NOTATION

The following is a list of acronyms and abbreviations, chemical names, and units of measure used in this document. Some acronyms used only in tables may be defined only in those tables.

GENERAL ACRONYMS AND ABBREVIATIONS

AADT	annual average daily traffic
AASHTO	American Association of State Highway and Transportation Officials
AC	alternating current
ACC	air-cooled condenser
ACEC	Area of Critical Environmental Concern
ADEQ	Arizona Department of Environmental Quality
ACHP	Advisory Council on Historic Preservation
ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AERMOD	AMS/EPA Regulatory Model
AFC	Application for Certification
AGL	above ground level
AIM	Assessment, Inventory and Monitoring
AIRFA	American Indian Religious Freedom Act
AMA	active management area
AML	animal management level
ANHP	Arizona National Heritage Program
APE	area of potential effect
APLIC	Avian Power Line Interaction Committee
APP	Avian Protection Plan
APS	Arizona Public Service
AQCR	Air Quality Control Region
AQRV	air quality–related value
ARB	Air Resources Board
ARRA	American Recovery and Reinvestment Act of 2009
ARRTIS	Arizona Renewable Resource and Transmission Identification Subcommittee
ARS	Agricultural Research Service
ARZC	Arizona and California
ATSDR	Agency for Toxic Substances and Disease Registry
AUM	animal unit month
AVSE	Arlington Valley Solar Energy
AVWS	Audio Visual Warning System
AWBA	Arizona Water Banking Authority
AWEA	American Wind Energy Association
AWRM	Active Water Resource Management
AZDA	Arizona Department of Agriculture
AZGFD	Arizona Game and Fish Department

AZGS	Arizona Geological Survey
BA	biological assessment
BAP	base annual production
BEA	Bureau of Economic Analysis
BISON-M	Biota Information System of New Mexico
BLM	Bureau of Land Management
BLM-CA	Bureau of Land Management, California
BMP	best management practice
BNSF	Burlington Northern Santa Fe
BO	biological opinion
BOR	U.S. Bureau of Reclamation
BPA	Bonneville Power Administration
BRAC	Blue Ribbon Advisory Council on Climate Change
BSE	Beacon Solar Energy
BSEP	Beacon Solar Energy Project
BTS	Bureau of Transportation Statistics
CAA	Clean Air Act
CAAQS	California Air Quality Standards
CAISO	California Independent System Operator
Caltrans	California Department of Transportation
C-AMA	California-Arizona Maneuver Area
CAP	Central Arizona Project
CARB	California Air Resources Board
CAReGAP	California Regional Gap Analysis Project
CASQA	California Stormwater Quality Association
CASTNET	Clean Air Status and Trends NETwork
CAWA	Colorado Agricultural Water Alliance
CCC	Civilian Conservation Corps
CDC	Centers for Disease Control and Prevention
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CDNCA	California Desert National Conservation Area
CDOT	Colorado Department of Transportation
CDOW	Colorado Division of Wildlife (now Colorado Parks and Wildlife)
CDPHE	Colorado Department of Public Health and Environment
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CES	constant elasticity of substitution
CESA	California Endangered Species Act
CESF	Carrizo Energy Solar Farm
CFR	*Code of Federal Regulations*
CGE	computable general equilibrium
CHAT	crucial habitat assessment tool

CIRA	Cooperative Institute for Research in the Atmosphere
CLFR	compact linear Fresnel reflector
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNHP	Colorado National Heritage Program
Colorado DWR	Colorado Division of Water Resources
CO_2e	carbon dioxide equivalent
CPC	Center for Plant Conservation
CPUC	California Public Utilities Commission
CPV	concentrating photovoltaic
CRBSCF	Colorado River Basin Salinity Control Forum
CREZ	competitive renewable energy zone
CRPC	Cultural Resources Preservation Council
CRSCP	Colorado River Salinity Control Program
CSA	Candidate Study Area
CSC	Coastal Services Center
CSFG	carbon-sequestration fossil generation
CSP	concentrating solar power
CSQA	California Stormwater Quality Association
CSRI	Cultural Systems Research, Incorporated
CTG	combustion turbine generator
CTPG	California Transmission Planning Group
CTSR	Cumbres & Toltec Scenic Railroad
CUP	Conditional Use Permit
CVP	Central Valley Project
CWA	Clean Water Act
CWCB	Colorado Water Conservation Board
CWHRS	California Wildlife Habitat Relationship System
DC	direct current
DEM	digital elevation model
DHS	U.S. Department of Homeland Security
DIMA	Database for Inventory, Monitoring and Assessment
DLT	dedicated-line transmission
DNA	Determination of NEPA Adequacy
DNI	direct normal insulation
DNL	day-night average sound level
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DOL	U.S. Department of Labor
DOT	U.S. Department of Transportation
DRECP	California Desert Renewable Energy Conservation Plan
DSM	demand-side management
DSRP	Decommissioning and Site Reclamation Plan
DTC/C-AMA	Desert Training Center/California–Arizona Maneuver Area

DWMA	Desert Wildlife Management Area
DWR	Division of Water Resources
EA	environmental assessment
EBID	Elephant Butte Irrigation District
ECAR	East Central Area Reliability Coordination Agreement
ECOS	Environmental Conservation Online System (USFWS)
EERE	Energy Efficiency and Renewable Energy (DOE)
Eg	band gap energy
EIA	Energy Information Administration (DOE)
EIS	environmental impact statement
EISA	Energy Independence and Security Act of 2007
EMF	electromagnetic field
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
EQIP	Environmental Quality Incentives Program
ERCOT	Electric Reliability Council of Texas
ERO	Electric Reliability Organization
ERS	Economic Research Service
ESA	Endangered Species Act of 1973
ESRI	Environmental Systems Research Institute
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impact
FR	*Federal Register*
FRCC	Florida Reliability Coordinating Council
FSA	Final Staff Assessment
FTE	full-time equivalent
FY	fiscal year
G&TM	generation and transmission modeling
GCRP	U.S. Global Climate Research Program
GDA	generation development area
GHG	greenhouse gas
GIS	geographic information system
GMU	game management unit
GPS	global positioning system
GTM	Generation and Transmission Model

GUAC	Groundwater Users Advisory Council
GWP	global warming potential
HA	herd area
HAP	hazardous air pollutant
HAZCOM	hazard communication
HCE	heat collection element
HCP	Habitat Conservation Plan
HMA	herd management area
HMMH	Harris Miller Miller & Hanson, Inc.
HRSG	heat recovery steam generator
HSPD	Homeland Security Presidential Directive
HTF	heat transfer fluid
HUC	hydrologic unit code
HVAC	heating, ventilation, and air-conditioning
I	Interstate
IARC	International Agency for Research on Cancer
IBA	important bird area
ICE	internal combustion engine
ICPDS	Imperial County Planning & Development Services
ICWMA	Imperial County Weed Management Area
IDT	interdisplinary team
IEC	International Electrochemical Commission
IFR	instrument flight rule
IID	Imperial Irrigation District
IM	Instruction Memorandum
IMPS	Iron Mountain Pumping Station
IMS	interim mitigation strategy
INA	Irrigation Non-Expansion Area
IOP	Interagency Operating Procedure
IOU	investor-owned utility
IPCC	Intergovernmental Panel on Climate Change
ISA	Independent Science Advisor; Instant Study Area
ISB	Intermontane Seismic Belt
ISCC	integrated solar combined cycle
ISDRA	Imperial Sand Dunes Recreation Area
ISEGS	Ivanpah Solar Energy Generating System
ISO	independent system operator; iterative self-organizing
ITFR	Interim Temporary Final Rulemaking
ITP	incidental take permit
IUCNNR	International Union for Conservation of Nature and Natural Resources
IUCNP	International Union for Conservation of Nature Pakistan
KGA	known geothermal resources area
KML	keyhole markup language

KOP	key observation point
KSLA	known sodium leasing area
LCC	Landscape Conservation Cooperative
LCCRDA	Lincoln County Conservation, Recreation, and Development Act of 2004
LCOE	levelized cost of energy
L_{dn}	day-night average sound level
LDWMA	Low Desert Weed Management Area
L_{eq}	equivalent sound pressure level
LiDAR	light detection and ranging
LLA	limited land available
LLRW	low-level radioactive waste (waste classification)
LPN	listing priority number
LRG	Lower Rio Grande
LSA	lake and streambed alteration
LSE	load-serving entity
LTMP	long-term monitoring and adaptive management plan
LTVA	long-term visitor area
MAAC	Mid-Atlantic Area Council
MAIN	Mid-Atlantic Interconnected Network
MAPP	methyl acetylene propadiene stabilizer; Mid-Continent Area Power Pool
MCAS	Marine Corps Air Station
MCL	maximum contaminant level
MEB	Marine Expeditionary Brigade
MFP	Management Framework Plan
MIG	Minnesota IMPLAN Group
MLA	maximum land available
MOA	military operating area
MOU	Memorandum of Understanding
MPDS	maximum potential development scenario
MRA	Multiple Resource Area
MRI	Midwest Research Institute
MRO	Midwest Reliability Organization
MSDS	Material Safety Data Sheet
MSL	mean sea level
MTR	military training route
MVEDA	Mesilla Valley Economic Development Alliance
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWMA	Mojave Weed Management Area
NAAQS	National Ambient Air Quality Standard(s)
NADP	National Atmospheric Deposition Program
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission (California)
NAIC	North American Industrial Classification System

NASA	National Aeronautics and Space Administration
NCA	National Conservation Area
NCCAC	Nevada Climate Change Advisory Committee
NCDC	National Climatic Data Center
NCES	National Center for Education Statistics
NDAA	National Defense Authorization Act
NDCNR	Nevada Department of Conservation and Natural Resources
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDWP	Nevada Division of Water Planning
NDWR	Nevada Division of Water Resources
NEAP	Natural Events Action Plan
NEC	National Electric Code
NED	National Elevation Database
NEP	Natural Events Policy
NEPA	National Environmental Policy Act of 1969
NERC	North American Electricity Reliability Corporation
NGO	non-governmental organization
NHA	National Heritage Area
NHD	National Hydrography Dataset
NHNM	National Heritage New Mexico
NHPA	National Historic Preservation Act of 1966
NID	National Inventory of Dams
NLCS	National Landscape Conservation System
NMAC	*New Mexico Administrative Code*
NMBGMR	New Mexico Bureau of Geology and Mineral Resources
NMDGF	New Mexico Department of Game and Fish
NM DOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NMED-AQB	New Mexico Environment Department-Air Quality Board
NMFS	National Marine Fisheries Service
NMOSE	New Mexico Office of the State Engineer
NMSU	New Mexico State University
NNHP	Nevada Natural Heritage Program
NNL	National Natural Landmark
NNSA	National Nuclear Security Administration
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NP	National Park
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NPV	net present value
NRA	National Recreation Area

NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	*National Register of Historic Places*
NRS	*Nevada Revised Statutes*
NSC	National Safety Council
NSO	no surface occupancy
NSTC	National Science and Technology Council
NTHP	National Trust for Historic Preservation
NTS	Nevada Test Site
NTTR	Nevada Test and Training Range
NVCRS	Nevada Cultural Resources Inventory System
NV DOT	Nevada Department of Transportation
NWCC	National Wind Coordinating Committee
NWI	National Wetlands Inventory
NWIS	National Water Information System (USGS)
NWPP	Northwest Power Pool
NWR	National Wildlife Refuge
NWSRS	National Wild and Scenic River System
O&M	operation and maintenance
ODFW	Oregon Department of Fish and Wildlife
OHV	off-highway vehicle
ONA	Outstanding Natural Area
ORC	organic Rankine cycle
OSE/ISC	Office of the State Engineer/Interstate Stream Commission
OSHA	Occupational Safety and Health Administration
OTA	Office of Technology Assessment
PA	Programmatic Agreement
PAD	Preliminary Application Document
PAH	polycyclic aromatic hydrocarbon
PAT	peer analysis tool
PCB	polychlorinated biphenyl
PCM	purchase change material
PCS	power conditioning system
PCU	power converting unit
PEIS	programmatic environmental impact statement
PFYC	potential fossil yield classification
PGH	Preliminary General Habitat
PIER	Public Interest Energy Research
P.L.	Public Law
PLSS	Public Land Survey System
PM	particulate matter
$PM_{2.5}$	particulate matter with a diameter of 2.5 μm or less
PM_{10}	particulate matter with a diameter of 10 μm or less
PPA	Power Purchase Agreement

P-P-D	population-to-power density
PPH	Preliminary Priority Habitat
POD	plan of development
POU	publicly owned utility
PPA	Power Purchase Agreement
PPE	personal protective equipment
PSD	Prevention of Significant Deterioration
PURPA	Public Utility Regulatory Policy Act
PV	photovoltaic
PVID	Palo Verde Irrigation District
PWR	public water reserve
QRA	qualified resource area
R&I	relevance and importance
RAC	Resource Advisory Council
RCE	Reclamation Cost Estimate
RCI	residential, commercial, and industrial (sector)
RCRA	Resource Conservation and Recovery Act of 1976
RD&D	research, development, and demonstration; research, development, and deployment
RDBMS	Relational Database Management System
RDEP	Restoration Design Energy Project
REA	Rapid Ecoregional Assessment
REAT	Renewable Energy Action Team
REDA	Renewable Energy Development Area
REDI	Renewable Energy Development Infrastructure
REEA	Renewable Energy Evaluation Area
ReEDS	Regional Energy Deployment System
REPG	Renewable Energy Policy Group
RETA	Renewable Energy Transmission Authority
RETAAC	Renewable Energy Transmission Access Advisory Committee
RETI	Renewable Energy Transmission Initiative
REZ	renewable energy zone
RF	radio frequency
RFC	Reliability First Corporation
RFDS	reasonably foreseeable development scenario
RGP	Rio Grande Project
RGWCD	Rio Grande Water Conservation District
RMP	Resource Management Plan
RMPA	Rocky Mountain Power Area
RMZ	Resource Management Zone
ROD	Record of Decision
ROI	region of influence
ROS	recreation opportunity spectrum
ROW	right-of-way

RPG	renewable portfolio goal
RPS	Renewable Portfolio Standard
RRC	Regional Reliability Council
RSEP	Rice Solar Energy Project
RSI	Renewable Systems Interconnection
RTO	regional transmission organization
RTTF	Renewable Transmission Task Force
RV	recreational vehicle
SAAQS	State Ambient Air Quality Standard(s)
SAMHSA	Substance Abuse and Mental Health Services Administration
SCADA	supervisory control and data acquisition
SCE	Southern California Edison
SCRMA	Special Cultural Resource Management Area
SDRREG	San Diego Regional Renewable Energy Group
SDWA	Safe Drinking Water Act of 1974
SEGIS	Solar Energy Grid Integration System
SEGS	Solar Energy Generating System
SEI	Sustainable Energy Ireland
SEIA	Solar Energy Industrial Association
SES	Stirling Energy Systems
SETP	Solar Energy Technologies Program (DOE)
SEZ	solar energy zone
SHPO	State Historic Preservation Office(r)
SIP	State Implementation Plan
SLRG	San Luis & Rio Grande
SMA	Special Management Area
SMART	specific, measurable, achievable, relevant, and time sensitive
SMP	suggested management practice
SNWA	Southern Nevada Water Authority
SPP	Southwest Power Pool
SRMA	Special Recreation Management Area
SSA	Socorro Seismic Anomaly
SSI	self-supplied industry
ST	solar thermal
STG	steam turbine generator
SUA	special use airspace
SWAT	Southwest Area Transmission
SWIP	Southwest Intertie Project
SWPPP	Stormwater Pollution Prevention Plan
SWReGAP	Southwest Regional Gap Analysis Project
TAP	toxic air pollutant
TCC	Transmission Corridor Committee
TDS	total dissolved solids
TEPPC	Transmission Expansion Planning Policy Committee

