, approximately 8.5 miles south of Boulder City, NV (Approximately 7 miles southeast of the proposed EITP route centerline at MP 0) Eldorado Valley	Bull Frog Green Energy LLC	Solar power plant on 3,639 acres.	Solar	ROW grant application is currently pending. No POD has been submitted, so the NEPA process has not been initiated[9].

Table 5-2 List of Projects Considered Within or Near the Ivanpah and Eldorado Valleys in Nevada

Map ID Letter or #, Project Name[6], and Application Number (if Applicable)	Location (distance from EITP and Valley in which Project is located)[5]	Owner	Project Description	Project Type	Status
FF – Cogentrix Solar Project (BLM ROW NVN 085611)[4]	Approximately 3 miles south/southeast of Boulder City, NV (Approximately 5.5 miles east of the proposed EITP route centerline at MP 0) Eldorado Valley	Cogentrix Solar Services LLC	Solar thermal power plant on 640 acres.	Solar Thermal	Overlaps ROW NVN 085117. ROW grant is currently pending. The project is currently on hold, and if the applicant chooses to move forward it will not be until 2011[9].
JJ – Power Partners Solar Project (BLM ROW NVN 086158)[4]	Approximately 12 miles south of Boulder City, NV (Approximately 9 miles southeast of the proposed EITP route centerline at MP 7) Eldorado Valley	Power Partners SW LLC	250 MW solar power plant on 3,885 acres.	Solar	ROW application received September 18, 2008, and is pending. The project is currently on hold, and if the applicant chooses to move forward it will not be until 2011[9].

Sources/Notes:

[1] CEC and CEC 2009

[2] Las Vegas Review Journal 2004

[3] Acciona 2009

[4] BLM 2009

[5] Distance to the proposed project were calculated using Southern California Edison 2009. Eldorado-Ivanpah Project Road Story Version 3 [In GIS Format]. Data Request: EITP-CPUC-SCE-001 Follow Up. CD-ROM 1 of 4.

[6] In the absence of a known project name, projects are named according to the owner/developer and the type of facility or structure proposed.

[7] Clark County Comprehensive Planning Department 2010

[8] Ann 2010

[9] Meckfessel 2010

[10] Mojave-Southern Great Basin Resource Advisory Council 2007

[11] Sempra Generation n.d.

[12] BLM 2007

\\Prtbhp1\gis\SanFrancisco\Ivanpah\Data\Analysis\CummulativeProjects\March2010_updates_per_commnets\tables\Surrounging_Projects.mxd 04/02/2010

LABEL	NAME	STATUS	Acreage*
1	Bighorn Electric Generating Station	Existing	86.9
2	Primm Casinos	Existing	127.8
3	Primm Valley Golf Course	Existing	531.3
4	Primm Outlet Mall	Existing	38.7
5	Ivanpah Dry Lake RA	Existing	12,855.3
6	Molycorp Mine	Existing	862.4
7	Colosseum Mine	Existing	289.9
8	Desert Oasis Apartments	Existing	13.5
9	Molycorp Mine Evaporation Pond	Existing	355.5
10	AT&T FiberOptic Cable	Existing	NA**
11	SCE 115 kV Transmission Line	Existing	NA**
12	Molycorp Wastewater Pipeline	Existing	NA**
13	Jean/Roach Dry Lake SRMA	Existing	224,931.4
14	SNSA	Pending	5,996.6
15	El Dorado Energy Combined Cycle Power Plant	Existing	138.2
16	Nevada Solar One	Existing	400.5
17	KFC/Taco Bell	Existing	3.6
A	First Solar Development	Pending	5,433.4
B	SNSA Ivanpah Airport Environs Overlay	Pending	16,579.6
C	Desert Xpress	Pending	NA**
CC	Searchlight Wind Energy Corp	Pending	19,886.7
DD	BullFrog Green Energy	Pending	3,352.2
E	Joint Port of Entry	Pending	324.7
F	Temporary Batch Plant	Existing	32.4
FF	Cogentrix Solar Services	Pending	640.8
J	Iberdrola Renewables	Pending	1,872.6
JJ	Power Partners SW	Pending	3,874.0
K	Brightsource ISEGS	Pending	4,073.4
Q	Nextlight Renewable Power	Pending	7,837.2
S	CalNev Pipeline Expansion Project	Existing/Pending	NA**
T	Table Mountain Wind	Pending	13,665.4
Z	Oak Creek Energy Systems/Desert Research Inst	Pending	35,530.5

* Cumulative project areas are approximated reflecting the project right-of-way and not necessarily the actual or final project boundary footprint.

** Linear projects not included when calculating overall disturbance acreages.

SOURCE: See source list for Table 5-1 and Table 5-2.

Figure 5-1
Eldorado-Ivanpah Transmission Project

Cumulative Projects

Study Area

Cumulative Linear Project
- Existing
- Existing/Pending
- Pending

Cumulative Project Area by Type
- Solar
- Wind

Cumulative Project Area by Status
- Approved/Existing
- Pending
- Ivanpah Airport Environs Overlay

PROPOSED PROJECT
- Transmission Line
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass
- Redundant Telecommunications Line - Golf Course
- Milepost
- Proposed Microwave Tower
- Proposed Substation
- Existing Substation
- City
- County Highway
- State Highway
- Interstate
- Railroad
- Dry Lake Bed
- Valley Boundary
- Boulder City Conservation Easement

N

0 1 2 3 4 5

Miles

March 2010

This page intentionally left blank

Table 5-3 Estimated Construction Periods and Workforce for Some Large Foreseeable Projects in the Cumulative Area

Project Name	Estimated Construction Period/Year(s) of Construction	Construction Overlap with EITP	Workforce during Construction	Workforce during Operation
DesertXpress[1]	2 years / 2010–2012	Yes	1,730–3,000 per year	700
Southern Nevada Supplemental Airport (SNSA)[2]	7 years / 2014–2020	Unlikely	12,000–13,000	4,000
ISEGS Solar Energy Project[3]	4 years / 2010–end of 2013	Yes	474–959 peak daily	90
First Solar Project	Unknown/Unknown	Potentially	474–959 peak daily[4]	90[4]
NextLight Renewable Power Project	4 years / 2010–2014	Yes	474–959 peak daily[4]	90[4]
Table Mountain Wind[7]	8 months / Unknown	Unlikely	100 during peak	10–20
5 Other Solar Power Projects Planned in the Ivanpah and Eldorado Valleys	Approximately 4 years per project / variable by project	Potentially	2,370–4,795 total for all projects[4]	450 total for all projects[4]
4 Wind Power Projects Planned in the Ivanpah and Eldorado Valleys	Approximately 6 months per project / variable by project	Potentially	600 total for all projects[5]	12 total for all projects[5]
Calnev Pipeline Expansion Project[6]	12 months / unknown	Potentially	250–300	unknown

Notes:
[1] USDOT FRA 2009
[2] Ricondo and Associates 2008
[3] CEC and BLM 2009
[4] Based on workforce needed for ISEGS. Total numbers were quantified by multiplying ISEGS estimates by number of projects.
[5] Based on construction workforce of 150 and operations workforce of 3 needed for Walker Ridge Wind Project in northern California. Total numbers were quantified by multiplying Walker Ridge estimates by number of projects.
[6] URS 2007
[7] Table Mountain Wind Company 2002

The following subsections provide additional information about the past, present, and reasonably foreseeable future projects and their potential impacts. Section 5.3 provides an analysis of the cumulative impacts of these projects and the proposed project.

5.2.1 Past and Present Projects / Existing Cumulative Conditions

5.2.1.1 California

The portion of the EITP that would be built within California is located in the eastern portion of the Mojave Desert in San Bernardino County. The area contains mountainous regions and valleys and is sparsely populated. The Ivanpah Valley floor is desert with prominent features including Interstate 15 (I-15), the Primm Valley Golf Course, and Ivanpah Dry Lake. I-15 bisects Ivanpah Valley and is the main highway between the Los Angeles area and Las Vegas. It passes by Mountain Pass on the western edge of the Molycorp Mine and drops into and crosses the valley floor between Ivanpah and Nipton. I-15 divides natural habitats north and south and is a permanent feature of the Ivanpah Valley. I-15 facilitates commercial, recreational, and tourism travel but contributes to traffic, noise, and air pollution. It has also permanently altered drainage patterns on the valley floor.

The Primm Valley Golf Course (Cumulative Project 3) was built over a former landfill in the late 1990s and opened in 1997 with additions in 1998. It includes an 18-hole desert course, an 18-hole lake course, practice facilities, a full-service restaurant and lounge, and a clubhouse (PrimmNevada.net 2010). As the only permanent green feature, the Primm Valley Golf Course contrasts significantly with the neutral tones of the remainder of the valley. The facility's long-term need for water has altered the hydrology of the valley and permanently altered drainage patterns on the

valley floor. While the facility has provided a recreational opportunity in the Ivanpah Valley, it has also eliminated habitats that once existed there.

The Ivanpah Dry Lake Recreation Area (Cumulative Project 5) extends southwest from Primm, Nevada, and covers almost 13 square miles in California. The dry lake bed is managed by the BLM and is popular for land sailing and kite buggying (PrimmNevada.net 2010) but is closed to motorized vehicles. Free permits are required to access the site for recreation, and commercial or organized events require special recreation permits (BLM 2010). The Ivanpah Desert Wildlife Management Area (DWMA), an overlay to Ivanpah Dry Lake, is south of the EITP and east of I-15. Some areas allow camping, but land sailing is not permitted in the southern half of the dry lake, which is primarily used for very low-level, widely dispersed motorized recreational activities (BLM 2002). Although Ivanpah Dry Lake is not developed, and therefore natural habitat is still present, the presence of recreationists has probably altered how wildlife use the area.

Much of the land in the Ivanpah Valley is managed by the BLM through grazing allotments and recreation areas; however, some lands have special designations, including the Mojave National Preserve, three wilderness areas (Wee Thump, Joshua Tree, and South McCullough), and Areas of Critical Environmental Concern (ACECs; see Section 3.9, "Land Use").

The Molycorp Mine and landfill (Cumulative Project 6) are located in Mountain Pass, California, in the mountains above the Ivanpah Valley. It is an active lanthanide mining and milling operation with a wastewater pipeline—**Molycorp Wastewater Pipeline** (Cumulative Project 12)—that extends from the mine, running east for 10 miles along Nipton Road and then turning north and running 3 more miles into Ivanpah Dry Lake. Between 1980 and 1998, the pipeline discharged wastewater to two evaporation ponds located on Nipton Road and in the Ivanpah Dry Lake (**Molycorp Mine Evaporation Pond** [Cumulative Project 9]). The pipeline is being removed, along with any residual soil contamination, beginning with the part that crosses National Park Service property. An agreement with the Regional Water Quality Control Board (RWQCB) requires cleanup and abatement of contaminated groundwater that developed below the two evaporation ponds (DSTC 2009, Cass 2010, and Hunter 2010). The drum yard at the mine facility was used to store and stage drummed lead containing filter cake waste generated on site. The concrete casting and staging area was used in a pilot test in the early 1990s to stabilize the lead containing filter cake in concrete. Under a 1994 settlement, Molycorp agreed to close the drum yard and casting and staging areas, removing all drummed wastes and closing all lead waste impacted areas. By the end of 2003, the Department of Toxic Substances Control's (DTSC's) Geology, Permitting, and Corrective Action Branch accepted the closure certification of these units and released Molycorp from financial responsibility for further closures (DTSC 2010). The facility is still operating and contributes to air emissions in the area (U. S. Environmental Protection Agency [EPA] 2010). It uses, stores, and discharges waters, and thus it has altered the hydrology of the area. It has also altered the terrain on which it sits, and thus the majority of the facility is unsuitable habitat for wildlife. Portions of the facility are visible from I-15 and have therefore altered the natural landscape. The Mountain Pass Telecommunication Alternative would cross the mine and follow the route of the wastewater discharge pipeline along Nipton Road.

The Colosseum Mine (Cumulative Project 7) occupies 284 acres approximately 5 miles north of the Mountain Pass substation but is no longer in operation. Formal mining operations began in 1987 (U.S. EPA 1992) and continued until 1993, producing approximately 7,000 ounces of gold per month. The mine was acquired in 1990 by Lac Minerals of Canada, and the company has paid more than $30 million for site reclamation (Jessey 2010). Like the Molycorp Mine, the Colosseum Mine has permanently altered the landscape and habitat on which it sits; however, it is not operating, so it is not using or discharging water or generating emissions. Also, it is more remote than the Molycorp Mine and cannot be seen easily from the Ivanpah Valley or I-15.

5.2.1.2 Nevada

In Nevada, as in California, the Ivanpah and Eldorado valleys are sparsely populated. The closest community to the proposed project is Primm, Nevada. Primm is an unincorporated community in Clark County along the California border, 40 miles south of Las Vegas on heavily traveled I-15. The town covers approximately 880 acres and has a population of about 1,000 residents. Originally named "Stateline" after a gas station built in the area in the 1920s, the town was renamed "Primm" in 1996.

Primm is a popular stop for visitors from California and is both a destination in its own right and a rest spot between Las Vegas and Los Angeles. In 2004, an apartment building called the **Desert Oasis Apartments** (Cumulative Project 8) was constructed to house employees (PrimmNevada.net 2010) for three **Primm Casinos** (Cumulative Project 2): Buffalo Bill's Resort Casino, Terrible's Primm Valley Resort, and Whiskey Pete's Hotel Casino, which has 2,642 hotel rooms. All three casinos are owned by Primm Valley Resorts. Additionally, a **KFC/Taco Bell** (Cumulative Project 17) recently opened in Primm, and the **Primm Outlet Mall** (Cumulative Project 4) has over 100 retail stores (Primm Nevada.net 2010). The casinos, hotels, and mall have led to increased population, with impacts to the area similar to those of other small towns. For example, traffic on I-15 is heaviest on Fridays, and air quality in the area does not meet certain ambient air quality standards (see Section 5.3.2, "Air Quality and Greenhouse Gases"). Noise is generated by activities in town, and natural habitat has been removed. Most of the facilities require the use of water and therefore draw on the local aquifers. The presence of the town has permanently altered the drainage patterns in the area.

A little more than 1 mile northeast of the center of Primm, **the Bighorn Electric Generating Station** (Cumulative Project 1) consists of two 159-megawatt (MW) natural gas turbines, each equipped with a natural gas duct burner that operates at 650 million British thermal units per hour (MMBtu/hr), a 40-MMBtu/hr natural gas auxiliary boiler, and a 500-horsepower diesel emergency generator. The presence of this facility has facilitated the growth of Primm, contributed to emissions and noise in the area, and removed natural habitat. The facility also likely draws on the local aquifer. The Bighorn Electric Generating Station has a Title V operating permit, and the maximum potential emissions for the facility in tons per year are 114.91 of PM_{10}, 157.91 of NO_X, 194.07 of CO, 10.52 of SO_2, 43.51 of VOC, 10.31 of HAP, and 230.30 of NH_3 (Reliant 2005).

The Jean/Roach Lake Special Recreation Management Area (SRMA; Cumulative Project 13)—a large area spanning much of the EITP route—encompasses the Ivanpah Valley in Nevada; the towns of Jean, Primm, and Goodsprings; and both the Jean and Roach Dry Lakes. The Jean/Roach Dry Lake SRMA is managed by BLM to provide recreational opportunities, including motorcycling, off-highway vehicle (OHV) and 4 x 4 driving, horseback riding, mountain biking, small-game hunting, and organized racing events (BLM 2007).

Pursuant to P.L. 85-339, a large area surrounding the Eldorado Substation in the Eldorado Valley was patented to the Colorado River Commission of the State of Nevada. This land was subsequently transferred to the City of Boulder City and Clark County for the purposes of habitat conservation for desert tortoise. The area is now known as the Boulder City Conservation Easement (BCCE) and is managed under the Clark County Multiple Species Habitat Conservation Plan (MSHCP). The primary purpose of the BCCE is to preserve and protect the property as partial mitigation for the incidental take of desert tortoise and disturbance of tortoise habitat in other portions of Clark County. The MSHCP prohibits any development within the BCCE without written approval from Boulder City and Clark County.

Nevada Solar One (Cumulative Project 16) is a concentrated solar power facility in the Eldorado Valley, approximately 13 miles southwest of Boulder City. The facility sits on 400 acres of land, surrounded by the BCCE, and generates 64 MW of power using parabolic concentrators with more than 180,000 mirrors that concentrate the solar energy onto more than 18,000 receiver tubes. Fluid that heats up to 735 degrees Fahrenheit flows through these tubes and is used to produce steam that drives a conventional turbine, which is connected to a generator that produces electricity (Acciona 2009).

Near the Nevada Solar One project in the BCCE is a facility owned and operated by Sempra Energy. **El Dorado Combined Cycle Power Plant** (Cumulative Project 15) is a 480-MW natural gas fired power plant located on 138-acres of land, 17 miles southwest of downtown Boulder City and 40 miles southeast of Las Vegas. Eldorado Combined Cycle Power Plant has been operational since May 2000 (Sempra Generation n.d.).

5.2.2 Reasonably Foreseeable Future Projects

5.2.2.1 Proposed Renewable Projects

Tables 5-1 and 5-2 list the renewable projects that have been proposed in the cumulative study area in the Ivanpah and Eldorado valleys. It is not anticipated that all of these projects will be approved or constructed; however, given the number of projects proposed and political focus on permitting, approving, and constructing renewable energy generation (as described in Section 1.2, "Purpose, Need, and Objectives"), it is reasonable to assume that some of these renewable projects will be constructed.

There are multiple other ROW applications on file with the BLM for wind monitoring sites where there has been no action on the part of the applicant to prepare a wind development Plan of Development. This category of wind applications are not considered reasonable foreseeable future projects since they are not likely to result in an actual wind development project. There are also multiple ROW applications for solar projects that overlap and were filed on top of other pending solar applications. These "second in line" solar applications are not considered reasonable foreseeable future projects either. These speculative projects are not included in Tables 5-1 and 5-2.

The following section supplements the information provided in Tables 5-1 and 5-2, providing a general discussion of the potential impacts of wind and solar projects in order to give context for the cumulative analysis in this Chapter. Specific projects in the EITP cumulative study area are in various phases of planning and permitting; therefore, as of December 31, 2009, specific information about potential environmental impacts was not available for all of them. Key projects that have filed Plans of Development (PODs) with the BLM and/or have published environmental planning documentation are described in more detail.

Wind Projects

Wind generation facilities typically are comprised of multiple wind turbines that are connected to a substation through a network of underground and overhead lines. In addition to erecting the wind turbines, installing a wind generation system typically requires constructing access roads, substations, and a switchyard as well as connecting the substation to a transmission line. The equipment for all the structures is stored at a staging area prior to construction. Many of the impacts associated with wind generation facilities result from their large footprint. Therefore, installation of these types of facilities could:

- Disturb wetlands or water bodies;
- Remove or alter vegetation and potential wildlife habitat;
- Temporarily displace wildlife; or
- Disturb cultural resources.

Likewise, operation of a wind generation facility typically:

- Alters the visual landscape;
- Causes the death or injury of birds and bats;
- Permanently displaces wildlife; and
- Influences migration patterns.

Other construction-related impacts are typical of construction projects in general, such as generation of noise and dust from construction activities and a temporary increase in traffic from the movement of construction vehicles and equipment on local streets. Construction of a wind generation facility also temporarily increases local employment, including non-local workers requiring housing; however, these facilities typically employ only 30 permanent workers (approximately) and therefore do not have a significant impact on local economies.

For most of the proposed wind projects in the cumulative study area (Figure 5-1), little site-specific information is available because EIRs or EISs are not yet completed. Therefore, the discussion of potential contributions to cumulative impacts from these projects is qualitative rather than quantitative and is based on the impacts of similar projects. As indicated in Tables 5-1 and 5-2, environmental documents are not available for the **Iberdola Renewables Wind Project** (Cumulative Project J) proposed in California or the **Oak Creek Energy System/Desert Research Institute** project (Cumulative Project Z) or the **Searchlight Wind Project** (Cumulative Project CC) n Nevada.

Meteorological Towers

As a first step to determine the viability of a location for a wind power generation project, meteorological (MET) towers are installed to collect relevant meteorological data. MET towers are typically 60 meters tall, and ground is disturbed for a 60-meter radius surrounding the tower. A right-of-way (ROW) grant for MET towers is usually valid for 3 years, so 3 years is the typical duration of operation. Construction impacts of MET towers may include:

- Vegetation trimming or removal;
- Dust from vehicles;
- Impacts to listed species; and
- Impacts to cultural resources.

Impacts that typically occur during operation include alteration of the visual landscape and injury or mortality of migratory birds and bats.

Table Mountain Wind Project (Cumulative Project T)

Table Mountain Wind Company, LLC, is proposing to develop a 150- to 205-MW wind project 20 miles southwest of Las Vegas near Goodsprings, Nevada (Table Mountain Wind Company 2002). Although the Final EIS for the project was completed in 2002, the Record of Decision has not yet been approved. The BLM has requested that a Supplemental EIS be prepared due to conflicts with the proposed SNSA near Jean, Nevada; however, the Supplemental EIS is projected to take 9 to 12 months to complete (Mojave-Southern Great Basin Resource Advisory Council 2007). The process has not yet been initiated as of the publication of the EITP Draft EIR/EIS; therefore, while the Table Mountain Wind Project is a reasonably foreseeable future project, at this time, it is considered unlikely that it would be constructed concurrently with the EITP.

Solar Projects

Photovoltaic (PV) and Concentrating Solar Power (CSP) are the two dominant solar energy technologies on the market. PV technology creates electricity directly from sunlight, using solar cells. Solar cells have traditionally been made of monocrystalline silicon, but other material technologies exist. PV solar cells produce alternating current electricity, which is converted to direct current electricity with an inverter and then integrated directly into the power grid (rooftop applications) or transferred along distribution lines (utility-scale applications).

CSP technology, or “solar thermal” technology, concentrates sunlight to heat a liquid that produces steam that turns a simple turbine to create electricity. Parabolic troughs, solar power towers, and solar dishes are all forms of CSP

technology that focus mirrors on a single point to generate steam. Generally, CSP technologies have been developed for utility-scale applications.

Both PV and CSP projects are proposed in the Ivanpah and Eldorado valleys. Some of these projects do not have detailed project descriptions available or have not undergone formal impact assessment. Both PV and CSP technologies have similar impacts, although CSP usually has a significant requirement for water for cleaning and cooling, which increases impacts. Typically, both types of construction projects cause a:

- Temporary increase in air pollutants and dust emissions;
- Temporary increase in noise;
- Temporary or permanent disruption of wildlife patterns from construction activities;
- Possible loss of cultural or historic resources; and
- Temporary disruption of local traffic patterns and road use.

Most of the construction impacts can be mitigated through site-specific best management practices and other mitigation measures. Because solar projects may result in a single use for the land, however, several permanent impacts could occur as a result of operations, including:

- Permanent loss of wildlife habitat;
- Impact to existing recreational activities;
- Increase in impermeable surfaces that could lead to increased magnitude or frequency of flooding events; and
- Permanent alteration of visual or aesthetic characteristics.

Limited site-specific information is available for most of the proposed solar projects in the cumulative study area because their EIRs or EISs are not complete. Therefore, the discussion of these projects' potential contributions to cumulative impacts is qualitative rather than quantitative and is based on the impacts of similar projects. As indicated in Tables 5-1 and 5-2, environmental documents are not available for the **First Solar Development** (Cumulative Project A) proposed in California or for **Bull Frog Green Energy** (Cumulative Project DD), **Cogentrix Solar Services** (Cumulative Project FF), or **Power Partners SW** (Cumulative Project JJ) proposed in Nevada.

Ivanpah Solar Electric Generating System Project (Cumulative Project K)

As discussed in Section 1.1.2, "Additional Projects Considered in this EIR/EIS," certain facts distinguish the Ivanpah Solar Electric Generating System (ISEGS) project from other proposed projects in the cumulative study area. The ISEGS project is closely related to the EITP, has demonstrated commercial viability, and is in the late stages of environmental review. In this cumulative impacts analysis, ISEGS is considered a foreseeable project. Impacts from the ISEGS project are also considered as part of the Whole of the Action / Cumulative Action at the end of each resource section in Chapter 3, "Environmental Analysis." For more detailed information about ISEGS, see Section 2.2.2, "Whole of the Action Description (CEQA)/Cumulative Action (NEPA)."

NextLight Silver State Solar Project (Cumulative Project Q)

The Silver State Solar Project, located near Primm, Nevada, along the California/Nevada border, would intersect the EITP near milepost (MP) 26. The project would generate 400 MW of electricity on approximately 7,925 acres of BLM-administered lands and was originally comprised two separate projects—Silver State North and Silver State South. Silver State North was originally planned as a CSP power plant, and Silver State South was to be a PV plant. In November 2009, the Silver State project POD was changed to include only solar PV technology for the entire Silver

State Solar Project. The Silver State Solar Project would use either crystalline silicon or thin-film PV technology on single-axis trackers or fixed panels. Water usage is not expected to exceed 30 acre-feet per year.

The project has finished the NEPA EIS scoping process and a Draft EIS is anticipated in early 2010. Project construction is expected to begin in December 2010 and continue through November 2014. Potential impacts of the NextLight Silver State Solar Project that may contribute to cumulative impacts include degradation of the visual character of Ivanpah Valley, noise and air quality impacts during construction, and alteration of OHV routes on BLM land (BLM 2009b).

The Silver State Solar Project is addressed in the EITP Draft EIR/EIS as a reasonably foreseeable future action. The project was not included in the "Whole of the Action / Cumulative Action" section of the EITP Draft EIR/EIS because the Silver State project began its NEPA analysis much later than the EITP. Further, at the time this document began development, there was not yet adequate information available to address the direct and indirect impacts of the Silver State Solar Project as part of the Whole of the Action / Cumulative Action. During the late stages of this Draft EIR/EIS's development, the environmental review schedules for the two projects began progressing on similar schedules. However, because the Draft EIS for the Silver State Solar Project had not yet been published while this EITP document was being developed, BLM and CPUC were limited to using the information it had available to analyze the cumulative impacts of the Silver State Solar Project along with other past, present, and reasonably foreseeable future projects.

5.2.2.2 Other Projects

Other large projects that are proposed in the area include the Southern Nevada Supplemental Airport (SNSA), Calnev Pipeline Expansion Project, Molycorp Mine, and DesertXpress High-Speed Rail Project. Additional information about these projects is given below.

Southern Nevada Supplemental Airport (Cumulative Project B)

The Clark County Department of Aviation (CCDOA) proposes to construct the SNSA on 5,934 acres in the Ivanpah Valley in Nevada between Jean and Primm. The new airport would provide additional capacity to serve visitors to the metropolitan Las Vegas area and residents of greater Clark County, Nevada. In the Draft Alternatives Working Paper, a number of project alternatives were considered to determine whether they would meet the purpose and need of the project, including using other modes of transportation and placing the airport at another site nearer to Las Vegas (FAA 2008). The Draft EIS for the SNSA project is expected to be released for public review in late 2012 or early 2013. Project construction is not anticipated to begin until 2014 and is expected to be completed in 2020 (FAA 2009, 2006). The proposed airport site would be less than one mile from the EITP at MP 26.

Surrounding the proposed SNSA would be the Ivanpah Airport Environs Overlay (see Figure 5-1 or Figure 3.9-1 in Section 3.9, "Land Use"). The overlay would be 17,000 acres and would serve as a Noise Compatibility Area for the airport. The EITP intersects the 17,000-acre Ivanpah Airport Environs Overlay between MPs 24.5 and 28.5.

Potential impacts of the SNSA that may contribute to cumulative impacts include noise during construction and operation, air quality impacts to the Ivanpah Valley, and traffic impacts along the I-15 corridor. Since the EIS for the SNSA has not been published, this project's contributions to cumulative impacts can only be evaluated qualitatively, based on similar projects.

Calnev Pipeline Expansion Project (Cumulative Project S)

Calnev Pipe Line, LLC (Calnev), an operating partnership for Kinder Morgan Energy Partners, LP, proposes to replace and expand its refined petroleum products pipeline on the existing Calnev system. The pipeline would run between the existing North Colton Terminal in the City of Colton, San Bernardino County, California, to Bracken Junction, located about 1.5 miles west of McCarran International Airport in the City of Las Vegas, Clark County, Nevada. In addition to the main underground pipelines, the existing Calnev system includes laterals to the Southern

California Logistics Airport (formerly George Air Force Base), Edwards and Nellis Air Force bases, the Burlington Northern and Santa Fe (BNSF) rail yard at Barstow, California, and the McCarran International Airport. Existing above-grade facilities include terminals, pump stations, and junctions at various locations along the alignment.

The project would involve construction, operation, and maintenance of approximately 233 miles of new 16-inch-diameter, subsurface pipeline from Colton to Las Vegas. In addition to pipeline construction, the project would require construction of tie-ins, laterals, a new pump station, a new junction, an electric substation, and upgrades to components of the existing Calnev system. Project construction is anticipated to be carried out within a 100-foot-wide ROW (URS 2007, BLM 2008). Pipeline startup had been previously projected for late 2009 or early 2010, but the project currently remains in the Draft EIR/EIS stage of environmental analysis. The pipeline project would intersect the EITP near MP 27. This pipeline project may contribute to cumulative impacts to air quality, noise, hydrology, soils, and traffic during the construction phase and hazards impacts in the case of rupture and/or explosion during the operation phase. Since the Draft EIS has not been published, this project's contributions to cumulative impacts can only be evaluated qualitatively, based on similar projects.

DesertXpress High-Speed Rail Line (Cumulative Project C)

DesertXpress Enterprises, LLC, proposes to construct and operate a privately financed interstate high-speed passenger train, with a top speed of approximately 150 miles per hour, between Victorville, California, and Las Vegas, Nevada. The approximately 60-foot-wide, 200-mile-long corridor would be a fully grade-separated, dedicated, double-track, passenger-only railroad roughly following I-15 and existing railroad corridors/ROWs. The project would also include construction of a passenger station in Victorville, California; a passenger station in Las Vegas, Nevada; a maintenance and operation facility in Victorville; an overnight maintenance and storage facility in the Las Vegas area; and associated ancillary facilities needed to maintain and operate the proposed rail line. Operation is estimated to start in 2012 (USDOT 2009). The project intersects EITP near MP 34. Possible impacts of the DesertXpress project that may contribute to cumulative impacts include collisions with local animals (including representatives of sensitive species such as the desert tortoise), public safety impacts, surface hydrology impacts, and possible air quality impacts, during both the construction and operation phases.

Joint Port of Entry Project (Cumulative Project E)

The State of California, acting through the California Department of Transportation (Caltrans), filed an application for the Joint Port of Entry (JPOE) project, which would be on 133 acres of public lands. The proposed JPOE inspection facility would be comprised of a commercial vehicle enforcement facility and an agricultural inspection facility between Nipton Road and Yates Well Road on southbound I-15. Upon completion of the project, all traffic entering California on southbound I-15 would be diverted through the JPOE. A Notice of Realty Action for the JPOE project was published on February 10, 2010. This project may contribute to cumulative impacts to aesthetics and visual resources, air quality (short-term), cultural, geology, noise, and transportation and traffic.

5.3 Cumulative Impact Analysis

This section analyzes cumulative impacts that could result from the EITP when considered with the other projects listed in Tables 5-1 and 5-2 and described above. Geographic areas for cumulative impacts vary by resource and are described within each resource subsection (i.e., the resource-specific "cumulative impact area"). The geographic extent and timeframe of the cumulative impact analysis, the past and present projects and their impacts, and the reasonably foreseeable future projects are described for each resource area. To assess the cumulative impact of the EITP, this analysis first assesses whether the cumulative projects would result in a cumulatively considerable impact and then, if a cumulatively considerable impact is determined to result, assesses the EITP's contribution to that impact. However, in instances in which the analysis in Chapter 3, "Environmental Analysis," determined that the EITP would result in no impact, these criteria are not carried forward for analysis in this section. In general, each cumulative impact discussion provides an overview of the potential impacts, followed by specific analysis of the EITP's cumulative impacts under both CEQA and NEPA. These analyses parallel the analyses for the EITP conducted in Chapter 3 in this Draft EIR/EIS.

As discussed in Section 1.1.2, "Additional Projects Considered in this EIR/EIS," many renewable generation projects are being developed, applied for, and analyzed under CEQA and/or NEPA concurrently with the proposed EITP in the Ivanpah Valley area. Their status and the level of publicly available information varies. Based on timing, geographic location, and signed agreements between the applicant and the BrightSource solar developer, the ISEGS project is considered part of the "whole of the action" under CEQA and as a "cumulative action" under NEPA. Other renewable generation projects planned in the Ivanpah Valley area would likely connect to the EITP as well, including those projects listed in Table 5-1 and 5-2. Unlike the ISEGS project, these projects are not considered part of the whole of the action under CEQA or as a cumulative action under NEPA due to the lack of a signed power purchase agreement (PPA) with specific contractual terms addressing interrelatedness and the lack of publicly available information on their environmental effects as of December 31, 2009.

The cumulative analysis provided in this section first provides a cumulative analysis with the ISEGS project as one of many cumulative projects. Then, a summary of the cumulative impact analysis that was developed for the ISEGS project by the California Energy Commission (CEC) and the BLM is also included under the ISEGS header for each resource below. This is followed by a brief analysis of the cumulative impact of the Whole of the Action / Cumulative Action evaluated in this EIR/EIS.