TES	thermal energy storage
TRACE	Transmission Routing and Configuration Estimator
TSA	Transportation Security Administration
TSCA	Toxic Substances Control Act of 1976
TSDF	treatment, storage, and disposal facility
TSP	total suspended particulates
UACD	Utah Association of Conservation Districts
UBWR	Utah Board of Water Resources
UDA	Utah Department of Agriculture
UDEQ	Utah Department of Environmental Quality
UDNR	Utah Department of Natural Resources
UDOT	Utah Department of Transportation
UDWQ	Utah Division of Water Quality
UDWR	Utah Division of Wildlife Resources
UGS	Utah Geological Survey
UNEP	United Nations Environmental Programme
UNPS	Utah Native Plant Society
UP	Union Pacific
UREZ	Utah Renewable Energy Zone
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USC	*United States Code*
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
Utah DWR	Utah Division of Water Rights
UTTR	Utah Test and Training Range
UWS	Underground Water Storage, Savings and Replenishment Act
VACAR	Virginia–Carolinas Subregion
VCRS	Visual Contrast Rating System
VFR	visual flight rule
VOC	volatile organic compound
VRHCRP	Virgin River Habitat Conservation & Recovery Program
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WA	Wilderness Area
WECC	Western Electricity Coordinating Council
WECC CAN	Western Electricity Coordinating Council–Canada
WEG	wind erodibility group
Western	Western Area Power Administration
WGA	Western Governors' Association
WGFD	Wyoming Game and Fish Department

WHA	wildlife habitat area
WHO	World Health Organization
WIA	Wyoming Infrastructure Authority
WRAP	Water Resources Allocation Program; Western Regional Air Partnership
WRCC	Western Regional Climate Center
WREZ	Western Renewable Energy Zones
WRRI	Water Resources Research Institute
WSA	Wilderness Study Area
WSC	wildlife species of special concern
WSMR	White Sands Missile Range
WSR	Wild and Scenic River
WSRA	Wild and Scenic Rivers Act of 1968
WWII	World War II
WWP	Western Watersheds Project
YPG	Yuma Proving Ground
ZITA	zone identification and technical analysis
ZLD	zero liquid discharge

CHEMICALS

CH_4	methane	NO_2	nitrogen dioxide
CO	carbon monoxide	NO_x	nitrogen oxides
CO_2	carbon dioxide		
		O_3	ozone
H_2S	hydrogen sulfide		
Hg	mercury	Pb	lead
N_2O	nitrous oxide	SF_6	sulfur hexafluoride
NH_3	ammonia	SO_2	sulfur dioxide
		SO_x	sulfur oxides

UNITS OF MEASURE

ac-ft	acre-foot (feet)	dBA	A-weighted decibel(s)
bhp	brake horsepower		
		°F	degree(s) Fahrenheit
°C	degree(s) Celsius	ft	foot (feet)
cf	cubic foot (feet)	ft^2	square foot (feet)
cfs	cubic foot (feet) per second	ft^3	cubic foot (feet)
cm	centimeter(s)		
		g	gram(s)
dB	decibel(s)	gal	gallon(s)

GJ	gigajoule(s)
gpcd	gallon per capita per day
gpd	gallon(s) per day
gpm	gallon(s) per minute
GW	gigawatt(s)
GWh	gigawatt hour(s)
GWh/yr	gigawatt hour(s) per year
h	hour(s)
ha	hectare(s)
Hz	hertz
in.	inch(es)
J	joule(s)
K	degree(s) Kelvin
kcal	kilocalorie(s)
kg	kilogram(s)
kHz	kilohertz
km	kilometer(s)
km^2	square kilometer(s)
kPa	kilopascal(s)
kV	kilovolt(s)
kVA	kilovolt-ampere(s)
kW	kilowatt(s)
kWh	kilowatt-hour(s)
kWp	kilowatt peak
L	liter(s)
lb	pound(s)
m	meter(s)
m^2	square meter(s)
m^3	cubic meter(s)
mg	milligram(s)
Mgal	million gallons
mi	mile(s)
mi^2	square mile(s)
min	minute(s)
mm	millimeter(s)
MMt	million metric ton(s)
MPa	megapascal(s)
mph	mile(s) per hour
MVA	megavolt-ampere(s)
MW	megawatt(s)
MWe	megawatt(s) electric
MWh	megawatt-hour(s)
ppm	part(s) per million
psi	pound(s) per square inch
psia	pound(s) per square inch absolute
rpm	rotation(s) per minute
s	second(s)
scf	standard cubic foot (feet)
TWh	terawatt hour(s)
VdB	vibration velocity decibel(s)
W	watt(s)
yd^2	square yard(s)
yd^3	cubic yard(s)
yr	year(s)
µg	microgram(s)
µm	micrometer(s)

11 UPDATE TO AFFECTED ENVIRONMENT AND IMPACT ASSESSMENT FOR PROPOSED SOLAR ENERGY ZONES IN NEVADA

The U.S. Department of the Interior Bureau of Land Management (BLM) has carried 17 solar energy zones (SEZs) forward for analysis in this Final Solar Programmatic Environmental Impact Statement (PEIS). These SEZs total approximately 285,000 acres (1,153 km^2) of land potentially available for development. This chapter includes analyses of potential environmental impacts for the proposed SEZs in Nevada—Amargosa, Dry Lake, Dry Lake Valley North, Gold Point, and Millers—as well as summaries of the previously proposed Delamar Valley and East Mormon Mountain SEZs and why they were eliminated from further consideration. The SEZ-specific analyses provide documentation from which the BLM will tier future project authorizations, thereby limiting the required scope and effort of project-specific National Environmental Policy Act of 1969 (NEPA) analyses.

The BLM is committed to collecting additional SEZ-specific resource data and conducting additional analysis in order to more efficiently facilitate future development in SEZs. The BLM developed action plans for each of the 17 SEZs carried forward as part of the Supplement to the Draft Solar PEIS (BLM and DOE 2011). These action plans described additional data that could be collected for individual SEZs and proposed data sources and methods for the collection of those data. Work is underway to collect additional data as specified under these action plans (e.g., additional data collection to support evaluation of cultural, visual, and water resources has begun). As the data become available, they will be posted on the project Web site (http://solareis.anl.gov) for use by applicants and the BLM and other agency staff.

To accommodate the flexibility described in the BLM's program objectives and in light of anticipated changes in technologies and environmental conditions over time, the BLM has removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS (BLM and DOE 2010) and the Supplement to the Draft (e.g., height restrictions on technologies used to address visual resource impacts). Alternatively, the BLM will give full consideration to any outstanding conflicts in SEZs as part of the competitive process being developed through rulemaking (see Section 2.2.2.2.1).

In preparing selected parcels for competitive offer, the BLM will review all existing analysis for an SEZ and consider any new or changed circumstances that may affect the development of the SEZ. The BLM will also work with appropriate federal, state, and local agencies, and affected tribes, as necessary, to discuss SEZ-related issues. This work would ultimately inform how a parcel would be offered competitively (e.g., parcel size and configuration, technology limitations, mitigation requirements, and parcel-specific competitive process). Prior to issuing a notice of competitive offer, the BLM would complete appropriate NEPA analysis to support the offer. This analysis would tier to the analysis for SEZs in the Solar PEIS to the extent practicable.

It is the BLM's goal to compile all data, information, and analyses for SEZs from the Draft Solar PEIS, the Supplement to the Draft, and this Final Solar PEIS into a single location

accessible via the project Web site (http://solareis.anl.gov) for ease of use by applicants and the BLM and other agency staff.

This chapter is an update to the information on Nevada SEZs presented in the Draft Solar PEIS. As stated previously, the Delamar Valley and East Mormon SEZs were dropped from further consideration through the Supplement to the Draft Solar PEIS. For the remaining five Nevada SEZs—Amargosa, Dry Lake, Dry Lake Valley North, Gold Point, and Millers—the information presented in this chapter supplements and updates, but does not replace, the information provided in the corresponding Chapter 11 on proposed SEZs in Nevada in the Draft Solar PEIS. Corrections to incorrect information in Sections 11.1, 11.3, 11.4, 11.6, and 11.7 of the Draft Solar PEIS and in Sections C.4.1, C.4.2, C.4.3, C.4.4, and C.4.5 of the Supplement to the Draft are provided in Sections 11.1.26, 11.3.26, 11.4.26, 11.6.26, and 11.7.26 of this Final Solar PEIS.

11.6 GOLD POINT

11.6.1 Background and Summary of Impacts

11.6.1.1 General Information

The proposed Gold Point SEZ is located in Esmeralda County in southwestern Nevada. In 2008, the county population was 664, while adjacent Nye County to the east had a population of 44,175. No incorporated towns are in close proximity to the SEZ. The nearest residences are in Gold Point, a well-preserved ghost town and point of interest for tourists about 2 mi (3.2 km) south of the SEZ. The town is located on BLM-administered lands; it thrived in the early 1900s, but most of the town was abandoned in the 1940s when mining operations ceased. The town currently has only a few occupied residences. The town of Tonopah is approximately 50 mi (80 km) to the north of the SEZ.

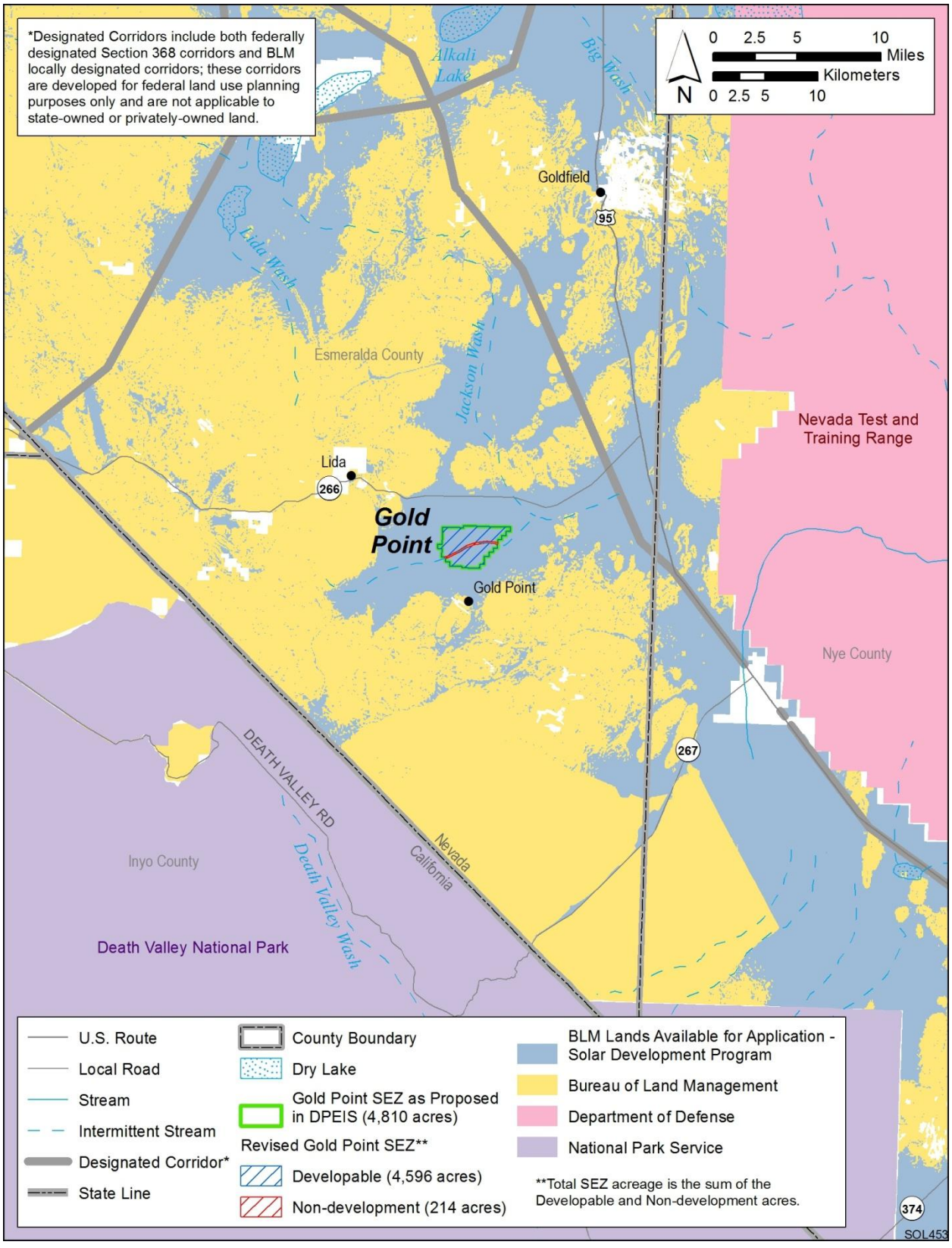
The nearest major road access to the proposed Gold Point SEZ is State Route 774, which parallels the eastern edge of the SEZ; U.S. 95 runs north–south as it passes within 9 mi (14 km) to the east of the SEZ. The UP Railroad serves the region; the closest stop is in Thorne, 160 mi (257 km) northwest of the SEZ. As of October 28, 2011, there were no pending solar applications within or adjacent to the SEZ.

As published in the Draft Solar PEIS (BLM and DOE 2010), the proposed Gold Point SEZ had a total area of 4,810 acres (19 km^2). In the Supplement to the Draft Solar PEIS (BLM and DOE 2011), no boundary revisions were identified for the proposed SEZ (see Figure 11.6.1.1-1). However, areas specified for non-development were mapped where data were available. For the proposed Gold Point SEZ, 214 acres (0.87 km^2) along a significant unnamed intermittent stream passing from west to east through the center of the SEZ was identified as a non-development area (see Figure 11.6.1.1-2). The remaining developable area within the SEZ is 4,596 acres (18.6 km^2).

The analyses in the following sections update the affected environment and potential environmental, cultural, and socioeconomic impacts associated with utility-scale solar energy development in the proposed Gold Point SEZ as described in the Draft Solar PEIS.

11.6.1.2 Development Assumptions for the Impact Analysis

Maximum solar development of the Gold Point SEZ was assumed to be 80% of the SEZ area over a period of 20 years, a maximum of 3,677 acres (15 km^2) (Table 11.6.1.2-1). Full development of the Gold Point SEZ would allow development of facilities with an estimated total of between 409 MW (power tower, dish engine, or PV technologies, 9 acres/MW [0.04 km^2/MW]) and 735 MW (solar trough technologies, 5 acres/MW [0.02 km^2/MW]) of electrical power capacity.



1

2 **FIGURE 11.6.1.1-1 Proposed Gold Point SEZ as Revised**

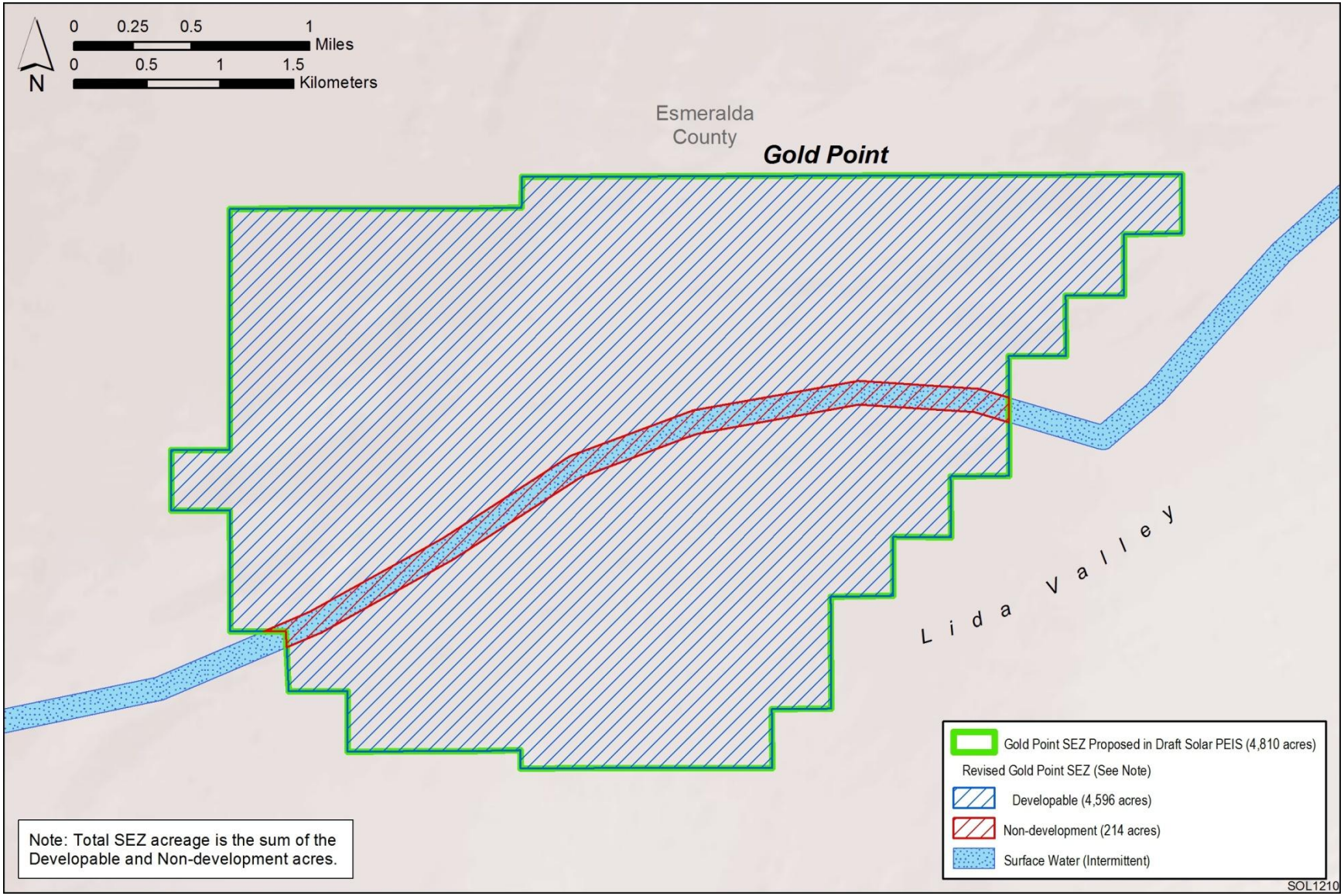


FIGURE 11.6.1.1-2 Developable and Non-development Areas for the Proposed Gold Point SEZ as Revised

TABLE 11.6.1.2-1 Assumed Development Acreages, Solar MW Output, and Nearest Major Road and Transmission Line for the Proposed Gold Point SEZ as Revised

Total Developable Acreage and Assumed Developed Acreage (80% of Total)	Assumed Maximum SEZ Output for Various Solar Technologies	Distance to Nearest State, U.S., or Interstate Highway	Distance and Capacity of Nearest Existing Transmission Line[e]	Area of Assumed Road ROW	Distance to Nearest Designated Corridor[f]
4,596 acres[a] and 3,677 acres	409 MW[b] and 735 MW[c]	State Route 774 0 mi[d]	3 mi and 345 kV	0 acres	6 mi

[a] To convert acres to km^2, multiply by 0.004047.

[b] Maximum power output if the SEZ were fully developed using power tower, dish engine, or PV technologies, assuming 9 acres/MW (0.04 km^2/MW) of land required.

[c.] Maximum power output if the SEZ were fully developed using solar trough technologies, assuming 5 acres/MW (0.02 km^2/MW) of land required.

[d] To convert mi to km, multiply by 1.6093.

[e] In the Draft Solar PEIS, the nearest transmission line identified was a 120-kV line 22 mi (35 km) from the SEZ; this information has been updated.

[f] BLM-designated corridors are developed for federal land use planning purposes only and are not applicable to state-owned or privately owned land.

Availability of transmission from SEZs to load centers will be an important consideration for future development in SEZs. For the proposed Gold Point SEZ, updated data indicate that the nearest existing transmission line is a 345-kV north–south line located about 3 mi (5 km) east of the SEZ (the Draft Solar PEIS had indicated that the closest existing line was a 120-kV line 22 mi [35 km] to the west of the SEZ). It is possible that a new transmission line could be constructed from the SEZ to the existing line, but the capacity of the line could be inadequate for the possible 428 to 770 MW of new capacity. Therefore, at full build-out capacity, new transmission lines and/or upgrades of existing transmission lines would be required to bring electricity from the proposed Gold Point SEZ to load centers. An assessment of the most likely load center destinations for power generated at the Gold Point SEZ and a general assessment of the impacts of constructing and operating new transmission facilities to those load centers are provided in Section 11.6.23. In addition, the generic impacts of transmission lines and associated infrastructure construction and of line upgrades for various resources are discussed in Chapter 5 of this Final Solar PEIS. Project-specific analyses would also be required to identify the specific impacts of new transmission construction and line upgrades for any projects proposed within the SEZ.

The updated transmission assessment for the Gold Point SEZ no longer evaluates the specifically located hypothetical transmission corridor assessed in the Draft Solar PEIS because the actual location of such a tie-in line is unknown. For this Final Solar PEIS, the 667 acres (2.7 km^2) of land disturbance for a hypothetical transmission corridor to an existing transmission

line is no longer assumed (although the impacts of required new transmission overall are addressed in Section 11.6.23).

For the proposed Gold Point SEZ, existing road access should be adequate to support construction and operation of solar facilities, because State Route 774 runs along the eastern border of the SEZ. Thus, no additional road construction outside of the SEZ is assumed to be required to support solar development, as summarized in Table 11.6.1.2-1.

11.6.1.3 Programmatic and SEZ-Specific Design Features

The proposed programmatic design features for each resource area to be required under the BLM Solar Energy Program are presented in Section A.2.2 of Appendix A of this Final Solar PEIS. These programmatic design features are intended to avoid, minimize, and/or mitigate adverse impacts from solar energy development and will be required for development on all BLM-administered lands, including SEZ and non-SEZ lands.

The discussions below addressing potential impacts of solar energy development on specific resource areas (Sections 11.6.2 through 11.6.22) also provide an assessment of the effectiveness of the programmatic design features in mitigating adverse impacts from solar development within the SEZ. SEZ-specific design features to address impacts specific to the proposed Gold Point SEZ may be required in addition to the programmatic design features. The proposed SEZ-specific design features for the Gold Point SEZ have been updated on the basis of revisions to the SEZ since the Draft Solar PEIS (such as boundary changes and the identification of non-development areas) and on the basis of comments received on the Draft and Supplement to the Draft Solar PEIS. All applicable SEZ-specific design features identified to date (including those from the Draft Solar PEIS that are still applicable) are presented in Sections 11.6.2 through 11.6.22.

11.6.2 Lands and Realty

11.6.2.1 Affected Environment

The exterior boundary of the proposed SEZ remains the same as that in the Draft Solar PEIS. Within the boundary of the proposed Gold Point SEZ, about 214 acres (0.87 km^2) along an intermittent stream has been identified as a non-development area. As stated in the Draft Solar PEIS, the area of the SEZ is isolated, and the land is undeveloped with only a few dirt roads present. A 345-kV transmission line 3 mi (5 km) east of the SEZ has now been identified as the closest existing transmission line to the SEZ.

11.6.2.2 Impacts

The description of impacts in the Draft Solar PEIS remains the same with the exception of the classification of land along the intermittent stream as a non-development area. The major

impact of the proposed SEZ on lands and realty activities is still that it would establish an isolated industrial area in an otherwise rural and undeveloped setting area and would exclude other existing and potential uses of the land. Because the SEZ is undeveloped and isolated, utility-scale solar energy development would be a new and highly discordant land use to the area.

11.6.2.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on lands and realty are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will provide some mitigation for the identified impacts but will not mitigate all adverse impacts. For example, impacts related to the exclusion of many existing and potential uses of the public land; the visual impact of an industrial-type solar facility within an otherwise rural area; and induced land use changes, if any, on nearby or adjacent state and private lands may not be fully mitigated.

No SEZ-specific design features for lands and realty have been identified through this Final Solar PEIS. Some SEZ-specific design features may be established for parcels within the Gold Point SEZ through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.3 Specially Designated Areas and Lands with Wilderness Characteristics

11.6.3.1 Affected Environment

As described in the Draft Solar PEIS, there are 6 specially designated areas within 25 mi of the proposed Gold Point SEZ that potentially could be affected by solar development in the SEZ: Death Valley NP, California Desert National Conservation Area, Death Valley WA, the Pigeon Spring and Queer Mountain WSAs, and the Fish Lake Valley SRMA.

11.6.3.2 Impacts

The description in the Draft Solar PEIS remains valid with the exception noted in the following paragraph. It is anticipated there would be no to minimal impact on specially designated areas near the SEZ.

In the Summary Impacts Table, Table 11.6.1.3-1 of the Draft Solar PEIS, in the column titled Environmental Impacts and the row for Specially Designated Areas and Lands with Wilderness Characteristics, a potential adverse impact on night sky viewing was included. Further review of the night sky issue indicates that there is not likely to be an adverse impact. The rationale for this is the distance between the proposed Gold Point SEZ and the specially designated areas, and the anticipated effectiveness of the programmatic design feature included in Section A.2.2.1.13.1 of Appendix A of this Final Solar PEIS.

11.6.3.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on specially designated areas are described in Section A.2.2 of Appendix A of this Final Solar PEIS (design features for both specially designated areas and visual resources would address impacts). Implementing the programmatic design features will provide some mitigation for the identified impacts.

No SEZ-specific design features for specially designated areas have been identified through this Final Solar PEIS. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.4 Rangeland Resources

11.6.4.1 Livestock Grazing

11.6.4.1.1 Affected Environment

One grazing allotment (the Magruder Mountain allotment) overlaps the proposed Gold Point SEZ, but only 0.7% of the allotment is within the SEZ.

11.6.4.1.2 Impacts

The conclusion in the Draft Solar PEIS that because less than 1% of the Magruder allotment overlaps the proposed SEZ there would be no impact on overall grazing use in the allotment is still applicable. Any cattle use displaced from the SEZ likely would be absorbed elsewhere in the allotment.

11.6.4.1.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on livestock grazing are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will provide some mitigation for any impacts.

No SEZ-specific design features to protect livestock grazing have been identified in this Final Solar PEIS. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.4.2 Wild Horses and Burros

11.6.4.2.1 Affected Environment

As presented in Section 11.6.4.2.1 of the Draft Solar PEIS, no wild horse or burro HMAs occur within the proposed Gold Point SEZ or in close proximity to it.

11.6.4.2.2 Impacts

As presented in the Draft Solar PEIS, solar energy development within the proposed Gold Point SEZ would not directly affect wild horses and burros.

11.6.4.2.3 SEZ-Specific Design Features and Design Feature Effectiveness

Because solar energy development within the proposed Gold Point SEZ would not affect wild horses and burros, no SEZ-specific design features to address wild horses and burros have been identified in this Final Solar PEIS.

11.6.5 Recreation

11.6.5.1 Affected Environment

The description of the area within and around the proposed Gold Point SEZ in the Draft Solar PEIS remains valid. The overall appearance of the site is uniform and somewhat monotonous, and it is believed that the area receives no significant recreational use.

11.6.5.2 Impacts

Although recreational use would be excluded from areas developed for solar energy production, the current level of use within the SEZ is so small that any loss of use would be insignificant.

In addition, lands that are outside of the proposed SEZ may be acquired or managed for mitigation of impacts on other resources (e.g., sensitive species). Managing these lands for mitigation could further exclude or restrict recreational use, potentially leading to additional losses in recreational opportunities in the region. The impact of acquisition and management of mitigation lands would be considered as a part of the environmental analysis of specific solar energy projects.

11.6.5.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on recreational resources are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will provide adequate mitigation for the identified impacts.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features to address recreation impacts have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.6 Military and Civilian Aviation

11.6.6.1 Affected Environment

The description in the Draft Solar PEIS remains valid. The proposed Gold Point SEZ is located under numerous MTRs and between two SUAs. The closest airport is the small BLM Lida Junction Airport, located about 10 mi (16 km) from the SEZ.

11.6.6.2 Impacts

Impacts described in the Draft Solar PEIS remain valid and have been updated with additional input from the DoD. Impacts include the following:

- Solar development could encroach into MTR airspace that crosses the SEZ; structures higher than 50 ft (15 m) AGL may present unacceptable electromagnetic compatibility concerns for the NTTR test mission.

- Light from solar facilities could affect DoD nighttime operations.

Through comments on the Draft Solar PEIS and the Supplement to the Draft, the DoD expressed concern for solar energy facilities that might affect military test and training operations. The DoD requested that the technology at the proposed Gold Point SEZ be restricted to low-profile, low-glare PV technologies under 50-ft (15-m) AGL, similar to the PV I Array at Nellis Air Force Base.

11.6.6.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on military and civilian aviation are described in Section A.2.2 of Appendix A of this Final Solar PEIS. The programmatic design features require early coordination with the DoD to identify and avoid, minimize, and/or mitigate, if possible, potential impacts on the use of military airspace.

No SEZ-specific design features to address impacts on military and civilian aviation have been identified in this Final Solar PEIS. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.7 Geologic Setting and Soil Resources

11.6.7.1 Affected Environment

11.6.7.1.1 Geologic Setting

Data provided in the Draft Solar PEIS remain valid. The boundaries of the proposed SEZ remain the same, but about 214 acres (0.87 km^2) of a non-development area encompassing a significant unnamed intermittent stream has now been identified.

11.6.7.1.2 Soil Resources

Data provided in the Draft Solar PEIS remain valid, with the following update:

- Table 11.6.7.1-1 provides revised areas for soil map units taking into account non-development areas.

11.6.7.2 Impacts

Impacts on soil resources would occur mainly as a result of ground-disturbing activities (e.g., grading, excavating, and drilling), especially during the construction phase of a solar project. Because the developable area of the SEZ has changed by less than 5%, the assessment of impacts provided in the Draft Solar PEIS remains valid, with the following updates:

- Impacts related to wind erodibility are somewhat reduced because the identification of non-development areas eliminates 214 acres (0.87 km^2) of moderately erodible soils from development.

- Impacts related to water erodibility are somewhat reduced because the identification of non-development areas eliminates 12 acres (0.05 km^2) of moderately erodible soils from development.

TABLE 11.6.7.1-1 Summary of Soil Map Units within the Proposed Gold Point SEZ as Revised

Map Unit Symbol[a]	Map Unit Name	Erosion Potential		Description	Area in Acres[d] (percentage of SEZ)
		Water[b]	Wind[c]		
1000	Keefa–Itme Association	Slight (0.20)	Moderate (WEG 3)[e]	Consists of about 70% Keefa sandy loam and 20% Itme gravelly loamy sand. Gently sloping soils on fan skirts, inset fans, and lake plains. Parent material consists of mixed alluvium (including from granitic rocks). Very deep and well drained, with moderate surface runoff potential and moderately rapid permeability. Available water capacity is low. Moderate rutting hazard. Used mainly as rangeland; unsuitable for cultivation.	2,405 (50.0)[f]
482	Stonell–Wardenot–Izo association	Slight (0.05)	Moderate (WEG 5)	Consists of about 35% Stonell very gravelly sandy loam, 30% Wardenot very gravelly sandy loam, and 20% Izo very gravelly sand. Gently sloping soils on fan remnants, inset fans, and drainage ways. Parent material is mixed alluvium. Very deep and excessively drained, with low surface runoff potential (high infiltration rate) and moderately rapid permeability. Available water capacity is low to very low. Slight rutting hazard. Used mainly as rangeland and wildlife habitat; unsuitable for cultivation.	1,077 (22.4)
1033	Papoose–Roic association	Moderate (0.37)	Moderate (WEG 3)	Consists of about 50% Papoose sandy loam and 45% Roic very gravelly loam. Gently to steeply sloping soils on lake terraces, hills, and pediments. Parent material is mixed alluvium and residuum and colluvium from tuffaceous sedimentary rocks. Very deep (Papoose soils) and very shallow (Roic soils over shallow paralithic bedrock) and well drained, with moderate surface runoff potential and moderate permeability. Available water capacity is low to very low. Moderate rutting hazard. Used mainly as rangeland or wildlife habitat; small areas may be irrigated and used for cropland (alfalfa and small grains).	577 (12.0)

TABLE 11.6.7.1-1 (Cont.)