5.3.1 Aesthetic and Visual Resources

5.3.1.1 Geographic Extent and Timeframe

The geographic scope for the analysis of cumulative impacts on visual resources includes all projects within the same viewshed as the EITP. Because the EITP is linear and crosses through the Eldorado and Ivanpah valleys, the cumulative analysis considers all planned renewable energy and infrastructure development in those valley regions that would be visible, along with the EITP, from the viewpoints identified in Section 3.2.1.6, "Key Observation Points." Additional detail about the determination of the geographic extent is provided below. Cumulative impacts to visual resources could occur during the EITP's construction or operation phases. Cumulative impacts could occur if activities associated with the construction of the EITP and any of the cumulative projects were to occur simultaneously. Given the amount of development planned in the cumulative study area, and given that renewable projects already or may eventually intend to connect to the EITP, it is reasonable to assume that some construction activities may take place concurrently with the EITP. Cumulative impacts could also occur for any cumulative projects that would be in operation concurrently with the EITP.

Views from Key Observation Points

An explanation of how Key Observation Points (KOPs) were selected is provided in 3.2.1.6, "Key Observation Points." The assessment of cumulative impacts on aesthetics and visual resources is limited to those projects that would be visible along with components of the EITP from each KOP (Table 5-4). Figures 5-2, 5-3, and 5-4 depict visibility of EITP components along with the cumulative projects. The visibility analysis used data for the existing land contours to determine the extent to which each project component could potentially be visible without being visually obstructed by topography; these maps also include a distance zone overlay to differentiate between foreground, middleground, and background distances, as distance is a key factor in determining the intensity of visual impacts. BLM distance zones are foreground (0 to 1 mile), middleground (1 to 3 miles), background (3 to 5 miles), and seldom-seen views (greater than 5 miles) (BLM Manual H-8410-1). The visibility of each project component is constrained to within 5 miles of the KOPs because any greater distance is considered to fall within the seldom seen distance zone. Table 5-4 lists what is visible at each KOP and the sensitivity of each. The sensitivity of these locations considers number of viewers, duration of views, distance between the viewer and the EITP, and viewer expectation. Viewer expectation considers viewer activity, adjacent land uses, special management areas in the vicinity, and any federal, state, or local regulations that protect visual resources in the area.

Table 5-4 EITP Project Components and Cumulative Projects Visible from KOPs

Key Observation Point	Project Component Visible	Distance Zone	Sensitivity	Cumulative Project Visible from KOP location[1]	VRM or VRI Designation
KOP 1: View of the Transmission Corridor Looking Northeast toward the McCullough Mountain Range	Transmission Line	Foreground and Middleground	Moderate	Existing SCE Transmission Line; Jean/Roach Dry Lake SRMA	VRM Class II and VRM Class III
KOP 2: View from the South McCullough Wilderness Area	Transmission Line	Background	Moderate	Existing SCE Transmission Line; Jean/Roach Dry Lake SRMA	VRM Class II
KOP 3: View from Interstate 15 near Jean, Nevada	Transmission Line	Seldom Seen	Low	Existing Transmission Line; AT&T Fiber Optic Cable; Jean/Roach Dry Lake SRMA; DesertXpress; Calnev Pipeline Expansion Project; SNSA	VRM Class III
KOP 4: View from the Desert Oasis Apartments in Primm, Nevada	Transmission Line	Foreground	Moderate to High	Existing Transmission Line; Jean/Roach Dry Lake SRMA; Ivanpah Dry Lake Recreation Area; Primm Casinos; Primm Outlet Mall; Primm Valley Golf Course; Bighorn Electric Generating System; Caltrans Temporary Batch Plant; SNSA; KFC/Taco Bell; ISEGS; First Solar; NextLight; DesertXpress; Calnev Pipeline Expansion Project	VRM Class III and VRI Class III
KOP 5: View from Ivanpah Dry Lake, East of Interstate 15	Transmission Line	Middleground	Moderate to High	Existing Transmission Line; Jean/Roach Dry Lake SRMA; Ivanpah Dry Lake Recreation Area; Molycorp Mine Evaporation Pond; Molycorp Mine Wastewater Pipeline; Primm Casinos; Primm Outlet Mall; Primm Valley Golf Course; Bighorn Electric Generating System; Caltrans Temporary Batch Plant; SNSA; KFC/Taco Bell; ISEGS; First Solar; NextLight; DesertXpress; Calnev Pipeline Expansion Project	VRM Class III
KOP 6: View from Interstate 15 near Primm, Nevada	Transmission Line	Middleground	Low	Existing Transmission Line; Jean/Roach Dry Lake SRMA; Ivanpah Dry Lake Recreation Area; Molycorp Mine Evaporation Pond; Molycorp Mine Wastewater Pipeline; Primm Casinos; Primm Outlet Mall; Primm Valley Golf Course; Bighorn Electric Generating System; Caltrans Temporary Batch Plant; SNSA; KFC/Taco Bell; ISEGS; First Solar; NextLight; DesertXpress; Calnev Pipeline Expansion Project	VRM Class III

Table 5-4 EITP Project Components and Cumulative Projects Visible from KOPs

Key Observation Point	Project Component Visible	Distance Zone	Sensitivity	Cumulative Project Visible from KOP location[1]	VRM or VRI Designation
KOP 7: View from Highway 95 in the Eldorado Valley	Eldorado Substation; Transmission Line	Background	Low	Existing Eldorado Substation; Existing Transmission Line; Nevada Solar One; El Dorado Energy Combined Cycle Power Plant; Cogentrix Solar Services	VRM Class III
KOP 8: View from Highway 164 Overpass in the Ivanpah Valley	Ivanpah Substation; Transmission Line	Background	Low	Primm Valley Golf Course; Caltrans Temporary Batch Plant; Molycorp Wastewater Pipeline; Molycorp Evaporation Pond; DesertXpress; Calnev Pipeline Expansion Project; Power Partners SW; Joint Port of Entry; ISEGS; First Solar.	VRI Class III

Notes:

[1] The cumulative projects listed here include all projects that would be potentially visible from each KOP based on topography. This list does not take into account other factors that may obstruct views of these projects from these locations, such as atmospheric conditions or intervening development. This list also represents projects that would be visible from the KOP in any direction, which does not necessarily correspond to the bearing of the KOP photographs included in Section 3.2: Aesthetics and Visual Resources.

5.3.1.2 Past and Present Project Impacts/Existing Cumulative Conditions

Section 3.2.1, "Environmental Setting," provides an overview of the existing visual setting and the potentially impacted viewer groups of the EITP and its alternatives. Both the Ivanpah and Eldorado valleys are predominantly intact scenically, although development is evident along Interstate 15 (I-15) and Highway 95, the major roads that bisect these valleys, and characterized by large expanses of open scrub land punctuated by flat, barren dry lakes. These vast expanses of gently sloping bajada contrast dramatically with the jagged peaks of the Clark, New York, Lucy Gray, and McCullough mountain ranges that surround the Ivanpah and Eldorado valleys.

Past and present projects have altered the visual character of the cumulative study area. Development in the vicinity of the EITP that has already altered the visual character of the Ivanpah Valley and the Eldorado Valley includes I-15, an existing railroad track, the Primm Valley Golf Course, several large interstate high voltage electric transmission lines and associated infrastructure, the existing Eldorado Substation, the Nevada Solar One Project, the Bighorn Electric Generating Station, numerous mining operations, the Jean/Roach Dry Lake SRMA and Ivanpah Dry Lake Recreation Area, and casino-focused commercial and residential development in Primm, Nevada.

Development has encroached on viewsheds for all of the eight KOPs (Table 5-4). Four of the eight KOPs—KOP 4, KOP 5, KOP 6, and KOP 8—depict views of the Ivanpah Valley area, where development has most encroached on viewsheds. Linear development, including the existing 115-kilovolt (kV) subtransmission line, the existing railroad, and I-15 have introduced vertical lines that bisect viewsheds and darker colors that contrast with the neutral tones of the desert setting. The structures associated with the other development in the area—including the Primm Casinos, the Primm Valley Outlet Mall, the KFC/Taco Bell, the Desert Oasis Apartment Complex, the Bighorn Electric Generating Station, and the Caltrans Temporary Batch Plant have affected the distribution and texture of vegetation in the valley, introduced new colors into the viewshed, required grading that has altered the existing landform, disrupted existing linear elements in views, and introduced structures that dominate viewsheds and draw the attention of the viewer. The Primm Valley Golf Course has introduced dark greens into the viewshed and altered the existing texture by changing the distribution of vegetation.

Three of the eight KOPs—KOP 1, KOP 2, and KOP 3—depict views of the Eldorado Valley west of the McCullough Mountain Range. Development visible in views from these locations includes I-15, the existing railroad, and the existing 115-kV subtransmission line. These projects have introduced new linear features into the viewshed that draw the attention of the viewer; additionally, I-15 and the railroad have introduced moderate color contrast with the neutral tones of the desert landscape. The AT&T fiber optic cable and the existing Calnev pipeline are present in these views, but not visible due to the fact that they were installed underground and vegetation has since concealed cleared and graded areas.

KOP 7 depicts a view of the Eldorado Valley east of the McCullough Mountain Range. Development has encroached on views from this location, including the 115-kV subtransmission line, a Los Angeles Department of Water and Power (LADWP) 500-kV transmission line, the Eldorado Substation, the Nevada Solar One facility, and the El Dorado Energy Combined Cycle Power Plant. These elements have introduced new lines and forms into the viewshed. Clearing and grading activities necessary to accommodate this development has altered the texture created by vegetative distribution and has introduced light tans that contrast with the natural hues of the desert landscape. The Nevada Solar One facility has also introduced deep blues into the viewshed, new linear features created by the rows of solar troughs, and a smooth texture. Overall, development dominates views from this location and draws the attention of the viewer.

The Ivanpah Dry Lake Recreation Area and Jean/Roach Dry Lake Recreation Areas (RA) are visible from all KOPs except for KOP 7. These projects represent areas of land managed for recreation purposes. OHV usage is an allowable use in these areas, so linear elements have been introduced throughout these RAs where OHV trails bisect the area. OHV usage in these locations has also changed the texture of the landscape due to the introduced strips of non-vegetated lines visible along each OHV trail. The RAs do not have structures associated with them.

\\Prtbhp1\gis\SanFrancisco\Ivanpah\Maps\MXDs\ReportFigures\ZVI_Tline.mxd 04/08/2010

LABEL	NAME	STATUS	Acreage*
1	Bighorn Electric Generating Station	Existing	86.9
2	Primm Casinos	Existing	127.8
3	Primm Valley Golf Course	Existing	531.3
4	Primm Outlet Mall	Existing	38.7
5	Ivanpah Dry Lake RA	Existing	12,855.3
6	Molycorp Mine	Existing	862.4
7	Colosseum Mine	Existing	289.9
8	Desert Oasis Apartments	Existing	13.5
9	Molycorp Mine Evaporation Pond	Existing	355.5
10	AT&T FiberOptic Cable	Existing	NA**
11	SCE 115 kV Transmission Line	Existing	NA**
12	Molycorp Wastewater Pipeline	Existing	NA**
13	Jean/Roach Dry Lake SRMA	Existing	224,931.4
14	SNSA	Pending	5,996.6
15	El Dorado Energy Combined Cycle Power Plant	Existing	138.2
16	Nevada Solar One	Existing	400.5
17	KFC/Taco Bell	Existing	3.6
A	First Solar Development	Pending	5,433.4
B	SNSA Ivanpah Airport Environs Overlay	Pending	16,579.6
C	Desert Xpress	Pending	NA**
CC	Searchlight Wind Energy Corp	Pending	19,886.7
DD	BullFrog Green Energy	Pending	3,352.2
E	Joint Port of Entry	Pending	324.7
F	Temporary Batch Plant	Existing	32.4
FF	Cogentrix Solar Services	Pending	640.8
J	Iberdrola Renewables	Pending	1,872.6
JJ	Power Partners SW	Pending	3,874.0
K	Brightsource ISEGS	Pending	4,073.4
Q	Nextlight Renewable Power	Pending	7,837.2
S	CalNev Pipeline Expansion Project	Existing/Pending	NA**
T	Table Mountain Wind	Pending	13,665.4
Z	Oak Creek Energy Systems/Desert Research Inst	Pending	35,530.5

* Cumulative project areas are approximated reflecting the project right-of-way and not necessarily the actual or final project boundary footprint.

** Linear projects not included when calculating overall disturbance acreages.

SOURCE: See source list for Table 5-1 and Table 5-2.

Figure 5-2
Eldorado-Ivanpah Transmission Project

Visibility Analysis for the Eldorado-Ivanpah Transmission Line and the Cumulative Projects

Cumulative Linear Project
- Existing
- Existing/Pending
- Pending
- Cumulative Project Area
- Ivanpah Airport Environs Overlay

PROPOSED PROJECT
- Transmission Line
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass
- Redundant Telecommunications Line - Golf Course
- Milepost
- Proposed Microwave Tower
- Proposed Substation
- Existing Substation
- City
- County Highway
- State Highway
- Interstate
- Railroad
- Dry Lake Bed
- KOP Locaiton
- 5 Mile Buffer of KOP Locations

Visibility Analysis
- Visible Areas in Foreground Visibility Zone (0-1mi)
- Visible Areas in Middleground Visibility Zone (3-5mi)
- Visible Areas in Background Visibility Zone (3-5mi)
- Visible Areas in Seldom Seen Visibility Zone (>5mi)

0 1 2 3 4 5 Miles

March 2010

This page intentionally left blank

\SanFrancisco\Ivanpah\Maps\PDFs\ReportFigures\March2010\ZVI_Ivanpah_substation.mxd 04/08/2010

LABEL	NAME	STATUS	Acreage*
1	Bighorn Electric Generating Station	Existing	86.9
2	Primm Casinos	Existing	127.8
3	Primm Valley Golf Course	Existing	531.3
4	Primm Outlet Mall	Existing	38.7
5	Ivanpah Dry Lake RA	Existing	12,855.3
6	Molycorp Mine	Existing	862.4
7	Colosseum Mine	Existing	289.9
8	Desert Oasis Apartments	Existing	13.5
9	Molycorp Mine Evaporation Pond	Existing	355.5
10	AT&T FiberOptic Cable	Existing	NA**
11	SCE 115 kV Transmission Line	Existing	NA**
12	Molycorp Wastewater Pipeline	Existing	NA**
13	Jean/Roach Dry Lake SRMA	Existing	224,931.4
14	SNSA	Pending	5,996.6
15	El Dorado Energy Combined Cycle Power Plant	Existing	138.2
16	Nevada Solar One	Existing	400.5
17	KFC/Taco Bell	Existing	3.6
A	First Solar Development	Pending	5,433.4
B	SNSA Ivanpah Airport Environs Overlay	Pending	16,579.6
C	Desert Xpress	Pending	NA**
CC	Searchlight Wind Energy Corp	Pending	19,886.7
DD	BullFrog Green Energy	Pending	3,352.2
E	Joint Port of Entry	Pending	324.7
F	Temporary Batch Plant	Existing	32.4
FF	Cogentrix Solar Services	Pending	640.8
J	Iberdrola Renewables	Pending	1,872.6
JJ	Power Partners SW	Pending	3,874.0
K	Brightsource ISEGS	Pending	4,073.4
Q	Nextlight Renewable Power	Pending	7,837.2
S	CalNev Pipeline Expansion Project	Existing/Pending	NA**
T	Table Mountain Wind	Pending	13,665.4
Z	Oak Creek Energy Systems/Desert Research Inst	Pending	35,530.5

* Cumulative project areas are approximated reflecting the project right-of-way and not necessarily the actual or final project boundary footprint.

** Linear projects not included when calculating overall disturbance acreages.

SOURCE: See source list for Table 5-1 and Table 5-2.

Figure 5-3
Eldorado-Ivanpah Transmission Project

Visibility Analysis for the Ivanpah Substation and the Cumulative Projects

Cumulative Linear Project
- Existing
- Existing/Pending
- Pending

Cumulative Project Area

Ivanpah Airport Environs Overlay

PROPOSED PROJECT
- Transmission Line
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass
- Redundant Telecommunications Line - Golf Course

- Milepost
- Proposed Microwave Tower
- Proposed Substation
- Existing Substation
- City
- County Highway
- State Highway
- Interstate
- Railroad
- Dry Lake Bed
- KOP Locaiton
- 5 Mile Buffer of KOP Locations

Visibility Analysis
- Visible Areas in Foreground Visibility Zone (0-1mi)
- Visible Areas in Middleground Visibility Zone (3-5mi)
- Visible Areas in Background Visibility Zone (3-5mi)
- Visible Areas in Seldom Seen Visibility Zone (>5mi)

N

0 1 2 3 4 5
Miles

March 2010

This page intentionally left blank

\\Prtbhp1\gis\SanFrancisco\Ivanpah\Maps\MXDs\ReportFigures\ZVI_Eldorado_substation.mxd 04/06/2010

LABEL	NAME	STATUS	Acreage*
1	Bighorn Electric Generating Station	Existing	86.9
2	Primm Casinos	Existing	127.8
3	Primm Valley Golf Course	Existing	531.3
4	Primm Outlet Mall	Existing	38.7
5	Ivanpah Dry Lake RA	Existing	12,855.3
6	Molycorp Mine	Existing	862.4
7	Colosseum Mine	Existing	289.9
8	Desert Oasis Apartments	Existing	13.5
9	Molycorp Mine Evaporation Pond	Existing	355.5
10	AT&T FiberOptic Cable	Existing	NA**
11	SCE 115 kV Transmission Line	Existing	NA**
12	Molycorp Wastewater Pipeline	Existing	NA**
13	Jean/Roach Dry Lake SRMA	Existing	224,931.4
14	SNSA	Pending	5,996.6
15	El Dorado Energy Combined Cycle Power Plant	Existing	138.2
16	Nevada Solar One	Existing	400.5
17	KFC/Taco Bell	Existing	3.6
A	First Solar Development	Pending	5,433.4
B	SNSA Ivanpah Airport Environs Overlay	Pending	16,579.6
C	Desert Xpress	Pending	NA**
CC	Searchlight Wind Energy Corp	Pending	19,886.7
DD	BullFrog Green Energy	Pending	3,352.2
E	Joint Port of Entry	Pending	324.7
F	Temporary Batch Plant	Existing	32.4
FF	Cogentrix Solar Services	Pending	640.8
J	Iberdrola Renewables	Pending	1,872.6
JJ	Power Partners SW	Pending	3,874.0
K	Brightsource ISEGS	Pending	4,073.4
Q	Nextlight Renewable Power	Pending	7,837.2
S	CalNev Pipeline Expansion Project	Existing/Pending	NA**
T	Table Mountain Wind	Pending	13,665.4
Z	Oak Creek Energy Systems/Desert Research Inst	Pending	35,530.5

* Cumulative project areas are approximated reflecting the project right-of-way and not necessarily the actual or final project boundary footprint.

** Linear projects not included when calculating overall disturbance acreages.

SOURCE: See source list for Table 5-1 and Table 5-2.

Figure 5-4
Eldorado-Ivanpah Transmission Project

Visibility Analysis for the Eldorado Substation and the Cumulative Projects

Goodsprings
Jean
Primm
IVANPAH
MT. PASS
ELDORADO
Nipton
Searchlight
NEVADA
CALIFORNIA
CLARK CO.
SAN BERNARDINO CO.
KOP 1
KOP 2
KOP 3
KOP 4
KOP 5
KOP 6
KOP 7
KOP 8

Cumulative Linear Project
- Existing
- Existing/Pending
- Pending

Cumulative Project Area

Ivanpah Airport Environs Overlay

PROPOSED PROJECT
- Transmission Line
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass
- Redundant Telecommunications Line - Golf Course

- Milepost
- Proposed Microwave Tower
- Proposed Substation
- Existing Substation
- City
- County Highway
- State Highway
- Interstate
- Railroad
- Dry Lake Bed
- KOP Locaiton
- 5 Mile Buffer of KOP Locations

Visibility Analysis
- Visible Areas in Foreground Visibility Zone (0-1mi)
- Visible Areas in Middleground Visibility Zone (3-5mi)
- Visible Areas in Background Visibility Zone (3-5mi)
- Visible Areas in Seldom Seen Visibility Zone (>5mi)

0 1 2 3 4 5
Miles

March 2010

This page intentionally left blank

5.3.1.3 Reasonably Foreseeable Future Projects

Planned development throughout the cumulative impact area for visual resources is dominated by renewable energy projects, including both solar and wind facilities, and the associated infrastructure. Table 5-4 lists the cumulative projects that would be visible with components of the EITP for each KOP. The ISEGS, First Solar, and NextLight Silver State Projects are all planned for the Ivanpah Valley area near Primm, Nevada. These projects would be visible from KOP 4, KOP 5, and KOP 6. The ISEGS and First Solar projects would be visible in distant views from KOP 8.

As described in Section 3.2.5.3, the ISEGS project would result in significant and unavoidable impacts on visual resources. Because the First Solar and NextLight Silver State Projects would use solar PV technology, these projects would result in less impacts from glare and would not have the approximately 450 foot tall towers proposed for ISEGS. These projects would still introduce contrast to the existing landscape similar to the contrast introduced by the Nevada Solar One project discussed above. Both projects would introduce deep blues into the viewshed, new linear features created by the rows of solar troughs, and a smooth texture. Additionally, clearing and grading activities would alter the texture created by vegetative distribution and would introduce light tans that would contrast with the natural hues of the desert landscape. Structures associated with these projects including solar panels, inverters, and gen-tie lines would encroach on foreground views and would attract the attention of the viewer in middleground and background distance zones.

Other development reflects the expansion of southern Nevada as a tourist destination. The proposed SNSA would result in significant and unavoidable adverse changes to existing visual resources, particularly for viewers near Primm, Nevada, on I-15, and within the Jean/Roach Dry Lake SRMA. Large paved areas would introduce greys and blacks that would contrast with the existing neutral tones of the desert landscape. Displacement of vegetation in these areas would also alter the existing texture created by the vegetation distribution. The flat, paved surface would create a new line in the landscape and associated structures would dominate the forms seen in existing views. The DesertXpress high speed rail project would introduce linear and color contrast, similar to the effects described above for the existing railroad.

KOP 7 may have partial views of the Cogentrix Solar Services project in the seldom seen distance zone, but any changes would be minor and difficult to distinguish due to distance and topography (Figure 5-2). KOP 8 may have partial views of the Iberdola Renewables project in the seldom seen distance zone but again, any changes would be minor and difficult to distinguish due to distance and topography (Figure 5-2). As seen in the visibility analyses for Figures 5-2, 5-3, and 5-4, no other projects would be visible from the KOPs.

5.3.1.4 Cumulative Impact Analysis

The potential for the aesthetic and visual impacts of the EITP to combine with the effects of other projects within the geographic extent of the cumulative analysis is described below. As discussed in Section 3.2.3, “Impact Analysis,” the EITP would be consistent with VRM or VRI designations for seven of the eight KOPs and, with mitigation, would result in less than significant impacts under CEQA. KOP 1 would result in a major, adverse effect under NEPA.

The methodology and impact criteria used to assess the impacts to visual resources under NEPA and CEQA are discussed in Section 3.2.3. The same KOPs used to assess the proposed project’s impacts on visual resources are also used to assess cumulative impacts to visual resources in the Eldorado and Ivanpah valleys. These KOPs were agreed upon by CPUC and BLM staff and represent typical and sensitive viewpoints in the project area. This section discusses the combined effects of the proposed project and past, present, and reasonably foreseeable projects on existing visual character and quality from each KOP. The relevant impact of the proposed project is IMPACT AES-2: Degrade Existing Visual Character or Quality.

Visual Impacts from Construction Activities

As stated above, cumulative impacts could occur if activities associated with the construction of the EITP and any of the cumulative projects were to occur simultaneously. Table 5-5 lists the cumulative projects that would or may overlap with EITP construction activities and the potentially affected KOPs. Any cumulative impacts associated with concurrent construction periods would be temporary.

Table 5-5 Concurrent Construction of the EITP and the Cumulative Projects and Potentially Affected KOPs

Cumulative Project Name	Estimated Construction Period/Year(s) of Construction	Construction Overlap With EITP	Affected KOP(s)	Relevant EITP Component
DesertXpress[1]	2 years/2010 – 2012	Yes	KOP 3, KOP 4[3], KOP 5, KOP 6, KOP 8	Transmission Line and Ivanpah Substation
Southern Nevada Supplemental Airport (SNSA)	7 years/2014 – 2020	Unlikely	KOP 3, KOP 4[3], KOP 5, KOP 6	Transmission Line
Calnev Pipeline Expansion Project	Unknown/Unknown	Potentially	KOP 3, KOP 4[3], KOP 5, KOP 6, KOP 8	Transmission Line and Ivanpah Substation
ISEGS Solar Energy Project[2]	4 years/2010 – end of 2013	Yes	KOP 4[3], KOP 5, KOP 6, KOP 8	Transmission Line and Ivanpah Substation
FirstSolar Project	Unknown/Unknown	Potentially	KOP 4[3], KOP 5, KOP 6, KOP 8	Transmission Line and Ivanpah Substation
NextLight Renewable Power Project	4 years/ 2010 - 2014	Yes	KOP 4[3], KOP 5, KOP 6, KOP 8	Transmission Line and Ivanpah Substation

Sources/Notes:
[1] USDOT FRA 2009
[2] CEC and BLM 2009
[3] KOP 4 is located within the Desert Oasis Apartment Complex that is surrounded by a screening wall; therefore, views of projects from this location may be obscured.

The three renewable energy projects listed in Table 5-5 would be visible from four KOPs in the Ivanpah Valley area near Primm, Nevada. Construction of these solar projects would require grading and the removal of vegetation, which would introduce color contrast through the exposure of bare soils and would alter the existing texture of the landscape by changing the distribution of vegetation. These activities would also introduce new lines and potentially alter existing forms. Temporary signage, as well as storage of construction materials and equipment, would clutter views and draw attention from the existing natural landscape.

The DesertXpress Project and the Calnev Pipeline Expansion Project would be located along the I-15 corridor and would be visible from the five KOPs along the I-15 corridor in both the Ivanpah and Eldorado valleys. These projects are both linear projects that would require grading and the exposure of soils through constructing a raised berm for the DesertXpress and through trenching activities for the Calnev Pipeline Expansion. This would create a new line that would bisect views; however, the area of land that would be disturbed during construction would be on a smaller scale than the area disturbed for the solar projects discussed above and would be less evident in middleground and background views, such as those from KOP 5, KOP 6, and KOP 8.

Construction of the EITP would result in temporary impacts on visual resources that would contribute incrementally to impacts on visual resources from the cumulative projects for KOP 4, KOP 5, KOP 6, and KOP 8. Construction activities would not likely be visible from KOP 3 due to distance and the fact that viewers represented by this KOP would likely be traveling at speeds of approximately 70 miles per hour on I-15. Construction activities for the EITP would require grading and vegetation removal for improvements to access and spur roads, which would introduce

new color into views, alter the texture of the landscape, and create a line that would bisect views. The EITP would also require the exposure of bare soils where towers would be installed and where laydown or staging yards would be located. Only KOP 8 would have views of a laydown or staging area. No trenching activities associated with the telecommunications line would be visible from these KOPs. Similar to the construction impacts of the linear projects described above, the EITP's impact on visual resources due to construction activity would be on a smaller scale than the impact of the construction activities associated with the three solar projects in the vicinity of Primm, Nevada. Still, the EITP would contribute to temporary cumulative impacts to the existing viewshed as seen from KOP 4, KOP 5, KOP 6, and KOP 8 by introducing new color and line into views and by altering the existing texture of the landscape.

Operational Impacts on KOPs

Operation of the cumulative projects would permanently alter the existing landscape for the life of the project as seen from the eight KOPs listed in Table 5-4. The cumulative impact on visual resources in the Ivanpah and Eldorado valleys would be considerable, as described below for each KOP Simulations. Displaying both the Project and the cumulative projects in one simulation was not completed due to a lack of available information on project design; therefore, visual impacts are described based on existing publicly available information about the visual impacts of the cumulative projects or, in the absence of published information, based on the visual impacts of similar projects.

KOP 1 and KOP 2

Both KOPs 1 and 2 include views of the existing 115-kV subtransmission line and the existing Jean/Roach Dry Lake SRMA. The impact of these projects on visual resources is described above in Section 5.3.1.2. No reasonably foreseeable future projects would be visible from these locations (Table 5-4). The EITP's impact on visual resources for each of these KOPs is described in Section 3.2.3.5. The EITP would result in a major, adverse and unavoidable impact for KOP 1 and a minor adverse impact for KOP 2. However, because no reasonably foreseeable future projects would be visible from this location, the EITP's impacts on visual resources would not contribute to a cumulative visual impact from these two KOPs.

KOP 3

KOP 3 includes views of the existing 115-kV transmission line, the AT&T fiber optic cable, and Jean/Roach Dry Lake SRMA. The impact of these projects on visual resources is described above in Section 5.3.1.2. Reasonably foreseeable future projects visible from this location include the DesertXpress Project, the Calnev Pipeline Expansion Project, and the SNSA. The DesertXpress Project would be installed on a raised berm that would likely be of a darker color than the surrounding neutral tones of the desert; this would introduce contrast with existing colors and would create a new line that bisects the viewshed. The Calnev Pipeline Expansion would be installed underground and would result in negligible operational impacts on visual resources. The SNSA would result in significant and unavoidable changes to the existing landscape, as described above in Section 5.3.1.3. These changes would not be consistent with the VRM Class III designation for the area affected because visual changes associated with the airport would not repeat the existing patterns of the landscape, would dominate the view, and would not achieve the objective of partial retention of the landscape.

The EITP would result in a negligible impact from this KOP due to distance and the speed of travel of motorists along I-15, as described in Section 3.2.3.5. The EITP would be located approximately 6.5 miles from the viewpoint and would replace an existing 115-kV subtransmission line. While the EITP would require larger towers and larger and more conductors, the incremental difference in size would not be distinguishable at this distance; additionally, the replacement of an existing line would achieve the VRM Class III objective of repeating patterns seen in the existing landscape. Because the impact of the EITP would be negligible at KOP 3, the EITP would not contribute to cumulative visual impacts from this location.

KOP 4

KOP 4 includes a view of the existing 115-kV subtransmission line. The Jean/Roach Dry Lake SRMA, Ivanpah Dry Lake Recreation Area, Primm Casinos, Primm Outlet Mall, Primm Valley Golf Course, Bighorn Electric Generating System, and KFC/Taco Bell could potentially be visible from this location, although the screening wall around the Desert Oasis Apartment Complex has completely obstructed views of these projects.

The only reasonably foreseeable project that would likely be visible from this viewpoint, given the screening wall, is the NextLight Silver State Solar Project. The NextLight Silver State Project would be visible in the middleground between the parking lot perimeter wall and the mountains in the distance. From this distance, solar panels would be visible as flat, geometric forms, which would create a moderate level of contrast with the surrounding environment. These features would create straight lines along the alluvial fan, which would contrast moderately with the more gentle lines of the surrounding environment. The collector fields would appear to be white to black in color and are mostly lighter than the brownish green to gray surrounding environment. The color contrast level is moderate. Further, the features would have a medium to coarse texture, which contrasts weakly with the surrounding environment. The features would attract attention, but would not dominate the view of the casual observer. The NextLight Silver State Project would likely meet the VRM Class III objectives from this KOP.

The EITP would result in a minor adverse impact from this KOP due to the fact that the project would be replacing an existing transmission line and, though the project would require taller poles and larger and more conductors, the project would repeat the existing patterns of the 115-kV transmission line and would achieve the VRM Class III and VRI Class III objective of partially retaining the character of the landscape. While the EITP would result in weak contrast with these existing lines and forms, the project would not introduce contrast with the existing color or texture in the landscape. When considered in conjunction with the presumed impacts of the NextLight Silver State Solar Project, the cumulative impact to visual resources would likely meet the VRM Class III objectives from this KOP as overall contrast would be weak to moderate.

KOP 5

KOP 5 includes the existing 115-kV subtransmission line, the Ivanpah Dry Lake Recreation Area, the Primm Casinos, and the Primm Outlet Mall. The Molycorp Mine Evaporation Pont, the Molycorp Mine Wastewater Pipeline, the Primm Valley Golf Course, the Bighorn Electric Generating System, and the Caltrans Temporary Batch Plant may be visible from this location but are not visible or distinguishable in the KOP photograph (Figure 3.2-12) due to distance, bearing of the photograph, or a combination of both factors. The impact of these projects on visual resources is described above in Section 5.3.1.2.

Reasonably foreseeable future projects that would be visible from KOP 5 include the NextLight Silver State Project, the First Solar Project, the DesertXpress Project and the Calnev Pipeline Expansion. As described above, the DesertXpress Project would be installed on a raised berm that would likely be of a darker color than the surrounding neutral tones of the desert; this would introduce contrast with existing colors and would create a new line that bisects the viewshed. The Calnev Pipeline Expansion would be installed underground and would result in negligible operational impacts on visual resources. The NextLight and First Solar projects are both photovoltaic projects and would be expected to have similar impacts on visual resources. As described above, each of these projects would result in weak contrast to form, weak contrast with existing lines, moderate contrast in color, and weak contrast in texture. In combination, however, these projects would significantly alter existing views from the Ivanpah Dry Lake bed by introducing new, darker colors into the landscape that would contrast with the existing neutral tones of the desert and attract the attention of viewer groups.