Map Unit Symbol[a]	Map Unit Name	Erosion Potential		Description	Area in Acres[d] (percentage of SEZ)
		Water[b]	Wind[c]		
940	Belted–Keefa association	Slight (0.10)	Moderate (WEG 3)	Consists of about 70% Belted gravelly loamy sand and 20% Keefa sandy loam. Gently to steeply sloping soils on beach terraces and fan skirts. Parent material consists of mixed alluvium. Very deep (Keefa soils) and very shallow (Belted soils over shallow duripan) and well drained, with high surface runoff potential (very slow infiltration rate) and moderate permeability. Available water capacity is low to very low. Moderate rutting hazard. Used mainly as rangeland, forest; unsuitable for cultivation.	451 (9.4)[g]
1031	Papoose sandy loam (0 to 8% slopes)	Moderate (0.37)	Moderate (WEG 3)	Gently sloping soils on lake terraces. Parent material consists of mixed alluvium from tuffs, basalt, and andesite with small amounts of limestone and quartzite. Very deep and well drained, with moderate surface runoff potential and moderately slow permeability. Available water capacity is low. Moderate rutting hazard. Used mainly as rangeland or wildlife habitat; small areas may be irrigated and used for cropland (alfalfa and small grains).	299 (6.2)

[a] Map unit symbols are shown in Figure 11.6.7.1-5 of the Draft Solar PEIS.

[b] Water erosion potential rates based on soil erosion factor K (whole rock), which indicates the susceptibility of soil to sheet and rill erosion by water. Values range from 0.02 to 0.69 and are provided in parentheses under the general rating; a higher value indicates a higher susceptibility to erosion. Estimates based on the percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity. A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions.

[c] Wind erosion potential here is based on the wind erodibility group (WEG) designation: groups 1 and 2, high; groups 3 through 6, moderate; and groups 7 and 8, low (see footnote d for further explanation).

[d] To convert acres to km^2, multiply by 0.004047.

Footnotes continued on next page.

TABLE 11.6.7.1-1 (Cont.)

[e] WEGs are based on soil texture, content of organic matter, effervescence of carbonates, content of rock fragments, and mineralogy, and also take into account soil moisture, surface cover, soil surface roughness, wind velocity and direction, and the length of unsheltered distance (USDA 2004). Groups range in value from 1 (most susceptible to wind erosion) to 8 (least susceptible to wind erosion). The NRCS provides a wind erodibility index, expressed as an erosion rate in tons per acre per year, for each of the wind erodibility groups: WEG 1, 220 tons (200 metric tons) per acre (4,000 m^2) per year (average); WEG 2, 134 tons (122 metric tons) per acre (4,000 m^2) per year; WEGs 3 and 4 (and 4L), 86 tons (78 metric tons) per acre (0.004 km^2) per year; WEG 5, 56 tons (51 metric tons) per acre (0.004 km^2) per year; WEG 6, 48 tons (44 metric tons) per acre (4,000 m^2) per year; WEG 7, 38 tons (34 metric tons) per acre (4,000 m^2) per year; and WEG 8, 0 tons (0 metric tons) per acre (4,000 m^2) per year.

[f] A total of 202 acres (0.82 km^2) within the Keefa–Itme association is currently categorized as a "non-development" area.

[g] A total of 12 acres (0.049 km^2) within the Belted–Keefa association is currently categorized as a "non-development" area.

Source: NRCS (2010).

11.6.7.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on soils are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will reduce the potential for soil impacts during all project phases.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features were identified for soil resources at the proposed Gold Point SEZ. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.8 Minerals (Fluids, Solids, and Geothermal Resources)

A mineral potential assessment for the proposed Gold Point SEZ has been prepared and reviewed by BLM mineral specialists knowledgeable about the region where the SEZ is located (BLM 2012). The BLM is proposing to withdraw the SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, for a period of 20 years (see Section 2.2.2.2.4 of the Final Solar PEIS). The potential impacts of this withdrawal are discussed in Section 11.6.24.

11.6.8.1 Affected Environment

The description in the Draft Solar PEIS remains valid. There are no mining claims located in the proposed Gold Point SEZ (as of September 2010); however, the western half of the SEZ was previously blanketed by both lode and placer claims, which have been closed. There are no active oil and gas leases in the area and no active or historical geothermal development in or near the SEZ.

11.6.8.2 Impacts

The description of the proposed SEZ in the Draft Solar PEIS is still accurate. If identified as an SEZ, it would continue to be closed to all incompatible forms of mineral development. Some future development of oil and gas resources beneath the SEZ would be possible, and production of common minerals could take place in areas not directly developed for solar energy production.

11.6.8.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on mineral resources are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will provide adequate protection of mineral resources.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features for mineral resources have been identified in this Final Solar PEIS. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.9 Water Resources

11.6.9.1 Affected Environment

The description of the affected environment given in the Draft Solar PEIS relevant to water resources at the proposed Gold Point SEZ remains valid and is summarized in the following paragraphs.

The Gold Point SEZ is within the Central Nevada Desert subbasin of the Great Basin hydrologic region. The SEZ is located in the southern portion of Lida Valley and surrounded by Slate Ridge to the south, Mount Jackson Ridge to the north, and Magruder Mountain and the Palmetto Mountains to the northwest. The average precipitation ranges from 3 to 6 in./yr (8 to 15 cm/yr), the average snowfall ranges from 6 to 18 in./yr (15 to 46 cm/yr), and the estimated pan evaporation rate is about 97 in./yr (246 cm/yr). No perennial surface water features or wetland areas are present in the SEZ. An unnamed intermittent/ephemeral stream and several washes, which are tributaries of Jackson Wash, drain toward the northeast across the SEZ. Flood hazards have not been identified for the SEZ, but for the adjacent Nye County an identified 100-year floodplain has been mapped for Jackson Wash that has a high probability of extending to areas within the SEZ. A total of 214 acres (0.9 km^2) along an intermittent/ephemeral tributary of Jackson Wash that cuts through the SEZ has been identified as a non-development area. The Gold Point SEZ is part of the Lida Valley groundwater basin, a basin-fill aquifer covering approximately 342,400 acres (1,386 km^2). The basin-fill aquifer consists of three units: consolidated rocks, older alluvium, and younger alluvium, which range in thickness from 500 to 2,460 ft (152 to 750 m). Estimates of groundwater recharge to the Lida Valley range from 50 to 700 ac-ft/yr (61,700 to 863,400 m^3/yr), depth to groundwater is on the order of 300 ft (91 m), and groundwater flows from southwest to northeast in the vicinity of the SEZ. Groundwater quality varies in the Lida Valley, but general impairments include TDS concentrations greater than 500 mg/L and sulfate concentrations greater than 250 mg/L.

All waters in Nevada are public property, and the NDWR is the agency responsible for managing both surface and groundwater resources. The Lida Valley groundwater basin is not a designated groundwater, thus there are no specific beneficial uses set by the NDWR. The estimate of perennial yield the NDWR uses to set water right limits is 350 ac-ft/yr (431,700 m^3/yr) for Lida Valley; current water rights total 76 ac-ft/yr (93,700 m^3/yr). Solar energy developers would have to submit applications for new groundwater withdrawals or transfer of existing water rights under the review of the NDWR.

In addition to the water resources information provided in the Draft Solar PEIS, this section provides a planning-level inventory of available climate, surface water, and groundwater monitoring stations within the immediate vicinity of the Gold Point SEZ and surrounding basin. Additional data regarding climate, surface water, and groundwater conditions are presented in Tables 11.6.9.1-1 through 11.6.9.1-7 and in Figures 11.6.9.1-1 and 11.6.9.1-2. Fieldwork and hydrologic analyses to determine 100-year floodplains and jurisdictional water bodies would need to be coordinated with appropriate federal, state, and local agencies. Areas within the Gold Point SEZ that are found to be within a 100-year floodplain will be identified as non-development areas. Any water features within the Gold Point SEZ determined to be jurisdictional will be subject to the permitting process described in the CWA.

TABLE 11.6.9.1-1 Watershed and Water Management Basin Information Relevant to the Proposed Gold Point SEZ as Revised

Basin	Name	Area (acres)[b]
Subregion (HUC4)[a]	Central Nevada Desert Basins (1606)	30,543,311
Cataloging unit (HUC8)	Cactus-Sarcobatus Flats (16060013)	1,764,557
Groundwater basin	Lida Valley	342,400
SEZ	Gold Point	4,810

[a] HUC = Hydrologic Unit Code; a USGS system for characterizing nested watersheds that includes large-scale subregions (HUC4) and small-scale cataloging units (HUC8).

[b] To convert acres to km^2, multiply by 0.004047.

TABLE 11.6.9.1-2 Climate Station Information Relevant to the Proposed Gold Point SEZ as Revised

Climate Station (COOP ID[a])	Elevation[b] (ft)[c]	Distance to SEZ (mi)[d]	Period of Record	Mean Annual Precipitation (in.)[e]	Mean Annual Snowfall (in.)
Dyer, Nevada (262431)	4,900	42	1903–2011	4.98	12.60
Goldfield, Nevada (263285)	5,690	22	1906–2009	6.06	17.80
Sarcobatus, Nevada (267319)	4,022	21	1941–1961	3.36	5.50

[a] National Weather Service's Cooperative Station Network station identification code.

[b] Surface elevations for the proposed Gold Point SEZ range from 4,831 to 5,059 ft.

[c] To convert ft to m, multiply by 0.3048.

[d] To convert mi to km, multiply by 1.6093.

[e] To convert in. to cm, multiply by 2.540.

Source: NOAA (2012).

TABLE 11.6.9.1-3 Total Lengths of Selected Streams at the Subregion, Cataloging Unit, and SEZ Scale Relevant to the Proposed Gold Point SEZ as Revised

Water Feature	Subregion, HUC4 (ft)[a]	Cataloging Unit, HUC8 (ft)	SEZ (ft)
Unclassified streams	87,719	0	0
Perennial streams	10,923,723	0	0
Intermittent/ephemeral streams	724,309,083	46,805,586	110,704
Canals	4,035,992	80,411	0

[a] To convert ft to m, multiply by 0.3048.

Source: USGS (2012a).

TABLE 11.6.9.1-4 Stream Discharge Information Relevant to the Proposed Gold Point SEZ as Revised

Parameter	Station (USGS ID)	
	Stonewall Flat Tributary near Goldfield, Nevada (10248970)	Lida Pass Tributary near Lida, Nevada (10248980)
Period of record	1963–1984	1968–1981
No. of observations	20	14
Discharge, median (ft^3/s)	1	0
Discharge, range (ft^3/s)	0–150	0–1
Discharge, most recent observation (ft^3/s)	7.5	0
Distance to SEZ (mi)	16	11

[a] To convert ft^3 to m^3, multiply by 0.0283.

[b] To convert mi to km, multiply by 1.6093.

Source: USGS (2012b).

11.6.9.2 Impacts

11.6.9.2.1 Land Disturbance Impacts on Water Resources

The discussion of land disturbance effects on water resources in the Draft Solar PEIS remains valid. As stated in the Draft Solar PEIS, land disturbance impacts in the vicinity of the proposed Gold Point SEZ could potentially affect drainage patterns, intermittent/ephemeral

TABLE 11.6.9.1-5 Surface Water Quality Data Relevant to the Proposed Gold Point SEZ as Revised

Station (USGS ID)	Period of Record	No. of Records
No water quality data are available for surface water stations in the SEZ's HUC8 watershed.	NA[a]	

[a] NA = no data collected for this parameter.

Source: USGS (2012b).

TABLE 11.6.9.1-6 Water Quality Data from Groundwater Samples Relevant to the Proposed Gold Point SEZ as Revised

	Station (USGS ID)[a]
Parameter	371647117015201
Period of record	2003
No. of records	1
Temperature (°C)[b]	21.5
Total dissolved solids (mg/L)	978
Dissolved oxygen (mg/L)	4.4
pH	7.2
Nitrate + nitrite (mg/L as N)	0.97
Phosphate (mg/L)	0.028
Organic carbon (mg/L)	NA[c]
Calcium (mg/L)	NA
Magnesium (mg/L)	NA
Sodium (mg/L)	NA
Chloride (mg/L)	NA
Sulfate (mg/L)	NA
Arsenic (µ/L)	NA

[a] Median values are listed.

[b] To convert °C to °F, multiply by 1.8, then add 32.

[c] NA = no data collected for this parameter.

Source: USGS (2012b).

TABLE 11.6.9.1-7 Groundwater Surface Elevations Relevant to the Proposed Gold Point SEZ as Revised

Parameter	Station (USGS ID)		
	372138117274001	373003117110101	372700117110001
Period of record	1967–1984	1958	1967–1994
No. of observations	2	1	16
Surface elevation (ft)[a]	5,262	4,690	4,622
Well depth (ft)	NA	604	NA
Depth to water, median (ft)	306.06	365	288.3
Depth to water range, (ft)	302.12–310	–	283.74–297.96
Depth to water, most recent observation (ft)	302.12	365	287.44
Distance to SEZ (mi)[b]	6	12	11

[a] To convert ft to m, multiply by 0.3048.

[b] To convert mi to km, multiply by 1.6093.

Source: USGS (2012b).

streamflows, and groundwater recharge and discharge properties. The alteration of naturaldrainage pathways during construction can lead to impacts related to flooding, loss of water delivery to downstream regions, and alterations to riparian vegetation and habitats. The identification of non-development areas associated with the intermittent tributary to Jackson Wash was made using low-resolution data from the National Hydrography Dataset (USGS 2012a), which did not completely capture the braided channels of the unnamed intermittent tributary to Jackson Wash as shown in Figure 11.6.9.1-1 of this Final Solar PEIS.

Land clearing, land leveling, and vegetation removal during the development of the SEZ have the potential to disrupt intermittent/ephemeral stream channels. Several programmatic design features described in Section A.2.2 of Appendix A of this Final Solar PEIS would avoid, minimize, and/or mitigate impacts associated with the disruption of intermittent/ephemeral water features. Additional analyses of intermittent/ephemeral streams are presented in this update, including an evaluation of functional aspects of stream channels with respect to groundwater recharge, flood conveyance, sediment transport, geomorphology, and ecological habitats. Only a summary of the results from these surface water analyses is presented in this section; more information on methods and results is presented in Appendix O.

The study region considered for the intermittent/ephemeral stream evaluation relevant to the Gold Point SEZ is a subset of the Cactus-Sarcobatus Flats watershed (HUC8), for which information regarding stream channels is presented in Tables 11.6.9.1-3 and 11.6.9.1-4 of this Final Solar PEIS. The results of the intermittent/ephemeral stream evaluation are shown in Figure 11.6.9.2-1, which depicts flow lines from the National Hydrography Dataset (USGS 2012a) labeled as low, moderate, and high sensitivity to land disturbance. Within the study area, 22% of the intermittent/ephemeral stream channels had low sensitivity, 64% had

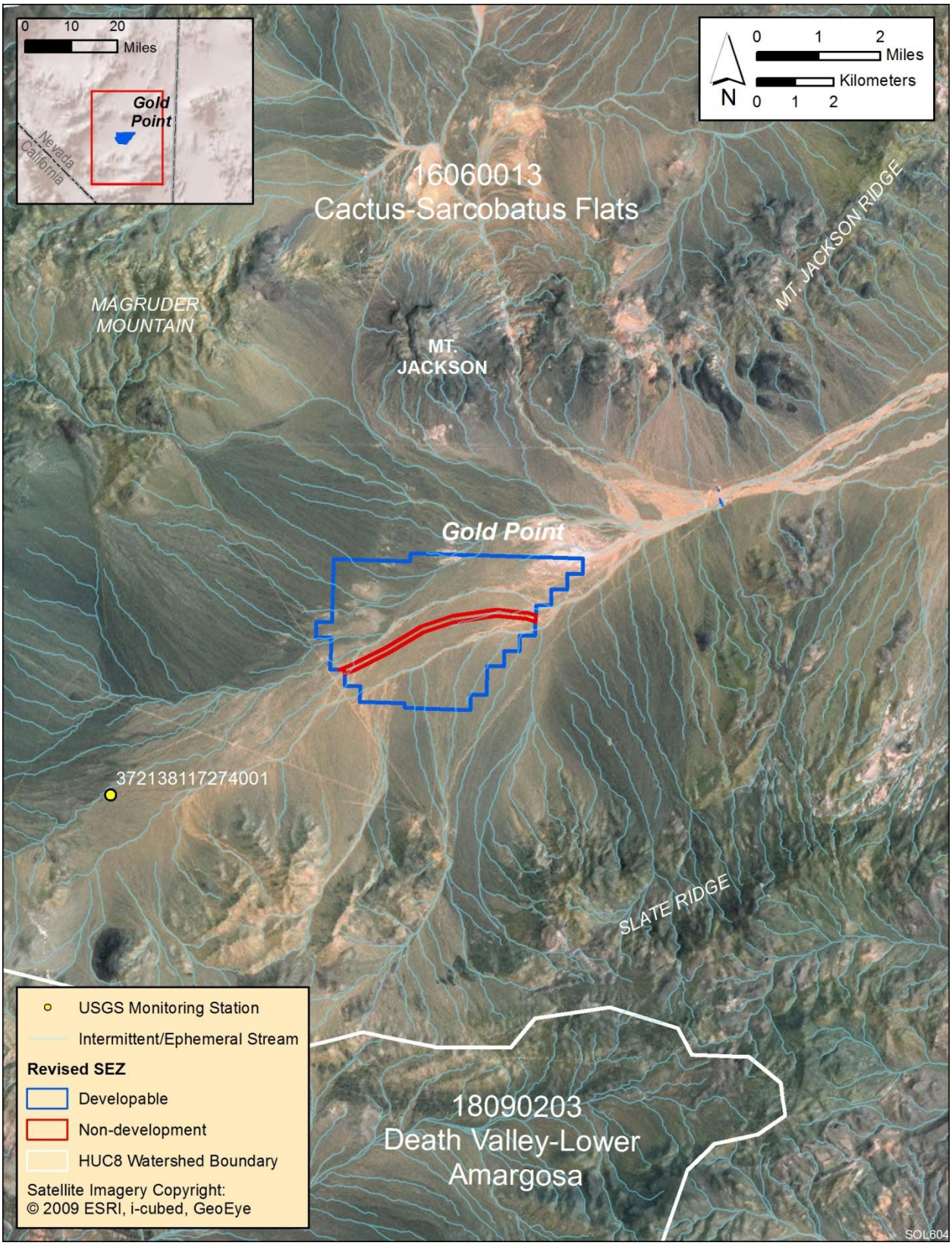


FIGURE 11.6.9.1-1 Water Features near the Proposed Gold Point SEZ as Revised

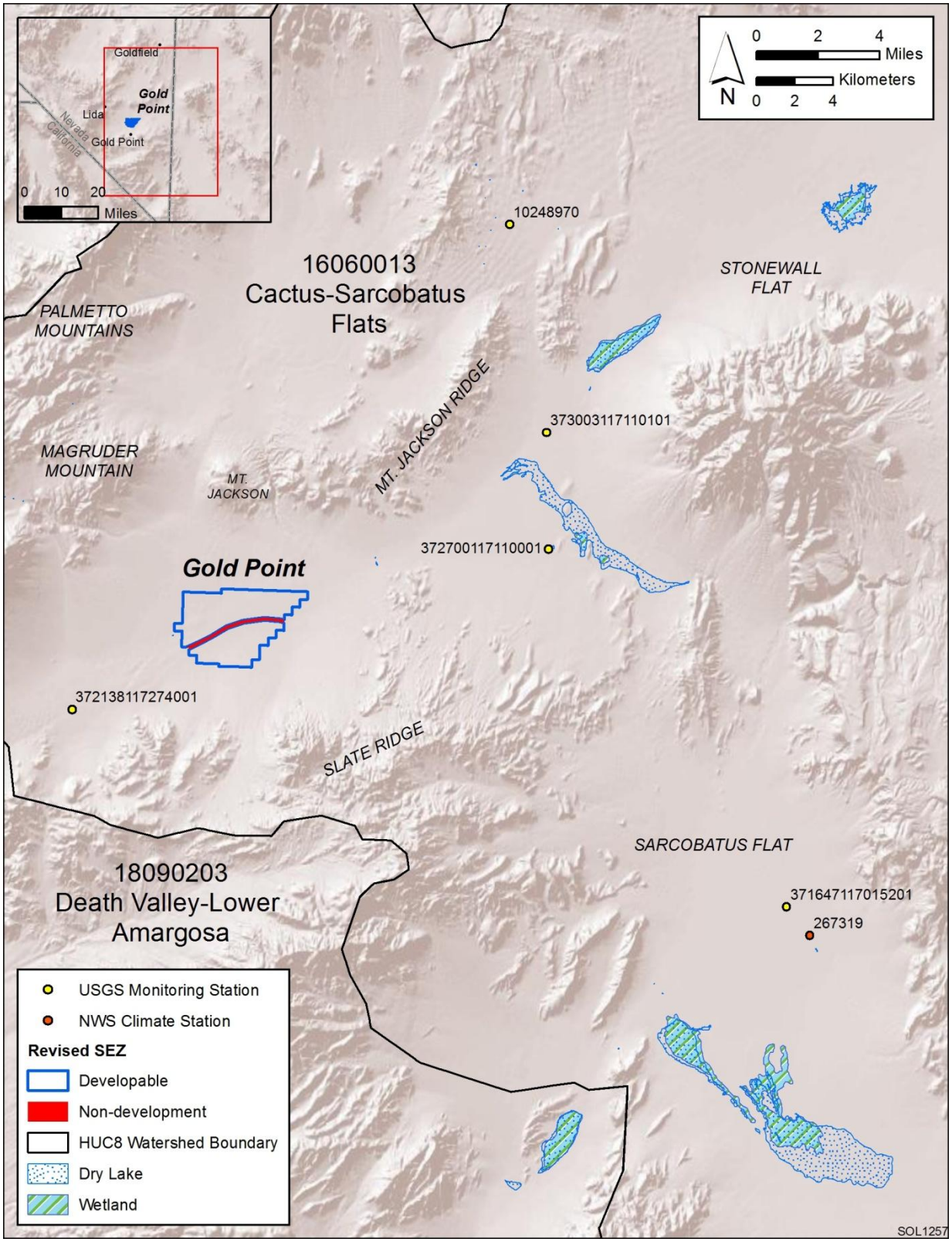


FIGURE 11.6.9.1-2 Water Features within the Catus-Sarcobatus Flats Watershed, Which Includes the Proposed Gold Point SEZ as Revised

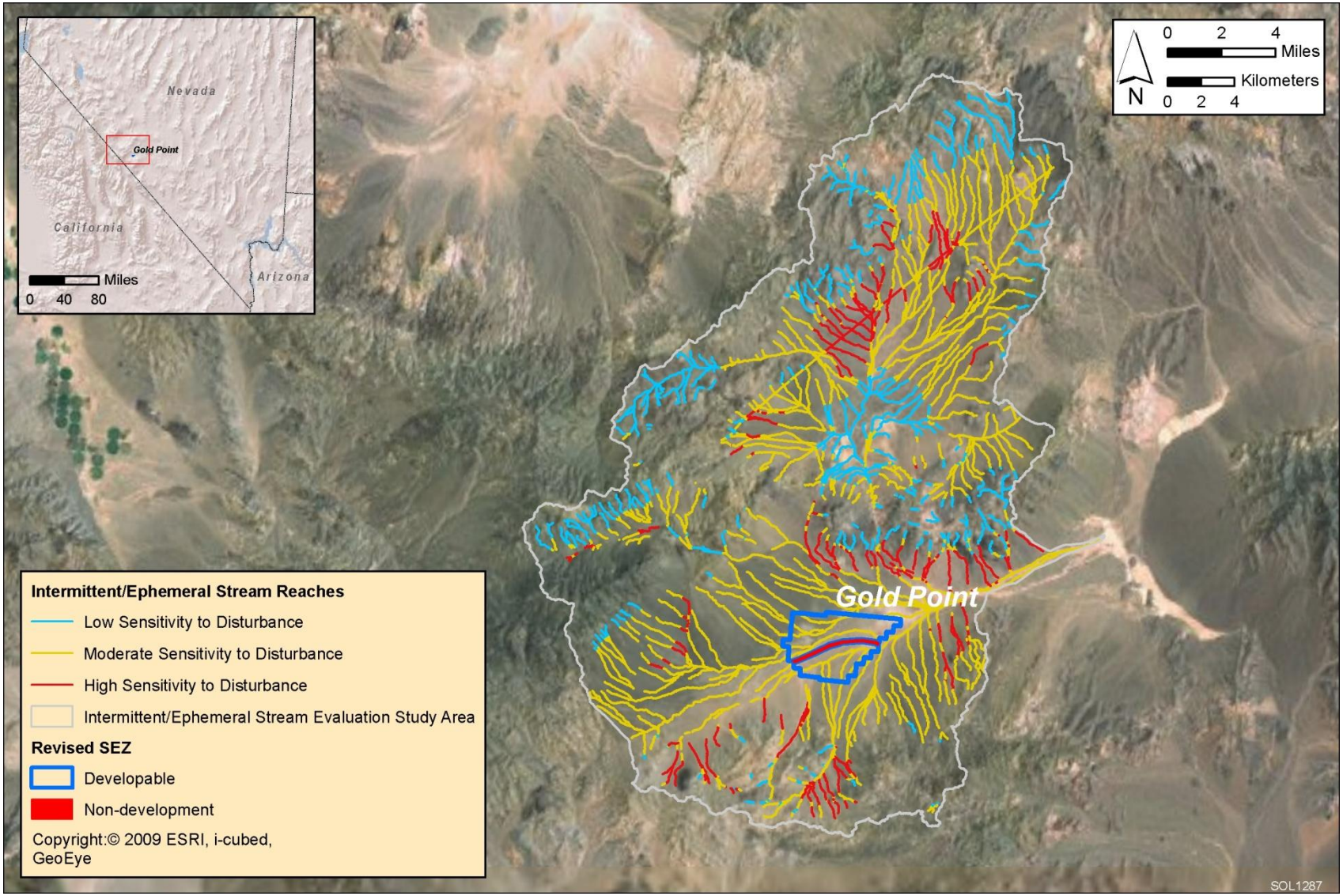


FIGURE 11.6.9.2-1 Intermittent/Ephemeral Stream Channel Sensitivity to Surface Disturbances in the Vicinity of the Proposed Gold Point SEZ as Revised

moderate sensitivity, and 13% had high sensitivity to land disturbance. All stream reaches within the SEZ have moderate sensitivity to land disturbance.

11.6.9.2.2 Water Use Requirements for Solar Energy Technologies

The water use requirements for full build-out scenarios of the Gold Point SEZ have not changed from the values presented in the Draft Solar PEIS (see Tables 11.7.9.2-1 and 11.7.9.2-2 in the Draft Solar PEIS). This section presents additional analyses pertaining to groundwater, which includes a basin-scale groundwater budget and a simplified, one-dimensional groundwater model of potential groundwater drawdown. Only a summary of the results from these groundwater analyses is presented in this section; more information on methods and results is presented in Appendix O.

The estimated total water use requirements during the peak construction year are as high as 1,707 ac-ft/yr (2.1 million m^3/yr). The total annual water requirements for operations were categorized as low, medium, and high groundwater pumping scenarios that represent full build-out of the SEZ, assuming PV, dry-cooled parabolic trough, and wet-cooled parabolic trough, respectively (a 30% operational time was considered for all solar facility types on the basis of operations estimates for proposed utility-scale solar energy facilities). This categorization results in water use estimates that range from 22 to 3,859 ac-ft/yr (27,100 to 4.8 million m^3/yr), or a total of 440 to 77,180 ac-ft (542,700 to 95.2 million m^3) over the 20-year operational period.

A basin-scale groundwater budget was assembled using available data on groundwater inputs, outputs, and storage (Table 11.6.9.2-1) for comparison with water use estimates relating to solar energy development. The peak construction year water requirements are greater than the total annual groundwater inputs to the Lida Valley Basin, but only represent 0.3% of the groundwater storage. Given the short duration of construction activities, impacts associated with the construction water demand are considered minimal. The long duration of groundwater pumping during operations (20 years) poses a greater threat to groundwater resources. The high pumping scenario exceeds the annual groundwater inputs to the basin by more than a factor of 5, and 13% of the groundwater storage over the 20-year operational period. The medium pumping scenario is similar to the amount of groundwater recharge the basin receives from precipitation and 2% of the groundwater storage over the 20-year operational period. The low pumping scenario poses the least impacts considering its relative magnitude to groundwater inputs to the basin, and it represents only 6% of the perennial yield set by the NDWR to guide allocations of water rights.

Groundwater budgeting allows for quantification of complex groundwater processes at the basin scale, but it ignores the temporal and spatial components of how groundwater withdrawals affect groundwater surface elevations, groundwater flow rates, and connectivity to surface water features such as streams, wetlands, playas, and riparian vegetation. A one-dimensional groundwater modeling analysis was performed to present a simplified depiction of the spatial and temporal effects of groundwater withdrawals by examining groundwater drawdown in a radial direction around the center of the SEZ for the low, medium, and high

TABLE 11.6.9.2-1 Groundwater Budget for the Lida Valley Groundwater Basin, Which Includes the Proposed Gold Point SEZ as Revised

Process	Amount[a]
Inputs	
Precipitation recharge (ac-ft/yr)	500
Underflow from Stonewall Flat (ac-ft/yr)	200
Outputs	
Underflow to Sarcobatus Flat (ac-ft/yr)	700
Discharge to springs (ac-ft/yr)	20
Groundwater withdrawals, 1966 (ac-ft/yr)	30
Storage	
Storage (ac-ft)	600,000
Perennial yield (ac-ft/yr)	350[b]

[a] To convert ac-ft to m^3, multiply by 1,234.

[b] Defined by NDWR

Source: Rush (1968).

pumping scenarios. A detailed discussion of the groundwater modeling analysis is presented in Appendix O. It should be noted, however, that the aquifer parameters used for the one-dimensional groundwater model (Table 11.6.9.2-2) represent available literature data, and that the model aggregates these value ranges into a simplistic representation of the aquifer.

Depth to groundwater ranges between 300 and 400 ft (91 and 122 m) below the surface in the Lida Valley. The one-dimensional groundwater modeling results suggest that groundwater withdrawals for solar energy development would result in groundwater drawdown in the vicinity of the SEZ (approximately a 2-mi [3.2-km] radius) that ranges up to 20 ft (6 m) for the high pumping scenario, up to 3 ft (1 m) for the medium pumping scenario, and less than 1 ft (0.3 m) for the low pumping scenario (Figure 11.6.9.2-2). The majority of the groundwater drawdown occurs within the vicinity of the SEZ. However, more than 2 ft (0.6 m) of drawdown occurs 10 mi (16 km) away from the SEZ under the high pumping scenario, and 1 ft (0.3 m) of drawdown occurs 5 mi (8 km) away from the SEZ under the medium pumping scenario.

11.6.9.2.3 Off-Site Impacts: Roads and Transmission Lines

As stated in the Draft Solar PEIS, impacts associated with the construction of roads and transmission lines primarily deal with water use demands for construction, water quality concerns relating to potential chemical spills, and land disturbance effects on the natural hydrology. Water needed for transmission line construction activities (e.g., for soil compaction, dust suppression, and potable supply for workers) could be trucked to the construction area from

TABLE 11.6.9.2-2 Aquifer Characteristics and Assumptions Used in the One-Dimensional Groundwater Model for the Proposed Gold Point SEZ as Revised

Parameter	Value[a]
Aquifer type/conditions	Basin fill/unconfined
Aquifer thickness (ft)[b]	500–2,460 (1,000)
Hydraulic conductivity (ft/day)[c]	0.003–427 (36)
Transmissivity (ft^2/day)	36,089
Specific yield[c]	0.0004–0.2 (0.03)
Analysis period (yr)	20
High pumping scenario (ac-ft/yr)[d]	3,859
Medium pumping scenario (ac-ft/yr)[d]	550
Low pumping scenario (ac-ft/yr)[d]	22

[a] Values in parentheses used for modeling analysis.