The EITP would result in a minor adverse impact from this KOP. All changes to visual elements from this vantage point due to operation of the EITP would be weak, would not attract the attention of the viewer, and would meet the objectives of VRM Class III. The EITP's contribution to impacts on visual resources from this KOP would be minor.

KOP 6

KOP 6 includes views of the existing 115-kV subtransmission line, the Ivanpah Dry Lake Recreation Area, the Primm Casinos, and the Primm Outlet Mall. Similar to KOP 5 described above, other projects may be visible from this location but are not depicted in the KOP photograph due to the bearing of the photograph or may not be distinguishable due to distance. The impact of these projects on visual resources is described above in Section 5.3.1.2.

Reasonably foreseeable future projects that would be visible from KOP 6 include the NextLight Silver State Project, the First Solar Project, the DesertXpress Project and the Calnev Pipeline Expansion. Impacts of these projects on visual resources would be the same as those described above for KOP 5. In combination, these projects would significantly alter existing views from I-15 by introducing new, darker colors into the landscape that would contrast with the existing neutral tones of the desert and attract the attention of viewer groups. However, it should be noted that the sensitivity for this viewpoint is low, as compared to the moderate to high sensitivity for KOP 5.

The EITP would result in a minor adverse impact from this KOP. The proposed transmission line would replace an existing 115-kV subtransmission line, and the route is approximately 1 mile from the KOP, which is considered within the middleground distance zone. Despite the fact that the EITP would require taller poles and larger and more conductors, the impact on visual resources from this KOP would be minor due to the distance and the fact that the EITP would repeat the patterns created by the existing subtransmission line. The EITP's contribution to impacts on visual resources from this KOP would be minor.

KOP 7

KOP 7 includes views of the existing 115-kV subtransmission line, the existing Eldorado Substation, the Nevada Solar One facility, and the El Dorado Combined Cycle Power Plant. The impact of the Nevada Solar One facility is similar to the visual impacts described for the proposed NextLight Solar Project for KOP 4 above: moderate contrast in form, moderate contrast with existing lines, moderate contrast in color, and weak contrast in texture. The El Dorado Combined Cycle Power Plant is less visually distinct than the Nevada Solar One facility due to distance between the viewpoint and the power plant, but nonetheless introduced weak contrast in color and form.

The Cogentrix Solar Services project would be visible from this location, but is not visible in this KOP photograph due to the bearing of the photograph chosen intentionally to show the visible portions of the proposed project; therefore, there would be no cumulative impacts from this KOP due to combined effects with reasonably foreseeable future projects.

The EITP would result in a negligible impact on visual resources from this KOP due to distance, the speed of viewers driving along Highway 95, and the low sensitivity of the viewpoint. Additionally, all additions to the Eldorado Substation would take place within the existing Eldorado Substation footprint and, while the proposed transmission line would require taller towers and larger and additional conductors, these changes would not be distinguishable at a distance of 3.5 miles. Therefore, EITP's contribution to impacts on visual resources from this KOP would be negligible.

KOP 8

KOP 8 includes views of the Primm Valley Golf Course, the Caltrans Temporary Batch Plant, and commercial and residential development in Primm, Nevada (although from this location these projects are not visually distinct from one another). The impact of these projects on visual resources is described above in Section 5.3.1.2. The Molycorp Wastewater Pipeline and Molycorp Evaporation Pond are present in this view but not visually distinct. The existing 115-kV subtransmission line is not visually distinct from this distance.

The DesertXpress, Calnev Pipeline Expansion, Joint Port of Entry (JPOE), ISEGS, and First Solar Project would be visible from this location. The impact on visual resources for the DesertXpress Project and the Calnev Pipeline

Expansion are described above for KOP 3: the DesertXpress Project would introduce contrast in color and would introduce a new line into the viewshed and the Calnev Pipeline Expansion would not be visible because it would be installed underground. The impact on visual resources for ISEGS is described in Section 3.2.5.3. ISEGS would result in substantial adverse impacts to six of ten KOPs chosen for that project (CEC and BLM 2009). The JPOE project would require the expansion of the I-15 corridor and construction of additional structures. From this distance, the JPOE would result in weak contrast in form by introducing new structures into the view, weak to moderate contrast in color depending on the color chosen for the structures, and weak change in line as the existing line of I-15 would be altered. In combination, these projects would significantly alter existing views from I-15 and would result in a major adverse cumulative impact.

The EITP would result in a moderate change in the color of the landform, a weak change in the line of vegetation, and a moderate contrast with existing structures in the background of KOP 8. The changes to the existing environment would be consistent with the VRI Class III designation assigned to these BLM-managed lands because the VRM Class III designation allows for moderate change. Additionally, mitigation measures AES-1, AES-2, and AES-3 would reduce the contrast that would be introduced to the existing colors in the viewshed and minimize the dominance of the substation and microwave tower within the view. Further, if ISEGS is constructed, it would be located between this viewpoint and the proposed Ivanpah Substation. The facilities associated with ISEGS would obstruct any views of the Ivanpah Substation. Therefore, the EITP's contribution to impacts on visual resources from this KOP would be minor.

Scenic Vistas

This section discusses the combined effects on scenic vistas of the EITP and past, present, and reasonably foreseeable projects. The relevant impact of the EITP is IMPACT AES-1: Adverse Impact to a Scenic Vista. There are no designated scenic vistas in the vicinity of the EITP; however, for the purposes of this analysis, the South McCullough Wilderness Area is treated as designated scenic vistas because the BLM manages these lands according to the most stringent restrictions to protect visual resources (VRM Class II). As discussed above for KOP 1 and KOP 2, no cumulative projects would be visible from this location, so no cumulative impact would occur.

Lighting and Glare

This section discusses the combined effects on visual resources due to the introduction of new sources of light or glare of the EITP and past, present, and reasonably foreseeable projects. The relevant impact of the EITP is IMPACT AES-4: Create a New Source of Light or Glare. EITP lighting would be shielded, directed downward, and used only for emergency repairs or maintenance. The EITP's contribution to light and glare from the substation would be infrequent and less than significant. It is possible that project lighting would be required for some towers within 20,000 feet of the SNSA, if the airport is approved and constructed. MM-HAZ 2 required the applicant to consult with the Federal Aviation Administration (FAA) to determine whether a Hazard/No Hazard Determination is required for the EITP and, if so, if lighting would be required for structures within 20,000 feet of the proposed airport. If so, the EITP could contribute to cumulative impact to visual resources by introducing a new source of light into the landscape.

The projects considered in the cumulative scenario might result in cumulatively considerable impacts to visual resources by introducing new sources of light and glare. Solar thermal projects planned in the region that would use power tower technology, such as ISEGS, or any projects that intended to use sterling dish technology, would introduce highly reflective surfaces into viewsheds, which would create glare and contribute to significant cumulative impacts. Additionally, the ISEGS project would require five to ten foot tall day and nighttime strobe lighting on top of its 459 foot power towers under FAA regulations.. This lighting would introduce a new source of light into viewsheds and, therefore, would also contribute to considerable cumulative impacts under this criterion. The proposed Ivanpah Substation would have a negligible contribution to cumulative impacts under this criterion because the lighting would be infrequent, shielded to prevent light spillage, and directed downward. If the EITP is required to install safety lighting on the proposed transmission towers near the SNSA, the EITP would contribute to impacts to visual resources under this criterion.

5.3.1.5 Alternatives

Because no activity is associated with the No Project Alternative, there would be no impacts to visual resources under this alternative. Views from the locations described above would not be altered in any way under the No Project Alternative.

The transmission route alternatives were developed to decrease impacts to specific resources, such as the Ivanpah Dry Lake, residents of the Desert Oasis Apartment Complex, or to address land use concerns near the existing Eldorado Substation. Each alternative deviates from the existing ROW, and all the deviations would result in increased visual contrast. However, these minor route variations are close to the existing transmission line and each would be the same distance from potential viewer groups and the cumulative projects considered in this analysis. Because the viewing groups and viewing distances for the proposed project and the alternatives would be similar, the alternatives' contribution to cumulative impacts to visual resources would be similar to those of the proposed project although incrementally greater due to the fact that new ROW not visually associated with existing ROWs would be required which would result in increased visual contrast.

The Golf Course Telecommunications Alternative and the Mountain Pass Telecommunications Alternative would both require additional undergrounding along Nipton Road and underbuilding on existing distribution lines. Undergrounding would require additional trenching along Nipton Road, within view of the Mojave National Preserve, which would temporarily increase visual contrast; however, once installed, the undergrounded segment of the telecommunications line would not be visible. The segments of the telecommunications line that would be underbuilt on existing distribution lines would result in the same impact to visual resources as the portion of the line that would be underbuilt on the Eldorado-Lugo transmission line. The Golf Course Telecommunications Alternative would require an additional segment of undergrounding under the Primm Valley Golf Course. The portion of the telecommunication line that would be installed under the golf course would result in increased visual impacts to golf course users during the construction period but would not impact views following construction. A portion of the Mountain Pass Telecommunications Alternative would cross through BLM land with a VRI Class II designation, which has a higher level of visual sensitivity than the proposed telecommunications path, which crosses BLM land with VRI Class III designation in California. Both these alternatives would have slightly higher impacts to some viewer groups than the proposed project during construction but would not introduce greater long-term visual contrast than the proposed project. Therefore, they would have similar contribution to cumulative impacts to visual resources as would the proposed project.

5.3.1.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP and ISEGS projects. The section summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and evaluates the combined effects of the EITP and ISEGS.

ISEGS Summary

The ISEGS visual analysis determined that the visual impacts of the ISEGS project would be cumulatively significant and unavoidable with respect to the immediate project viewshed. The anticipated cumulative impacts of the ISEGS project in combination with foreseeable future local projects in the Ivanpah Valley would thus be considerable and potentially significant (CEC and BLM 2009).

Cumulative Impact of the Whole of the Action / Cumulative Action

The ISEGS project would be visible from I-15, the Ivanpah Dry Lake, the Clark Mountains, the Stateline Wilderness Area, and Primm, Nevada. The whole of the action / cumulative action (the combined ISEGS and EITP) would unavoidably alter the viewshed. As determined by the ISEGS FSA/DEIS, the combination of the whole of the action / cumulative action and the foreseeable projects could contribute to considerable cumulative visual impacts. Therefore, the whole of the action / cumulative action would have a potentially unavoidable significant contribution to

considerable cumulative visual impacts for motorists along I-15, recreationists on the Ivanpah Dry Lake, dispersed recreationists in the Clark Mountains and Stateline Wilderness Area, and residents of or visitors to Primm, Nevada.

5.3.2 Air Quality and Greenhouse Gases

5.3.2.1 Geographic Extent and Timeframe

Air quality impacts resulting from the EITP could occur over the entire route, which includes the natural basin formed within the Ivanpah Valley and Eldorado Valley (as formed by the Spring Mountains, Clark Mountains, New York Mountains, Highland Mountains, and McCullough Mountain Ranges). The potential cumulative impact area encompasses two air basins, two counties, and two local air quality jurisdictions. Since the proposed project has negligible direct operating emissions, this cumulative impact discussion focuses on construction impacts. Therefore, the timeframe for this analysis is the 18 months of construction. Construction impacts are localized and of short duration. Therefore, only projects within 1 mile of the route are considered projects that when combined with impacts from the EITP could contribute to cumulative impacts. Additionally, only projects with construction scheduled concurrently in the same area as the EITP are considered as possible contributors to cumulative impacts.

5.3.2.2 Past and Present Project Impacts / Existing Cumulative Conditions

As discussed previously, EITP construction would take place in desert, rural areas where population is sparse, with the exception of Primm, Nevada. The presence of I-15 and other state routes facilitates travel to, from, and within California and Nevada. The Bighorn Electricity Generating Facility has facilitated growth within Primm. The Molycorp Mine, Bighorn Electricity Generating Facility, and the traffic throughout the Ivanpah Valley generate emissions that affect the current ambient air quality in the region. Air quality, in general, reflects current regional emissions; therefore, this discussion focuses on present conditions and the potential contribution of reasonably foreseeable future projects.

The EITP would be located partially in California, within the Mojave Desert Air Basin. Local air quality in that area would be administered by the Mojave Desert Air Quality Management District (MDAQMD). The EITP would also be located in Clark County, Nevada; local air quality there would be administered by the Clark County Department of Air Quality and Environment Management (DAQEM). The section of the Mojave Desert Air Basin in which EITP activities would occur is currently designated as nonattainment for particulate matter less than or equal to 10 micrometers in diameter (PM_{10}) with respect to National Ambient Air Quality Standards (NAAQS) and as nonattainment for ozone and PM_{10} with respect to California Ambient Air Quality Standards (CAAQS). The portion of Clark County in which EITP activities would occur is designated as nonattainment for ozone with respect to NAAQS. Ambient air quality for the area is described in detail in Section 3.3.1, "Environmental Setting." Since the EITP would be located in areas designated as nonattainment, any significant increase in emissions of nonattainment pollutants (or precursors) could impact air quality adversely.

5.3.2.3 Reasonably Foreseeable Future Projects and Changes

Only the projects listed in Tables 5-1 and 5-2 and shown in Figure 5-1 are considered potential contributors to cumulative impacts. They have the potential to temporally overlap emissions with construction of the EITP, because they are located within 1 mile of the EITP. However, as indicated in Table 5-3, the construction schedule of many of these projects is uncertain, so the construction periods of several projects may not coincide with the EITP.

From southwest to northeast, the proposed Eldorado–Ivanpah 230-kV transmission line would traverse the proposed locations of the ISEGS and First Solar projects, as well as Ivanpah Dry Lake, which is used for recreation in California. Once the proposed transmission line crossed the California-Nevada border, it would be located within 1 mile of all structures in Primm, including the existing rail line, the proposed location of the DesertXpress rail line, the proposed location of the Calnev Pipeline Expansion, and the proposed location of NextLight's Silver State Solar Project.

5.3.2.4 Cumulative Impact Analysis

The potential for air quality impacts of the EITP to combine with the effects of other projects within the geographic extent and timeframe of the cumulative analysis is described below. Since the EITP would have negligible operating emissions, the cumulative impact analysis focuses on construction impacts, which would be localized and of short duration. As discussed above, only projects within 1 mile of the EITP route, as well as projects that would generate emissions during construction of the EITP, are considered for analysis of cumulative impacts. Additionally, only new projects with construction or operating emissions that would occur at the same time as the EITP's construction are considered as part of this cumulative impact analysis; existing emission sources are considered part of the existing ambient background cumulative condition.

A cumulative impact analysis of greenhouse gas (GHG) emissions for the EITP is provided in Section 3.3, "Air Quality and Greenhouse Gases." The analysis in Section 3.3 considers the EITP's contribution to global climate change, which was determined to be less than significant. No further analysis of GHG emissions is included in this section.

Construction Impacts on Air Quality

This section discusses the combined effects on air quality during construction of the EITP and other past, present, and reasonably foreseeable projects. The relevant impacts of the EITP are IMPACT AIR-2: Temporary Ambient Air Quality Impacts Caused by Construction Activities Would Violate or Contribute Substantially to an Air Quality Violation; IMPACT AIR-3: Temporary Emission Increases of NO_x, VOCs, and PM_{10} during Construction Would Contribute to a Cumulatively Considerable Net Increase of a Criteria Pollutant in a Non-Attainment Area; and IMPACT AIR-4: Temporarily Expose Sensitive Receptors to Substantial Pollutant Concentrations.

Construction of the EITP would take 18 months and would generate emissions of carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), sulfur dioxide (SO_2), PM_{10}, and particulate matter less than or equal to 2.5 micrometers in diameter ($PM_{2.5}$). Ozone is not emitted directly from emission sources but is created in the atmosphere via a chemical reaction between NO_X and VOCs in the presence of sunlight; these compounds are referred to as ozone precursors. The estimated average daily emissions would exceed MDAQMD daily construction emission significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$. This threshold would not necessarily be exceeded daily, but it could be, if all components of the EITP were to be constructed simultaneously. The emissions would be localized to those locations under construction. Facilities such as the Bighorn Electric Generating Station and other existing projects shown in Tables 5-1 and 5-2 are currently generating emissions, and those emissions are factored into the evaluation of air impacts discussed in Section 3.3, "Air Quality."

Construction of the foreseeable projects within 1 mile of the EITP would generate similar types of emissions and could contribute cumulatively to impacts to air quality. Individually, the foreseeable projects could exceed the daily construction emission thresholds for the same or different criteria pollutants as the EITP. As indicated in Table 5-3 and Figure 5-1, some projects could have temporally and spatially overlapping construction. Table 5-6 provides the estimated daily emissions of the EITP and ISEGS. These are the only projects for which there are publicly available emissions data for this area.

Table 5-6 Estimated Daily Construction Emissions of Criteria Pollutants for the Proposed Project and Other Foreseeable Projects[1]

Criteria Pollutant	Maximum Daily Emissions (lb/day)			MDAQMD Daily Emission Significance Threshold (lb/day)
	Proposed Project		ISEGS	
	CA[2]	NV[3]	CA[4]	
CO	164	113	509	548
NO_X	331	201	500	137
VOC	39	23	63	137
SO_2	0.9	1.2	2	137
PM_{10}	401	218	285	82

Notes:

[1] Only data on the ISEGS project were publically available during the preparation of this Draft EIR/EIS.

[2] Construction includes removal of the 115-kV line, installation of the 220-kV and 33-kV lines, construction of the Ivanpah Substation, and installation of the telecommunication line

[3] Construction includes installation of the 220-kV line, expansion of the Eldorado Substation, replacement of the Eldorado–Lugo line, and installation of the telecommunication line

[4] Construction for this project would only take place in California

The construction emissions estimates for ISEGS are likely to be comparable to those for the other solar thermal projects proposed in the area, such as the First Solar project or the NextLight Silver State Solar Project. Given the daily and annual emission estimates, and since the EITP, ISEGS, DesertXpress, and Calnev could occur concurrently, cumulative temporary air quality impacts could occur. These temporary cumulative increases in criteria pollutants could lead to or contribute to violations of ambient air quality standards. In addition, increases in PM_{10}, NO_x, and VOCs from these and other reasonably foreseeable future projects could contribute to a considerable net increase of criteria pollutants in a nonattainment area. Section 3.3.4, "Mitigation Measures," includes a summary of measures to be implemented to mitigate project construction emissions, including the use of low-emission equipment and enhanced fugitive dust controls. These mitigation measures are not expected to reduce emissions from EITP construction activities to below the MDAQMD daily significance thresholds. Thus, the EITP could have a potentially significant and unavoidable contribution to these cumulative impacts.

Diesel particulate emissions also would be generated during project construction. The only receptor that could be exposed to short-term increased pollutant concentrations are residents of the Desert Oasis Apartment Complex. The estimated construction time at this location for the EITP is 2.5 weeks. Installation of the Calnev Pipeline is likely to take several days to install in the area near the Desert Oasis Apartment Complex. Although possible, it is unlikely that these projects would have overlapping construction schedules at this location. Even if the construction schedules overlapped, construction activities would be only for several days in the area of potential exposure; therefore, there would not be a significant cumulative impact to this receptor.

Objectionable Odors

This section discusses the combined effects associated with odors generated during construction of the EITP and other past, present, and reasonably foreseeable projects. The relevant impact of the EITP is IMPACT AIR-5: Temporarily Create Objectionable Odors due to Fuel Combustion that would affect a Substantial Number of People. Vehicle and equipment emissions odors during construction could be perceptible by people when construction was occurring in Primm. No other location along the EITP route has a substantial number of people. Construction in Primm would occur over a 2.5-week period near the Desert Oasis Apartment Complex. As discussed above, although unlikely, the Calnev Pipeline Expansion could have an overlapping construction schedule at this location, but the overlap would only be for a day or two. Even if the construction schedules overlapped, construction activities would be only for several days in the area of potential exposure, there would not be a significant cumulative impact.

5.3.2.5 Alternatives

The No Action Alternative involves no activity; therefore, no emissions would be generated. This alternative would have no direct or cumulative impact on air quality.

Because the alternative transmissions routes and telecommunication alternatives simply vary the route of the proposed project and all the same components would be built, air emissions that would be generated from the alternatives would be similar to those from the proposed project. The amounts of emissions would vary, given the changes in distances of the transmission line and telecommunication route. However, for all the alternatives, contributions to cumulative air quality impacts would be similar to those of the proposed project.

5.3.2.6 Whole of the Action / Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP and ISEGS projects. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and then evaluates the combined effects of the EITP and ISEGS.

ISEGS Summary

The ISEGS FSA/DEIS determined that cumulative impacts would occur under the following circumstances:

- As a result of any project emissions of nonattainment criteria pollutants and their precursors (NO_x, VOCs, and PM_{10}); these are considered CEQA-significant cumulative impacts that must be mitigated
- As a result of a significant contribution to GHG emissions

The ISEGS cumulative analysis for air quality determined there could be significant temporary impacts during construction of other projects in the project vicinity, most notably from construction traffic and fugitive dust associated with other renewable energy projects, a proposed airport, and a commercial/residential development in the town of Jean.

In the long term, several of the developments would have beneficial impacts. For example, the high-speed train would reduce traffic emissions on I-15, and the renewable energy projects would reduce emissions within the area of the Western Electricity Coordinating Council. No additional cumulative air quality impact modeling analysis was performed. While adverse cumulative impacts would likely occur, no CEQA-significant cumulative air quality impacts are expected after implementation of recommended project mitigation measures. However, because there are a large number of renewable projects currently proposed for development in the desert southwest, it is appropriate that emissions reduction practices be integrated into project proposals to reduce any potential cumulative effects, including construction emissions of criteria pollutants and potential contributions to region ozone and particulate matter and haze.

While ISEGS would emit some GHG emissions, its contribution to the system build-out of renewable resources in California would result in a net cumulative reduction of GHG emissions from new and existing fossil resources. The ISEGS project would emit considerably less GHG than would existing power plants and most other generation technologies, and thus would contribute to continued improvement of the electricity system GHG emission rate average for the western United States, and, specifically, California. The ISEGS project would lead to a net reduction in GHG emissions across the electricity system that provides energy and capacity to California. The project would result in a cumulative overall reduction in GHG emissions from the state's power plants, would not worsen current conditions, and would thus not result in CEQA impacts that would be cumulatively significant.

Cumulative Analysis of the Whole of the Action / Cumulative Action

As discussed previously, concurrent construction of the EITP, ISEGS, and other foreseeable projects would be likely to result in considerable cumulative impacts to air quality. Therefore, the Whole of the Action / Cumulative Action, combined with the other foreseeable projects, could result in temporary cumulative increases in criteria pollutants that could lead to or contribute to violations of ambient air quality standards. In addition, increases in PM_{10} and the ozone precursors NO_X and VOCs would contribute to a considerable net increase of criteria pollutant in a non-attainment area. The Whole of the Action / Cumulative Action could have a significant contribution to these cumulative impacts. Section 3.3.4, "Mitigation Measures," of this report includes a summary of measures to be implemented to mitigate project construction emissions, including the use of low-emission equipment and enhanced fugitive dust controls. These mitigation measures are not expected to reduce emissions from project construction activities to below the MDAQMD daily significance thresholds. Thus, the EITP could have a potentially significant and unavoidable contribution to these cumulative impacts.

Since ISEGS is not located near any residential center, the cumulative impacts associated with odor and exposure of sensitive receptors to diesel particulate emissions would be similar to the proposed project. That is, there would not be a cumulatively significant impact to either.

Since the EITP would not contribute to air quality impacts during operations of ISEGS, the Whole of the Action / Cumulative Action impacts during operation would be the same as those for the ISEGS project alone. These are discussed above and in Section 3.3, "Air Quality and Greenhouse Gases."

5.3.3 Biological Resources

5.3.3.1 Geographic Extent and Timeframe

Environmental analysis for biological resources is confined by the geographic boundaries of the region in which the EITP is sited. Therefore, cumulative biological impacts associated with the EITP were evaluated within an area that extends west to the Mesquite Valley, east to the Eldorado Valley, and south to the Ivanpah and Piute valleys. This area—the cumulative impact area—is shown in Figure 5-5.

The cumulative impact area reflects natural watershed boundaries and encompasses the local ranges of species that may be affected by the EITP and other projects. The cumulative impact area is an expansion of the area used to assess potential biological impacts of the EITP; this expansion facilitates an evaluation of cumulative impacts on a regional, landscape-level scale. Analysis of cumulative impacts will assess regional impacts on wildlife corridors and species impacts resulting from cumulative habitat fragmentation and loss.

Cumulative loss of biological resources over time from the EITP was assessed through review of existing (present) projects' disturbance legacy and by considering the timeframe for implementation of future projects. The extent of temporal cumulative effects would depend on construction schedules for new projects and the expected operational life of existing and proposed projects. For instance, concurrent construction disturbance would cause short-term but intense impacts in the area, whereas phased construction among projects could cause chronic but less intensive disturbance impacts. For many projects, the extent of biological resource impacts may extend beyond the life cycle of the project due to permanent habitat removal.

\\Prtbhp1\gis\SanFrancisco\Ivanpah\Data\Analysis\CummulativeProjects\March2010_updates_per_commnets\tables\Surrounging_Projects.mxd 04/02/2010

LABEL	NAME	STATUS	Acreage*
1	Bighorn Electric Generating Station	Existing	86.9
2	Primm Casinos	Existing	127.8
3	Primm Valley Golf Course	Existing	531.3
4	Primm Outlet Mall	Existing	38.7
5	Ivanpah Dry Lake RA	Existing	12,855.3
6	Molycorp Mine	Existing	862.4
7	Colosseum Mine	Existing	289.9
8	Desert Oasis Apartments	Existing	13.5
9	Molycorp Mine Evaporation Pond	Existing	355.5
10	AT&T FiberOptic Cable	Existing	NA**
11	SCE 115 kV Transmission Line	Existing	NA**
12	Molycorp Wastewater Pipeline	Existing	NA**
13	Jean/Roach Dry Lake SRMA	Existing	224,931.4
14	SNSA	Pending	5,996.6
15	El Dorado Energy Combined Cycle Power Plant	Existing	138.2
16	Nevada Solar One	Existing	400.5
17	KFC/Taco Bell	Existing	3.6
A	First Solar Development	Pending	5,433.4
B	SNSA Ivanpah Airport Environs Overlay	Pending	16,579.6
C	Desert Xpress	Pending	NA**
CC	Searchlight Wind Energy Corp	Pending	19,886.7
DD	BullFrog Green Energy	Pending	3,352.2
E	Joint Port of Entry	Pending	324.7
F	Temporary Batch Plant	Existing	32.4
FF	Cogentrix Solar Services	Pending	640.8
J	Iberdrola Renewables	Pending	1,872.6
JJ	Power Partners SW	Pending	3,874.0
K	Brightsource ISEGS	Pending	4,073.4
Q	Nextlight Renewable Power	Pending	7,837.2
S	CalNev Pipeline Expansion Project	Existing/Pending	NA**
T	Table Mountain Wind	Pending	13,665.4
Z	Oak Creek Energy Systems/Desert Research Inst	Pending	35,530.5

* Cumulative project areas are approximated reflecting the project right-of-way and not necessarily the actual or final project boundary footprint.

** Linear projects not included when calculating overall disturbance acreages.

SOURCE: See source list for Table 5-1 and Table 5-2.

Figure 5-5
Eldorado-Ivanpah Transmission Project

Cumulative Biological Impact Analysis: Desert Tortoise

Study Area

Cumulative Linear Project
- Existing
- Pending
- Existing/Pending

Cumulative Project Area by Type
- Solar
- Wind

Cumulative Project Area by Status
- Approved/Existing
- Pending
- Ivanpah Airport Environs Overlay

PROPOSED PROJECT
- Transmission Line
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass
- Redundant Telecommunications Line - Golf Course
- Milepost
- Proposed Microwave Tower
- Proposed Substation
- Existing Substation
- City
- County Highway
- State Highway
- Interstate
- Railroad
- Dry Lake Bed
- Valley Boundary
- Suitable Desert Tortoise Habitat
- Desert Tortoise Critical Habitat

N

0 1 2 3 4 5
Miles

March 2010

This page intentionally left blank

5.3.3.2 Past and Present Project Impacts / Existing Cumulative Conditions

The EITP would be constructed in an area that supports a broad variety of biological resources. The resources within the cumulative impacts area are summarized here, and details are given in Section 3.4, "Biological Resources." The entire EITP is within the Mojave Desert biome, which is comprised of a diverse range of habitat types typical of those found in the Mojave Desert. These habitat types include desert scrub, desert wash, and scattered desert woodlands. The cumulative impact area also includes several dry lake beds, numerous drainages, and areas relatively devoid of native vegetation including developed areas, paved roads, highways, access roads, and other disturbed areas associated with ongoing mining operations. Invasive and noxious weed species have been identified throughout the cumulative impact area.

The area supports habitat for, and populations of, numerous special-status flora and fauna, as described in Section 3.4. These include species under federal and/or state protection, including desert tortoise, desert bighorn sheep, Gila monster, burrowing owl, and other sensitive species in California and Nevada.

Land use in the cumulative impacts area has been historically altered by human activities over the past century (i.e. development has been in earnest at least since the mid-1900's), resulting in conversion of undeveloped land and habitat loss, fragmentation, and degradation. This habitat loss and fragmentation has direct and indirect impacts on special-status species in the cumulative area. Direct effects to special-status wildlife and plants include potential 'take' (injury and/or mortality) of an individual. Indirect effects include alteration of wildlife behavior, loss of genetic pool for plants and wildlife through take, and lowered animal breeding success due to behavior changes. Existing projects such as the Bighorn Electric Generating System, the Eldorado Energy Combined Power Plant, Primm Valley Golf Course, Primm Casinos, Nevada Solar One, and small and large-scale mining projects have permanently removed or altered approximately 2,900 acres of native desert habitat in the cumulative impact area. Project features such as continuously maintained access roads, paved roads and highways, and paved footprints for infrastructure have permanently altered the desert valley habitat. Additionally, ongoing recreational activities and human presence within the Ivanpah Dry Lake Recreation Area and Jean/Roach Dry Lake SRMA disturb wildlife communities on approximately 238,000 acres. The dry lakes themselves, where most of the recreational activities take place, provide significant habitat for only a small suite of plant and wildlife species due to the harsh saline environment and naturally compacted soils. These commercial, industrial, and recreational activities have been present in the area for several decades and will continue into the foreseeable future.

Most of the existing projects are near I-15, which bisects the cumulative impact area and runs between several mountain ranges. This development pattern has resulted in a mosaic of habitat degradation along a linear corridor, and potential barriers and divisions of terrestrial wildlife between the east and west side of the I-15 highway. Some species are more susceptible to habitat fragmentation than others. Wide-ranging mammals and reptiles such as the desert bighorn sheep, badger, Gila monster, and desert tortoise are more strongly negatively affected by habitat fragmentation, as they need larger territories in which to forage and maintain genetic viability of populations. Smaller animals such as desert rodents and lizards, and migratory avian species are generally not as strongly impacted by larger-scale habitat fragmentation.

Several projects are either no longer operational (e.g., Colosseum Mine) or have changed locations of land disturbance activities over time (e.g., Molycorp Mine evaporation ponds and wastewater pipe discharge locations). Despite cessation of activities, these projects have permanently altered the landscape and use of natural habitats by wildlife. Past physical disturbance such as vegetation removal, soil compaction, and colonization by invasive plant species can prevent or reduce the likelihood of re-colonization of the area by native desert plants. Reducing the cover of native plants can, in turn, make an area unattractive to native wildlife that depend on the native desert vegetation. The impacts from these disturbances can last for many years, as recovery of desert systems has been documented to take anywhere from 30 to 60 years, depending on the vegetation type (e.g., perennials and shrubs take less time to recover than do longer-lived vegetation such as Joshua trees, creosote, or pinyon-pine woodlands) (Carpenter et al. 1986, Rundel and Gibson 1996).

Most of the existing past and present projects in the cumulative area are in the desert valley floor, rather than at the higher mountain elevations. An electrical transmission station (Mountain Pass Substation) is located in the Clark Mountains, numerous transmission lines traverse the ranges in the cumulative area, and the Molycorp Mine is located on the lower slopes of the Clark Mountain Range. The locations of the projects affect different suites of wildlife and plant species, as vegetation colonizing the mountains and desert valleys is unique and provides habitat niches for wildlife. For instance, many desert songbirds and migratory birds use both montane and valley floor vegetation for foraging and nesting; bighorn sheep utilize both the upper mountainous areas during lambing and valley floors for migrating, while desert tortoise remain within the valley floor and lower slopes of the bajadas. Specifically, the existing infrastructure found within the mountains (i.e. Molycorp Mine, Mountain Pass Substation, existing transmission lines) have permanently removed approximately 900 acres of montane and desert valley habitat, and on-going operations result in minor but continuous disturbance to wildlife due to on-going operations and human presence. Many special-status species are sensitive to increased human presence and noise, including desert bighorn sheep and nesting migratory birds. These species would be potential present within the higher elevations of the mountain ranges in the cumulative area.

5.3.3.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future projects that could impact biological resources in the cumulative impact area represent overall development trends in the Ivanpah and Eldorado valleys. These projects are shown in Figure 5-5 and listed in Tables 5-1 and 5-2. Development in the area is dominated by renewable energy. Major renewable projects require extensive access roads, new transmission lines to tie into the existing electrical grid system, and large swaths of cleared and graded land for infrastructure (e.g., substations, solar farms). As currently proposed, renewable solar and wind projects would impact approximately 100,000 acres of desert and mountain range habitat in the cumulative analysis area. These large project footprints are scattered around and throughout the cumulative area, and in many cases are located within special wildlife habitat management areas. Solar farms are located primarily along the valley floors, while wind projects, which encompass approximately 71,000 acres of habitat, are proposed along the upper mountain slopes and ridges.

Other projects in the cumulative impacts area include several large-scale, long-term transportation infrastructure projects, including DesertXpress, the Joint Port of Entry, and the proposed SNSA. These projects also require large swaths of cleared and graded land for infrastructure placement and could require over 23,000 acres. These projects would generally occur along the I-15 corridor and make use of existing ROWs where native habitats have already been disturbed; however, the width of existing linear disturbance within the cumulative impact area would be expanded. Additional ongoing regional trends that have led to degradation of biological resources in the cumulative impact area include population growth and the subsequent demand for new housing and infrastructure, grazing, and recreational activities. Currently, the demand for desert habitat acreage for these human growth indicators is fairly low.

In Nevada, the U.S. Fish and Wildlife Service (USFWS) is collecting information to prepare an EIS under NEPA for the review of a proposed amendment to the Clark County MSHCP. The amendment would increase the total acres of species habitat (protected under the current MCHCP) that could be disturbed by giving Clark County, the cities, and the Nevada Department of Transportation an Incidental Take Permit (ITP). The permit would allow incidental take of covered species on up to 215,000 additional acres in Clark County. The MSHCP amendment would cover disturbance resulting from, but not limited to, residential and commercial development; utility and transportation facilities and other capital improvements and operations activities; flood control; and development of urban parks and recreation facilities. Additionally, the amendment would revise the permit term to 50 years. The proposed amendment is being prepared under Section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended. The protected species that could be impacted in the proposed amended planning area would be covered species; these are desert tortoise, southwestern willow flycatcher, Las Vegas buckwheat, Yuma clapper rail, yellow-billed cuckoo, and Las Vegas bearpoppy. Clark County, the cities, and Nevada Department of Transportation propose to reduce the number of species covered under the existing permit but may also seek to address and cover additional rare and/or sensitive species (in addition to the six previously mentioned species) that could occur within the planning area. USFWS

conducted meetings in October 2009 and the deadline for public comments was October 30, 2009. At this time, a draft/final EIS is not available for review; therefore, the nature of the contribution of this amendment to cumulative impacts can only be evaluated qualitatively. Impacts for covered species could occur from potential habitat disturbance and removal of 215,000 acres of desert habitat within Clark County.

5.3.3.4 Cumulative Impact Analysis

The potential for impacts to biological resources from the EITP to combine with the effects of other projects within the geographic and temporal extent of the cumulative analysis is described below. As described in Section 3.4, "Biological Resources," the EITP would have adverse impacts on biological resources during construction and operation. For the analysis of cumulative impacts, impacts to biological resources were reviewed for the following reasonably foreseeable projects with publicly available environmental information: DesertXpress, NextLight Solar, Table Mountain Wind, and ISEGS. No other quantitative data were available because the environmental documents have not yet been published for the Calnev Pipeline Expansion project, Searchlight Wind Energy, First Solar Development, Iberdrola Renewables, the SNSA, or any of the other future projects listed in Table 5-1.

Cumulative Impact BIO-C-1: Habitat Fragmentation, Degradation, and Loss

This section discusses the combined effects of habitat fragmentation, degradation, and loss resulting from the EITP and past, present, and reasonably foreseeable projects. The relevant impacts resulting from the EITP are IMPACT BIO-1 through BIO-6.

Cumulative impacts to biological resources can be either additive (that is, directly proportional in severity to the quantity of the resource affected, such as vegetation loss or wetland fill) or exponential. For exponential impacts, increasing levels become disproportionately more substantial if they affect biological features that are critical to the survival of a species. An example of an exponential impact is habitat fragmentation, where the result of the construction of multiple projects in a particular area results in fragmentation of areas that formerly provided contiguous habitat into separate areas too small to support dependent species.

The EITP has a relatively small construction footprint, despite its linear extent, is limited in duration (18 months), and requires a maximum of 190 construction workers. Most of the elements of the EITP would be constructed within an existing ROW where the native vegetation has already been disturbed, with the exception of the Ivanpah Substation, one of the proposed microwave towers, and new access roads, which, together, would temporarily and permanently impact approximately 443 acres of vegetation (see Section 3.4.1.1, "Existing Conditions"). The EITP would have relatively minor impacts on habitat fragmentation, assuming land temporarily disturbed during construction (384 acres) would be restored to its original state to the greatest extent possible. However, these impacts could be significant when combined with impacts from other regional projects. The development of numerous large-scale projects, such as ISEGS, DesertXpress, NextLight, Table Mountain, other wind and solar generation facilities, and the SNSA would result in a substantial permanent conversion (over 120,000 acres) of desert valley and mountain top habitat to industrial/commercial uses. This could have significant effects on a variety of species through direct habitat loss and/or habitat fragmentation.

The EITP, in conjunction with other projects, would result in cumulative impacts on native vegetation communities, including cacti and yucca species, and adversely affect special management areas due to temporary and permanent habitat loss from ground disturbance and inadvertent distribution of noxious weeds, as described in Section 3.4, "Biological Resources." Specifically, ISEGS would disturb approximately 4,073 acres of Mojave creosote scrub, DesertExpress would disturb approximately 278 acres of mesquite scrub and Joshua tree woodlands, Nextlight would disturb 2,967 acres of desert scrub, and Table Mountain could disturb approximately 765 acres of Mojave blackbrush scrub, Joshua trees and montane pinyon-juniper woodland. Thus, in conjunction with the EITP, cumulative impacts to native desert vegetation communities would be approximately 8,500 acres of disturbance. These impacts would be both temporary and permanent, as restoration of habitat back to its baseline condition has a temporal aspect: creosote, Joshua trees, and conifer forests take much longer to re-colonize an area as opposed to

smaller cacti and perennial plant species. Nesting birds, bats, reptiles, and other wildlife rely on these vegetation types for forage and nesting opportunities. Removal of vegetation and/or long-term restoration efforts could negatively impact common and special-status wildlife. Cumulative impacts from the projects would affect the desert valley vegetation located along the desert floor and lower bajada slopes, as well as vegetation typically characterizing the desert mountain ridges (i.e. pinyon-pine and juniper woodland and upper elevation scrub).

Cumulative impacts from all projects on these habitat resources could be significant. The contribution of the EITP to these cumulative impacts would be short term and limited, due to the short temporal duration of construction and the relatively limited geographical extent of the EITP's impact area. The EITP's contribution to cumulative impacts is further reduced through avoidance and minimization measures. Avoidance measures that would be implemented during construction would include environmental training, use of biological monitors, pre-construction surveys, biological clearance surveys, and flagging of sensitive areas such as critical nursery areas and aquatic resources. If avoidance were not possible, further mitigation measures proposed to reduce cumulative habitat degradation and loss would include engineering drainage crossings to reduce degradation and impacts, using appropriate BMPs to reduce impacts, restoring temporarily disturbed land after construction, and developing and implementing an Invasive Species Management Plan. It is assumed that similar mitigation would be implemented by other projects, which would be subject to separate, independent environmental review. With the incorporation of mitigation, the EITP's contribution to cumulative impacts on habitat would be less than significant and not considerable.

Cumulative impacts on biological resources could be exacerbated as a result of project schedules. Construction of multiple projects within the same time period can result in greater impacts from emissions, noise, construction equipment and vehicle traffic, and overall habitat degradation and loss. If projects were to be constructed consecutively, project impacts would be reduced in intensity but prolonged in duration, resulting in adverse impacts on the life cycles of species and/or resulting in prolonged or permanent displacement of wildlife from critical habitats. If the EITP were constructed simultaneously with other projects, cumulative construction and operation impacts to habitat could increase, although the contribution of EITP would be minor and not significant due to implemented avoidance and minimization measures.

Cumulative Impact BIO-C-2: Special-Status Species

This section discusses the combined effects on special-status species of EITP and past, present, and reasonably foreseeable projects. Special-status species that could be impacted by the California portions of the EITP are listed in Table 3.4-4, and the special-status species that could be impacted by the Nevada portion of the EITP are listed in Table 3.4-5. Special-status species at the federal level include those listed as threatened, endangered, or proposed, and those that are candidates for listing under the Endangered Species Act. The BLM State Director's Office designates sensitive species. In California, plant and animal species are tracked and monitored by the California Department of Fish and Game via the California Natural Diversity Database. The State of California, through the Fish and Game Code, may also formally designate plants and animals as state-listed threatened or endangered. The California Department of Fish and Game maintains a list of fully protected species that may not be taken or possessed at any time and for which permits are required for scientific collecting and/or relocation (for the protection of livestock). In Nevada, at-risk species are tracked through the Nevada Natural Heritage Program within the Department of Conservation and Natural Resources. The Nevada Natural Heritage Program ranks plant and animal species based on rarity and perceived level of threat. The State of Nevada can fully protect wildlife species through the stipulations of Nevada Revised Statute 501. The state protects "critically endangered" plant species as well as cacti and yuccas under Nevada Revised Statute 527.The relevant impacts from the EITP are IMPACT BIO-1 and BIO-2.

As discussed in Section 3.4, the EITP would result in impacts on special-status plant and animal species that could contribute to cumulative impacts in conjunction with similar impacts from other projects. The EITP would result in habitat impacts to wildlife movement corridors, migratory paths, and critical nursery sites for certain species. Impacts would occur to big game corridors (desert bighorn sheep), general wildlife corridors for species such as large reptiles and wild burro, lambing areas for desert bighorn sheep, and critical habitat found within the EITP that could be used

as a movement corridor by desert tortoise. In addition to habitat removal, impacts would result from noise and visual disturbances and increased human/vehicle presence during construction, operation, and maintenance, all of which could have indirect effects such as disruption of normal behavior patterns as well as cause direct injury and/or mortality. Species potentially affected would include special-status plants and several special-status wildlife species (reptiles, mammals, and birds) with potential for significant impacts to desert tortoise, desert bighorn sheep, American badger, and raptors, including the burrowing owl.

Many of the reasonably foreseeable future projects could also negatively impact special-status plant and animal species in the cumulative impact area. These impacts are discussed generally below in the context of large-scale habitat disturbance and loss because sufficient, comparable data are not available on a project-specific basis to support further quantitative analysis. However, this approach is appropriate as macro-level impacts on habitat communities would result in corollary effects on the plants and wildlife that thrive on the unique desert habitat.

As identified in the environmental documentation for several cumulative projects, the EITP and other reasonably foreseeable future projects could have an adverse cumulative impact on populations and individuals of rare plant species such as Mojave milkweed, desert pincushion, Parish's club-cholla, white-margined beardtongue, rosy two-toned beardtongue, and Aven Nelson phacelia, all of which occur within the cumulative impact area. These plants could be directly removed and/or crushed by construction activities or indirectly affected by increased fugitive dust, erosion, invasive plant propagation, and altered drainage. Several projects have generally assessed impacts to plant species from construction, but specific population numbers and locations of affected plants for ISEGS, NextLight, Table Mountain, and DesertXpress are not available. However, each of these projects has recommended mitigation measures such as avoidance, salvage, restoration, and compensation to reduce impacts to special-status plants to less than significant. Similar mitigation measures have been included for the EITP to reduce impacts. If these measures are applied over the cumulative impacts area, the EITP would have a negligible contribution to cumulative impacts to special-status plant populations.

Although for many future developments specific data are not available, impacts on desert tortoise and bighorn sheep are quantified here as an example of the extent of wildlife impacts that could occur in desert valley and upper mountain habitat within the EITP cumulative analysis area. Desert tortoise has commonly been used as an indicator species to illustrate broader-ranging potential impacts on desert habitat and wildlife. Bighorn sheep could similarly be used as an indicator of potential impacts to mountainous areas and the wildlife species that utilize that niche such as migratory birds and large mammals.

The range of the desert tortoise encompasses virtually all of the cumulative impact area (Figure 5-5), incorporates most of the habitat types that would be used by other potentially impacted species such as American badger, Gila monster, and desert birds, and includes the locations of the majority of the past, present, and future cumulative projects evaluated in this analysis. Additionally, tortoise populations have been eliminated or reduced in large parts of their ranges in California and in areas near Las Vegas as a result of human activities and disease (USFWS 2008a). This historical decline, coupled with potential impacts from future projects, makes any future impacts potentially significant. The range of the desert tortoise is limited at higher elevations, as the species is generally not found above 5,000 feet. In contrast, desert bighorn sheep are well-adapted to the higher elevations of desert mountain ranges, and in the EITP cumulative area, are known to occupy the Clark, Spring, and McCullough Mountain ranges. These mountains provide forage, shelter, and potential critical lambing areas for the sheep, in addition to serving as large-scale migratory pathways among the desert valleys.

One potential impact from reasonably foreseeable future projects, including the EITP, could be habitat loss over a large area. The use of both desert tortoise and bighorn sheep as potential indicators for cumulative impacts is appropriate to address large-scale disturbance and/or loss of desert valley and mountain habitat. Coupled with historical losses, this extensive habitat loss would result in significant cumulative impacts. As discussed in Section 5.3.3.2, there are currently approximately 240,500 acres of habitat that have been disturbed (approximately 238,000 acres) and/or converted to infrastructure (approximately 3,000 acres). Reasonably foreseeable future projects are

expected to result in approximately 120,000 acres of habitat disturbance/loss. Of that, future wind projects encompass approximately 71,000 acres of upper desert valley and mountain tops within the cumulative study area.

As currently proposed, the EITP would contribute 0.1% to future cumulative impacts on non-critical desert tortoise habitat and 0.4% on critical habitat (Table 5-7). The small percentage of desert valley habitat loss from EITP would result in a minor cumulative impact. The EITP would also result in modification of desert mountain habitat within the Clark and McCullough Mountains, affecting approximately 150 acres of mountain pass and lower bajada slope areas. This would be a small contribution (0.2%, or 150/71,000 acres) to cumulative desert mountain habitat loss as compared to other future projects sited in mountainous areas. Overall, contributions from the EITP to habitat loss and potential impacts to special-status wildlife would be minor. However, cumulative impacts on desert tortoise could be major and considerable.

Table 5-7 Impacts on Desert Tortoise Habitat from the EITP and Other Proposed Projects

Desert Tortoise Habitat Type	EITP[1] (acres)	Other Projects[2] (acres)	Total Impacts (EITP + Other Proposed Projects)	Contribution of EITP to Cumulative Impacts (%)
Critical	72	17,979	18,051	0.40
Non-Critical	301	310,221	310,522	0.10
Total	**373**	**328,200**	**328,573**	**0.11**

Notes:
[1] See PEA 2009. These are both temporary and permanent impacts.
[2] For data source, see Figure 5-5

MM BIO-12 would require the applicant to coordinate with wildlife resource agencies, provide rigorous clearance surveys and construction monitoring for the desert tortoise, and limit human/equipment interactions with individual tortoises. Documentation of the coordination efforts with wildlife resource agencies will be provided to the CPUC. Implementation of this mitigation measure would reduce the EITP's contribution to cumulative impacts on desert tortoise to less than significant.

Although desert tortoise impacts could be significant, the contribution of the EITP to overall cumulative habitat loss would be short term and limited due to the short duration of construction and relatively small footprint of the EITP's impact area. The EITP's contribution could be reduced to less than significant with implementation of general avoidance mitigation measures. Mitigation measures would include pre-construction surveys, biological monitoring during construction, and preventive measures such as fencing to protect wildlife from injury and entrapment within construction areas. It is assumed that similar mitigation would be implemented by other projects, which would be subject to separate, independent environmental review. If avoidance of impacts to wildlife were not possible, those impacts would be mitigated by species-specific measures detailed in Section 3.4, "Biological Resources." These would include consultation with USFWS, pre-construction surveys, biological monitoring, relocation activities (desert tortoise), and limitations on construction activities and timing. Therefore, with the exception of desert tortoise, the EITP's contribution to cumulative impacts on wildlife species would be minor.

5.3.3.5 Alternatives

Because the No Project / No Action Alternative involves no activity, there would be no impacts on biological resources under NEPA or with respect to any of the CEQA criteria under this alternative, and there would be no contribution to cumulative impacts.

The alternative transmission routes and the telecommunication alternatives would involve the same project components as the EITP; only the route would vary. The alternatives would result in cumulative impacts similar to those of the proposed project, with the exceptions described below.

Transmission Alternative Routes A, B, and C would have a slightly higher contribution to impacts on native vegetation and listed plant and animal habitat and species because they would involve a larger area of permanent and temporary disturbance. There would also be slightly higher impacts on suitable and critical habitat for desert tortoise and therefore a slightly increased contribution to cumulative impacts on this species. Routes A and B would impact critical habitat within BLM special management areas and within the BCCE conservation area.

Transmission Alternative Routes C and D and Subalternative E would have lower impacts on vegetation directly adjacent to the dry lake and substrate within the dry lake because they would avoid a portion of Ivanpah Dry Lake. However, in avoiding the dry lake, these routes would disturb other previously undisturbed desert scrub habitat areas, which have greater amounts of suitable habitat for desert tortoise. Therefore, these alternative routes would have greater impacts to suitable desert tortoise habitat than would the proposed project. Thus, these alternatives could result in higher cumulative impacts to desert tortoise.

The Golf Course and Mountain Pass Telecommunication Alternatives would contribute to cumulative impacts to the same degree as would the proposed project but would have a higher contribution to cumulative impacts on native vegetation, including upper mountain pinyon-pine woodland, and listed plant and animal habitat and species, including bighorn sheep and montane bird species. This contribution would be associated with a larger area of permanent and temporary disturbance. These alternatives would also contribute more to cumulative impacts associated with inadvertent noxious weed dispersal due to the increased length of disturbance in areas without previous disturbance. Compared with the proposed project, these alternatives would have higher impacts on critical desert tortoise habitat, potential bighorn sheep habitat, and montane bird habitat. Therefore, these two alternatives would have an increased contribution to cumulative impacts on these species.

5.3.3.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the EITP and the ISEGS project combined, in order to assess cumulative impacts from both the generation and transmission aspect of the proposed action. First, the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM is summarized. Next, the combined effects of the EITP and the ISEGS project are evaluated.

ISEGS Summary

The BLM and the CEC (the Staff) have concluded that without mitigation the ISEGS project would contribute substantially to the cumulative impact of significant loss of Ivanpah Valley's biological resources, including the threatened desert tortoise and other special-status species. Impact avoidance and minimization measures described in the Staff's analysis and included in the conditions of certification would help reduce these impacts. However, compensatory measures are also necessary to offset project-related losses and to assure compliance with state and federal laws such as endangered species acts and regulations protecting waters of the state. In the case of special-status plants, impacts would remain significant according to CEQA standards despite compensatory mitigation.

Past and current actions have significantly reduced and degraded the plant communities and wildlife habitat within the Ivanpah Valley, and the ISEGS project would substantially contribute to the further loss of biological resources and genetic diversity of special-status species. Given the ISEGS project's location on a large portion of the Ivanpah Valley, and, in particular, the presence of bajada and alluvial fans that support special-status plant species, a substantial portion of the suitable habitat for these plants would be negatively affected by construction of the ISEGS project. This effect would increase the threat of elimination of the Ivanpah Valley portion of these species' ranges. ISEGS, combined with future proposed projects, would also significantly affect a genetically distinct subpopulation of desert tortoise within the Northeastern Mojave Recovery Unit that occurs in the Ivanpah Valley (Murphy et al. 2007, USFWS 2008b).

While no precise estimate can be made of the future habitat loss, collectively the ISEGS project and other projects would remove and fragment tens of thousands of acres of additional habitat. The ISEGS project, combined with the

proposed 4,000-acre First Solar development immediately to the east, would eliminate a large swath of the higher quality desert tortoise habitat found on the west side of I-15 within the Ivanpah Valley. All of these past, present, and future proposed activities would contribute to the significant loss of Ivanpah Valley vegetation communities, wildlife habitat, and special-status species. With the exception of special-status plant species, this significant cumulative impact may be reduced to less than significant levels with appropriate levels of compensatory mitigation. Cumulative impacts to special-status plants would remain significant according to CEQA standards despite compensatory mitigation.

Cumulative Analysis of the Whole of the Action / Cumulative Action

In combination with ISEGS, the EITP would incrementally contribute to the projected loss of natural vegetation and sensitive natural communities within the cumulative impact area. The combined effects of the conversion of native desert habitat to developed uses associated with past, present, and future projects could exacerbate adverse impacts associated with the EITP and ISEGS through habitat fragmentation and cumulative loss of habitats used by special-status species and sensitive natural communities. Indirect impacts also may be increased as a result of decreased quality of the remaining areas of habitat from habitat fragmentation and adverse effects (e.g., increased stormwater runoff, noise, and disturbance) resulting from increased proximity to commercial and industrial land uses.

Together, the EITP and ISEGS would disturb and/or remove approximately 4,500 acres of desert vegetation, including temporary and permanent impacts to several special-status plants. Of the total habitat acerage, 150 acres would occur within mountainous terrain and the rest (4,350 acres) would occur within desert valley habitat. The EITP has a relatively small construction footprint, despite its linear extent, is limited in duration (18 months), and requires a maximum of 190 construction workers. Most of the elements of the EITP would be constructed within an existing ROW where the native vegetation has already been disturbed. However, the construction of the Ivanpah Substation, as part of both EITP and ISEGS, would require a large swath of habitat disturbance/removal in previously undisturbed, higher quality desert vegetation. ISEGS would therefore have a relatively large construction footprint, would require 4 years of construction, and require a relatively large workforce (Table 5-3). The geographic and temporal extent of impacts from EITP in combination with ISEGS would result in substantial contributions to cumulative impacts in the cumulative analysis area.

The EITP and ISEGS projects would contribute 1.41% of the future cumulative impacts on non-critical desert tortoise habitat and 0.4% on critical habitat (Table 5-8). The percentage of desert valley habitat loss from EITP and ISEGS would result in a substantial cumulative impact without mitigation. The EITP would also result in modification of desert mountain habitat within the Clark and McCullough Mountains, affecting approximately 150 acres of mountain pass and lower bajada slope areas. ISEGS would not impact mountainous areas as it is located wholly within the desert valley floor. There would be a small contribution (0.2%, or 150/71,000 acres) to cumulative desert mountain habitat loss from the combined EITP and ISEGS as compared to other future projects sited in mountainous areas. Overall, contributions from EITP and ISEGS to habitat loss and potential impacts to special-status wildlife would be major, including cumulative impacts on desert tortoise and special-status plants.

Table 5-8 Impacts on Desert Tortoise Habitat from the EITP/ISEGS and Other Proposed Projects

Desert Tortoise Habitat Type	EITP and ISEGS[1] (acres)	Other Projects[2] (acres)	Total Impacts (EITP/ISEGS + Other Proposed Projects)	Contribution of EITP/ISEGS to Cumulative Impacts (%)
Critical	72	17,979	18,051	0.40
Non-Critical	4,374	306,148	310,522	1.41
Total	**4,446**	**324,127**	**328,573**	**1.35**

Notes:
[1] See PEA 2009. These are both temporary and permanent impacts.
[2] For data source, see Figure 5-5

The contribution of the EITP and ISEGS combined to overall cumulative habitat loss would be long term and major due to permanent habitat removal and the geographic extent. These impact contributions could be reduced to less than significant with implementation of general avoidance mitigation measures. Mitigation measures would include pre-construction surveys, biological monitoring during construction, and preventive measures such as fencing to protect wildlife from injury and entrapment within construction areas. If avoidance of impacts to wildlife and plants were not possible, those impacts would be mitigated by species-specific measures detailed in Section 3.4, "Biological Resources" of the EITP document, and in the ISEGS environmental documentation (CEC and BLM 2009). These measures would include consultation with USFWS, pre-construction surveys, biological monitoring, relocation activities (desert tortoise), limitations on construction activities and timing, and compensatory measures for loss of special-status species and suitable habitat. Even after mitigation, cumulative impacts on desert tortoise and special-status plants could be major and considerable. Therefore, with the exception of desert tortoise and special-status plants, the contribution of the EITP in conjunction with ISEGS to cumulative impacts on habitat and wildlife species would be reduced to minor.

5.3.4 Cultural Resources and Native American Values

5.3.4.1 Geographic Extent and Timeframe

The proposed project could result in impacts to cultural resources by removing, disturbing, or causing damage to a cultural resource or group of resources present within the project area. The integrity of the regional resource base and the significance of a given cultural resource or group of resources are considered when determining the significance of impacts to that resource. Because the number of cultural resources is finite, limited, and non-renewable, assessment of cumulative impacts must consider resources that would be impacted by the project, the extent to which those impacts would degrade the integrity of the regional resource base, and impacts other projects might have on the regional resource base. These effects, taken together, are "considerable" if they result in degradation of the resources base. Therefore, the geographic extent of cumulative impacts for the proposed project's cultural resources analysis comprises not only the areas within the ROW where ground disturbing activities would occur, but also the Eldorado Valley, McCullough Mountains, New York Mountains, Jean Valley, the Ivanpah Valley, Clark Mountains, and other adjacent areas. The proposed project's impacts would occur during construction; however, their contribution to cumulative impacts would occur over the lifetime of the project. Therefore, the timeframe of cumulative impact analysis is the lifetime of the proposed project.

The proposed project would require the removal and destruction of the historic Boulder Dam-San Bernardino Transmission Line (36-10315 [CA-SBR-10315H]/53-8280). Cumulative impacts to this resource could occur if any of the cumulative projects would also result in degradation of the resource. Because this is a linear resource that exists outside the geographic scope described above, geographic scope for the cumulative impacts analysis for this specific resource comprises the entire ROW of the transmission line from Victorville to Hoover Dam.

5.3.4.2 Past and Present Project Impacts/Existing Cumulative Conditions

Section 3.5.1.1, "Environmental Setting," provides an inventory of cultural resources within the vicinity of the EITP and its alternatives. The survey of the EITP proposed route resulted in the discovery or re-recording of cultural resources along the proposed transmission route, telecommunications route, and alternative routes.. No previously recorded resources were located during the background search and no newly discovered resources were identifies during the field survey of the Ivanpah Substation site. For the cumulative analysis, the geology of the area within the geographic extent described above includes areas with alluvial deposits dating to the Holocene, which have the potential to contain buried cultural resources.

The condition of known cultural resources varies and reflects the natural and anthropogenic effects that can alter the integrity of any resource or group of resources. In the cumulative impact area, sun exposure, wind, erosion, and sedimentation are the natural factors affecting the integrity of cultural resources; however, human activities can

exacerbate these effects and have resulted in the most apparent cultural resources impacts in the cumulative impacts area. In some cases, these effects have damaged or destroyed the most significant qualities of the resource. Road construction, for example, can destabilize slopes and increase erosion of archaeological sites. One previously recorded historic site (36-10873) in the EITP ROW is located within the I-15 median and is not considered eligible for listing in the NRHP because it has been damaged, likely by road construction and maintenance (Chambers 2009). Desirable recreational sites could coincide with the locations of cultural resources. Land sailing activities that occur at Ivanpah Dry Lake come into contact with cultural resources on the dry lake bed, resulting in damage or alternation of sites or isolated finds. Recreational OHV activities are popular in the Ivanpah Valley—such as take place at the Jean/Roach Dry Lake SRMA—and also contribute to damage and destruction of cultural resources. Other human activities that impact cultural resources include agricultural practices that disturb sediments that contain sites and commercial and community expansion that results in the loss or destruction of resources. Many of the cultural resources in the cumulative impact area have been affected to some extent by one or a combination of these factors.

5.3.4.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future projects in the cumulative impact area could result in direct andindirect impacts to cultural resources that could contribute to cumulative resources. Impacts to cultural resources due to the combined effects of the proposed project and past, present, and reasonably foreseeable projects do not depend on the timing of construction or operation. Therefore, all reasonably foreseeable future projects within the cumulative impact area for cultural resources are considered.

Proposed projects in the EITP cumulative impact area that have evaluated and published information regarding their potential to impact cultural resources include the DesertXpress and the ISEGS projects. The ISEGS project would contribute to impacts on CA-SBR-10315H; these effects would be cumulative rather than direct or indirect. BrightSource would be required by the BLM and the CEC mitigate impacts of ISEGS on significant cultural resources including CA-SBR-10315H as part of the Conditions of Certification, should the project be permitted This mitigation includes evaluation and documentation of any potentially significant cultural resources as listed in Section 3.5.5.4.

For the segments of the DesertXpress project that would cross the Eldorado and Ivanpah Valleys, 34 eligible or listed cultural resource sites would be located within the project area that could be directly or indirectly impacted by the project. Construction of the DesertXpress project would include ground-disturbing activities that could result in impacts on these known resources as well as on unknown archaeological resources within the project's cumulative impact area; to reduce potential impacts on archaeological resources, DesertXpress would be required to implement four strategies: 1) avoidance; 2) evaluation and data recovery or other mitigation through archaeological investigation; 3) monitoring during construction, and 4.) vibration monitoring for historic structures. A description of all mitigation measures applicable to cultural resources for the DesertXpress is included in the Draft EIS for the project (USDOT FRA 2009).

Other proposed projects in the cumulative impact area that could potentially impact cultural resources include the reasonably foreseeable future projects listed on Tables 5-1 and 5-2 The cultural resource studies for these projects have not been made public; however, it is likely that these projects would be required to adopt mitigation measures similar to those described above, including avoidance, evaluation and data recovery for cultural resources that cannot be avoided, and monitoring during construction.

5.3.4.4 Cumulative Impact Analysis

The potential for cultural resources impacts from the proposed project to combine with the effects of past, present, and reasonably foreseeable projects within the cumulative impact area is described below.

Known Cultural Resources

The relevant impact of the proposed project is IMPACT CR-1: Impacts to Cultural Resources 36-10315 (CA-SBR-10315H)/53-8280 (Boulder Dam to San Bernardino 132-kV Transmission Line) and 36-7694 (CA-SBR-7694H)/26CK4957 (LADWP Boulder Transmission Line). Nine other potentially significant cultural resources were recorded within the EITP's cumulative impact area, but the EITP would not impact these resources or these resources were determined to be ineligible to be listed as described in Section 3.5.3.5. A cumulative impact could occur if one or more of the projects on the cumulative project list would damage the same resource as the EITP or if one or more of the projects on the cumulative project list, together with the EITP, would degrade the integrity of the regional resources base by damaging a known cultural resource.

Proposed projects in the EITP cumulative impact area that have evaluated and published information regarding their potential to impact cultural resources include the DesertXpress and the ISEGS projects. As stated in Section 3.5.5.3, one cultural resource on the ISEGS project site, CA-SBR-10315H (the Boulder Dam to San Bernardino Transmission Line), has been determined eligible for the NRHP, and is listed on the CRHR, and the potential effects of the project on the resource would be cumulative rather than direct or indirect. Analysis of the impact determined that the ISEGS project would be responsible for partial (approximately 21%) destruction of the resource, but these impacts would be mitigated through evaluation and documentation of the resource. As discussed above, impacts to known cultural resources from the DesertXpress project would be mitigated through avoidance, documentation and evaluation, and monitoring, including vibration monitoring. To minimize impacts to historic architectural structures, such as the Boulder Dam-San Bernardino Transmission line, DesertXpress would be required to comply with MM CR-2: Data Evaluation and Recovery/Other Measures, which requires HAER documentation for any historic structures that would be impacted by the project (USDOT FRA 2009).

The impact analysis for known cultural resources for the EITP concluded that there would be a potential to disturb, destroy or remove the eleven known cultural resources within the transmission line ROW and telecommunications line route through ground disturbance during construction. However, the analysis concluded that nine of the eleven cultural resources either would not be impacted through use of the APMs listed in Section 3.5.3.4 or were not considered eligible for listing on the NRHP. Construction of the EITP would result in a direct, adverse, and permanent impact to Cultural Resources 36-10315 (CA-SBR-10315H) and 36-7694 (CA-SBR-7694H)/26CK4957 by altering the setting and disturbing elements of the site that contribute to its historic significance. The construction plans call for removal of portions of these historic resources. These impacts would be mitigated through sufficient HABS/HAER documentation of the known cultural resource, as approved by the appropriate regulatory body.

Construction of the DesertXpress and ISEGS projects would also result damage to, removal of, or destruction of segments of the Boulder Dam–San Bernardino 132-kV Transmission Line (36-10315 [CA-SBR-10315H]), similar to the impact of the EITP on this cultural resource. Therefore, the construction of these three projects could result in a cumulatively considerable impact to this cultural resource. The proposed project's contribution to cumulative impacts would be mitigated through adequate documentation. If adequate measures and mitigations were implemented by all the foreseeable construction projects that could affect other known cultural resources, then there would not be cumulatively considerable impacts to known cultural resources.

Previously Unidentified Cultural Resources and Human Remains

This section discusses the combined effects on previously unidentified cultural resources and human remains that could result from the proposed project and past, present, and reasonably foreseeable projects. The relevant impacts of the proposed project are IMPACT CR-2: Impacts to Previously Unidentified Cultural Resources and IMPACT CR-3: Unanticipated Discovery of Human Remains. For the reasons discussed below, cumulative impacts to unidentified cultural resources and human remains were not found to be significant or cumulatively considerable assuming proper mitigation for all projects.