[b] Faunt et al. (2004).

[c] Belcher et al. (2001).

[d] To convert ac-ft to m^3, multiply by 1,234.

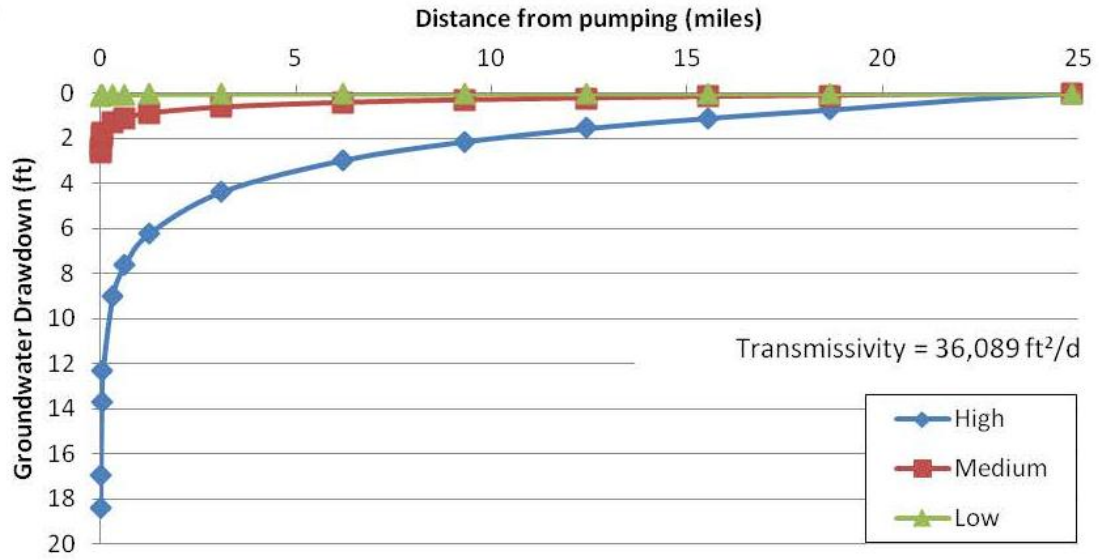


FIGURE 11.6.9.2-2 Estimated One-Dimensional Groundwater Drawdown Resulting from High, Medium, and Low Groundwater Pumping Scenarios over the 20-Year Operational Period at the Proposed Gold Point SEZ as Revised

an off-site source. If this occurred, water use impacts at the SEZ would be negligible. The Draft Solar PEIS assessment of impacts on water resources from road and transmission line construction remains valid.

11.6.9.2.4 Summary of Impacts on Water Resources

The additional information and analyses of water resources presented in this update agree with information provided in the Draft Solar PEIS, which indicates that the Gold Point SEZ is located in a high-elevation desert valley where water resources are primarily groundwater, along with intermittent/ephemeral surface water features. Groundwater is primarily found in the basin-fill aquifer that is connected to adjacent valleys. Current groundwater withdrawals in the Lida Valley Basin are unknown, but water right allocations total 245 ac-ft/yr (302,200 m^3/yr) primarily for commercial uses (NDWR 2012).

Disturbances to intermittent/ephemeral streams within the Gold Point SEZ could potentially affect ecological habitats associated with the stream channels within the SEZ. The intermittent/ephemeral stream evaluation identified several stream reaches in the study region with moderate sensitivity to land disturbance; however, high-sensitivity reaches with respect to groundwater recharge, flood and sediment conveyance, and ecological habitats were variable across the study area, but typically the total sensitivity was in the moderate range (Figure O.1-5 in Appendix O). In addition, portions of the tributary channels to Jackson Wash extend outside the non-development area of the SEZ. As stated in the Draft Solar PEIS, floodplain maps in the adjacent Nye County suggest that 100-year floodplain areas could be associated with these tributary channels, and design features in Appendix A of this Final Solar PEIS describe the need to avoid identified 100-year floodplain areas.

Groundwater withdrawals associated with the medium and high pumping scenarios have the potential to adversely affect groundwater resources in the Lida Valley as they are equal to or greatly exceed groundwater recharge for the basin. Groundwater withdrawals associated with the low pumping scenario are preferred given the groundwater budget constraints, along with the minimal observed groundwater drawdown estimated by the one-dimensional modeling analysis. Ultimately, securing water rights may limit groundwater withdrawals as the perennial yield of the Lida Valley is set at 350 ac-ft/yr (431,700 m^3/yr), which the NDWR uses as a guideline in allocating water rights.

Predicting impacts associated with groundwater withdrawals is often difficult given the heterogeneity of aquifer characteristics, the long time period between the onset of pumping and its effects, and limited data. One of the primary mitigation measures to protect water resources is the implementation of long-term monitoring and adaptive management (see Section A.2.4 of Appendix A). For groundwater, this requires the combination of monitoring and modeling to fully identify the temporal and spatial extent of potential impacts. The framework for a long-term monitoring program would need to be created for the Gold Point SEZ once development begins.

11.6.9.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on surface water and groundwater are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will provide some protection of and reduce impacts on water resources.

On the basis of impact analyses conducted for the Draft Solar PEIS, updates to those analyses due to changes to the SEZ boundaries, and consideration of comments received as applicable, the following SEZ-specific design feature has been identified:

- Groundwater analyses suggest that full build-out of wet- and dry-cooled technologies is not feasible; for mixed-technology development scenarios, any proposed wet- and dry-cooled projects should utilize water conservation practices.

The need for additional SEZ-specific design features will be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.10 Vegetation

11.6.10.1 Affected Environment

The proposed Gold Point SEZ was revised to identify 214 acres (0.87 km^2) along a significant unnamed intermittent stream traversing the SEZ from west to east as a non-development area. In addition, the assumed transmission line was removed from consideration.

As presented in Section 11.6.10.1 of the Draft Solar PEIS, 5 cover types were identified within the area of the proposed Gold Point SEZ, while 16 cover types were identified in the area of indirect impacts, including the assumed transmission line corridor. Sensitive habitats on the SEZ include riparian, desert dry wash, and playa habitats. Because of the removal of the assumed transmission line from consideration, the Developed (Open Space-Low Intensity) and Developed (Medium-High Intensity) cover types are no longer within the indirect impact area. Figure 11.6.10.1-1 shows the cover types within the affected area of the Gold Point SEZ as revised.

11.6.10.2 Impacts

As presented in the Draft Solar PEIS, the construction of solar energy facilities within the proposed Gold Point SEZ would result in direct impacts on plant communities because of the removal of vegetation within the facility footprint during land-clearing and land-grading operations. Approximately 80% of the SEZ would be expected to be cleared with full

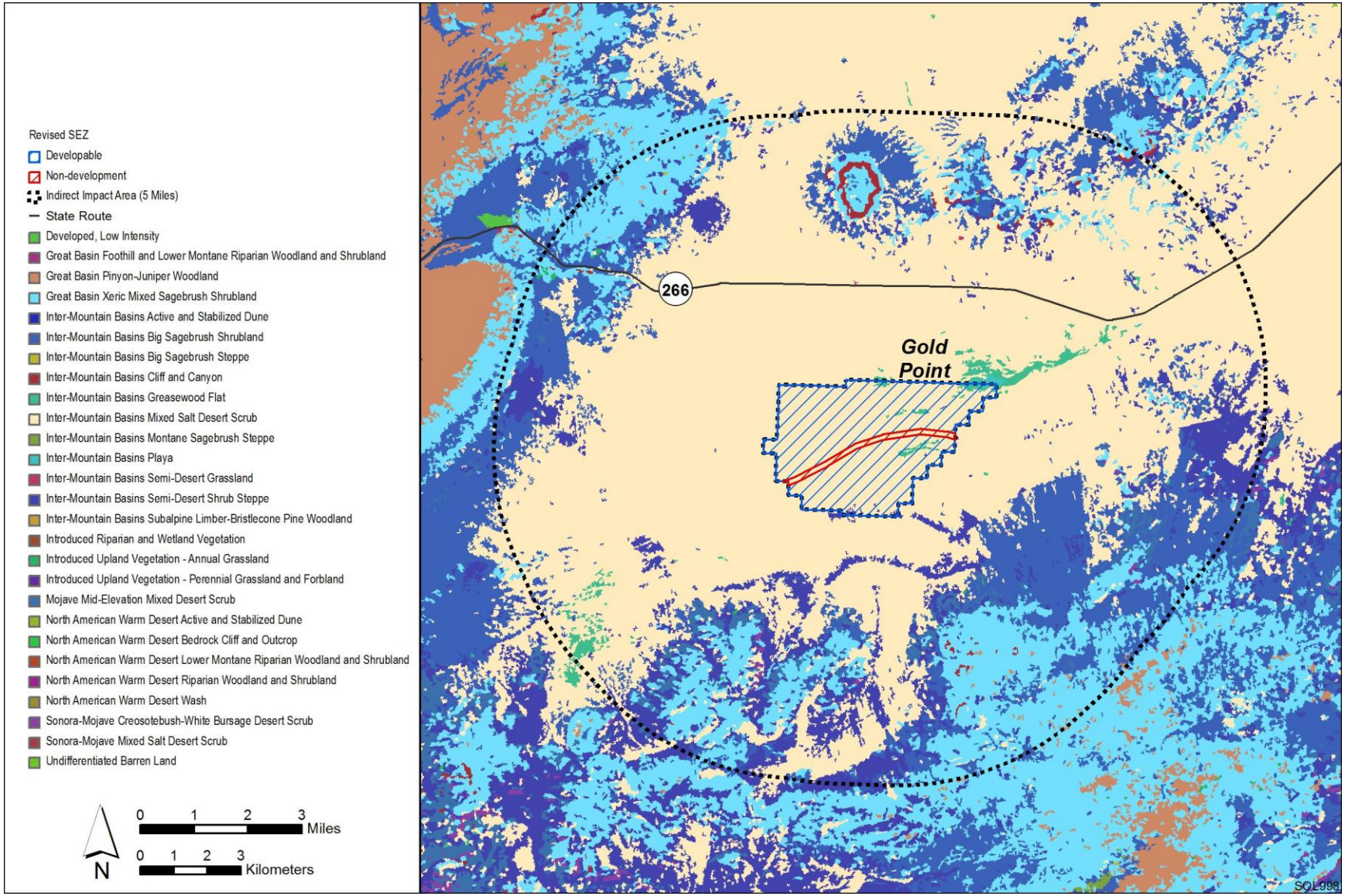


FIGURE 11.6.10.1-1 Land Cover Types within the Proposed Gold Point SEZ as Revised

development of the SEZ. As a result of the changes to the proposed SEZ developable area, approximately 3,677 acres (14.9 km^2) would be cleared.

Overall impact magnitude categories were based on professional judgment and include (1) *small*: a relatively small proportion (≤1%) of the cover type within the SEZ region would be lost; (2) *moderate*: an intermediate proportion (>1 but ≤10%) of a cover type would be lost; and (3) *large*: >10% of a cover type would be lost.

11.6.10.2.1 Impacts on Native Species

The analysis presented in the Draft Solar PEIS based on the original Gold Point SEZ developable area indicated that development would result in a small impact on all land cover types occurring within the SEZ (Table 11.6.10.1-1 in the Draft Solar PEIS). Development within the revised Gold Point SEZ could still directly affect all of the cover types evaluated in the Draft Solar PEIS. The reduction in the developable area would result in reduced impact levels on these cover types in the affected area, but the impact magnitudes would remain unchanged compared to the original estimates in the Draft Solar PEIS.

Direct impacts on the stream that occurs within the non-developable portion of the SEZ, or the previously identified transmission corridor, would not occur. As a result, direct impacts on the Developed (Open Space-Low Intensity) and Developed (Medium-High Intensity) cover types, which had occurred within the transmission corridor, would not occur. However, direct impacts on dry washes and playas could still occur. Indirect impacts on habitats associated with playas, washes, or riparian habitats within or near the SEZ, as described in the Draft Solar PEIS, could also occur.

11.6.10.2.2 Impacts from Noxious Weeds and Invasive Plant Species

As presented in the Draft Solar PEIS, land disturbance from project activities and indirect effects of construction and operation within the Gold Point SEZ could potentially result in the establishment or expansion of noxious weeds and invasive species populations, potentially including those species listed in Section 11.6.10.1 of the Draft Solar PEIS. Impacts such as reduced restoration success and possible widespread habitat degradation could still occur; however, a small reduction in the potential for such impacts would result from the reduced developable area of the SEZ.

11.6.10.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on vegetation are described in Section A.2.2 of Appendix A of this Final Solar PEIS. SEZ-specific species and habitats determine how programmatic design features are applied, for example:

- All riparian, dry wash, and playa communities within the SEZ shall be avoided to the extent practicable, and any impacts minimized and mitigated in consultation with appropriate agencies. Any Joshua tree or other *Yucca* species, cacti, or succulent plant species that cannot be avoided shall be salvaged. A buffer area shall be maintained around dry wash, riparian, and playa habitats to reduce the potential for impacts.

- Appropriate engineering controls shall be used to minimize impacts on dry wash, playa, wetland, greasewood flat, and riparian habitats, including downstream occurrences, resulting from surface water runoff, erosion, sedimentation, altered hydrology, accidental spills, or fugitive dust deposition. Appropriate buffers and engineering controls will be determined through agency consultation.

- Groundwater withdrawals shall be limited to reduce the potential for indirect impacts on habitats associated with springs. Potential impacts on springs shall be determined through hydrological studies.

It is anticipated that implementation of these programmatic design features will reduce a high potential for impacts from invasive species and impacts on dry washes, playas, riparian habitats, wetlands, and springs to a minimal potential for impact. Residual impacts on groundwater-dependent habitats could result from limited groundwater withdrawal; however, it is anticipated that these impacts would be avoided in the majority of instances.

On the basis of impact analyses conducted for the Draft Solar PEIS, updates to those analyses due to changes to the SEZ boundaries, and consideration of comments received as applicable, no SEZ-specific design features for vegetation have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.11 Wildlife and Aquatic Biota

For the assessment of potential impacts on wildlife and aquatic biota, overall impact magnitude categories were based on professional judgment and include (1) *small*: a relatively small proportion (≤1%) of the species' habitat within the SEZ region would be lost; (2) *moderate*: an intermediate proportion (>1 but ≤10%) of the species' habitat would be lost; and (3) *large*: >10% of the species' habitat would be lost.

11.6.11.1 Amphibians and Reptiles

11.6.11.1.1 Affected Environment

As presented in Section 11.6.11.1 of the Draft Solar PEIS, representative amphibian and reptile species expected to occur within the Gold Point SEZ include the Great Plains toad (*Bufo*

cognatus), red-spotted toad (*Bufo punctatus*), desert horned lizard (*Phrynosoma platyrhinos*), Great Basin collared lizard (*Crotaphytus bicinctores*), long-nosed leopard lizard (*Gambelia wislizenii*), western fence lizard (*Sceloporus occidentalis*), western whiptail (*Cnemidophorus tigris*), zebra-tailed lizard (*Callisaurus draconoides*), coachwhip (*Masticophis flagellum*), common kingsnake (*Lampropeltis getula*), glossy snake (*Arizona elegans*), gophersnake (*Pituophis catenifer*), groundsnake (*Sonora semiannulata*), long-nosed snake (*Rhinocheilus lecontei*), nightsnake (*Hypsiglena torquata*), and Mojave rattlesnake (*Crotalus scutulatus*).