Given the nature of the sediments and the historical activities in the area, cultural resources may be buried in the cumulative impact area. Therefore, subsurface unknown cultural resources could be unearthed by any ground

disturbing activity for all reasonably foreseeable future projects. Additionally, many of the cumulative projects that have not published any results of cultural resource field surveys or record searches; additional cultural resources may be identified as a result of pending surveys for these sites. To estimate the potential number of cultural resources in the cumulative impact area, a records search was conducted for the EITP that provided information about the distribution of previously recorded cultural resources within a one-mile buffer of the project routes. The results of this search allow for an order of magnitude estimate of 100 to 200 cultural resources in the cumulative impact area (PEA 2009). This is a conservative estimate based on 43 reasonably foreseeable future projects that would impact over 290,000 acres (this number does not include the disturbance of linear projects). Since the order of magnitude estimate was calculated, a number of these projects have withdrawn their application; the cumulative projects listed in Tables 5-1 and 5-2 reflect this decrease and include 14 reasonably foreseeable future projects that would impact approximately 100,000 acres. Therefore, the number of cultural resources in the cumulative impact area would likely be less than the order of magnitude estimate of 100 to 200. Regardless, it is reasonable to assume that additional cultural resources are located in the cumulative impact area that are currently unknown due to the publication of survey results for many of the cumulative projects.

Ground disturbing activities associated with the construction of the reasonably foreseeable future project could result in impacts to these resources by demolishing, destroying, or altering the resource and its immediate surroundings in a way that dimishes its integrity and impairs its ability to be considered for listing in the NRUP or the CRHR. Effects on unique archaeological resources, as defined under California Public Resources Code 21083.2(g), would also be considered significant if the impact would diminish information contained in the sites. For the two cumulative projects that have published information on cultural resource impacts, ISEGS would be required mitigate potential impacts to unknown cultural resources through use of monitors, preparation of a Cultural Resources Monitoring and Mitigation Plan, and other measures as outlined in Section 3.5.5.5. As discussed above, DesertXpress would be required to implement four strategies: 1) avoidance; 2) evaluation and data recovery or other mitigation through archaeological investigation; 3) monitoring during construction, and 4.) vibration monitoring for historic structures to reduce impacts to unknown cultural resources.

Because the reasonably foreseeable future projects would also be evaluated for their potential impacts to cultural resources under CEQA or NEPA, as applicable, it is reasonable to assume that these projects would be required to reduced potentially significant impacts by mitigation measures similar to those described above for the ISEGS and DesertXpress projects. All reasonably foreseeable future projects would be subject to Section 106 regulations (36 CFR 800). If adequate measures and mitigations are implemented by all the foreseeable construction projects, then there would not be considerable cumulative impacts to known cultural resources.

As discussed above, the sediments within the proposed project area have the potential to contain buried and therefore previously unidentified cultural resources. Such an unanticipated cultural resource could be impacted by ground disturbing activities associated with construction of the EITP, as the disturbance could diminish the scientific or cultural integrity of the resource. The applicant would reduce such impacts through APMs CR-5 and CR-6, and implementation of MM CR-1 would further reduce potential impacts to minor levels. As discussed above, it would be expected that the reasonably foreseeable future projects would adopt similar measures or be required to implement similar mitigation measures; therefore, there would be no cumulative impact to unknown cultural resources.

Additionally, the reasonably foreseeable future project and the EITP could result in impacts on human remains if there were unanticipated discoveries of human remains during construction. For the EITP, SCE would reduce impacts on human remains by following the steps outlined in APM CR-6. It would be expected that the reasonably foreseeable future projects would be required to implement similar mitigation measures in compliance with applicable regulations; therefore, there would be no cumulative impact due to the unanticipated discovery of human remains.

5.3.4.5 Alternatives

Because no activity is associated with the No Action Alternative, it would not contribute to adverse cumulative impacts to cultural resources.

Alternative Transmission Route C would result in the same adverse permanent impacts to Boulder Dam–San Bernardino 132-kV Transmission Line as the proposed project. APM CR-1, CR-2, CR-3b, and CR-4b would reduce the impact. Impacts to this resource would be mitigated through sufficient HABS/HAER documentation.

No previously recorded cultural resources were located during the pre-field research, and no new cultural resources were found during the field survey of Alternative Transmission Routes A, B, and D, Subalternative E, Telecommunications Alternative (Golf Course), and Telecommunication Alternative (Mountain Pass). Due to the lack of known resources and the likely measures to be implemented, there would be no cumulatively considerable impact to previously identified cultural resources.

Alternative Transmission Routes A, B, C, and D; Subalternative E; and the Telecommunication Alternatives would require excavation of sediments that have the potential for buried previously unidentified cultural resources or human remains. Similar to measures implemented for the proposed project, mitigation measures MM CR-1, APM CR-5, and APM CR-6 would be implemented for these alternatives. If such measures would be implemented by all foreseeable projects constructing in sediments, then there would not be cumulatively considerable impacts to previously unidentified cultural resources and human remains.

5.3.4.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP project and the ISEGS. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and then evaluates the combined effects of the EITP and ISEGS.

Summary

According to the ISEGS FSA/DEIS, ISEGS would make a significant contribution to the combined cumulative impacts of several foreseeable projects on the Boulder Dam–San Bernardino 132-kV Transmission Line. However, impacts of the ISEGS project would not have the potential to combine with impacts of past, present, and reasonably foreseeable projects to result in a significant contribution to local cumulative impacts to other known or unknown resources (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action

Construction of the proposed project and ISEGS, the whole of the action, would contribute to cumulative adverse impacts to the Boulder Dam–San Bernardino 132-kV Transmission Line that have been previously described; however, impacts would be mitigated through sufficient HABS/HAER documentation of the resource.

Because these projects would be constructed in similar sediments and alluvium, they both have the potential to disturb buried cultural resources or human remains. Each project has measures to mitigate the potential adverse impacts. Construction of the foreseeable projects in this area would likely require implementation of similar mitigation measures or would require clearance before construction occurred. Therefore, there would not be cumulatively considerable impacts to the disturbance of undiscovered cultural resources or human remains in the area.

5.3.5 Geology, Soils, Minerals, and Paleontology

5.3.5.1 Geographic and Temporal Extent

The geographic scope for considering cumulative impacts on geology, soils, minerals, and paleontology is the proposed EITP ROW, alternatives, and Ivanpah Substation site. Impacts on these resources would be limited to those that would be affected by project construction. The timeframe for the cumulative analysis is the operational lifetime, because the EITP could have impacts (on soils, in particular) for as long as it is present. However, most impacts would occur during construction.

5.3.5.2 Past and Present Project Impacts / Existing Cumulative Conditions

The project area is in the Mojave Desert, an area with a low potential for seismic activity and geologic hazards. There is no history of seismic activity in the Ivanpah or Eldorado valleys, and there are only two active faults in the region, the Black Hills Fault and the Stateline Fault System (SFS). The town of Primm lies near the SFS.

Most of the soils in the proposed project area are sand and gravel, which is typical of Ivanpah and Eldorado valley soils. There are no active mining operations along the proposed project corridor.

The actual number and type of paleontological resources that might be adversely affected by the cumulative projects is unknowable without a comprehensive inventory of the area defined for the analysis. Development of such an inventory is beyond the reasonable scope of this analysis. Typically, cultural and paleontological resources are identified as part of the permitting process for individual undertakings, and often are discovered only during ground-disturbing activities. Applicable laws and regulations, as discussed in Section 3.7.3, afford specific protections to discovered resources.

5.3.5.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future projects in the cumulative impact area for geology, soils, minerals, and paleontological resources include ISEGS, First Solar, NextLight, SNSA, Bull Frog Solar, Power Partners Solar, DesertXpress, and the Calnev Pipeline Expansion. For the complete listing of relevant cumulative projects in the Ivanpah and Eldorado valleys see Tables 5-1 and 5-2.

Cumulative geologic impacts could occur where future or existing projects cross or would be located adjacent to the proposed project (or vice-versa). The proposed project would cross several proposed solar projects (ISEGS, First Solar Development, and NextLight Renewable Power) and would be close, at certain locations, to the existing Calnev pipelines, the proposed Calnev Pipeline Expansion project, and the proposed DesertXpress High-Speed Rail project. Consequently, reasonably foreseeable future projects that could contribute to cumulative impacts related to geologic impacts are limited to parallel and crossing transmission lines, crossing passenger rail lines, and local commercial developments.

Impacts on geology, soils, and minerals, including accelerated erosion, slope failures, and loss of mineral resources, from future foreseeable projects could occur and could contribute to cumulative impacts on these resources during both construction and operation phases; therefore, the temporal context for the cumulative impact analysis for these resources includes the life of the cumulative projects, beginning with construction.

For paleontological resources, impacts typically occur during ground-disturbing activities associated with construction; therefore, the temporal context for the cumulative impact analysis for paleontological resources is limited to overlapping construction phases.

5.3.5.4 Cumulative Impact Analysis

The potential for impacts on geology, soils, minerals, and paleontological resources from the proposed project to combine with the effects of other projects within the cumulative impact area and timeframe is described below. The impact analysis in Section 3.6, “Geology, Soils, Minerals, and Paleontology,” concluded that construction and operation of the proposed project in compliance with existing regulations, standard operating procedures, APMs, and mitigation measures would reduce potential impacts on those resources to negligible or less than significant.

While projects could affect resources, resources could also affect projects. Examples are seismic impacts (groundshaking, earthquake-induced ground failure, and fault rupture) from the numerous local and regional faults and

impacts from unstable soils. For this cumulative impact area, geologic resources' impacts on projects would not be cumulatively considerable.

Geology and Geologic Hazards

This section discusses the combined effects related to geology and geologic hazards of the proposed project and past, present, and reasonably foreseeable projects. The relevant impacts of the proposed project are IMPACT GEO-1: Rupture of Earthquake Fault Across the Transmission Line Route, IMPACT GEO-2: Exposure of People or Structures to Potential Adverse Effects due to Seismic Ground Shaking, IMPACT GEO-3: Exposure of People or Structures to Potential Adverse Effects due to Seismic-Related Ground Failure, and IMPACT GEO-4: Expose People or Structures to Adverse Effects due to Landslides.

The project would cross the SFS on the California side just before the California/Nevada border south of Primm, Nevada. The Calnev Pipeline and the proposed DesertXpress High-Speed Rail Project also cross the SFS at a similar location. Buildings in Primm at the outlet mall and stretches of I-15 immediately south of the California-Nevada state line would be close to EITP structures and would be exposed to the same geologic hazards if they occurred. Movement along the SFS could cause earthquakes, resulting in damage to existing structures. However, as noted above, seismic impacts (groundshaking, earthquake-induced ground failure, and fault rupture) from the numerous local and regional faults would be impacts from the geologic environment on individual future or existing projects and would not introduce considerable cumulative impacts.

Further, there are no highly sensitive geologic formations in the project area. Therefore, the proposed project does not contribute to cumulative impacts to geologic resources. From the available information, no reasonably foreseeable future projects indicate plans to significantly alter sensitive geologic formations. However, the available information is limited.

Construction of ISEGS, First Solar, NextLight, SNSA, Bull Frog Solar, Power Partners Solar, DesertXpress High-Speed Rail, and the Calnev Pipeline Expansion would disturb the ground surface; however, each project would be required to protect existing surface materials and topsoil by complying with regulations and implementing project-specific Stormwater Pollution Prevention Plans (SWPPPs) and grading permits. For discussion of disturbance to the dry lakes, see Section 5.3, "Hydrology and Water Resources."

Due to the active geologic environment of the region, reasonably foreseeable future projects would likely be required to prepare a geotechnical report. Applicants for the proposed project, ISEGS, and the Joint Point of Entry project in the cumulative impacts area intend to complete geotechnical testing to ensure sound foundations for transmission line towers, solar heliostats, and other project components. A temporary use permit for geotechnical testing and soil sampling is in process for the Joint Point of Entry project located 2.5 miles south-southeast of the proposed project. The impact from the geotechnical testing on geologic resources would be negligible or less than significant. Therefore, there would not be a considerable cumulative impact to geologic resources from the testing.

Soils

This section discusses the combined impacts on soils of the proposed project and past, present, and reasonably foreseeable projects. The relevant impacts of the proposed project are IMPACT GEO-6: Structural Failure of Towers and Substation Facility due to Unstable Soil Conditions Resulting in Subsidence or Collapse and IMPACT GEO-7: Structural Failure of Towers or Substation Facility due to Expansive Soils.

Similar to seismic impacts, structural impacts from unstable soils are an impact of the geologic environment on individual projects and would not introduce considerable cumulative impacts.

Only during the construction phase could the proposed project result in release of chemicals or pollutants that would contaminate soil, so it would be only during construction when any such release could be combined with the release

of pollutants by other sources in the cumulative impacts area. This potential cumulative impact is discussed in Section 5.6, "Health, Safety, and Hazards."

For an estimate of cumulative impacts to lands and biological habitat, and related disturbance to soil, see Section 5.10, "Land Use, Agricultural Resources, and Special Management Areas," and Section 5.5, "Biological Resources."

Minerals

This section discusses the combined effects on minerals of the proposed project and past, present, and reasonably foreseeable projects. The relevant impact of the proposed project is IMPACT MR-1: Loss of Mineral Resource of Value to Region and the Residents of the State.

None of the reasonably foreseeable future projects in the cumulative impacts area are expected to interfere with active mining operations. The Molycorp Mine is located near Mountain Pass and approximately 5 miles south-southwest of the proposed Ivanpah Substation. This open pit mine is expected to continue operations until mid-2020. The routes for the Calnev Pipeline Expansion and the DesertXpress High-Speed Rail pass between Mountain Pass and the Molycorp Mine to the north of Highway 10. The EITP's Mountain Pass Telecommunications Alternative would pass through the Molycorp Mine, resulting in minor, short-term, adverse impacts from interrupting mining operations.

Most of the multiple mining claims registered with the BLM in the region (Figure 3.6-3) are inactive. Available information on cumulative projects does not indicate any interference with active mining operations. Therefore, there is no considerable cumulative impact to mining claims.

The proposed project would not require extraction of minerals or prevent access to any active mining operations. The project would be on land designated as an energy corridor. The land is not eligible for mining, and the project would not limit any existing mining claims. Therefore, incremental impact of the proposed project on any cumulative impacts on minerals would be negligible or less than significant.

Paleontological Resources

This section discusses the combined effects on paleontological resources of the proposed project and past, present, and reasonably foreseeable projects. The relevant impact of the proposed project is IMPACT PALEO-1: Directly or Indirectly Damage or Destroy Paleontological Resources.

ISEGS, First Solar, Calnev Pipeline Expansion, DesertXpress High-Speed Rail, and SNSA are reasonably foreseeable future projects that are close to the dry lakes. The dry lakes are on either side of I-15 to the north and south of Primm, Nevada, as shown in Figure 5-1. Dry lakes are the only locations in the cumulative impacts area known to have sensitivity for paleontological resources. Construction of projects could impact paleontological resources in the dry lakes, since ground-disturbing activities would be necessary during construction. The combined impacts from the proposed project and reasonably foreseeable future projects in the cumulative impact area on paleontological resources may be significant. APMs for the proposed project impacts, consisting of monitoring, field surveys, and data recovery, would reduce impacts to less than significant. If the other proposed projects also implement similar measures following NEPA regulations (United States Code, Section 4321 et seq.; 40 CFR 1502.25) and Appendix G of the CEQA guidelines (Section (V) (c)), potential cumulative impacts on paleontological resources associated with the proposed project, in conjunction with other proposed projects in the cumulative impact area, would be negligible or less than significant.

Paleontological resources are similar to cultural resources in that impacts are limited to specific undiscovered sites or fossils that could be discovered and potentially impacted through ground-disturbing activities. Therefore, the cumulative scope for paleontological resources would be the same as for cultural resources (see Section 5.6, "Cultural Resources"). Unknown, unrecorded paleontological resources may be found at nearly any development site. As they are discovered, sites are recorded and information is retrieved. If the nature of the resource requires it, the resource is protected. When discovered, paleontological resources are treated in accordance with applicable

federal and state laws and regulations as well as the mitigation measures and permit requirements applicable to a project.

As discussed before, paleontological resources are known to be present in the cumulative impact area, particularly for those projects that would be located near the dry lakes, such as ISEGS, First Solar, NextLight, the DesertXpress High-Speed Rail, and the Calnev Pipeline Expansion. If resources were discovered during construction of these projects, they would be subject to legal requirements designed to protect them, thereby reducing impacts. Therefore, proposed project impacts combined with impacts from past, present, and reasonably foreseeable projects would not be significant and no additional mitigation measures would be necessary.

5.3.5.5 Alternatives

The No Project Alternative involves no activity; therefore, under this alternative, there would be no impacts on geology, soils, minerals, or paleontological resources, nor would there be a contribution to cumulative impacts.

The alternative transmission routes and the telecommunication alternatives merely vary the route of the proposed project; the same components would be built. The impact on geology, soils, minerals, or paleontological resources for all the alternatives would be similar to the impacts of the proposed project, with the exception of the Mountain Pass Telecommunications Alternative. This alternative would pass through the Molycorp Mine, resulting in minor, short-term, adverse impacts from interruptions in mining operations. Overall, the alternatives would all have approximately the same contribution to cumulative impacts.

5.3.5.6 Whole of the Action / Cumulative Action

This section analyzes the potential cumulative effects of the EITP and the ISEGS project combined. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and then evaluates the combined effects of the EITP and ISEGS.

ISEGS Summary

The potential for significant adverse cumulative impacts to ISEGS from geologic hazards during its design life and to potential geologic, mineralogic, and paleontological resources from the construction, operation, and closure of the ISEGS project is not significant with respect to CEQA or NEPA. Most cumulative impacts related to geology and paleontology only have the potential to occur within boundaries of the ISEGS project site itself because geologic materials occur at specific locales and are only affected by activities acting on them directly. Geologic impacts from the ISEGS project would be site-specific and would therefore not have the potential to combine with impacts from other projects.

The ISEGS project site is currently not used for mineral production, nor is it under claim, lease, or permit for the production of locatable, leasable, or salable minerals. Sand and gravel resources are present at the site; however, such materials are present throughout the region and the ISEGS would not have a significant impact on their availability. In addition, these resources would become available again following decommissioning of the project. As a result, the project would not have any cumulative impacts on the development of geologic or mineral resources.

The construction and operation of other projects within the vicinity of ISEGS could result in increased stormwater and sediment transport impacts. However, all of these projects would be designed to avoid, manage, and mitigate potential stormwater and sediment impacts. Likewise, the ISEGS project has been designed to be in compliance with existing laws, ordinances, regulations, and standards and would use a stormwater and sediment pass-through design that would result in only a minor increase of sediment downgradient of the proposed project. Therefore, the construction and operation of the proposed ISEGS project would not impact water resources from erosion, stormwater, or sediment aggradation or degradation.

No paleontological resources have been documented on the ISEGS project site or at the proposed laydown area. However, based on the geology of the site and because paleontological resources have been discovered on sites within 2 miles of the ISEGS project, the probability of encountering paleontological resources is high on portions of the project site, and also during construction of other projects in the Ivanpah Valley. The project would include conditions of certification that would require a worker education program in conjunction with monitoring of earthwork activities by qualified professional paleontologists. The certification conditions would require that earthwork be halted any time potential fossils were recognized by either a paleontologist or workers. When properly implemented, the conditions of certification yield a net gain to the science of paleontology, since fossils that would not otherwise have been discovered can be collected, identified, studied, and properly curated. It is reasonable to assume that the reasonably foreseeable projects would include similar measures. Therefore, ISEGS would not contribute to any considerable cumulative impacts to paleontological resources (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action / Cumulative Action

The ISEGS project and the proposed EITP would have negligible or less than significant impacts on geology (including geologic hazards), soils, minerals, and paleontological resources in the Ivanpah Valley; therefore, the Whole of the Action / Cumulative Action of EITP and ISEGS would not contribute to considerable or significant cumulative impacts on these resources.

5.3.6 Hazards, Health, and Safety

5.3.6.1 Geographic Extent and Timeframe

Impacts resulting from hazards and hazardous materials would be limited to the proposed project site and directly adjacent land because impacts would result only from incidents associated with hazardous materials during construction or maintenance activities. Therefore, the geographic extent for the analysis of cumulative impacts related to hazards, hazardous materials, and potential environmental contamination is limited to the immediate vicinity surrounding project substations, staging areas, laydown areas, and transmission and telecommunications line ROWs. These cumulative impacts could occur during construction and operation and would be limited to the areas of concurrent construction or maintenance. Although incidents could occur during maintenance activities, if cumulative impacts were to occur, they would be more likely to occur during the 18-month construction period because greater volumes of hazardous materials and more equipment would be in use. Therefore, the timeframe for the cumulative impact analysis with respect to hazardous materials will be the construction period.

The geographic extent of the cumulative impacts analysis with respect to fire hazards is limited to the Ivanpah and Eldorado valleys because all construction and operation activities associated with the proposed project and any proposed alternatives would take place within the EITP ROW in the County of San Bernardino, California, and Clark County, Nevada. The timeframe for this cumulative impacts analysis with respect to fire hazards is also the construction period for two reasons: 1) The construction period is the more likely time for a fire hazard because there is more activity, and 2) the proposed project is replacing an existing transmission line. Therefore, the presence of the new transmission line would have the same cumulative contribution to fire hazards as the existing transmission line.

5.3.6.2 Past and Present Project Impacts/Existing Cumulative Conditions

In California, the area along the route of the proposed project alignment consists of undeveloped land, open space, and scattered rural residences.

Hazardous Materials and Wastes

Past and present projects that have had an impact on the Ivanpah Valley in California with respect to hazardous materials and wastes include the Molycorp Mine and its Evaporation Pond and Wastewater Pipeline; CalNev Pipeline; and the flyash land disposal site located near the Primm Valley Golf Course. Although the Colosseum Mine could have residual contamination, it is too far from the construction corridor of the proposed project to have the

potential to contribute to cumulative impacts. Biogen operated a coal power plant near the present location of the Primm Valley Golf Course. A by-product of coal-fired power plants is fly ash. Biogen disposed of the fly ash in an on-site landfill which is in the vicinity of the Primm Valley Golf Course; however, the Biogen facility was closed in the early 1990s (Cass 2010). The past and present impacts of the other cumulative projects listed above are described below.

The Molycorp Mine was originally opened in the early 1950s near the town of Mountain Pass, California, and is an active lanthanide mining and milling operation. According to the Toxic Release Inventory Database, the Molycorp Mine emits air quality contaminates, but there are no surface water discharges and no underground injection. Lead compounds are shipped off-site for disposal (U.S. EPA 2010). The Molycorp Mine has a history of contamination. Under a 1994 settlement, Molycorp agreed to close the drum yard and the concrete casting and staging areas at the Mountain Pass Facility in order to remove all drummed wastes and close all lead waste impacted areas. By the end of 2003, DTSC's Geology, Permitting, and Corrective Action Branch accepted the closure certification of these units and released Molycorp from closure financial responsibility (DTSC 2010). According to Envirostor, the Molycorp Mountain Pass Facility currently has a non-operating hazardous waste facility (DTSC 2010). There is also groundwater contamination associated with the on-site evaporation pond (Cass 2010).

The Mountain Pass Telecommunication Alternative follows the route of the Molycorp wastewater pipeline down the mountain, and both the Mountain Pass and Golf Course Telecommunication Alternatives follow its path along a portion of Nipton Road. The Molycorp Pipeline also has a history of contamination. Between 1984 and 1993, Molycorp reported over 40 spills from the pipeline, totaling 727,000 gallons. In 1996, there were at least 11 spills from pipeline ruptures, totaling in excess of 350,000 gallons. Some of the waste contained heavy metals and low levels of radioactivity, up to 100 times acceptable (background) levels. In 1997, the Lahontan RWQCB issued Cleanup and Abatement Order 6-97-66, and Molycorp completed the cleanup in 1998. More than half of the wastes were radioactive. In 1998, the Lahontan RWQCB issued orders requiring Molycorp to cease disposing of and clean up radioactive and hazardous waste in ponds on the playa and at the mill site and subsequently identified additional areas of the pipeline that required remediation and developed a plan for pipeline removal. Following a civil suit from county prosecutors for violating state drinking water safety laws, Molycorp temporarily suspended operations at the mine and mill in September 1998 until environmental reviews were complete and a solution to its wastewater issues was reached (EPA 2010). Much of the contamination along the pipeline has been removed (Cass 2010).

Contamination has also occurred at the evaporation pond sites. The wastewater pipeline discharged to two different sets evaporation ponds. From 1980 to 1987, wastewater was discharged to the Old Ivanpah Evaporation Ponds (OIEP) located approximately 10 miles east of the mine along Nipton Road. Operations at the OIEP were discontinued when it was discovered that the underlying groundwater was contaminated with total dissolved solids (TDS), nitrate, and strontium that appeared to be related to the ponds. In 1987, wastewater discharge was moved to the New Ivanpah Evaporation Ponds (NIEP), located approximately three miles north of the OIEP near the center of the Ivanpah Playa. The NIEP location was selected based on naturally poor groundwater quality (high saline and TDS) that exists beneath the dry lakebed. The wastewater discharged to the NIEP contained elevated TDS, primarily chloride and sodium with lower concentrations of strontium, nitrate, barium, lead, and radionuclides. The media of concern at the NIEP is surface soils and groundwater. The NIEP has not been formally closed. Groundwater monitoring for TDS, nitrates/nitrites, strontium, and lead is on-going around the NIEP (Arcadis 2009).

Currently, Chevron Corporation owns the wastewater discharge pipeline and the evaporation ponds. Molycorp Minerals LLC owns and operates the mine. Chevron is in the process of removing the pipeline and removing residual contamination associated with the pipeline. It is also monitoring the groundwater at the evaporation ponds. Molycorp Minerals LLC is currently operating the mine but is not mining. It is processing stockpiled materials (Hunter 2010).

The existing CalNev Pipeline Corridor transects the Ivanpah Valley. There are no known leaks or releases in this area from this underground pipeline system. However, contaminated soils may be present in the subsurface and could be found if the pipeline expansion occurs. The proposed project crosses this pipeline corridor less than 1 mile northeast of Primm (see Figure 5-6).

Within Primm, Nevada, there are residential developments and commercial and industrial properties. Underground storage tanks (USTs) are present at the local gas stations. There could be contamination associated with these tanks, but if there is it would not contribute to any contamination found or cause by the project because the proposed project does not pass in close proximity to these USTs. The remainder of the route is primarily undeveloped open space. Within the undeveloped and open space land and residential areas there is little likelihood of significant soil or groundwater contamination, based on a lack of uses that would involve hazardous materials. Refer to Tables 3.7-1 and 3.7-2 for a list of the hazardous waste sites and permitted facilities UST sites and land disposal sites.

Fire Hazards

The area along I-15 in San Bernardino County is classified as a moderate fire zone (SB County Fire 2010). Primm has a low fire hazard with low ignition risks (Resource Concepts, Inc. 2005). The route to the Eldorado Substation would likely have a low fire hazard (see Section 3.7.1.8: Fire Hazards).

5.3.6.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future projects identified for this analysis include the ISEGS, FirstSolar, NextLight, the CalNev Pipeline Expansion Project, and the DesertXpress High-Speed Rail Project because of the proposed project crosses or intersects each of these projects (see Figure 5-6), and there is the potential for overlapping construction schedules (Table 5-3). Construction of these projects would require the use of fuels and hazardous materials. They would also use equipment that could act as an ignition source.

The analysis considers the location of known significant soil or groundwater contamination. Sites with known environmental contamination would be legally required to be investigated and remediated in accordance with regulatory agency standards prior to redevelopment. Although localized areas of soil contamination could be encountered by some of these projects, most are new developments in open areas where there has been no historical industrial use. Areas with previously unknown contamination will likely be discovered during planning, followed by the required reporting and cleanup.

5.3.6.4 Cumulative Impact Analysis

The potential for hazards and hazardous materials impacts of the proposed project to combine with the effects of other projects within the cumulative impact area is described below. Regarding cumulative environmental contamination impacts, the proposed project's contribution to a cumulative impact would only be considered significant if it combined with other projects to result in substantial volumes of contaminated soil that required offsite treatment and that, as a combined volume, exceeded the capacity of available treatment facilities or resulted in substantial exposure of hazardous materials to the public. For the reasons discussed below, the proposed project would not contribute to considerable cumulative impacts.

Hazardous Materials, Spills, and Potential Exposures

This section discusses the combined effects on hazards and hazardous materials of the proposed project and past, present, and reasonably foreseeable future projects. The relevant impacts of the proposed project are IMPACT HAZ-1: Create Hazards through Routine Transport, Use, or Disposal of Hazardous Materials; IMPACT HAZ-2: Create Hazards through Accidental Release of Hazardous Materials into the Environment; and IMPACT HAZ-3: Expose the Public or Environment to Contaminated Soil or Groundwater. In addition, this section addresses the related NEPA criteria.

\\SanFrancisco\Ivanapah\Maps\MXDs\ReportFigures\SurroundingProjects.mxd 01/12/2010

LABEL	NAME	STATUS	Acreage*
1	Bighorn Electric Generating Station	Existing	86.9
2	Primm Casinos	Existing	127.8
3	Primm Valley Golf Course	Existing	531.3
4	Primm Outlet Mall	Existing	38.7
5	Ivanpah Dry Lake RA	Pending	12,855.3
8	Desert Oasis Apartments	Existing	13.5
10	AT&T FiberOptic Cable	Existing	NA**
11	SCE 115 kV Transmission Line	Existing	NA**
13	Jean/Roach Dry Lake SRMA	Existing	224,931.4
14	SNSA	Pending	5,996.6
17	KFC/Taco Bell	Pending	3.6
A	First Solar Development	Pending	5,433.4
C	DesertXPress	Pending	NA**
F	Temporary Batch Plant	Existing	32.4
K	Brightsource ISEGS	Pending	4,073.4
Q	Nextlight Renewable Power	Pending	7,837.2
S	CalNev Pipeline Expansion Project	Existing/Pending	NA**

* Cumulative project areas are approximated reflecting the project right-of-way and not necessarily the actual or final project boundary footprint.

** Linear projects not included when calculating overall disturbance acreages.

SOURCE: See source list for Table 5-1 and Table 5-2.

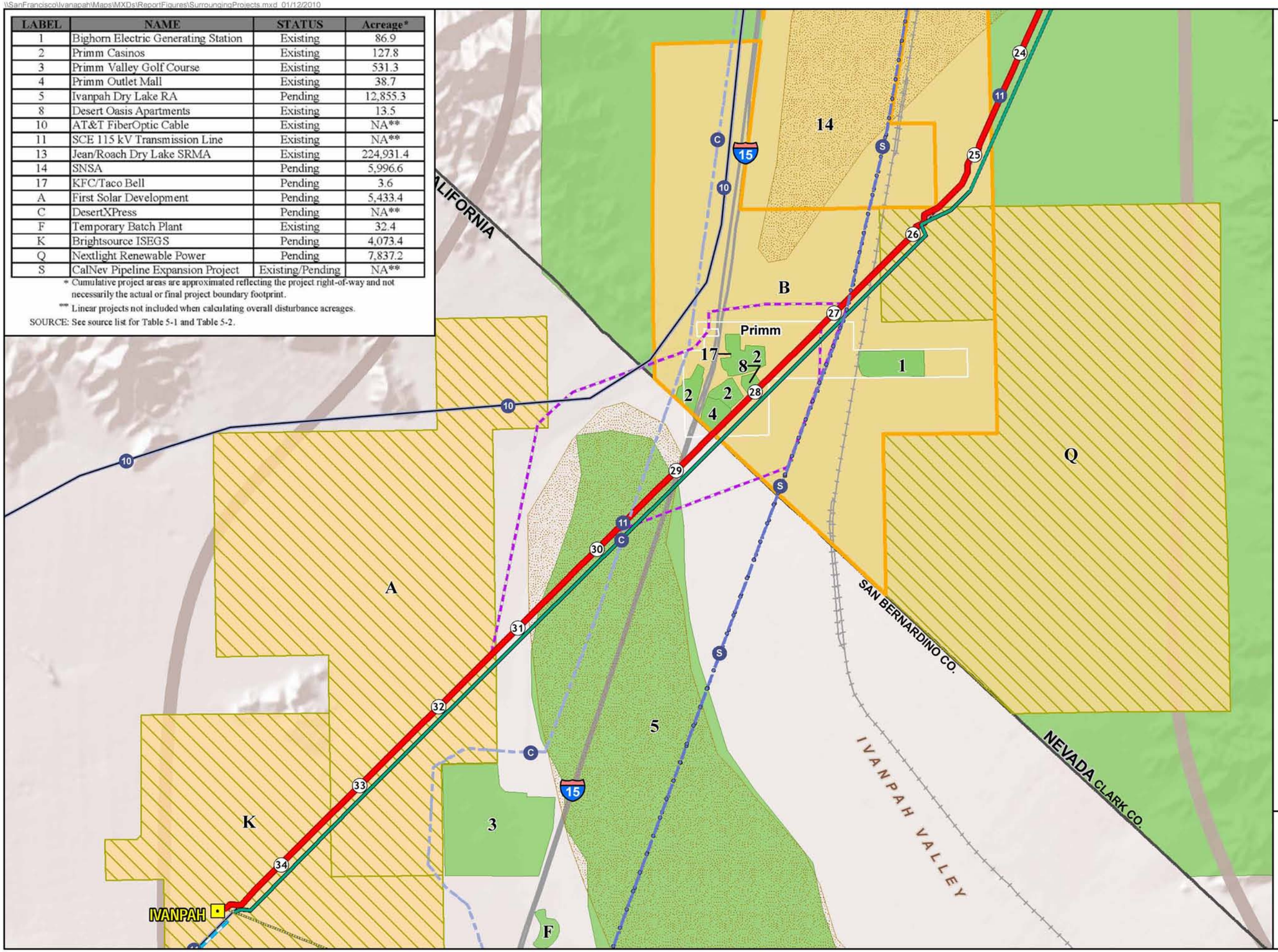


Figure 5-6
Eldorado-Ivanpah Transmission Project

Cumulative Projects near Primm, Nevada and the Primm Valley Golf Course

Cumulative Linear Project
- Existing
- Existing/Pending
- Pending

Cumulative Project Area by Type
- Solar
- Wind

Cumulative Project Area by Status
- Approved/Existing
- Pending
- Ivanpah Airport Environs Overlay

PROPOSED PROJECT
- Transmission Line
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass

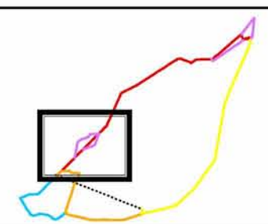
- Milepost
- Proposed Substation
- City
- Interstate
- Railroad
- Dry Lake Bed
- Valley Boundary

N

0 0.5 1

Miles

March 2010



This page intentionally left blank

As discussed above, potential cumulative effects of hazardous materials spills and potential exposures could only occur in the immediate vicinity of the proposed project area. Construction and operational activities associated with the proposed project could result in releases of hazardous materials in localized areas of the transmission line, substations, or telecommunication lines. The applicant would implement programs and measures to reduce the potential for a spill and to address ones that occur. A hazardous materials and waste handling management program (APM HAZ-2) would contain emergency release response procedures. The applicant would also be required to implement a Stormwater Pollution Prevention Plan (SWPPP) during construction and a Spill Prevention, Control, and Countermeasure (SPCC) plan (APM HAZ-5) during operations at substations. Over the entire construction period, over 700,000 gallons of fuels would be used. Typically spills occur during refueling, which typically takes place at construction yards. The applicant would establish hazardous material transportation procedures as well as fueling and maintenance of construction equipment procedures (APM HAZ-2). The measures described above would reduce the potential for spills of hazardous materials and ensure cleanup measures would be implemented if a spill occurred.

The reasonably foreseeable future projects that would be crossed by the proposed project and could have concurrent construction schedules are ISEGS, First Solar, NextLight, DesertXpress and the CalNev Pipeline Expansion. The ISEGS project would implement measures that are similar to those in this project to remediate spills as described in Section 3.7.5. DesertXpress would implement a SWPPP and SPCC Plan to prevent and address spills. It is likely that the CalNev Pipeline Expansion, First Solar, and NextLight would have similar measures to prevent and cleanup spills, but these projects have not completed their environmental review processes; therefore, the exact steps that they would undertake to prevent and cleanup spills is not known. However, they would be required to comply with state and federal laws and regulations. Therefore, it is unlikely that there would an incident where multiple projects would have a hazardous materials release in close proximity to each other such that could be cumulative effects. Any release of hazardous materials would have to be remediated according to state and federal regulations.

As discussed in Section 3.7: Hazards, Health and Safety, contaminated soils or water are unlikely to be encountered during construction of the proposed project. However, the applicant has committed to conducting a Phase I Environmental Site Assessment prior to construction to identify potential contamination in areas to be graded or excavated as part of the proposed project (APM HAZ-1). In case residual soil contamination were found along the proposed project route, the applicant would implement a Soil Management Plan (APM HAZ-3) to guide the characterization and cleanup of contaminated the soils according to applicable regulations. Encountering contaminated groundwater would be unlikely at any of the sites on the floors of the valleys because the depth to groundwater is over 500 feet below ground surface (bgs). Surface water bodies are ephemeral in the area, so surface water contamination would not likely be encountered.

Cumulative impacts could occur if multiple projects would be unearthing and exposing contamination in close proximity to each other. The proposed project would cross the construction corridor of DesertXpress and the CalNev Pipeline Expansion at discrete locations. The potential for concurrent construction is unlikely. DesertXpress has included mitigation measures to address the potential for unearthing contaminated soil. The CalNev Pipeline Expansion would involve the installation of a new 16-inch pipeline. Most of the construction would occur in their existing pipeline ROW. The existing CalNev pipelines transports fuel products. There is the possibility that the existing CalNev pipelines have leaked; therefore, when the pipeline ROW is unearthed, some soil could be contaminated with petroleum products. Due to this possibility, the CalNev proponent would likely also be required to have a plan to address the potential of unearthing contaminated soil. Although it is unlikely that the proposed project and these projects would be constructed in the same location at the same time, the Soil Management Plan (APM HAZ-3) that the proposed project would use and the mitigation measure that other projects would likely use would reduce the potential for exposing the public or wildlife to existing contamination to negligible levels.

The proposed project would cross within one mile to several miles of the right-of-way for the ISEGS, FirstSolar, and NextLight solar projects. For these projects, there is the possibility of concurrent construction in close proximity. Like the proposed project, ISEGS has included mitigation measures to address the potential for unearthing contaminated soil. FirstSolar and NextLight are likely to include similar mitigation measures. Because any soil contamination

encountered would be removed and/or remediated prior to construction, impacts of the proposed project would not combine with impacts of other projects, and there would not be a considerable cumulative effect.

Airport Risks

This section discusses the combined effects on airports of the proposed project and past, present, and reasonably foreseeable projects. The relevant impact of the proposed project is IMPACT HAZ-4: Increase Safety Hazards for People Residing or Working within 2 Miles of a Public Airport or Public Use Airport. The proposed 230-kV transmission line would be constructed within 0.5 miles of the southern boundary of the proposed SNSA that is scheduled for completion by 2020. However, the EIS for the SNSA is currently in progress and is not expected to be completed until the forth quarter of 2012. Therefore, it is not possible to conclusively state whether the EITP would impact the future SNSA until completion of its EIS and approval of that project. The 230-kV transmission line lattice steel towers would be 180 feet high. Per MM HAZ-2, the applicant would be required to consult with the FAA to determine whether a Hazard/No Hazard Determination is required and whether the EITP's final design should incorporate measures to reduce obstructions to air navigation (such as lighting on tower structures).

Regardless of whether the FAA determines that a Hazard/No Hazard Determination is required for the EITP, if the SNSA is approved, the FAA would review any project that is proposed to be located within 20,000 feet of the airport before it could be approved for construction. Any new project that represented an airport risk would either not be approved or would have to be modified or mitigated such that it would not represent an airport risk when it was constructed or operational. The ISEGS project would require five to ten foot tall day and nighttime strobe lighting on top of its 459 foot power towers under FAA regulations. At this time, it is not known whether there would be any of the other foreseeable projects that would have structures that would exceed the FAA 200-foot height limit and potentially conflict with the airport requirements. One of the currently proposed projects could have effects that are not compatible with the operations of an airport. Based on knowledge of past wind projects and the proximity of the Table Mountain Wind Project, there could be radar interference issues with two SNSA radar facilities.

In order to further reduce potential hazards associated with SNSA, the applicant will implement MM HAZ-2. MM HAZ-2 requires that the applicant consult with the FAA regarding final project design and whether a Hazard/No Hazard Determination is required. Therefore, the proposed project's contribution to potential future airport risks would be negligible. At this time, it is not possible to assess the cumulative potential airport risks at the proposed SNSA because insufficient information is available about SNSA and the proposed projects that would be located within 20,000 feet of the SNSA.

Emergency and Evacuation Routes

This section discusses the combined effects on emergency and evacuation routes of the proposed project and past, present, and reasonably foreseeable projects. The relevant impact of the proposed project is IMPACT HAZ-5: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan.

I-15 is an emergency evacuation route. Traffic congestion on I-15 could delay response times for emergency vehicles that are servicing the area or could impede use of I-15 as an evacuation route. Section 3.14: Traffic and Transportation, describes in detail the impacts of congestion and lane closures. Temporary lane closures and increased traffic congestion might occur during construction of the proposed project and other foreseeable projects. The proposed transmission line would cross I-15 near MP 29 at the California/Nevada border. The DesertXpress is proposed to follow I-15 near the California-Nevada border in California and would be within the I-15 corridor in Nevada. The construction period for DesertXpress would be from 2010 to 2012, therefore, there could be overlap with the proposed project. The boundary of the proposed SNSA would be I-15; therefore, they could impacts to I-15; however the construction period would not overlap with the proposed project. If lane closures were necessary for construction or maintenance of the proposed project or the DesertXpress, the applicant or the proponent for DesertXpress would have to obtain an encroachment permit from the appropriate authorities (e.g., Caltrans or Nevada Department of Transportation) for work that would performed within roadway and railroad

ROWs (APM-TRA-1). Increased traffic congestion could occur from construction vehicles and worker's vehicles transiting to and from project sites. The applicant would implement a Traffic Management and Control Plan (APM TRA-2) that would specify how the flow of traffic would be controlled and how emergency situations would be addressed. Impacts related to ground transportation risks would be reduced by minimizing the use of local streets (APM TRA-3) and by implementing BMPs such as using flaggers, identifying detours, and communicating with stakeholders.

Concurrent construction of the proposed project and ISEGS, FirstSolar, NextLight, the CalNev Pipeline Expansion Project, and DesertXpress could increase traffic congestion and flow; therefore, there could be cumulative impacts to access and use of emergency routes. The other foreseeable projects would work with local authorities to develop traffic management plans similar to those for the proposed project. The authorities could plan for potential traffic delays using their knowledge of traffic patterns, and could schedule lane closures so they would not jeopardize traffic flow or the security of evacuation routes. Overall, a considerable increase in traffic congestion could result in a cumulative impact; however, traffic management plans would likely reduce this impact so that it would not be considerable.

Fire Hazards

This section discusses the combined effects on fire hazards of the proposed project and past, present, and reasonably foreseeable projects. The relevant impact of the proposed project is IMPACT HAZ-6: Expose People or Structures to Wildland Fires. Wildfire risks of construction and operations are associated with combustion of native materials due to smoking, refueling, sparks from welding, and operating vehicles and other equipment off roadways. Brushing activities for vegetation control and removal during construction could result in fire. These risks would be associated with construction of the proposed project and large foreseeable projects, as previously discussed. The applicant would implement a Fire Management Plan (APM HAZ-4) that would establish standards and practices to minimize the risk of fire danger, and, in case of fire, provide for immediate suppression and notification.

Past and present projects have contributed to the existing fire hazard conditions. The Ivanpah Valley in California has a moderate fire risk. In Nevada, the fire risk outside of Primm is not known, although the city of Primm has a low fire risk. Concurrent construction of the foreseeable construction in California, such as ISEGS, First Solar, the Calnev Pipeline Expansion, and the DesertXpress rail line, could increase the fire risks. However, each project would likely implement its own fire management program to reduce the potential risk of fires. Therefore, there would not be a considerable cumulative impact.

5.3.6.5 Alternatives

Because no activity is associated with the No Action Alternative, this alternative would not contribute to cumulative impacts associated with hazards.

Construction and operation of all the transmission routes and telecommunications alternatives would require use of hazardous materials. Since any spills would be cleaned up, there would not be the potential for impacts of the proposed project to combine with impacts of other projects and there would not be considerable cumulative impacts.

Most of the alternatives are unlikely to encounter any existing contamination. The telecommunications alternatives are in closer proximity to known hazardous materials and contamination. The Mountain Pass Telecommunications Alternative would cross through the Molycorp Mine facility. This portion of the telecommunication line would be constructed aboveground (e.g. an overhead wire); therefore, potential on-site contamination would not be unearthed. Construction through this type of facility would increase the potential for exposure of workers to hazardous materials or wastes. Project workers would have to comply with the health and safety requirements of the facility and those of the Applicant's Health and Safety Plan (MM HAZ-1). This alternative would also travel along the same corridor as the Molycorp Wastewater Pipeline which historically leaked, but the historical soil contamination was removed. This

portion of this alternative would be both aboveground and underground. Since a cleanup has been conducted in this area, It would be unlikely that contaminated soil would be encountered. In addition, any known contamination would be removed and/or remediated prior to construction. Therefore, it would be unlikely for the proposed project to combine with impacts of this past project, so there would not be considerable cumulative impacts.

The Golf Course Telecommunications Alternative would be routed along the south side of the golf course, but would be strung aboveground; therefore it is unlikely that fly ash associated with the former Biogen land disposal facility would be disturbed during the installation of this alternative, so there would not be cumulatively considerable impacts.

Of the project alternatives, only Alternative Transmission Routes C and D and Subalternative E are near the proposed SNSA. Alternative Transmission Route C is closer to the proposed airport than is the proposed project, and Alternative Transmission D and Subalternative E would be further from the proposed airport than is the proposed project. Closer proximity of structures to the proposed airport could increase safety hazards. However, it is assumed that the applicant would comply with FAA's Determination of Hazard/No Hazard for whichever alternative is selected. Therefore, as discussed above, there would be no significant cumulative impacts to airport safety.

Of the project alternatives, Alternative Transmission Routes C and D and Subalternative E, as well as Telecommunications Alternative (Mountain Pass) and Telecommunications Alternative (Golf Course), cross or are parallel to I-15, an evacuation route. Similar to the proposed project, encroachment permits would have to be obtained for these alternatives, and traffic management plans would have to be implemented in consultation with local transportation authorities. This would be the case for the other foreseeable projects, as well. Therefore, there would not be considerable cumulative impacts to emergency response/evacuation plans.

Similar to the proposed project, Alternative Transmission Routes A, B, C, and D and Subalternative E would not contribute to considerable cumulative impact to wildland fire hazards.

5.3.6.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP project and ISEGS. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and then evaluates the combined effects of the EITP and ISEGS.

Summary

The evaluation of cumulative impacts for this resource in the ISEGS FSA/DEIS considered the potential for simultaneous release of a hazardous chemical from the proposed ISEGS and release from other existing or foreseeable nearby facilities. It was determined that because of the quantities of hazardous chemicals to be stored at the facility, there would be no possibility of an offsite impact. In addition, there are no nearby facilities that use large quantities of hazardous chemicals, so there is little to no possibility that vapor plumes would mix to produce airborne concentrations that would present a significant risk. Hazardous material use, storage, and transportation would not pose a significant cumulative impact with respect to CEQA or NEPA regulations (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action/Cumulative Action

The cumulative impacts of the EITP and ISEGS projects combined would be similar to those of the proposed project alone. Since any hazardous materials spills that occurred during construction would likely be small, localized, and cleaned up, there would not be the potential for impacts of both to combine with impacts of other projects, and there would not be a considerable cumulative impact.

During operations, the proposed project would store fuel at the substations. ISEGS would use large quantities of natural gas. Calnev currently transports multiple different types of fuels. Operations of any of the new facilities would require transportation, storage, use, and disposal of hazardous materials according to local, state, and federal regulations. Implementation of SPCC plans would be necessary, depending on the amounts of fuel stored. For each

operation, standards and codes would apply to ensure the safety of workers and the public. Although there would be multiple projects operating within the cumulative impact area of the Ivanpah and Eldorado valleys and each would increase the risk of spills, contamination, and exposure to the public, those risks would be minimized by the projects operating under legal requirements and industry standards. Any hazardous materials spills that occurred during operations would likely be small, localized, and cleaned up. Therefore, there would not be the potential for impacts of the combined project to combine with impacts of other projects, and there would not be considerable cumulative impacts due to spills, contamination, or accidents related to the transportation, storage, use, or disposal of hazardous materials.

Since ISEGS would not be within 2 miles of an airport nor would it involve lane closures of major thoroughfare, the contribution to cumulative impacts would only be from the EITP, as discussed above. Therefore, there would be no considerable cumulative impacts to airports.

ISEGS would use large quantities of natural gas during operations and therefore there are fire risks. However, the natural gas would not be stored on site but would be delivered via an existing underground pipeline. ISEGS would reduce the risk of a fire and/or explosion to insignificant levels through adherence to applicable codes and implementation of effective safety management practices. In addition, the proponent's Safety Management Plan would address handling and use of natural gas and reduce the potential for equipment failure due to improper maintenance or human error. As discussed above, each foreseeable project would likely implement its own fire management program to reduce the potential risks of fires. Therefore, there would not be a considerable cumulative impact due to fire risk.

5.3.7 Hydrology and Water Quality

5.3.7.1 Geographic Extent and Timeframe

In general, impacts to hydrology and water quality are contained within watersheds. Water quality regulations, such as total maximum daily loads (TMDLs), are generally implemented at the watershed level. Therefore, the cumulative impacts area for this cumulative analysis of hydrology and water quality consists of the watersheds and subwatersheds of the Ivanpah and Eldorado valleys. The timeframe for the cumulative analysis is the life of the project because the presence of the project would alter the hydrology of the area as long as it is present.

5.3.7.2 Past and Present Project Impacts / Existing Cumulative Conditions

Although there is some development in the cumulative impact area for hydrology and water quality, the area is largely undeveloped, and the hydrology and water quality reflect this. Development within Primm, Nevada, at the Primm Valley Golf Course, and at the Molycorp Mine has altered the natural hydrology of these areas and, therefore, has contributed to the current condition of the hydrology and water quality in the cumulative impacts area.

The presence of the town of Primm and the Primm Valley Golf Course has altered drainage patterns. The town and golf course use groundwater drawn from the local aquifer, thus further altering hydrology. Construction of the town and golf course altered the local topography. The Molycorp Mine also has altered the landscape and changed the local hydrology. It uses water in operations and it has a surface impoundment. The mine has also introduced contamination into the local water table. Formerly, the mine discharged wastewater to Ivanpah Dry Lake through a wastewater pipe. The effects of these past projects were considered in the impact assessment for the EITP in Section 3.8.3.

5.3.7.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future development throughout the cumulative impacts area for hydrology and water quality is dominated by proposed renewable energy projects, specifically ISEGS, First Solar, and NextLight (see Figure 5-1 and Tables 5-1 and 5-2). Other projects within the watersheds that could contribute to cumulative impacts include the

SNSA, the Calnev Pipeline Expansion, and the DesertXpress High-Speed Rail. The SNSA is still in the planning phase and, if built, would not be completed until 2020; therefore, it could only contribute to impacts during operations. The other projects could have overlapping construction schedules; therefore, they could contribute to cumulative impacts during construction (see Table 5-3).

5.3.7.4 Cumulative Impact Analysis

The potential for hydrology and water quality impacts of the proposed project to combine with the effects of other projects within the geographic extent and timeframe of the cumulative analysis is described below.

Hazardous Materials Spills

This section addresses the combined effects of the EITP on potential hazardous material releases (IMPACT HYDRO-1: Introduction of Hazardous Contamination into Surface and Groundwater) and the similar reasonably foreseeable future projects. The potential cumulative effects of past and present hazardous material releases are discussed in 5.3.6 Hazards, Health, and Safety.

Although hazardous material spills can occur on any construction site, the applicant would implement many programs and measures to reduce the potential for a spill and to address ones that occur. These include measures such as a hazardous materials and waste handling management program (APM HAZ-2) that has emergency release response procedures to address any potential release of hazardous materials (APM W-10). Since the EITP would store quantities of fuel at the substations, SPCC plans (APM W-14) would be required.

The large reasonably foreseeable future construction projects, such as ISEGS, FirstSolar, the Calnev Pipeline Expansion, SNSA, and DesertXpress, would also be required by law to implement a SWPPP because of the amount of soil that would be disturbed and would likely have the same type of hazardous materials management programs as the applicant. They also would be required by law to implement an SPCC plan if they would have aboveground oil storage capacity greater than 1,320 U.S. gallons or completely buried oil storage capacity greater than 42,000 U.S. gallons.

With successful implementation of the spill prevention measures, any release from either the EITP or the reasonably foreseeable future projects would likely have short-term and localized effects. Given the ephemeral nature and small number of water bodies in the area, considerable cumulative impacts to water quality would not be likely. In addition, groundwater is located from over 200 feet to over 500 feet below ground surface within the Ivanpah Valley, and it is unlikely any contamination would migrate to that depth before actions were taken to remediate it. Therefore, it is unlikely that there would be a significant cumulative impact to water quality that would result in a violation of water quality standards.

Erosion

This section addresses the potential for erosion from the combined impacts of the EITP and past, present, and reasonably foreseeable future projects. The relevant impacts of the EITP are IMPACT HYDRO-1: Introduction of Hazardous Contamination into Surface and Groundwater and IMPACT HYDRO-3: Increased Erosion or Siltation due to Alteration of Surface Drainage Patterns.

The estimated total land disturbance from the EITP would be approximately 470 acres during construction, and permanent disturbance would be approximately 60 acres. ISEGS would disturb approximately 4,100 acres and NextLight would disturb approximately 3,000 acres. First Solar has requested use of approximately 4,100 acres, and the SNSA would require approximately 6,000 acres. Both DesertXpress and the Calnev Pipeline Expansion would be linear projects. Calnev would have an approximate 100-foot construction corridor. The construction corridor for the DesertXpress is not known but the permanent ROW would be 60 feet (URS 2007 and USDOT 2009). In the Eldorado Valley, Bull Frog Green Energy has requested a ROW of over 3,300 acres and Power Partners Solar Project has requested over 3,800 acres in ROWs; however, not all this land would likely be developed.

During construction of the EITP, the applicant would implement the required SWPPP and MM W-1 (Erosion Control Plan). This would help ensure all the appropriate erosion control measures were used during construction to prevent onsite or of-site siltation or erosion. Since the EITP would mostly be replacing an existing transmission line, the installation of replacement towers would not substantially alter existing drainage patterns. The access roads,

substations, and tower foundation would be installed using erosion controls that are consistent with design standards and practices and/or landowner requirements.

The large reasonably foreseeable future construction projects, such as ISEGS, FirstSolar, NextLight, the Calnev Pipeline Expansion, SNSA, and DesertXpress, would also be required by law to implement SWPPPs to prevent erosion. Therefore, there would not be a considerable cumulative impact to erosion in the cumulative impact area.

Cumulative Impact WAT-C-1: Water Use

This section addresses the combined effects of water use by the EITP and past, present, and reasonably foreseeable future projects. The relevant impact of the EITP is IMPACT HYDRO-2: Lowering of Water Table or Interference with Aquifer Recharge.

The EITP would use between 30.6 acre feet per annum and 38.3 acre feet per annum of water during construction. The source of this water is currently unknown but would be a local vendor or agency. The applicant would not drill any wells. MM W-3 would require the applicant to develop and implement a Water Use Plan that specified all resources and the potential impacts. The foreseeable solar projects within the Ivanpah Valley are shown in Figure 5-1. Within the Ivanpah Valley, ISEGS, FirstSolar, and NextLight solar projects would occupy over 11,000 acres. ISEGS is the only project within the Ivanpah Valley that has completed an environmental analysis. ISEGS has estimated that it would use no more than 100 acre feet per annum during construction and operations. ISEGS would draw its water from two wells located close to its site (CEC and BLM 2009). Therefore, First Solar would probably use 100 acre feet per annum and NextLight would use somewhat less. It is not known what the source of water would be for the EITP or most of the other proposed solar projects.

The capacity of the local aquifer is not currently known. The town of Primm and the Primm Valley Golf Course are drawing upon water in the Ivanpah Valley. Without knowing the water sources for the EITP or the reasonably foreseeable future projects, it is not possible to assess the magnitudes of the impacts, but if all the water needed to support the foreseeable projects were drawn from the local water table, there could be a considerable cumulative impact on the local water table. The EITP's contribution would depend on the volume of water to be drawn from the local aquifer and the total amount drawn by other foreseeable projects. Because the source of water is currently unknown, MM PUSVC-C-1 is necessary.

MM PUSVC-C-1. This mitigation measure will require the applicant to demonstrate to the BLM and CPUC that the supplier of the water to be used for the EITP has an adequate supply such that the existing local public and private water usages are not altered. Implementation of this mitigation measure would reduce the EITP's incremental contribution to less than significant or to minor.

Groundwater Recharge

This section addresses the combined effects on groundwater recharge of the EITP and past, present, and reasonably foreseeable future projects. The relevant impact of the EITP is IMPACT HYDRO-2: Lowering of Water Table or Interference with Aquifer Recharge.

Most of the construction of the EITP would involve replacement of existing towers; however, the Ivanpah Substation, microwave tower site, expansion of the Eldorado Substation, and new tower locations would be new facilities. Altogether, the EITP would be in four largely undeveloped groundwater basins covering 1,587 square miles (or more than 1 million acres). Assuming there would be approximately 60 acres of impervious surfaces associated with the EITP, that area would total 0.01% of surfaces in the cumulative impact area, a miniscule increase. The areas with the most impervious surfaces in the cumulative study area include Primm (880 acres) followed by Nevada Solar One (approximately 400 acres). I-15 also represents an impervious surface in Ivanpah Valley. If the SNSA is approved, it would occupy approximately 6,000 acres; the wind projects could occupy over 70,000 acres; and the solar projects could occupy 28,000 acres, all built on previously undisturbed land. Although solar projects would not pave the total area that they occupy, the solar panels would re-direct precipitation. Also, while wind projects would not create as

impervious or semipervious a surface as solar projects, they would add some impervious surfaces to the cumulative study area. Collectively, these projects could result in a cumulative alteration of the local groundwater recharge. Insufficient information is available to characterize or quantify the exact nature of the cumulative alteration; however, considering the relative lack of impervious surfaces that would be associated with the EITP, it is estimated that the area of new impervious surfaces created by the EITP would be so small in reference to the size of the recharge area that it would not alter groundwater recharge within the local basins and would therefore not contribute to a considerable cumulative impact.

Alteration of Drainage Patterns

This section discusses the combined effects on drainage patterns of the EITP and past, present, and reasonably foreseeable projects. The relevant impacts of the EITP are IMPACT HYDRO-3: Increased Erosion or Siltation due to Alteration of Surface Drainage Patterns and IMPACT HYDRO-4: Altered Course of Stream or River due to Modification of Surface Drainage Patterns.

Past projects have altered drainage patterns by changing local topography. Each time a site is graded and developed, natural drainage features are culverted, redirected, or, in the case of small desert washes, eliminated. Aerial photographs of Primm, the Primm Golf Course, the I-15 corridor, and Molycorp Mine show small ephemeral washes around the perimeter of each site that do not continue into these developed areas.

Construction of the EITP could alter drainage patterns; however, the applicant would avoid stream channels (APM W-1) and avoid placing transmission poles within active drainage channels (APM W-4) to minimize the alteration. Alterations that occurred would likely be short term and localized, but some could be long term and localized. In an additional effort to prevent alteration of drainage patterns, the applicant would be required to conduct onsite flow modeling (MM W-4). The modeling would predict any alteration in flow paths and establish a channel system to mitigate any impacts. ISEGS, First Solar, NextLight, SNSA, Bull Frog Green Energy, Power Partners Solar, DesertXpress, and Calnev Pipeline Expansion would be constructed on the floors of the Ivanpah or Eldorado valleys and could also alter drainage patterns. As part of the permitting process, the projects would be required to coordinate development with the U.S. Army Corps of Engineers. The projects would likely be required to minimize changes to natural drainage patterns; however, the presence of 29,000 acres of facilities on the floors of the Ivanpah Valley and the Eldorado Valley could nonetheless alter drainage patterns in the valleys. Although the alterations would be localized, given the acreage that these projects could cover within the valleys there could be considerable cumulative alterations. Insufficient data are available to predict the exact nature of these alterations; however, the EITP's contribution to cumulative impacts would be localized and relatively small given its footprints for construction (470 acres) and operations (60 acres).

Flood Hazards

This section discusses the combined effects on flood hazards of the EITP and past, present, and reasonably foreseeable future projects. The relevant impacts of the EITP are IMPACT HYDRO-5: Modified Runoff Characteristics, Possibly Leading to Flooding or Inundation by Mudflow; IMPACT HYDRO-7: Exposure to a Significant Risk of Flooding; and IMPACT HYDRO-6: Placement of Structures within a 100-year Flood Hazard Area.

During construction of the EITP, flooding or inundation of the alluvial fans crossed by the EITP due to random storm events would be unlikely. Alluvial fans have established drainage patterns for normal precipitation events, but the sediments of alluvial fans can shift during flash floods. The applicant would keep construction equipment out of flowing streams (APM W-1), avoid tower placement in active drainage channels (APM W-4), create a system of diversion dikes around any sites where active channels could not be avoided (APM W-5), collect and divert runoff from roadways (APM W-6), develop a ditch and install drainage devices to reduce stormwater speed (APM W-7), and implement a SWPPP (APM W-9). Construction across Ivanpah Dry Lake would result in disturbance to the playa surface and normal flooding processes. MM W-5 (Restoration of Dry Lake) would require the applicant to restore the lake surface to preconstruction conditions. Even with these measures, construction activities could change natural runoff patterns, thereby affecting waterbody volume and flow, possibly affecting flooding patterns of local waterways.

Using the results of the hydrological modeling of the alluvial fan (MM W-6), the applicant would site structures in those areas in a way that would reduce the possibility of floods.

ISEGS, First Solar, NextLight, Calnev Pipeline Expansion, SNSA, Bull Frog, Power Partners, and DesertXpress would be constructed on alluvium on the valley floors and sloping alluvial fans. The analysis of the ISEGS project indicated that the ISEGS project area is subject to flash floods and mass erosion. The results of hydrological modeling indicated that a 100-year flood event would inundate most of the proposed ISEGS project area through canalized and sheet flows and would be primarily erosive rather than depositional. Scour analysis was used to ensure that the project design could withstand flash flood flows with minimal damage to site structures and heliostats (CEC and BLM 2009). The Calnev Pipeline Expansion and the DesertXpress High-Speed Rail (segment 4B) would cross Ivanpah Dry Lake. DesertXpress would implement mitigation to restore areas to preconstruction conditions to allow for revegetation and would give special attention to erosion control near ephemeral drainages and within playas (USDOT 2009). No specific restoration requirements are specified for the Calnev Pipeline Expansion (URS 2007). The DesertXpress drainage facilities and culverts would be sized to handle the flow of a 100-year, 24-hour storm event (USDOT 2009). The other foreseeable future projects would be required to take similar measures to reduce the potential adverse effects of flood events; therefore, the potential cumulative risks would be reduced. As long as the foreseeable projects did the appropriate hydrologic modeling to site their facilities in the areas with lowest flood risk and their structures were designed to accommodate a 100-year, 24-hour flood event, there would not be a significant cumulative impact to flood risks. However, most of the reasonably foreseeable future projects have not completed their environmental analysis, so it is not possible to determine if all the proper steps will be taken.

Debris Flow

This discussion focuses on the consequences of debris flow and the related issues in IMPACT HYDRO-5: Modified Runoff Characteristics, Possibly Leading to Flooding or Inundation by Mudflow. As discussed above, portions of the cumulative impact area are vulnerable to flooding. A potential consequence of flooding is debris flow in flood waters. If EITP structures were to become detached from their footings or foundations, they could be part of a debris flow. Debris flows also include rocks, boulders, and any other objects that are dislodged by a flood. Since multiple structures may be built near each other, one dislodged EITP tower could dislodge or damage other nearby structures, which could then damage or dislodge still others, thus causing a public safety hazard. The applicant would implement multiple measures (APM W-1, APM W-4, APM W-5, and APM W-7) to ensure that active drainage channels would not be hindered by construction activity. In addition, hydrological modeling of the alluvial fan (MM W-6) would be used in the project siting process to ensure that project components would be sited in areas of the alluvial fan that are least likely to shift. This would reduce the long-term public safety risk associated with flooding to moderate.

Other foreseeable future projects on alluvial fans include ISEGS, NextLight, First Solar, and DesertXpress; however, these projects may not do comparable modeling for siting of facilities. The Big Horn Electric Generating Station is located on an alluvial fan. Therefore, there could be considerable cumulative impacts to public safety due to debris flow during flooding. The EITP's contribution to cumulative public safety risks associated with flooding would be long term (throughout the life of the project) but minor. Because the EITP would have a smaller footprint than many of the foreseeable projects in the Ivanpah and Eldorado valleys and the towers would be designed to resist scour, debris flows would be more likely to pass EITP structures without dislodging them.

100-Year Flood Zone Hazards

The transmission line tower footings in Ivanpah Dry Lake and the telecommunication line near Nipton Road would be located within a 100-year flood hazard zone. During a flood event, flood flow would be diverted at the location of individual structures; however, the topography of the area is sufficiently flat such that localized diversions would not significantly redirect or impede the overall flow of flood waters within the cumulative impact area. Additionally, the tower footings' size would not significantly redirect or impeded the flow of flood waters, and the applicant would design transmission tower footings to withstand scour and inundation from a 100-year flood (APM W-3). All other foreseeable projects within a 100-year flood zone would undertake similar measures to reduce this potential

cumulative impact; however, given the number of new structures in the area, there could be an increase in the volume of flood waters diverted. Due to the relatively small number of new EITP structures and components in the over all cumulative impact area, the EITP would likely have a less than significant or negligible contribution to this cumulative impact.