11.6.11.1.2 Impacts

As presented in the Draft Solar PEIS, solar energy development within the proposed Gold Point SEZ could affect potentially suitable habitats for the representative amphibian and reptile species. The analysis presented in the Draft Solar PEIS for the Gold Point SEZ indicated that development would result in a small overall impact on all representative amphibian and reptile species (Table 11.6.11.1-1 in the Draft Solar PEIS). The reduction in the developable area of the Gold Point SEZ would result in reduced habitat impacts for all representative amphibian and reptile species; the resultant impact levels for all the representative species would still be small.

11.6.11.1.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on amphibian and reptile species are described in Section A.2.2 of Appendix A of this Final Solar PEIS. SEZ-specific conditions will be considered when programmatic design features are applied, for example:

- Development in wash, playa, and cliff and canyon habitats shall be avoided.

The major wash (significant unnamed intermittent stream) in the SEZ has been identified as a non-development area, but other avoidable washes may exist within the SEZ. With the implementation of programmatic design features, impacts on amphibian and reptile species would be reduced.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features for amphibian and reptile species have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.11.2 Birds

11.6.11.2.1 Affected Environment

As presented in Section 11.6.11.2.1 of the Draft Solar PEIS, a large number of bird species could occur or have potentially suitable habitat within the affected area of the proposed

Gold Point SEZ. Representative bird species identified in the Draft Solar PEIS include (1) shorebirds: killdeer (*Charadrius vociferus*); (2) passerines: ash-throated flycatcher (*Myiarchus cinerascens*), Bewick's wren (*Thryomanes bewickii*), black-tailed gnatcatcher (*Polioptila melanura*), black-throated sparrow (*Amphispiza bilineata*), Brewer's sparrow (*Spizella breweri*), cactus wren (*Campylorhynchus brunneicapillus*), common poorwill (*Phalaenoptilus nuttallii*), common raven (*Corvus corax*), greater roadrunner (*Geococcyx californianus*), horned lark (*Eremophila alpestris*), ladder-backed woodpecker (*Picoides scalaris*), Le Conte's thrasher (*Toxostoma lecontei*), lesser nighthawk (*Chordeiles acutipennis*), loggerhead shrike (*Lanius ludovicianus*), northern mockingbird (*Mimus polyglottos*), rock wren (*Salpinctes obsoletus*), sage sparrow (*Amphispiza belli*), Say's phoebe (*Sayornis saya*), and western kingbird (*Tyrannus verticalis*); (3) raptors: American kestrel (*Falco sparverius*), golden eagle (*Aquila chrysaetos*), great horned owl (*Bubo virginianus*), long-eared owl (*Asio otus*), red-tailed hawk (*Buteo jamaicensis*), and turkey vulture (*Cathartes aura*); and (4) upland gamebirds: chukar (*Alectoris chukar*), Gambel's quail (*Callipepla gambelii*), and mourning dove (*Zenaida macroura*).

11.6.11.2.2 Impacts

As presented in the Draft Solar PEIS, solar energy development within the Gold Point SEZ could affect potentially suitable bird habitats. The analysis presented in the Draft Solar PEIS indicated that development would result in a small overall impact on all representative bird species (Table 11.6.11.2-1 in the Draft Solar PEIS). The reduction in the developable area of the Gold Point SEZ would result in reduced habitat impacts for all representative bird species; the resultant impact levels for all representative bird species would still be small.

11.6.11.2.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on bird species are described in Section A.2.2 of Appendix A of this Final Solar PEIS. With the implementation of required programmatic design features, impacts on bird species are anticipated to be small.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, the following SEZ-specific design feature for birds has been identified:

- Wash and playa habitats should be avoided. The major wash (significant unnamed intermittent stream) in the SEZ has been identified as a non-development area, but other avoidable washes may exist within the SEZ.

If SEZ-specific design features are implemented in addition to required programmatic design features, impacts on bird species would be small. The need for additional SEZ-specific design features will be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.11.3 Mammals

11.6.11.3.1 Affected Environment

As presented in Section 11.6.11.3.1 of the Draft Solar PEIS, a large number of mammal species were identified that could occur or have potentially suitable habitat within the affected area of the proposed Gold Point SEZ. Representative mammal species identified in the Draft Solar PEIS include (1) big game species: cougar (*Puma concolor*), elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and pronghorn (*Antilocapra americana*), (2) furbearers and small game species: the American badger (*Taxidea taxus*), black-tailed jackrabbit (*Lepus californicus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*, common), desert cottontail (*Sylvilagus audubonii*), gray fox (*Urocyon cinereoargenteus*), kit fox (*Vulpes macrotis*), and red fox (*Vulpes vulpes*), and (3) small nongame species: Botta's pocket gopher (*Thomomys bottae*), cactus mouse (*Peromyscus eremicus*), canyon mouse (*P. crinitis*), deer mouse (*P. maniculatus*), desert kangaroo rat (*Dipodomys deserti*), desert shrew (*Notiosorex crawfordi*), desert woodrat (*Neotoma lepida*), little pocket mouse (*Perognathus longimembris*), Merriam's pocket mouse (*Dipodomys merriami*), northern grasshopper mouse (*Onychomys leucogaster*), southern grasshopper mouse (*O. torridus*), and white-tailed antelope squirrel (*Ammospermophilus leucurus*). Bat species that may occur within the area of the SEZ include the big brown bat (*Eptesicus fuscus*), Brazilian free-tailed bat (*Tadarida brasiliensis*), California myotis (*Myotis californicus*), hoary bat (*Lasiurus cinereus*), long-legged myotis (*M. volans*), silver-haired bat (*Lasionycteris noctivagans*), and western pipistrelle (*Parastrellus hesperus*).

11.6.11.3.2 Impacts

As presented in the Draft Solar PEIS, solar energy development within the proposed Gold Point SEZ could affect potentially suitable habitats of mammal species. The analysis presented in the Draft Solar PEIS indicated that development would result in a small overall impact on all representative mammal species analyzed (Table 11.6.11.3-1 in the Draft Solar PEIS). The reduction in the developable area of the Gold Point SEZ would result in reduced habitat impacts for all representative mammal species; resultant impact levels for all representative mammal species would still be small. This conclusion also applies to mapped year-round pronghorn habitat that occurs within the Gold Point SEZ.

11.6.11.3.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on mammal species are described in Section A.2.2 of Appendix A of this Final Solar PEIS. With implementation of required programmatic design features, impacts on mammal species are anticipated to be small.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, the following SEZ-specific design features for mammals have been identified:

- The fencing around the solar energy development should not block the free movement of mammals, particularly big game species.

- Wash and playa habitats should be avoided. The major wash (significant unnamed intermittent stream) in the SEZ has been identified as a non-development area, but other avoidable washes may exist within the SEZ.

If these SEZ-specific design features are implemented in addition to required programmatic design features, impacts on mammal species would be small. The need for additional SEZ-specific design features will be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.11.4 Aquatic Biota

11.6.11.4.1 Affected Environment

There are no perennial streams or water bodies present in the proposed Gold Point SEZ. Updates to the Draft Solar PEIS include the following:

- The intermittent stream that runs through the center of the SEZ has been identified as a non-development area.

- The route of a new transmission line described in the Draft Solar PEIS is no longer assumed, and it is therefore not assumed to cross over Jackson Wash.

Aquatic biota present in the surface water features in the Gold Point SEZ have not been characterized. As stated in Appendix C of the Supplement to the Draft Solar PEIS, site surveys can be conducted at the project-specific level to characterize the aquatic biota, if present, within the SEZ.

11.6.11.4.2 Impacts

The types of impacts that could occur on aquatic habitats and biota from the development of utility-scale solar energy facilities are discussed in Section 5.10.3 of the Draft and Final Solar PEIS. Aquatic habitats present on or near the Gold Point SEZ could be affected by solar energy development in a number of ways, including (1) direct disturbance, (2) deposition of sediments, (3) changes in water quantity, and (4) degradation of water quality. The impact assessment provided in the Draft Solar PEIS remains valid, with the following updates:

- The intermittent wash running through the center of the SEZ has been identified as a non-development area; therefore, it would not be directly affected by construction activities. However, as described in the Draft Solar

PEIS, it could be affected indirectly by solar development activities within the SEZ.

- The transmission line corridor described in the Draft Solar PEIS is no longer assumed for the Gold Point SEZ. Therefore, Jackson Wash may not be directly affected by a stream crossing associated with a new transmission line.

11.6.11.4.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on aquatic biota are described in Section A.2.2 of Appendix A of this Final Solar PEIS. SEZ-specific conditions will be considered when programmatic design features are applied, for example:

- Appropriate engineering controls shall be implemented to minimize the amount of contaminants and sediment entering the unnamed intermittent stream within the SEZ.

It is anticipated that the implementation of the programmatic design features will reduce impacts on aquatic biota, and if the utilization of water from groundwater or surface water sources is adequately controlled to maintain sufficient water levels in nearby aquatic habitats, the potential impacts on aquatic biota from solar energy development at the Gold Point SEZ would be small.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features for aquatic biota have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.12 Special Status Species

11.6.12.1 Affected Environment

As presented in the Draft Solar PEIS, 21 special status species were identified that could occur or have potentially suitable habitat within the affected area of the proposed Gold Point SEZ. Since publication of the Draft Solar PEIS, eight additional special status species have been identified that could potentially occur in the affected area based on county-level occurrences and the presence of potentially suitable habitat. These eight special status species are all designated sensitive species by the Nevada BLM office and include (1) birds: golden eagle, loggerhead shrike, and long-eared owl; and (2) mammals: big brown bat, California myotis, hoary bat, long-legged myotis, and western pipistrelle. These additional species are discussed below.

Golden Eagle. The golden eagle is an uncommon to common permanent resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The species inhabits rolling foothills, mountain areas, and desert shrublands. It nests on cliff faces and in large trees in open areas. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, there is no suitable nesting habitat within the SEZ, but approximately 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable nesting habitat occurs in the area of indirect effects.

Loggerhead Shrike. The loggerhead shrike is a common winter resident in lowlands and foothills of southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The species occurs in open habitats with shrubs, trees, utility lines, or other perches. The highest densities of this species occur in open-canopied foothill forests. On the basis of an evaluation of the SWReGAP habitat suitability model for this species, potentially suitable foraging habitat for the loggerhead shrike may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1).

Long-Eared Owl. The long-eared owl is an uncommon year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The species inhabits desert shrubland environments in proximity to riparian areas such as desert washes. It nests in trees using old nests from other birds or squirrels. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable nesting habitat (forests) does not occur on the SEZ. However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) that may be potentially suitable nesting habitat occurs in the area of indirect effects.

Big Brown Bat. The big brown bat is a fairly common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The big brown bat is uncommon in desert habitats but may occur in desert shrublands in close proximity to water sources. The species inhabits desert shrubland environments in proximity to riparian areas such as desert washes. It roosts in buildings, caves, mines, and trees. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests and rock outcrops) does not occur on the SEZ. However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) and 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occur in the area of indirect effects.

California Myotis. The California myotis is a fairly common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The species inhabits desert, chaparral, woodlands, and forests. It roosts primarily in crevices but

TABLE 11.6.12.1-1 Habitats, Potential Impacts, and Potential Mitigation for Special Status Species That Could Be Affected by Solar Energy Development on the Proposed Gold Point SEZ as Revised[a]

Common Name	Scientific Name	Listing Status[b]	Habitat[c]	Maximum Area of Potential Habitat Affected[d]: Within SEZ (Direct Effects)[e]	Maximum Area of Potential Habitat Affected[d]: Outside SEZ (Indirect Effects)[f]	Overall Impact Magnitude[g] and Species-Specific Mitigation[h]
Birds						
Golden eagle	*Aquila chrysaetos*	BLM-S	An uncommon to common permanent resident and migrant in southern Nevada. Habitat includes rolling foothills, mountain areas, and desert shrublands. Nests on cliff faces and in large trees in open areas. About 3,330,000 acres[i] of potentially suitable habitat occurs within the SEZ region.	4,500 acres of potentially suitable habitat lost (0.1% of available potentially suitable habitat)	87,950 acres of potentially suitable habitat (2.6% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.
Loggerhead shrike	*Lanius ludovicianus*	BLM-S	A common winter resident in lowlands and foothills in southern Nevada. Prefers open habitats with shrubs, trees, utility lines, or other perches. Highest density occurs in open-canopied foothill forests. About 3,300,000 acres of potentially suitable habitat occurs within the SEZ region.	4,490 acres of potentially suitable habitat lost (0.1% of available potentially suitable habitat)	88,000 acres of potentially suitable habitat (2.7% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.
Long-eared owl	*Asio otus*	BLM-S	An uncommon yearlong resident in southern Nevada. Occurs in desert shrubland environments in proximity to riparian areas such as desert washes. Nests in trees using old nests from other birds or squirrels. About 3,210,000 acres of potentially suitable habitat occurs within the SEZ region.	4,500 acres of potentially suitable habitat lost (0.1% of available potentially suitable habitat)	87,700 acres of potentially suitable habitat (2.7% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.

TABLE 11.6.12.1-1 (Cont.)

Common Name	Scientific Name	Listing Status[b]	Habitat[c]	Maximum Area of Potential Habitat Affected[d]		Overall Impact Magnitude[g] and Species-Specific Mitigation[h]
				Within SEZ (Direct Effects)[e]	Outside SEZ (Indirect Effects)[f]	
Mammals						
Big brown bat	*Eptesicus fuscus*	BLM-S	Occurs throughout the southwestern United States in various habitat types. Uncommon in hot desert environments but may occur in areas in close proximity to water sources such as lakes and washes. Roosts in buildings, caves, mines, and trees. About 2,350,000 acres of potentially suitable habitat occurs within the SEZ region.	4,560 acres of potentially suitable habitat lost (0.2% of available potentially suitable habitat)	63,400 acres of potentially suitable habitat (2.7% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.
California myotis	*Myotis californicus*	BLM-S	A common year-round resident in southern Nevada. Occurs in a variety of habitats, including desert, chaparral, woodlands, and forests. Roosts primarily in crevices but will also use buildings, mines, and hollow trees. About 2,400,000 acres of potentially suitable habitat occurs within the SEZ region.	4,570 acres of potentially suitable habitat lost (0.2% of available potentially suitable habitat)	75,000 acres of potentially suitable habitat (3.1% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.
Hoary bat	*Lasiurus cinereus*	BLM-S	The most widespread North American bat species, occurs throughout southern Nevada in various habitat types. Occurs in habitats such as woodlands, foothills, desert shrublands, and chaparral. Roosts primarily in trees. About 780,000 acres of potentially suitable habitat occurs within the SEZ region.	250 acres of potentially suitable habitat lost (<0.1% of available potentially suitable habitat)	8,400 acres of potentially suitable habitat (1.1% of available suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.

TABLE 11.6.12.1-1 (Cont.)

Common Name	Scientific Name	Listing Status[b]	Habitat[c]	Maximum Area of Potential Habitat Affected[d]		Overall Impact Magnitude[g] and Species-Specific Mitigation[h]
				Within SEZ (Direct Effects)[e]	Outside SEZ (Indirect Effects)[f]	
Mammals (Cont.)						
Long-legged myotis		BLM-S	Common to uncommon year-round resident in southern Nevada. Uncommon in desert and arid grassland environments. Most common in woodlands above 4,000 ft[j] elevation. Forages in chaparral, scrub, woodlands, and desert shrublands. Roosts in trees, caves, and crevices. About 2,300,000 acres of potentially suitable habitat occurs within the SEZ region.	4,550 acres of potentially suitable habitat lost (0.2% of available potentially suitable habitat)	63,400 acres of potentially suitable habitat (2.8% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.
Western pipistrelle	*Pipistrellus Hesperus*	BLM-S	A common year-round resident of deserts, grasslands, and woodlands in southern Nevada. Occurs in various habitats including mountain foothill woodlands, desert shrublands, desert washes, and pinyon-juniper woodlands. Roosts primarily in rock crevices; occasionally in mines and caves. About 3,270,000 acres of potentially suitable habitat occurs within the SEZ region.	4,570 acres of potentially suitable habitat lost (0.1% of available potentially suitable habitat)	88,000 acres of potentially suitable habitat (2.7% of available potentially suitable habitat)	Small overall impact. Direct impact on foraging habitat only. Avoidance of direct impacts on all foraging habitat is not feasible because suitable foraging habitat is widespread in the area of direct effects.