5.3.7.5 Alternatives

The No Action Alternative involves no activity; therefore, there would be no impacts on water resources or contributions to cumulative impacts.

Because the transmission and telecommunication alternatives merely vary the route of the proposed project, the same components would be built, and the cumulative impact on hydrology and water resources would be similar to the proposed project.

5.3.7.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP and ISEGS. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM and then evaluates the combined effects of the EITP and ISEGS.

ISEGS Summary

According to the ISEGS FSA/DEIS, the effects of ISEGS, combined with other projects, would be to increase the total basin pumping by 11%. This is a minimal increase and would not substantially reduce flow to Las Vegas Valley or other basin users. ISEGS and cumulative pumping from existing and proposed projects would therefore not substantially deplete groundwater supplies or interfere substantially with groundwater recharge (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action / Cumulative Action

The cumulative impacts of the Whole of the Action / Cumulative Action would be similar to that of the EITP. Similar to the EITP, the Whole of the Action / Cumulative Action combined with foreseeable future projects in the cumulative impact area would not contribute to cumulative impacts on groundwater and surface water quality because all projects would be required to comply with the appropriate laws and regulations for the management of hazardous materials. Likewise, both the EITP and the ISEGS project would be required to comply with SWPPPs to prevent on-site and off-site erosion during construction, thereby limiting erosion to negligible or less than significant levels. As discussed above, the Whole of the Action / Cumulative Action, combined with the other foreseeable projects, could result in considerable cumulative impacts to groundwater quantity if water use is not strictly controlled through the implementation of measures similar to MM W-2 and MM PUSVC-C-1. Though water use for ISEGS would be more than for the EITP, water use for both projects would be limited through implementation of mitigation measures, resulting in negligible or less than significant impacts to groundwater quantity; however, the foreseeable future projects in the cumulative impact area could result in considerable cumulative impacts to groundwater recharge due to the increase in impervious surfaces. The Whole of the Action / Cumulative Action would increase impervious area in the Ivanpah Valley, especially on the west side of Ivanpah Dry Lake. Because both projects were found to have negligible or less than significant impacts to groundwater recharge and their combined acreage would still be small relative to the whole groundwater basin, the increases in impervious area for the Whole of the Action / Cumulative Action would also have negligible or less than significant reductions in groundwater recharge.

As stated above, the construction of reasonably foreseeable future projects could result in considerable cumulative impacts to drainage patterns. Due to the combined number of structures, the Whole of the Action / Cumulative Action could have minor, long-term impacts to drainage patterns resulting in increased flooding risk, especially on the west side of Ivanpah Dry Lake near ISEGS and the Ivanpah Substation. The Whole of the Action / Cumulative Action could also result in minor, long-term increase in risk associated with debris flow damage. Because the Whole of the

Action / Cumulative Action would alter drainage patterns, there would be an increased risk for debris flows. If a debris flow were to occur and cause the collapse of an EITP transmission tower near ISEGS, it could result in more damage to ISEGS structures and subsequently in additional material, specifically, mirrors, in the debris flow. This would increase the cumulative risk associated with debris flow damage. However, as described in Section 3.8.5.4, "ISEGS Conditions of Certification / Mitigation Measures," the ISEGS FSA/DEIS recommends that the CEC impose Condition of Certification SOIL& WATER-5, which requires BrightSource to design ISEGS such that heliostats are reinforced to withstand 6 feet of scour. Additionally, they are required to develop a Stormwater Damage Monitoring and Response Plan that includes a strategy to clean up and mitigate broken or transported heliostats. BrightSource would also be required to establish a baseline and monitor for changes to the surface of Ivanpah Dry Lake and would develop standards and procedures for reassessing the proposed stormwater management plan if it does not perform as planned. SOIL&WATER-5 would reduce the risk and mitigate the impacts of debris flow damage; therefore, the Whole of the Action / Cumulative Action would have negligible or less than significant cumulative impacts under this criterion.

ISEGS would not be located within a 100-year flood hazard zone; therefore, the potential for the Whole of the Action / Cumulative Action to impede or redirect flood flow is consistent with the EITP and negligible or less than significant.

5.3.8 Land Use

5.3.8.1 Geographic Extent and Timeframe

Land use impacts caused by the EITP would be limited to grazing allotments, Animal Unit Months (AUMs) allocated for grazing, and designated areas within the Ivanpah Valley; therefore, the geographic area analyzed for cumulative land use impacts is limited to land uses in the Ivanpah Valley. The timeframe for this analysis is the period of construction and operation of the project because the land use changes would be remain for as long as the transmission line was operational.

5.3.8.2 Past and Present Project Impacts

As discussed in Section 3.9, "Land Use," almost all of the land on the California side of the proposed EITP route is managed by the federal government through the BLM. Since the California Desert Conservation Area Plan was adopted in 1980 (as amended), all land within the California Desert Conservation Area has been given specific designations with regard to allowable use. For example, energy corridors were designated to place energy projects, such as transmission line and natural gas pipeline projects, as close together as feasible.

Since Nevada became a state, nearly all of the land in the Eldorado and Ivanpah valleys has been managed by the federal government through the BLM for multi-purpose uses, such as for recreational use, livestock grazing, and energy project ROWs, such as electric and gas transmission projects, fiber-optic cable projects, and power generating projects. In the mid-1990s the Desert Tortoise Recovery Plan (Mojave Population) was initiated, and the BLM Las Vegas Field Office designated the Piute-Eldorado ACEC in the Eldorado Valley to provide protection of desert tortoise and critical desert tortoise habitat. In 1998, the BLM Las Vegas Field Office adopted the current resource management plan which provides management recommendations for all of the land under its jurisdiction, including all BLM land crossed by the proposed project in Nevada.

In the mid-1990s, a large area of land, now known as the BCCE, surrounding the Eldorado Substation was transferred to Boulder City and Clark County and is managed under the Clark County MSHCP, the primary goal of which is to protect desert tortoise and critical desert tortoise habitat. This action prohibits any development within the BCCE unless given written approval from Boulder City and Clark County.

5.3.8.3 Reasonably Foreseeable Future Projects

For cumulative impacts to land use policies, grazing allotments, AUMs allocated for livestock, and designated areas, the First Solar Photovoltaic Project, ISEGS, DesertXpress, and the Joint Port of Entry facility were determined to contribute to cumulative impacts of the proposed project and alternatives. Descriptions of these projects are provided in Tables 5-1 and 5-2, and their locations are given in Figure 5-1.

The SNSA is a reasonably foreseeable future project. To date, the SNSA has not been approved and the EIS for the SNSA is not scheduled to be published until late 2012 or early 2013. However, Clark County has included in their South County Land Use Plan of 2008 the following goals and policies for the Ivanpah Airport Environs Overlay:

- *Goal SC13: Provide for compatibility between Ivanpah Airport Environs and existing or proposed land uses.*
- *Policy SC13.1: New development projects located in the Ivanpah Airport Noise Compatibility Area (ANCA) shall comply with additional ANCA land use regulations.*
- *Policy SC13.2: Encourage building and structures to comply with any regulations established for the Ivanpah Airport Noise Compatibility Area (ANCA) unless deviations are deemed appropriate by the Airport Hazard Areas Board of Adjustment.*
- *Policy SC13.3: Encourage development patterns and standards compatible with the future operations of the Ivanpah Airport since most of Jean and Primm will be within the Airport Noise Compatibility Area (ANCA).*

These restrictions would only apply to the Ivanpah Airport Environs Overlay (see Figure 5-1 or Figure 3.9-1). Any projects that are proposed within the Ivanpah Airport Environs Overlay would have to adhere to the above guidelines and policies.

As discussed in Section 5.3.6, "Hazards, Health, and Safety," MM HAZ-2 requires the applicant to consult with the FAA to determine if a Hazard/No Hazard Determination is required for the EITP. The applicant would then be required to incorporate any recommendations into their final design prior to EITP construction. Because the SNSA is a reasonably foreseeable future project, it is expected that the FAA could require special lighting on certain transmission towers or other measures. The FAA is also required to assess whether any reasonably foreseeable future projects located within 20,000 feet of the airport would represent hazards or obstructions to air navigation if SNSA was approved. Any new project that represented an airport risk would either not be approved or would have to be modified or mitigated such that it would not represent an airport risk when it was constructed or operational.

5.3.8.4 Cumulative Impact Analysis

The potential for impacts of the EITP from land use, grazing allotments, AUMs allocated for grazing, and designated areas to combine with the effects of other projects within the geographic extent and timeframe of the cumulative analysis is described below. There would be construction-related impacts on the Ivanpah Dry Lake Recreation Area and the Jean/Roach Dry Lake SRMA. Cumulative impacts to those recreation areas are discussed in this chapter in Section 5.3.13, "Recreation."

Grazing Allotments

The EITP would have long-term impacts to grazing in the cumulative impact area. Acreage and AUMs of grazing allotments would be permanently impacted by the EITP when combined with other future foreseeable projects as provided in Table 5-8.

Table 5-8 Permanent Acreage and AUM Loss to the Clark Mountain Grazing Allotment

Total Clark Mountain Allotment Acreage	Total Clark Mountain Allotment Available AUMs
97,560	*1,428*

	Acreage Loss	Acreage Loss as a Percentage	AUM Loss	AUM Loss as a Percentage
EITP				
Proposed Transmission Route (Excluding Ivanpah Substation)	38.5	0.04%	0.66	0.05%
Transmission Alternative C	5.3	0.005%	0.09	0.00001%
Transmission Alternative D	0.2	0.00001%	0.02	0.00001%
Future Foreseeable Projects*				
ISEGS (Including Ivanpah Substation)	4,073	4.2%	70.0	4.9%
First Solar Photovoltaic Project	4,160	4.3 %	71.0	5.0%
DesertXpress	87	.09%	1.5	0.1%
I-15 Port of Entry	unknown	Unknown	unknown	Unknown

* Please note that Calnev was not considered in this analysis because it is an underground pipeline system. Its presence does not affect grazing allotments.

The EITP would remove for the lifetime of the project approximately 38.5 acres of land from the Clark Mountain Grazing Allotment and reduce the allotment by 0.66 AUMs. If the EITP and the other foreseeable projects were constructed, the total grazing acreage loss to the Clark Mountain Allotment would be approximately 8,320 acres with an AUM loss of 142.5. This represents approximately 8.59% percent of the total acreage and an estimated 10% percent of the AUMs allocated for livestock in the Clark Mountain Grazing Allotment. This impact is determined to be an unavoidable cumulatively considerable impact; however, the EITP's contribution would be negligible because the EITP's contribution to acreage and AUM loss would be less than half of one percent of the total acreage and available AUMs within the Clark Mountain Allotment. Such an incremental contribution to total acreage and AUM loss is so small as to be considered negligible.

Land Use Policy

The proposed EITP route, DesertXpress, and the Calnev Pipeline Expansion would cross through land designated as the Ivanpah Airport Environs Overlay for the SNSA. In order to ensure that there are no impacts related to land use planning efforts for the future SNSA, the applicant would have to adhere to the policies of the South County Land Use Plan. Implementation of MM HAZ-2 would help fulfill these policies by requiring consultation with the FAA. MM HAZ-2 requires the applicant to consult with the FAA to determine whether a Hazard/No Hazard Determination is required and whether the FAA has any recommendations, such as lighting on transmission towers, which should be integrated into the final design. The proponents of DesertXpress and the Calnev Pipeline Expansion would also have to adhere to the policies of the South County Land Use Plan or seek an exemption that would be agreed to by Clark County in order to proceed with construction. Therefore, there would not be a cumulatively considerable impact to land use policies in Clark County.

The proposed project would be routed through the BCCE, which is managed by Clark County and the City of Boulder City with specific utility corridors reserved to the BLM. No reasonably foreseeable future project is proposed within this conservation easement, so there would not be any cumulative impacts.

5.3.8.5 Alternatives

Grazing Allotments

The permanent grazing acreage lost from development of the foreseeable projects in the Clark Mountain Grazing Allotment and Alternative C would be 8,325.3 with an AUM loss of 142.5 and would be 8,317.2 with an AUM loss of 142.52 for the combined development with Alternative D. Both scenarios represent 8.6% of the total acreage and 10% of the AUMs allocated for livestock in the Clark Mountain Grazing Allotment (see Table 5-8). This impact would be an unavoidable significant cumulative impact to the Clark Mountain Grazing Allotment. However, the incremental contribution of these alternatives would be negligible because they would contribute to less than 5% of the grazing acreage and AUM loss.

5.3.8.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative impacts of the combined EITP and ISEGS. The section first summarizes the Land Use and Livestock Grazing cumulative analysis from ISEGS FSA/DEIS prepared by the CEC and the BLM and then evaluates the combined impacts of the EITP and ISEGS.

ISEGS Summary

Impacts of the ISEGS project would combine with impacts of present and reasonably foreseeable projects to result in a contribution to cumulative impacts in the Ivanpah Valley area related to land use that would be significant with respect to CEQA as well as NEPA. Impacts of the ISEGS project could also combine with the potential impacts of reasonably foreseeable renewable energy projects in the southern California Mojave Desert to result in significant and immitigable regional cumulative impacts related to land use.

In addition to the ISEGS facility, there are other reasonably foreseeable future actions that could contribute to impacts to the Clark Mountain Allotment. Regionally, impacts to livestock grazing in the planning area have been occurring for 100 years or more. Authorized and unauthorized vehicle use, maintenance, and construction of utility ROWs can have an impact to livestock grazing by removing vegetation used for forage. The impact of other proposed and probable development projects (mineral production, solar projects, rail lines, and airports) may be more substantial if they require significant reductions in the acreage of existing allotments.

Cumulative impacts on the Clark Mountain Allotment, as well as the overall availability of land for grazing, could result from the combination of the EITP with other proposed land uses that would require reduction of total permitted AUMs, including other solar energy projects and the proposed DesertXpress rail line. With respect to NEPA, the overall impact of the proposed projects in the area on the Clark Mountain Allotment may be considerable if the proposed DesertXpress line is constructed and the rail line cuts off livestock access to portions of the allotment. The ISEGS project, by itself, would reduce the area of the Clark Mountain Allotment by approximately 4% and would reduce the AUMs permitted on the allotment by 4.7%. Overall, the impact on the grazing allotment would not be significant with respect to CEQA because the discontinuance of livestock grazing at the ISEGS site would not contribute to considerable cumulative impacts to the desert environment or to livestock. With respect to NEPA, the overall impact of the proposed projects in the area might be considerable if the DesertXpress line is constructed. However, the contribution of the ISEGS project to that cumulative impact would be relatively small.

Cumulative Analysis of the Whole of the Action / Cumulative Action

The EITP and ISEGS combined would permanently remove 4,073 acres from the Clark Mountain Grazing Allotment and reduce the allotment's AUMs by 70. This is 4.2% of the total acreage of the allotment and 4.9% of the AUMs allocated for livestock on the Clark Mountain Allotment. The total grazing acreage loss to the Clark Mountain Allotment as a result of the Whole of the Action / Cumulative Action and future foreseeable projects that would have permanent impacts to the Clark Mountain Allotment would be approximately 8,320 acres, with an AUM loss of 142.5.

This represents 8.59% of the total acreage and an estimated 10% of the AUMs allocated for livestock in the Clark Mountain Grazing Allotment. This impact is an unavoidable minor cumulative impact.

5.3.9 Noise

5.3.9.1 Geographic Extent and Timeframe

Noise impacts are limited to where there are receptors to hear noise. Because the EITP route and the areas near substation locations are sparsely populated, there are only two noise receptors that could be potentially impacted by construction or operation noise. These are the Primm Valley Golf Club in California and the Desert Oasis Apartment Complex in Primm, Nevada. Development within 2 miles of these receptors could contribute to increases in ambient noise levels to these receptors. Noise impacts were limited to period of construction. Therefore, the geographic area analyzed for cumulative noise impacts is a 2-mile radius around each noise receptor and the timeframe for the analysis is the 18-month construction period.

5.3.9.2 Past and Present Project Impacts/Existing Cumulative Conditions

Noise, in general, reflects the current noise generated, rather than noise from past projects; therefore this cumulative analysis will focus on present conditions and the potential contribution of reasonably foreseeable future projects.

Ambient noise levels reflect current land uses and development. Ambient noise levels at certain locations along the project route are provided in Section 3.10.1.2, "Local Setting." The character of the area along the project route varies from desert open space to rural to urbanized. As discussed above, the Desert Oasis Apartment Complex and Primm Valley Golf Course are the current noise-sensitive receptors. The Desert Oasis Apartment Complex in Primm, Nevada, is in the urbanized area closest to the EITP route. At this location, current contributors to noise are I-15 and a nearby truck stop. The Primm Valley Golf Course is currently surrounded by open space. At this location, current contributors to existing noise levels are I-15 and noise due to golf course activities.

5.3.9.3 Reasonably Foreseeable Future Projects

Noise levels in San Bernardino and Clark counties reflect an increasing number of sources of noise due to increased highway traffic, air traffic, construction projects, and expanded development. Approved, pending, and reasonably foreseeable projects would add to the future expected noise levels throughout the geographic area. However, various noise levels will continue to be experienced in the area regardless of projects, depending on the proximity to human activity. Open space and rural communities will remain the quietest.

Ongoing and anticipated development near the Primm Valley Golf Course is dominated by energy developments in California, specifically the Calnev Pipeline Expansion, ISEGS, and the First Solar Photovoltaic Project (see Table 5-1 and Figure 5-1). This trend will continue for reasonably foreseeable future projects forecasted throughout the project area. Anticipated development near the Desert Oasis Apartment Complex will include more urbanization as well as the Calnev Pipeline Expansion (see Table 5-2 and Figure 5-1). The potential for future projects to contribute to cumulative noise impacts would depend on their distance from the noise receptors as well as the potential for overlapping construction schedules. Approved, pending, and reasonably foreseeable future projects identified in this document would not increase the number of noise-sensitive uses in the area. The EITP has no adverse operational impacts from noise, so only projects that could have concurrent construction periods are considered in this analysis.

5.3.9.4 Cumulative Impact Analysis

Construction Noise

This section addresses the combined effects of construction noise from the EITP and past, present, and reasonably foreseeable future projects. The relevant impact from the EITP is IMPACT NOI-1: Project Construction Noise

Exceeding Noise Levels or Standards and IMPACT NOI-5: Cause a Substantial Temporary Increase in Ambient Noise Levels in the Project Vicinity.

Increases in ambient noise levels due to EITP construction activities would be short term. EITP construction contractors would comply with local noise ordinances (APM NOI-1), keep construction equipment in working order (APM NOI-2), and maintain equipment according to manufacturer's recommendations (APM NOI-3). In addition, they would muffle the noise generated by construction equipment (APM NOI-4) and minimize idling time (APM NOI-5).

However, the EITP would contribute to an increase in ambient noise levels due to corona noise during operations. This increase would contribute to the anticipated increased ambient noise level for residents of the Desert Oasis Apartment Complex and users of the Primm Valley Golf Course. Existing and reasonably foreseeable future projects within 2 miles of these receptors could also contribute to a significant increase in ambient noise levels. Table 5-9 lists the existing and foreseeable future projects within 2.5 miles of the Desert Oasis Apartment Complex and users of the Primm Valley Golf Course.

Table 5-9 Existing and Foreseeable Projects within 2.5 miles of the Noise Receptors

Existing or Foreseeable Projects[1]	Distance from Noise Receptor (miles)
Projects Near Desert Oasis Apartment Complex	
EITP	*0.01*
KFC/Taco Bell	0.4
Calnev Pipeline	*0.5*
Primm Outlet Mall	0.9
BLM-sanctioned recreational activities	1.0
Primm Casino	1.7
Bighorn Electric Generating Station	1.7
Projects Near Primm Valley Golf Course	
Temporary asphalt batch plant	0.5
ISEGS	*0.5*
EITP	*0.6*
First Solar	*1.0*
Calnev Pipeline Expansion	*1.3*
Ivanpah Dry Lake Special Recreation Management Area	1.8
Ivanpah Substation	*2.4*

Note:
[1] Italics indicate reasonably foreseeable future projects.

Desert Oasis Apartment Complex

The analysis in Section 3.10, "Noise and Vibration," concluded that the installation of the proposed EITP would result in direct minor adverse noise impacts due to project construction at residences located at the Desert Oasis Apartment Complex for a 2.5-week period despite implementation of MM NOI-1. This analysis took into account the noise currently generated at this receptor from existing facilities, such as the Primm Outlet Mall, Primm Casino, and Bighorn Electric Generating Station. However, the largest contributors to noise at these apartments were traffic noise on I-15 and at the nearby truck stop.

Based on a projected 12-month construction period, installation of the Calnev Pipeline could occur at a rate between 1 and 2 miles per day in the vicinity of Primm; therefore, its potential impacts to the Desert Oasis Apartment Complex would be for one or three days. Calnev would implement noise control measures to ensure noise levels would be reduced to acceptable levels (URS 2007). If construction of the Calnev Pipeline was concurrent with construction of the EITP, the noise levels are unlikely to exceed the noise generated by the EITP because of the distances from the noise source to the receptor. Therefore, at this receptor, the cumulative impact would be equivalent to the direct

impact from the EITP, which was evaluated as minor, short term, localized, and less than significant because of its duration. In addition, there are no noise level limits for construction noise in Clark County although construction must be limited to daytime hours.

Primm Valley Golf Course

Noise from the construction of the Ivanpah Substation would be less than 46 dBA at Primm Valley Golf Course. This level is lower than the 24-hour equivalent sound level (L_{eq}) of 55 dBA (ambient noise level) measured during the November 2008 ambient noise survey. Concurrent construction of the proposed Ivanpah Substation and ISEGS, First Solar, Calnev Pipeline, as well as other components of the EITP, would increase the volume of noise in the area. Data are available about the anticipated noise generated for ISEGS and the Calnev Pipeline; however, none are available for First Solar. The installation of the Calnev Pipeline and the EITP in this area would be short, so these projects would contribute to a very short increase in noise levels. In contrast, the substation would take 16 months to construct, ISEGS would take 48 months, and First Solar would probably take about 48 months also.

The estimated construction noise from ISEGS could reach levels of 50 dBA L_{eq} at the Primm Valley Golf Course. The ISEGS FSA/DEIS estimated that the combined construction noise from First Solar and ISEGS would reach levels of 51 to 56 dB at the Primm Valley Golf Course. However, if pile driving were necessary for construction of ISEGS, noise could approach 58 dBA at the Primm Valley Golf Course. Mitigation for this potential impact would be to limit pile driving to the hours between 7 a.m. and 7 p.m. (CEC and BLM 2009). The estimated combined construction noise at the Primm Valley Golf Course of the proposed Ivanpah Substation, the Eldorado-Ivanpah transmission line, likely noise generated from the construction of the Calnev Pipeline (based on noise generated from other pipeline construction projects and the distance from the receptor), ISEGS, and First Solar would be 59 dBA with pile driving at the ISEGS project and 57 dBA without pile driving. The level does not exceed San Bernardino County's allowable noise level of 60 dBA for other commercial purposes; therefore, there would not be a considerable cumulative impact.

Groundborne Vibration and Noise

This section addresses the combined effects of the groundborne vibration and noise from the EITP and from past, present, and reasonably foreseeable future projects. The relevant impact from the EITP is IMPACT NOI-3: Groundborne Vibration or Groundborne Noise due to Construction Activities.

Construction of the EITP is estimated to generate 76 velocity decibels (VdB) of groundborne noise at the Desert Oasis Apartment Complex. This level exceeds the FTA threshold of 75 VdB by 1 VdB. Concurrent construction of the EITP and the Calnev Pipeline could increase, but could also have no affect on, the level of groundborne vibration and noise at this receptor. Insufficient data are currently available to calculate the level, and it is not known whether concurrent construction would at occur at this location. Nevertheless, the combined impact would be limited to a short time period. Because of the short duration and as long as construction was limited to daytime hours, the cumulative impact would be less than significant.

5.3.9.5 Alternatives

Because no activity is associated with the No Action Alternative, it would not contribute to adverse cumulative noise impacts.

Alternative Transmission Routes A and B would not contribute to noise or groundborne vibration impacts at the two noise receptors because of their distances from the receptors, and therefore, they could not contribute to cumulative noise impacts.

Alternative Transmission Route C and D and Subalternative Route E would be located further from the Desert Oasis Apartment Complex (the most sensitive noise receptor) than the proposed project; thus, their potential contribution to noise and vibration impacts would be less and they would contribute incrementally less to the cumulative noise and vibration impacts at the most sensitive noise receptor.

Because of their distance from the noise receptors, the Mountain Pass and Golf Course Telecommunication Alternatives would not contribute to cumulative noise or vibration impacts to noise receptors in this analysis.

5.3.9.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP and ISEGS. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and then evaluates the combined effects of the EITP and ISEGS.

ISEGS Summary

According to the ISEGS FSA/DEIS cumulative analysis, the First Solar Photovoltaic Project is the only one of the reasonably foreseeable future projects in the vicinity that would be located close enough to the ISEGS project to potentially contribute to cumulative noise impacts. Noise generated during construction of the ISEGS project could reach 50 to 55 dBA L_{eq} at the Primm Valley Golf Course, but such levels would not likely be annoying to golfers. Noise from the First Solar Photovoltaic Project could combine with noise generated by the ISEGS project; however, because doubling the distance from a noise source reduces the sound pressure level by 6 dB, noise from construction of the First Solar Photovoltaic Project would be expected to be roughly 6 dB quieter at the golf course than noise from ISEGS. Combined construction noise from the two projects would thus reach levels of 51 to 56 dB at the golf course, an unnoticeable increase over noise from one project alone. Noise impacts of the ISEGS project would thus not combine with impacts of past, present, and reasonably foreseeable projects to result in a significant contribution to local or regional cumulative impacts related to noise (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action / Cumulative Action

The EITP and ISEGS are likely to be constructed concurrently and would increase noise levels at the closest noise receptor, the Primm Valley Golf Course. As discussed above, the estimated cumulative noise level at this receptor from these projects and the other foreseeable project in the noise cumulative impact area would range from 57 to 59 dBA. This level does not exceed San Bernardino County's allowable noise level of 60 dBA for other commercial purposes. Therefore, the cumulative impacts would not be significant.

Due to distance, the Whole of the Action / Cumulative Action would not result in detectable levels of vibration at the Primm Valley Golf Course; therefore, there would be no cumulative impact due to vibration.

5.3.10 Public Services and Utilities

5.3.10.1 Geographic Extent and Timeframe

Public services and utilities impacts from the EITP are limited to the area from which the Ivanpah and Eldorado valleys draw public services and utilities; therefore, the geographic area analyzed for cumulative public services and utilities impacts comprises the public services and utilities systems that service the Ivanpah and Eldorado valleys. The timeframe for the cumulative analysis is the period of operation of the transmission line because operational water usage would occur during the entire time period of operations.

5.3.10.2 Past and Present Project Impacts/Existing Cumulative Conditions

Much of the EITP route is characterized by sparsely populated open space and agricultural land, with the exception of Primm, Nevada. Primm is urbanized with multiple casinos and other services; however, its permanent population is approximately 1,000 (www.primmnevada.net). Primm has over 2,500 hotel rooms and has the infrastructure and services to accommodate many more people than its permanent population.

Within the Ivanpah Valley in California, most services and utilities are currently provided by San Bernardino County from either Barstow or Baker (see Section 3.11.1, "Environmental Setting"). Water is provided by local wells. In Nevada, services are provided from Las Vegas, Boulder City, Searchlight, and Jean. Most wastewater is discharged and treated through septic systems, but Primm has a wastewater treatment plant.

Solid waste generated in this area of California would go to either the Barstow Sanitary Landfill or the Victorville Sanitary Landfill. The Barstow Sanitary Landfill, located approximately 110 miles southwest of the proposed Ivanpah Substation, can accept up to 600 tons of solid waste per day. Although the current facility is nearing capacity, the recently approved Barstow Sanitary Landfill Expansion Project would expand the landfill by 284 acres (San Bernardino County 2009a, 2009c). According to the CEQA Findings and Final EIR for that project, the landfill will be increased in size according to the actual inflow rate during expansion (San Bernardino County 2009a); however, if the landfill is not expanded in time to accept wastes generated by the EITP, the Victorville Sanitary Landfill is the next closest landfill in California. It is approximately 140 miles southwest of the proposed Ivanpah Substation. The Victorville Sanitary Landfill accepted approximately 980 tons of wastes per day in 2006 and 890 tons of wastes per day in 2007. It is permitted to accept up to 3,000 tons of wastes per day and is not nearing capacity (CIWMB 2009).Therefore, the local California landfills have capacity to accept additional solid waste.

5.3.10.3 Reasonably Foreseeable Future Projects

This area is likely to experience considerable changes in the reasonably foreseeable future. Multiple large-scale renewable energy projects are proposed (Tables 5-1 and 5-2). This could include as many as six solar projects (ISEGS, First Solar, NextLight, Bull Frog Green Energy, Power Partners Solar, and Cogentrix) and four wind projects (Table Mountain, Iberdola Renewables, Oak Creek Energy Systems, and Searchlight Wind). In addition, the construction of the SNSA, DesertXpress, and the Calnev Pipeline Expansion would require hundreds to thousands of workers. Depending on the timing of each construction project, services could be strained during the construction period. Table 5-3 lists projected overlap in construction schedules. The construction of the SNSA would not overlap with the construction of the EITP; but many of the others projects could, such as DesertXpress and ISEGS. There are no known reasonably foreseeable future projects that would increase the amount of housing in Primm. When and if the reasonably foreseeable future projects become operational, some would have permanent staff, but the number of employees would be considerably fewer than during construction (see Section 3.13, "Socioeconomics, Population and Housing, and Environmental Justice").

5.3.10.4 Cumulative Impact Analysis

The potential for the public services and utilities impacts of the EITP to combine with the effects of other projects within the geographic extent and timeframe of the cumulative analysis is described below.

There would be no impacts related to the following CEQA considerations:

- Requiring new or physically altered public facilities;
- Exceeding wastewater requirements of the RWQCB;
- Exceeding wastewater requirements of existing treatment facilities; or
- Requiring or resulting in the construction of new stormwater drainage facilities.

Therefore, these criteria are not discussed in the cumulative impact analysis below.

Public services and utilities impacts from the EITP would occur primarily during the construction phase, so the cumulative impact analysis is limited primarily to that phase. During operation, the EITP's impacts to public services and utilities would affect water usage; therefore, for this criterion, the cumulative impact analysis considers the potential for cumulative impacts over the life of the project.

Emergency Response Services

This section discusses the combined effects on emergency services of the EITP and past, present, and reasonably foreseeable projects. The relevant impact of the EITP is IMPACT PUSVC-1: Emergency Services Needed in Response to an Accident or Other Emergency Incident.

With respect to the EITP, the applicant would minimize the potential for workplace accidents and fires by operating under a Site Safety Plan (MM HAZ-3) and implementing a Fire Management Plan (APM HAZ-4). In addition, the applicant would implement a Hazardous Materials Management Program (APM HAZ-2) that would use emergency response procedures to address potential releases. This would minimize the need to use local emergency medical or fire services. The need for police services would be minimized by security design features described in Section 3.11, "Public Services," to prevent potential vandalism during construction and operations. These features would include patrolling sites and fencing facilities, among other measures.

Concurrent construction of multiple reasonably foreseeable future construction projects, such as ISEGS and DesertXpress, could increase demands on emergency services, but each project would likely take steps to minimize its demand on these services. However, these projects would also use safe work practices and implement plans to prevent spills, fires, and other emergency situations to minimize the demand on emergency services. Therefore, concurrent construction of multiple projects would not likely create a significant cumulative impact on emergency services, and there would not be a considerable cumulative impact.

Cumulative Impact PUSVC-C-1: Water Use

This section discusses the combined effects of water use of the EITP and past, present, and reasonably foreseeable projects. The relevant impact of the EITP is IMPACT PUSVC-2: Project Construction Temporarily Increases Water Use, and Project Operation Contributes to Increased Long-term Water Consumption. During construction of the EITP, between 32,000 and 40,000 gallons of water could be used per day. The applicant estimates that between 30.6 and 38.3 acre feet per annum of water would be used during construction. The source of this water is currently unknown, but the applicant has stated that they would not drill any wells. MM W-2 (Water Use Plan) would require the applicant to develop and implement a Water Use Plan that specifies all water sources and the upper limit of water usage. The DesertXpress DEIS did not discuss their source of water during construction, but concluded that the rail lines would not require the use of water (USDOT 2009). ISEGS would draw water from one of two wells that its applicant would install near the facility. ISEGS estimated that it would use no more than 100 acre feet per annum, and it would be required to monitor its potential impact on groundwater levels (CEC and BLM 2009). Given that multiple reasonably foreseeable future construction projects in the area could occur concurrently with the EITP, there could be a cumulatively significant impact on local water use, depending on the water sources. At this time, there is insufficient data available to calculate the cumulative water usage of the all the reasonably foreseeable future projects; therefore, the EITP's contribution to the cumulative impact cannot be estimated. Mitigation is necessary to decrease the potential cumulative impact. Implementation of MM PUSVC-C-1 will require the applicant to demonstrate that the supplier of the water to be used for the EITP has an adequate supply such that there will be no adverse impacts on local public and private water supplies.

MM PUSVC-C-1. This mitigation measure will require the applicant to demonstrate to the BLM and CPUC that the supplier of the water to be used for the EITP has an adequate supply such that the existing local public and private water usages are not altered. Implementation of this mitigation measure would reduce the EITP's incremental contribution to less than significant or to minor.

Solid Waste

This section discusses the combined effects on solid waste generation of the EITP and past, present, and reasonably foreseeable future projects. The relevant impacts of the EITP are IMPACT PUSVC-3: Solid Waste Generated During

Construction of the Project Exceeds Landfill Requirements and IMPACT PUSVC-4: Solid Waste Generated During Construction of the Project Results in Noncompliance with Federal, State, or Local Statutes, Regulations, or Policies. Solid waste generated by construction of the EITP would include the removed power line towers and poles; removed conductor cable; removed overhead ground wires; substation construction waste; and excess materials. During construction, the applicant has estimated that a total of 540 tons of waste would be created, of which approximately 400 tons (74 percent) would be salvaged or recycled and approximately 140 tons (26 percent) would be disposed of in landfills; therefore, the applicant would be on track to meet solid waste management requirements in both California and Nevada. Existing solid waste facilities have adequate capacity to accommodate project-related solid wastes. With the implementation of MM PUSVC-1: Construction Waste Disposal Plan, potential impacts on landfills would be less than significant.

ISEGS would generate approximately 280 tons of solid waste over the four-year construction period that would be either recycled or disposed of in a Class III landfill. ISEGS would implement a similar Construction Waste Disposal Plan. First Solar and the other proposed solar projects would be anticipated to generate similar volumes of solid waste that would go to local landfills (CEC and BLM 2009). The other reasonably foreseeable future renewable energy projects would be expected to dispose of solid waste in the same landfills as the EITP. Construction of the DesertXpress High-Speed Rail is anticipated to generate negligible quantities of waste (USDOT 2009).

All of the reasonably foreseeable future projects would contribute solid waste to landfills in either California or Nevada. However, state and local regulations and plans require recycling to varying degrees. Therefore, the total solid waste from each project that goes to a landfill would be reduced. Although the EITP and other reasonably foreseeable future projects would use local landfills, the landfills appear to have the capacity to accept more waste than they are currently accepting. There would not be a significant cumulative impact on the capacity of local landfills as long as all of the projects adhered to local policies and regulations related to recycling. There would not be a considerable cumulative impact to either the Barstow and Victorville Sanitary Landfills because once Barstow facility is expanded both landfills will have sufficient capacity for many years.

5.3.10.5 Alternatives

The No Project Alternative involves no activity; therefore, no use of public services or utilities would be needed and there would be no contribution to cumulative impacts.

The alternative transmission line routes and the telecommunication alternatives simply vary the route of the proposed project. All of the same components would be built. Use of public services and utilities for all of these alternatives would be similar to use for the proposed project. Therefore, these alternatives would have the same contribution to cumulative impacts as would the proposed project.

5.3.10.6 Whole of the Action/Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP project and ISEGS. The section first summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM, and then evaluates the combined effects of the EITP and ISEGS.

Summary

The ISEGS FSA/DEIS cumulative analysis evaluated potential impacts on fire and emergency service capabilities in San Bernardino County, California, and Clark County, Nevada, during construction and operation of the EITP in conjunction with potential emergency service requirements of other existing and future projects. The limited fire risks and potential for hazardous materials incidents at the ISEGS site during construction and operation would not be expected to pose significant added demands on local fire protection services. Therefore, the EITP would not contribute to a considerable cumulative impact on existing local fire protection services.

The ISEGS project would generate nonhazardous solid waste that would add to the total waste generated in San Bernardino County and Clark County. Although wastes would be generated in modest quantities, waste recycling would be employed wherever practical, and sufficient capacity is available at several treatment and disposal facilities to handle the volumes of wastes that would be generated. Most of the other projects identified are of similar or smaller scale than ISEGS and would therefore be expected to generate a similar or smaller volume of nonhazardous waste. The FSA/DEIS concludes that the total amount of available solid waste landfill capacity in the ISEGS project vicinity is more than sufficient to accept waste from multiple projects even if all of the cumulative projects were constructed. Therefore, waste generated by the ISEGS project would not result in significant cumulative impacts associated with nonhazardous solid waste.

Cumulative Analysis of the Whole of the Action/Cumulative Action

With respect to emergency services, both during construction and operations EITP and the ISEGS project measures would be implemented to minimize potential use of emergency services, similar to other foreseeable projects, such as the Calnev Pipeline Expansion or DesertXpress, through use of safe work practices and plans to prevent spills, fires, and other emergency situations and minimize the demand on emergency services. Therefore, it would be unlikely that Whole of the Action / Cumulative Action impacts combined with impacts from other reasonably foreseeable future projects would create a significant cumulative impact on emergency services. Therefore, there would not be a considerable cumulative impact.

As discussed above, both EITP and ISEGS would require water during construction and operations. EITP would need a maximum of 38.3 acre feet per annum during its construction. During operations, it would need a minimal amount of water. Mitigation measures would require ISEGS to limit its water usage to 100 acre feet per annum for construction and operations. ISEGS would draw its water from two local wells. The storage capacity of the groundwater basin on the California side of the Ivanpah Valley is estimated to be 3.09 million acre feet (CEC and BLM 2009). Given that 1) multiple projects are proposed to be built in the area that would all need a local water source, 2) that there are existing wells using the same water sources, and 3) that the area is a desert with low precipitation, there could be a considerable cumulative impact on local water supplies. Until the source of water for EITP construction is known, it is not possible to estimate the exact contribution of the Whole of the Action / Cumulative Action to cumulative impacts; therefore, it is potentially significant. As discussed in CUMULATIVE IMPACT PUSVC-C-1: Water Use, MM PUSVC-C-1 would be implemented to ensure that the applicant's water use would have no adverse impacts on local public and private water supplies.

EITP and the ISEGS project combined with the other foreseeable projects would dispose of solid waste in local landfills; however, significant cumulative impacts to landfill capacity would be unlikely. All projects would have to comply with local recycling policies and regulations, and the local landfills appear to have adequate capacity to accommodate the anticipated solid waste. Therefore, there would be no significant cumulative impacts to landfill capacity.

5.3.11 Recreation

5.3.11.1 Geographic Extent and Timeframe

Recreational impacts caused by the EITP would be limited to the recreational areas crossed by the EITP; the Ivanpah Dry Lake Recreation Area and Jean/Roach Dry Lake SRMA; therefore, the geographic area analyzed for cumulative recreational impacts is the Ivanpah Valley within the timeframe of construction.

5.3.11.2 Past and Present Project Impacts

The past and present projects have created opportunities for indoor and outdoors recreation throughout the region. Over the last 20 years, the Ivanpah Valley has experienced minor development with projects like the Bighorn Electric Generating Station, the Buffalo Bills Hotel and Casino, and several fast food establishments near the California-Nevada border at Primm, Nevada. Additionally, Primm has experienced several linear energy projects, including the Kern River Pipeline Expansion Project, upgrades to I-15, and fiber-optic telecommunication line projects. In addition, recreation areas and facilities have been established including the Jean/Roach Dry Lake SRMA, the Ivanpah Dry Lake Recreation Area, and the Prim Valley Golf Club.

The expansion of the I-15 corridor and the construction of the Buffalo Bills Hotel and Casino have resulted in beneficial impacts on recreation in the Ivanpah and Eldorado valleys. For example, the I-15 corridor expansion has allowed greater accessibility by a greater number of people to the recreational areas and facilities, and the Buffalo Bills Hotel and Casino has allowed for the extended enjoyment of recreational areas and facilities by providing lodging for recreationists to stay for multiple days. Of the projects described in the previous paragraph, none has had a negative effect on recreation in the Ivanpah and Eldorado Valleys.

The Ivanpah Dry Lake Recreation Area is managed by the BLM and is popular for land sailing and kite buggying (PrimmNevada.net 2010) but is closed to motorized vehicles. Free permits are required to access the site for recreation, and commercial or organized events require special recreation permits (BLM 2010). The Ivanpah Desert Wildlife Management Area (DWMA), an overlay to Ivanpah Dry Lake, is south of the EITP and east of I-15. Some areas allow camping, but land sailing is not permitted in the southern half of the dry lake, which is primarily used for very low-level, widely dispersed motorized recreational activities (BLM 2002).

The Jean/Roach Dry Lake SRMA is illustrated in Figure 5-1. It provides opportunities for recreation, including motorcycling, OHV and 4 x 4 driving, horseback riding, mountain biking, small-game hunting, and organized racing events (BLM 2007).

5.3.11.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable projects that might contribute to cumulative impacts to recreation areas crossed by EITP are those that might be constructed simultaneously or that would temporarily limit or restrict access to a recreational area sequentially. A specific foreseeable project that meets these criteria is the NextLight Silver State Solar Project.

5.3.11.4 Cumulative Impact Analysis

The potential for cumulative impacts on recreation from the EITP and other projects within the geographic extent and timeframe of the cumulative analysis is described below. As discussed in Section 3.12.3, “Impact Analysis,” construction of the EITP would result in minor, short-term, and adverse impacts on recreation resources. The EITP would not result in demand for new or expanded recreation facilities within the cumulative impact area nor would the EITP result in increased use of existing recreation facilities that would substantially degrade the facility; therefore, impacts under the CEQA recreation criteria are not discussed in the cumulative impact analysis.

Cumulative Impact REC-C-1: Restricting Access to Areas within the Jean/Roach Dry Lake SRMA

The EITP would cross the Jean/Roach Dry Lake SRMA between MP 7 and MP 28.5. Construction of the transmission line would temporarily restrict access to several trail segments. As part of the project (APM REC-1), the applicant would coordinate closures of recreational facilities with the facility owners and would schedule construction to avoid heavy use periods. MM REC-1 requires the applicant to locate extra workspace areas outside of the Ivanpah Dry Lake Recreation Area and Jean/Roach Dry Lake SRMA, which would further minimize the temporary disturbance on recreation in the vicinity of the dry lakes.

The Nextlight Silver State Solar Project would be located entirely within the boundary of the Jean/Roach Dry Lake SRMA and would be constructed on two sections of a competitive OHV racing trail. If the EITP and NextLight Silver State Solar Project had overlapping construction schedules, there could be a considerable short-term cumulative impact to the Jean/Roach Dry Lake SRMA because each would temporarily restrict access to trails. Based on the duration of construction in the Jean/Roach Dry Lake SRMA and the area of the Jean/Roach Dry Lake SRMA crossed by the EITP, the project would have a minor short-term contribution or less than significant contribution with mitigation to cumulative impacts on recreation in the Jean/Roach Dry Lake SRMA.

5.3.11.5 Alternatives

There would be no contribution to cumulative impacts to recreation as a result of the proposed transmission and telecommunication alternatives.

5.3.11.6 Whole of the Action/Cumulative Action

This section analyzes the cumulative impacts of the combined EITP and ISEGS project to recreation. The section first summarizes recreation cumulative analysis from ISEGS FSA/DEIS prepared by the CEC and the BLM, followed by a discussion of the cumulative impacts of the Whole of the Action / Cumulative Action with respect to recreation areas.

ISEGS Summary

According to the ISEGS FSA/DEIS, ISEGS would contribute incrementally to the long-term reduction of outdoor recreation quality available in the Ivanpah Valley area of the California Desert due to the cumulative effects of development leading to a transformation from a natural setting to a more industrial setting. The adverse effect of development on recreational resources within the Ivanpah Valley area may become pronounced due to the proximity of the area to Las Vegas, ease of public access from I-15, increasing tourist use of the Primm area, and other planned development projects including the First Solar Photovoltaic Project, the DesertXpress High-Speed Rail Project, and the SNSA. Therefore, ISEGS would contribute to diminishing the quality of outdoor recreation experiences in the Ivanpah Valley area; however, even when considered with other existing and foreseeable projects, ISEGS would not contribute to a considerable cumulative impact on recreation in the Ivanpah Valley and surrounding area (CEC and BLM 2009).

With respect to recreational use of Ivanpah Dry Lake, the ISEGS project would cause a slight overall average decrease in ground-level wind speeds and a slight increase in ground-level wind turbulence. This would not be a significant adverse impact to land sailing on Ivanpah Dry Lake (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action/Cumulative Action

Approval of the ISEGS project would directly remove approximately 3,712 acres from potential use for recreational opportunities such as camping, hiking, hunting, and wildlife viewing. This acreage is approximately 10% of the land available for recreation within the Ivanpah Valley. However, it is unlikely that this area is used for recreation (CEC and BLM 2009). The EITP would remove only 38.5 acres (Ivanpah Substation and the communications site) from land available for recreation, because much of the EITP would be in existing ROWs.

Since ISEGS would not be located on or directly adjacent to any existing recreational facility, and therefore would not have a direct impact on recreational resources, the cumulative effect of the Whole of the Action / Cumulative Action would be the same or similar to the EITP, which would be temporarily restricting access to areas of the Jean/Roach Dry Lake SRMA during project construction.

5.3.12 Socioeconomics

5.3.12.1 Geographic Extent and Timeframe

The socioeconomic impacts of the EITP would be limited to the local and regional economy within the Eldorado and Ivanpah valleys and the local communities within that region; therefore, the geographic area analyzed for cumulative socioeconomic impacts was selected to encompass potential impacts on the local and regional economy and on the local population within the Eldorado and Ivanpah valleys. Since the EITP comprises the replacement of an existing transmission line, the occurrence of potential economic impacts would be limited to the period of construction. The 18-month construction phase has therefore been used as the timeframe for this cumulative analysis.

5.3.12.2 Past and Present Project Impacts/Existing Cumulative Conditions

Section 3.13.1, "Environmental Setting," describes existing socioeconomic conditions within the cumulative study area, including demographics, housing, and workforce characteristics. Socioeconomic conditions in the Ivanpah Valley have been historically influenced by the construction and operation of the three local casinos and outlet mall in Primm, which have affected demand for and supply of jobs as well as housing demand, business revenues, and property values. Local demand for housing and workforce has historically reflected the area's prevailing level of development and growth.

As stated in Section 3.13, "Socioeconomics, Population and Housing, and Environmental Justice," both Clark County and San Bernardino County have been affected by the recent economic downturn in the last two to three years, with unemployment increasing and housing development and population growth decreasing. Employment and population growth have been trending downwards within the region since 2008. As of September 2009, unemployment in San Bernardino and Clark counties was over 13 percent, with approximately 261,000 people out of work.

5.3.12.3 Reasonably Foreseeable Future Projects

Construction and operation of the EITP in conjunction with ISEGS, First Solar, NextLight Silver State Solar, SNSA, Bull Frog Green Energy, Power Partners Solar, Cogentrix, DesertXpress, Calnev Pipeline Expansion, Table Mountain Wind, Iberdola Renewables, OakCreek Energy Systems, and Seachlight Wind would increase the use of local businesses and hotels and could increase business and tax revenues within the Ivanpah and Eldorado valleys. However, the largest cumulative positive effects would be limited to those reasonably foreseeable future projects that would be constructed currently with the EITP—DesertXpress and ISEGS.

5.3.12.4 Cumulative Impact Analysis

The potential for socioeconomic and environmental justice impacts of the EITP to combine with the impacts of other projects within the geographic extent and timeframe of the cumulative analysis is described below. The incremental contribution of the EITP combined with similar effects of other projects would make up the overall cumulative impacts on socioeconomic resources.

Under CEQA, the proposed project was determined to have no impact on the following criteria and, therefore, it could not contribute to cumulative impacts on these criteria:

- Inducing population growth
- Increasing demand for permanent and temporary housing
- Displacing existing residences

Therefore, impacts associated with these criteria are not discussed in this cumulative analysis.

Local Economy, Labor Force, and Tourism

During construction of the EITP, local spending would increase within the Ivanpah Valley and, to a lesser degree, in the Eldorado Valley. This would benefit the local and regional economy through expenditures on goods and services. The EITP would provide approximately 34 local jobs and tax revenue to local communities. Approximately 156 out-of-town construction workers would be employed in the area for 12 to 18 months (PEA 2009). Operation and maintenance of the project would not provide any new, local jobs. Project materials and equipment would be sourced locally or regionally wherever possible, which would also benefit the local economy.

While all of the projects considered in the cumulative impacts analysis would be expected to have some influence on socioeconomic resources, within the Ivanpah Valley, a number of major construction projects are planned which would be expected to have particular influence on socioeconomic conditions. These include three linear construction projects (the Calnev Pipeline, the DesertXpress High-Speed Rail, and the AT&T Fiber Optic Replacement), as well numerous solar and wind projects. Many of the foreseeable projects would require hundreds to thousands of laborers during construction but would have a smaller labor force for operations (see Table 5-3).

While other reasonably foreseeable future projects would likely draw on the unemployed construction workforce, they could also attract workers from other regions. Local construction workers on the EITP or any of the other foreseeable projects would receive additional income for the duration of their employment, some of all of which would likely be spent in the local area. Non-local construction crews would use local accommodations for lodging, which would have a nominal beneficial impact on tourism in the area. The reasonably foreseeable future projects would also draw on locally procured materials, goods, and services, and some regional suppliers could also benefit by these purchases. As it is anticipated that additional clean energy projects would be proposed and permitted over time, in order to meet California's renewable portfolio standard mandates, regional suppliers of clean energy technology and equipment would likely benefit from implementation of clean energy infrastructure and development. These benefits would reflect the timing of construction and operation of all the permitted facilities, as well as project-specific requirements and therefore cannot be predicted at this time.

The concurrent construction of the reasonably foreseeable future projects would result in a beneficial cumulative impact on the local and regional economy and tourism and could decrease unemployment during periods of construction. As the construction schedule and worker requirements of many of the reasonably foreseeable future projects are not currently known, it is not possible to determine the quantity or duration of any potential net change in local and/or regional employment The EITP would be constructed by a specialized crew made up primarily of workers relocating from outside the region; of the 190 people anticipated to be employed during construction, approximately 34 would be hired locally. Due to the relatively short length of time of construction (18 months) and the small number of people who would be employed compared with the unemployment rate in the region, the EITP's contribution to the cumulative impact on the economy and employment would be negligible.

Environmental Justice

Most of the proposed EITP transmission line corridor follows existing ROWs and crosses undeveloped areas with dispersed and sparse populations. Three census tracts in the vicinity of the EITP corridor comprise low-income populations more than double county averages (see Table 3.13-9). Potential cumulative impacts identified in this analysis that could disproportionately affect these communities, resulting in a cumulative environmental justice impact, include impacts to air quality, recreation, water supply, and traffic.

The other linear projects (the AT&T Fiber Optic Replacement, the Calnev Pipeline Expansion, and the DesertXpress High-Speed Rail Project) would also have impacts similar to those of the EITP in that there would be increased levels of dust and traffic. Aside from the NextLight Silver State Solar Project, the proposed renewable energy projects in the Ivanpah and Eldorado valleys would be built in remote areas that are sparsely populated. The NextLight Silver State Solar Project would be built within 1 mile of Primm. These projects, in conjunction with the EITP, would result in cumulative impacts to air, noise, public services, and traffic that may effect low-income populations in Primm, Nevada.

However, these impacts would not disproportionately affect these communities, as described below, and therefore would not result in a cumulative environmental justice impact.

Residents along the EITP route may be exposed to short-term increases in criteria pollutant emissions. The estimated construction time at any one location for the EITP is 2.5 weeks which could potentially overlap with construction of other cumulative projects in the cumulative study area. Although possible, it is unlikely that the Calnev Pipeline Expansion and DesertXpress would have overlapping construction schedules within the immediate vicinity of receptors along the route. Given that construction activities would be transient in the area of potential exposure, there would not be a significant cumulative impact. Similarly, because of the relatively short duration of construction and the unlikelihood of overlapping construction schedules within the vicinity of receptors along the routes, the EITP's contribution to cumulative impacts due to objectionable odors would be negligible. Because cumulative impacts to air quality would be negligible and not significant for the entirety of the route, low-income populations along the route would not be disproportionately affected by cumulative impacts to air quality.

The EITP would also contribute to cumulative impacts to recreation, specifically temporarily restricting access to the Jean/Roach Dry Lake SRMA and Ivanpah Dry Lake Recreation Area. Cumulative impacts to recreation by restricting access, particularly to planned recreation events on the dry lakes, could impact residents of low-income communities in the area; however, these events attract visitors from beyond the local community, and therefore, this cumulative impact would not disproportionately affect low-income groups.

The cumulative analysis identified a potentially significant cumulative impact to local water supplies (Section 5.3.10.4), which could disproportionately impact low-income communities in the vicinity of the EITP. However, MM PUSVC-C-1 will require the applicant to demonstrate that the supplier of the water to be used for the EITP has an adequate supply such that there will be no adverse impacts on local public and private water supplies. Therefore, this would not result in a cumulative environmental justice impact.

Similar to cumulative recreation impacts, cumulative impacts to traffic would not disproportionately affect low-income populations along the route because the transportation routes that would be impacted by the project and the cumulative projects are used by a much broader population than the local community. These cumulative impacts to traffic would uniformly affect all travelers on I-15, which is used largely for travel between the Los Angeles area and Las Vegas, Nevada.

5.3.12.5 Alternatives

The No Project Alternative would not contribute to any cumulative impacts on the local economy, labor force, tourism, or minority/low-income populations.

Because Alternative Transmission Routes A, B, C, and D, Subalternative Route E, and the telecommunication alternatives (both Golf Course and Mountain Pass) only vary the route of the EITP, they would contribute to cumulative socioeconomic impacts to a degree similar to that of the proposed project. That is, they would have a negligible contribution to the cumulative beneficial impacts to the local and regional economies, tourism, and employment.

5.3.12.6 Whole of the Action / Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP and ISEGS projects and presents a summary of the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM and evaluates the combined effects of the EITP and ISEGS.

Summary

According to the ISEGS FSA/DEIS, ISEGS would not result in any cumulative socioeconomic impacts. ISEGS requires relatively few construction workers relative to the amount of available workers for both construction and operation and so would not contribute to cumulative socioeconomic impacts resulting from an influx of non-local workers (CEC and BLM 2009).

The long-term payment of taxes and fees and distribution of operations and maintenance and payroll dollars associated with the ISEGS project is expected to have a significant benefit to San Bernardino County, California, and Clark County, Nevada, by increasing the amount of public funds available to the counties. These benefits from ISEGS plus benefits of the revenues from other reasonably foreseeable projects would result in cumulative benefits (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action / Cumulative Action

Construction and operation of the Whole of the Action / Cumulative Action (the combined EITP and ISEGS) would result in a beneficial impact to the local economy, tourism, and employment that would be larger than benefits from either of the individual projects alone. According to the ISEGS FSA/DEIS, ISEGS would generate approximately $2.2 million per year from assessed property tax values. Its annual operational and maintenance budget would be $340,500 (CEC and BLM 2009). There would be a considerable beneficial cumulative impact on the local economy, tourism, and employment from the construction and operations of the Whole of the Action / Cumulative Action and other foreseeable projects. However, given the size of the economy and the level of employment locally, the contribution of the Whole of the Action / Cumulative Action would be negligible.

Similar to the EITP, the Whole of the Action / Cumulative Action and foreseeable projects are unlikely to result in significant disproportionately high adverse cumulative impacts to minority/low-income populations.

5.3.13 Transportation and Traffic

5.3.13.1 Geographic Extent and Timeframe

Traffic impacts of the EITP would be limited to the regional freeways and local roads that comprise the local transportation network during construction; therefore, the geographic area analyzed for cumulative traffic and transportation impacts is the road network within the Ivanpah and Eldorado valleys. The timeframe for this cumulative analysis is the construction period because the impact evaluation in Section 3.14, “Traffic and Transportation,” determined that there were no impacts to ground traffic and transportation during operations. However, the EITP would require helicopter usage during operation and maintenance procedures. Therefore, the timeframe for the cumulative analysis for air traffic is the lifetime of the project.

5.3.13.2 Past and Present Project Impacts/Existing Cumulative Conditions

Except for the small community of Primm, Nevada, the EITP is located in a rural, sparsely populated area with a significant amount of publicly owned land. Past projects related to transportation and traffic within the Ivanpah and Eldorado valleys include I-15, State Route (SR) 164, SR 161, SR 604, and US-95. These projects have resulted in the current conditions. As discussed in Section 3.14, “Traffic and Transportation,” the level of service (LOS) for these roads is adequate, except for I-15. On most days, I-15 experiences an average daily traffic volume of approximately 38,000 trips (LOS C), which means the flow of traffic has been determined to be stable; however, on Fridays from approximately noon to 10 p.m., traffic on northbound 1-15 increases to an hourly average of between 1,700 and 2,000 trips (LOS D; Green 2009).

5.3.13.3 Reasonably Foreseeable Future Projects

Ongoing and foreseeable development throughout the cumulative impact area for traffic and transportation is dominated by proposed renewable energy projects. As shown in Figure 5-1 and described in Tables 5-1 and 5-2, additional renewable energy development is expected in the area. The renewable projects that have the potential to affect traffic because of their proximity to Primm and I-15 and their potentially overlapping construction schedules would be ISEGS, FirstSolar, and Nextlight Silver State. Other projects in the vicinity of I-15 include the SNSA, the Calnev Pipeline Expansion, and the DesertXpress High-Speed Rail.

The start time for construction of the SNSA is not known, but based on the current environmental review status, it is not likely to begin until 2014. The EITP would begin construction in 2011 and be completed during 2013; therefore, the SNSA is not considered in the analysis of ground traffic impacts. The projected construction schedule of the Calnev Pipeline Expansion and First Solar are unknown, but DesertXpress is projected to be constructed between 2010 and 2012. ISEGS is projected to be built between 2010 and 2013, while NextLight Renewable Power is projected to be built from 2010 to 2014. These projects are considered in this analysis (see Table 5-3).

5.3.13.4 Cumulative Impact Analysis

The potential for traffic and transportation impacts of the EITP to combine with the effects of other projects within the geographic extent and timeframe of the cumulative analysis is described below.

Cumulative Impact TRANS-C-1: Traffic Load, Capacity, and Level of Service

This section discusses the combined effects on traffic load, capacity, and LOS standards of the EITP and past, present, and reasonably foreseeable projects. Relevant impacts of the EITP are IMPACT TRANS-1: Traffic Load and Capacity and IMPACT TRANS-2: Level of Service Standard and Lane Closures.

Most roads in the cumulative impact area are infrequently used and would not be adversely affected by a slight, temporary increase in road traffic; however, construction of the EITP would increase use of I-15 by a maximum of 200 vehicles. Northbound I-15 experiences periods of heavy use on Friday from approximately noon to 10 p.m. because of motorists traveling between the Las Vegas and Los Angeles areas.

The applicant would acquire encroachment permits (APM TRA-1) and implement a Traffic Management and Control Plan (APM TRA-2) to reduce impacts. The Traffic Management Plan would provide strategies to assure safe and effective passage of through-traffic along I-15 and SR 164/Nipton Road. In addition, the implementation of MM TRANS-1 would minimize potential impacts to I-15 by requiring the applicant to limit construction activities so that lane closures did not occur during peak usage times on Fridays from noon to 10 P.M.

The EITP, ISEGS, the First Solar Project, the NextLight Silver State Solar Project, the Calnev Pipeline Expansion Project, and the DesertXpress High-Speed Rail Project would be located near the I-15 corridor. It is likely that during certain periods, construction of these projects could have overlapping schedules (see Table 5-3). As would the EITP, the large construction projects would have to obtain encroachment permit to minimize impacts to I-15. ISEGS would implement a Traffic Control Plan that contains a Traffic Management Plan; however, it could not be determined if the DesertXpress would have a comparable plan. Calnev, First Solar, and NextLight would likely also implement Traffic Management Plans.

With concurrent construction of the projects mentioned above, the number of vehicles using I-15 would increase and would adversely impact traffic load and LOS on I-15 principally on Fridays from noon to 10 p.m. However, the exact number of vehicles to be added cannot be determined with the available information. The EITP would contribute a maximum of 200 vehicles over an 18-month period and would minimize impacts through use of a Traffic Management Plan; therefore, the contribution of the EITP's impact on traffic and transportation would be minor.

However, the EITP's incremental effect could result in a considerable cumulative impact; therefore, mitigation would be necessary.

MM-C-TRANS-1 will require the applicant to limit the use of I-15 on Fridays from noon to 10 p.m. This will require using alternative routes or planning sufficiently such that vehicular use of I-15 would be limited to fewer than 15 vehicles every 15 minutes, resulting in a minor, short-term cumulative impact. Implementation of this mitigation measure would reduce the EITP's incremental contribution to less than significant or minor.

EITP construction would result in short-term adverse traffic impacts where vehicles and equipment would enter or leave construction yards and at crossing points along the transmission line route. Crossing points which are in and near Primm, were considered for this cumulative analysis. However, these effects, even when combined with the existing traffic in Primm and the reasonably foreseeable future projects that would be located in and near Primm (DesertXpress Rail Line, Calnev Pipeline Expansion, First Solar, and NextLight), are so localized and temporary that they would not measurably change the existing conditions; therefore, no cumulative impacts on ground traffic would occur.

Air Traffic

Helicopter use during maintenance procedures is common for linear projects. Calnev Pipeline requires helicopter use and other existing transmission lines may also use helicopters in the cumulative impact area. If the SNSA is constructed, use of helicopters during operations could contribute to a cumulative impact; however, given the infrequency of use, the EITP's contribution to this impact would be negligible. MM TRANS-2, which requires coordination with the FAA regarding a Helicopter Flight Plan and Safety Plan, would be sufficient to reduce impacts. In addition, it is reasonable to assume that any existing or future projects in the cumulative impact area that require the use of helicopters would similarly consult with the FAA.

Emergency Access

The EITP, in combination with the other projects mentioned above that are in close proximity to I-15 and would be constructed concurrently, would not interfere with emergency response activities. Emergency response providers near the cumulative study area would be notified in advance about the exact location of construction and road or route closure schedules. Like the EITP, the foreseeable projects would coordinate with local police and traffic engineers to plan appropriate access alternatives for temporary street closures and traffic disruption, if closures were required. Therefore, there would not be a considerable cumulative impact to emergency access.

5.3.13.5 Alternatives

Because no activity is associated with the No Project Alternative, it would not contribute to short-term or long-term adverse cumulative impacts on transportation and traffic.

Because construction vehicles would travel along the same traffic corridors to and from construction yards and the construction location for all alternatives, all would contribute to cumulative impacts on traffic load and LOS on Fridays. In addition, construction of some of the alternative routes would require construction crossing or along I-15. Both the Mountain Pass and Golf Course Telecommunication Alternatives cross I-15 and travel along it for part of their routes. Transmission Alternatives C and D near Primm also cross I-15. Any of the alternatives' incremental effects could result in a considerable cumulative impact; therefore, MM-C-TRANS-1 would be necessary regardless of the alternative selected.

Alternative transmission routes A, B, C, and D and Subalternative Route E and the Telecommunication Alternatives would have short-term, minor, adverse traffic impacts at construction yards and crossing points (MP 29) similar to those of the EITP because the same construction yards would be used for all alternatives. However, these effects, even when combined with the existing traffic in Primm and the reasonably foreseeable future projects that would be located in and near Primm (DesertXpress, Calnev Pipeline, First Solar, and NextLight), are so localized and

temporary that they would not measurably change the existing conditions; therefore, no cumulative traffic impacts would likely occur.

Like the other alternatives, the Mountain Pass and Golf Course Telecommunication Alternatives would cause a direct, short-term, minor adverse traffic impact at construction yards and crossing points along the telecommunication line route.

5.3.13.6 Whole of the Action / Cumulative Action

This section analyzes the potential cumulative effects of the combined EITP and ISEGS project. The section summarizes the cumulative analysis presented in the ISEGS FSA/DEIS prepared by the CEC and the BLM and then evaluates the combined effects of the EITP and ISEGS.

ISEGS Summary

According to the ISEGS FSA/DEIS, traffic and transportation impacts of the ISEGS project would not combine with impacts of any past, present, or reasonably foreseeable projects to result in cumulatively considerable impacts to local streets in the immediate vicinity of the ISEGS project site. However, traffic and transportation impacts of the ISEGS project would result in a considerable local and regional cumulative impact to northbound I-15, related primarily to motorists travelling to Las Vegas. Vehicle trips generated during construction and operation of the ISEGS project would contribute to an adverse direct and cumulative impact, which would be significant with respect to CEQA and NEPA, on northbound I-15 on Fridays between noon and 10 p.m. This impact would remain even with implementation of mitigation limiting the amount of project-related traffic generated on area roadways on Friday afternoons (CEC and BLM 2009).

Cumulative Analysis of the Whole of the Action / Cumulative Action

The EITP and ISEGS are likely to be constructed concurrently and would have similar impacts on traffic volumes on northbound I-15 on Fridays between noon and 10 p.m. These impacts could not be completely mitigated. Therefore, concurrent construction of any of the other foreseeable renewable energy projects with these projects would contribute to considerable cumulative impacts on traffic load/volume. The contribution of the combined projects would depend on the amount of time that construction overlapped. Like the EITP, the Whole of the Action / Cumulative Action contribution to impacts to traffic load and LOS could be significant, but implementation of MM-C-TRANS-1 and a similar mitigation proposed for ISEGS would reduce the cumulative effects and would reduce the Whole of the Action / Cumulative Action's contribution to cumulative effects to minor, short-term, less than significant impacts; however, the cumulative impact to traffic on Fridays could still be significant.

Similar to the analysis provided for the proposed project, a considerable cumulative impact to emergency access with respect to the Whole of the Action / Cumulative Action would not occur.