[a] The species presented in this table represent new species identified following publication of the Draft Solar PEIS or a re-evaluation of those species that were determined to have moderate or large impacts in the Draft Solar PEIS. The other special status species for this SEZ are identified in Table 11.6.12.1-1 of the Draft Solar PEIS.

[b] BLM-S = listed as sensitive by the BLM.

Footnotes continued on next page.

TABLE 11.6.12.1-1 (Cont.)

[c] Potentially suitable habitat was determined using SWReGAP habitat suitability models (USGS 2004, 2007). Area of potentially suitable habitat for each species is presented for the SEZ region, which is defined as the area within 50 mi (80 km) of the SEZ center.

[d] Maximum area of potentially suitable habitat that could be affected relative to availability within the SEZ region. Habitat availability for each species within the region was determined by using SWReGAP habitat suitability models (USGS 2004, 2007). This approach probably overestimates the amount of suitable habitat in the project area.

[e] Direct effects within the SEZ consist of the ground-disturbing activities associated with construction and the maintenance of an altered environment associated with operations.

[f] Area of indirect effects was assumed to be the area adjacent to the SEZ within 5 mi (8 km) of the SEZ boundary where ground-disturbing activities would not occur. Indirect effects include effects from surface runoff, dust, noise, lighting, and so on from project developments. The potential degree of indirect effects would decrease with increasing distance away from the SEZ.

[g] Overall impact magnitude categories were based on professional judgment and are as follows: (1) small: <1% of the population or its habitat would be lost and the activity would not result in a measurable change in carrying capacity or population size in the affected area; (2) moderate: >1 but <10% of the population or its habitat would be lost and the activity would result in a measurable but moderate (not destabilizing) change in carrying capacity or population size in the affected area; (3) large: >10% of a population or its habitat would be lost and the activity would result in a large, measurable, and destabilizing change in carrying capacity or population size in the affected area. Note that much greater weight was given to the magnitude of direct effects because those effects would be difficult to mitigate. Design features would reduce most indirect effects to negligible levels.

[h] Species-specific mitigations are suggested here, but final mitigations should be developed in consultation with state and federal agencies and should be based on pre-disturbance surveys.

[i] To convert acres to km^2, multiply by 0.004047.

[j] To convert ft to m, multiply by 0.3048.

will also use buildings, mines, and hollow trees. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests and rock outcrops) does not occur on the SEZ or area of indirect effects (Table 11.6.12.1-1). However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) and 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occurs in the area of indirect effects.

Hoary Bat. The hoary bat is a fairly common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The species inhabits woodlands, foothills, desert shrublands, and chaparral. It roosts primarily in trees. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests) does not occur on the SEZ (Table 11.6.12.1-1). However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) that may be potentially suitable roosting habitat occurs in the area of indirect effects.

Long-Legged Myotis. The long-legged myotis is a common to uncommon year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. This species is uncommon in desert and arid grassland environments and most common in woodlands above 4,000-ft (1,219-m) elevation. It forages in chaparral, scrub, woodlands, and desert shrublands and roosts in trees, caves, and crevices. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests and rock outcrops) does not occur on the SEZ. However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) and 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occur in the area of indirect effects.

Western Pipistrelle. The western pipistrelle is a common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. The species inhabits mountain foothill woodlands, desert shrublands, desert washes, and pinyon-juniper woodlands. It roosts primarily in rock crevices and occasionally in mines and caves. Potentially suitable foraging habitat for this species may occur on the SEZ and throughout the area of indirect effects (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (rock outcrops) does not occur on the SEZ. However, approximately 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occurs in the area of indirect effects.

11.6.12.2 Impacts

Overall impact magnitude categories were based on professional judgment and include (1) *small*: a relatively small proportion (≤1%) of the special status species' habitat within the SEZ region would be lost; (2) *moderate*: an intermediate proportion (>1 but ≤10%) of the special status species' habitat would be lost; and (3) *large*: >10% of the special status species' habitat would be lost.

As presented in the Draft Solar PEIS, solar energy development within the Gold Point SEZ could affect potentially suitable habitats of special status species. The analysis presented in the Draft Solar PEIS for the Gold Point SEZ indicated that development would result in no impact or a small overall impact on all special status species, with the exception of the Eastwood milkweed (*Asclepias eastwoodiana*) (Table 11.6.12.1-1 in the Draft Solar PEIS). Development within the Gold Point SEZ could still affect the same 21 species evaluated in the Draft Solar PEIS; however, the reduction in the developable area would result in reduced (and still small) impact levels compared to original estimates in the Draft Solar PEIS. Impacts on the Eastwood milkweed were determined to range from small to large depending on the availability of suitable desert wash habitat, which could not be quantified prior to the Final Solar PEIS. Pre-disturbance surveys will be required to determine the observed locations and habitat suitability of the SEZ for the Eastwood milkweed.

In addition, impacts on the eight BLM-designated sensitive species that were not evaluated for the Gold Point SEZ in the Draft Solar PEIS are discussed below and in Table 11.6.12.1-1. The impact assessment for these additional species was carried out in the same way as for those species analyzed in the Draft Solar PEIS (Section 11.6.12.2 of the Draft Solar PEIS).

Golden Eagle. The golden eagle was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. This species is an uncommon to common permanent resident in southern Nevada, and potentially suitable foraging habitat is expected to occur in the affected area of the Gold Point SEZ as revised. Approximately 4,500 acres (18 km^2) of potentially suitable foraging habitat on the SEZ could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents 0.1% of potentially suitable habitat in the SEZ region. About 87,950 acres (356 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 2.6% of the available suitable foraging habitat in the SEZ region (Table 11.6.12.1-1). Most of this area could serve as foraging habitat (open shrublands). On the basis of an evaluation of SWReGAP land cover types, there is no suitable nesting habitat within the SEZ, but approximately 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable nesting habitat occurs in the area of indirect effects.

The overall impact on the golden eagle from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable foraging habitat for this species in the area of direct effects represents less than 1% of potentially suitable foraging habitat in the SEZ region. The implementation of programmatic design features is expected to be sufficient to reduce

indirect impacts on this species to negligible levels. Avoidance of direct impacts on all potentially suitable foraging habitat is not a feasible way to mitigate impacts on the golden eagle, because potentially suitable shrubland is widespread throughout the area of direct effects and is readily available in other portions of the affected area.

Loggerhead Shrike. The loggerhead shrike was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. This species is a common winter resident in lowlands and foothills of southern Nevada. Approximately 4,490 acres (18 km^2) of potentially suitable foraging habitat on the SEZ could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents 0.1% of potentially suitable habitat in the SEZ region. About 88,000 acres (356 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 2.7% of the available suitable foraging habitat in the SEZ region (Table 11.6.12.1-1).

The overall impact on the loggerhead shrike from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable foraging habitat for this species in the area of direct effects represents less than 1% of potentially suitable foraging habitat in the SEZ region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of direct impacts on all potentially suitable foraging habitat is not a feasible way to mitigate impacts on the loggerhead shrike, because potentially suitable shrubland is widespread throughout the area of direct effects and readily available in other portions of the affected area.

Long-Eared Owl. The long-eared owl was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. This species is an uncommon to common permanent resident in southern Nevada, and potentially suitable foraging habitat is expected to occur in the affected area of the Gold Point SEZ. Approximately 4,500 acres (18 km^2) of potentially suitable foraging habitat could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents 0.1% of potentially suitable habitat in the SEZ region. About 87,700 acres (355 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 2.7% of the available suitable foraging habitat in the SEZ region (Table 11.6.12.1-1).

The overall impact on the long-eared owl from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable foraging habitat for this species in the area of direct effects represents less than 1% of potentially suitable foraging habitat in the SEZ region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of direct impacts on all potentially suitable foraging habitat is not a feasible way to mitigate impacts on the long-eared owl, because potentially suitable shrubland is widespread throughout the area of direct effects and readily available in other portions of the affected area.

Big Brown Bat. The big brown bat is a fairly common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. Suitable roosting habitat (caves, forests, and buildings) is not expected to occur on the SEZ, but the availability of suitable roosting sites in the area of indirect effects has not been determined. Approximately 4,560 acres (18 km^2) of potentially suitable foraging habitat could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents about 0.2% of potentially suitable foraging habitat in the region. About 63,400 acres (257 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 2.7% of the available suitable foraging habitat in the region (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests and rock outcrops) does not occur on the SEZ. However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) and 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occur in the area of indirect effects.

The overall impact on the big brown bat from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable habitat for this species in the area of direct effects represents less than 1% of potentially suitable habitat in the region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of all potentially suitable foraging habitat is not a feasible way to mitigate impacts, because potentially suitable foraging habitat is widespread throughout the area of direct effects and is readily available in other portions of the SEZ region.

California Myotis. The California myotis is a fairly common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. Suitable roosting habitat (forests and rock outcrops) is not expected to occur on the SEZ, but the availability of suitable roosting sites in the area of indirect effects has not been determined. Approximately 4,570 acres (18 km^2) of potentially suitable foraging habitat could be directly affected by construction and operations (Table 11.6.12.1-1). This direct impact area represents about 0.2% of potentially suitable foraging habitat in the region. About 75,000 acres (304 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 3.1% of the available suitable foraging habitat in the region (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests and rock outcrops) does not occur on the SEZ or area of indirect effects (Table 11.6.12.1-1). However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) and 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occur in the area of indirect effects.

The overall impact on the California myotis from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable habitat for this species in the area of direct effects represents less than 1% of potentially suitable habitat in the region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of all potentially suitable foraging habitat is not a feasible

way to mitigate impacts, because potentially suitable foraging habitat is widespread throughout the area of direct effects and is readily available in other portions of the SEZ region.

Hoary Bat. The hoary bat is a fairly common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. Suitable roosting habitat (forests) is not expected to occur on the SEZ, but the availability of suitable roosting sites in the area of indirect effects has not been determined. Approximately 250 acres (1 km^2) of potentially suitable foraging habitat on the SEZ could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents less than 0.1% of potentially suitable foraging habitat in the region. About 8,400 acres (34 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 1.1% of the available suitable foraging habitat in the region (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests) does not occur on the SEZ (Table 11.6.12.1-1). However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) that may be potentially suitable roosting habitat occurs in the area of indirect effects.

The overall impact on the hoary bat from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable habitat for this species in the area of direct effects represents less than 1% of potentially suitable habitat in the region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of all potentially suitable foraging habitat is not a feasible way to mitigate impacts, because potentially suitable foraging habitat is widespread throughout the area of direct effects and is readily available in other portions of the SEZ region.

Long-Legged Myotis. The long-legged myotis is a common to uncommon year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. Suitable roosting habitat (forests and rock outcrops) is not expected to occur on the SEZ, but the availability of suitable roosting sites in the area of indirect effects has not been determined. Approximately 4,550 acres (18 km^2) of potentially suitable foraging habitat on the SEZ could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents about 0.2% of potentially suitable foraging habitat in the region. About 63,400 acres (257 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 2.8% of the available suitable foraging habitat in the region (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, potentially suitable roosting habitat (forests and rock outcrops) does not occur on the SEZ. However, approximately 80 acres (0.3 km^2) of woodland habitat (pinyon-juniper) and 350 acres (1.5 km^2) of cliff and rock outcrop habitat that may be potentially suitable roosting habitat occur in the area of indirect effects.

The overall impact on the long-legged myotis from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable habitat for this species in the area of direct

effects represents less than 1% of potentially suitable habitat in the region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of all potentially suitable foraging habitat is not a feasible way to mitigate impacts, because potentially suitable foraging habitat is widespread throughout the area of direct effects and is readily available in other portions of the SEZ region.

Western Pipistrelle. The western pipistrelle is a common year-round resident in southern Nevada. This species was not analyzed for the Gold Point SEZ in the Draft Solar PEIS. Suitable roosting habitat (forests and rock outcrops) is not expected to occur on the SEZ, but the availability of suitable roosting sites in the area of indirect effects has not been determined. Approximately 4,570 acres (18 km^2) of potentially suitable foraging habitat on the SEZ could be directly affected by construction and operations (Table 11.6.12.1-1). This direct effects area represents about 0.1% of potentially suitable foraging habitat in the region. About 88,000 acres (356 km^2) of potentially suitable foraging habitat occurs in the area of indirect effects; this area represents about 2.7% of the available suitable foraging habitat in the region (Table 11.6.12.1-1). On the basis of an evaluation of SWReGAP land cover types, no suitable roosting habitat (forests and rock outcrops) exists within the SEZ or within the area of indirect effects.

The overall impact on the western pipistrelle from construction, operation, and decommissioning of utility-scale solar energy facilities within the Gold Point SEZ is considered small, because the amount of potentially suitable habitat for this species in the area of direct effects represents less than 1% of potentially suitable habitat in the region. The implementation of programmatic design features is expected to be sufficient to reduce indirect impacts on this species to negligible levels. Avoidance of all potentially suitable foraging habitat is not a feasible way to mitigate impacts, because potentially suitable foraging habitat is widespread throughout the area of direct effects and is readily available in other portions of the SEZ region.

11.6.12.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features are described in Section A.2.2 of Appendix A of this Final Solar PEIS. SEZ-specific conditions will be considered when programmatic design features are applied, for example:

- Pre-disturbance surveys shall be conducted within the SEZ to determine the presence and abundance of special status species, including those identified in Table 11.6.12.1-1 of the Draft Solar PEIS as well as those identified in Table 11.6.12.1-1 of this Final Solar PEIS. Disturbance to occupied habitats for these species shall be avoided or minimized to the extent practicable. If avoiding or minimizing impacts on occupied habitats is not possible, translocation of individuals from areas of direct effects or compensatory mitigation of direct effects on occupied habitats may be used to reduce impacts. A comprehensive mitigation strategy for special status species that uses one or more of these options to offset the impacts of development shall be developed in coordination with the appropriate federal and state agencies.

- Avoiding or minimizing disturbance to desert wash, playa, and sagebrush habitats to reduce or eliminate impacts on two special status species.

- Coordination with the USFWS and the NDOW shall be conducted for the greater sage-grouse (*Centrocercus urophasianus*)—a candidate species for listing under the ESA. Coordination would identify an appropriate survey protocol and mitigation requirements, which may include avoidance, minimization, translocation, or compensation.

It is anticipated that the implementation of these programmatic design features will reduce the majority of impacts on the special status species from habitat disturbance and groundwater use.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features have been identified for special status species. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.13 Air Quality and Climate

11.6.13.1 Affected Environment

Except as noted below, the information for air quality and climate presented for the affected environment of the Draft Solar PEIS remains essentially unchanged.

11.6.13.1.1 Existing Air Emissions

The Draft Solar PEIS presented emissions data for Esmeralda County for 2002. More recent data for 2008 (EPA 2011a) were reviewed for this Final Solar PEIS. The two emissions inventories used different sources and assumptions. For example, the 2008 data did not include biogenic emissions. All emissions were lower in the more recent data. These changes would not affect the modeled air quality impacts presented in this update.

11.6.13.1.2 Air Quality

The calendar quarterly average NAAQS of 1.5 $\mu g/m^3$ for lead (Pb) presented in Table 11.6.13.1-2 of the Draft Solar PEIS has been replaced by the rolling 3-month standard (0.15 $\mu g/m^3$). The federal 24-hour and annual SO_2 and 1-hour O_3 standards have been revoked as well (EPA 2011b). These changes will not affect the modeled air quality impacts presented here. The Nevada SAAQS have not been changed.

11.6.13.2 Impacts

11.6.13.2.1 Construction

Methods and Assumptions

Except as noted below, the methods and modeling assumptions are the same as those presented in the Draft Solar PEIS. The developable area of the proposed Gold Point SEZ was reduced by about 4%, from 4,810 acres (19.5 km^2) to 4,596 acres (18.6 km^2), a change too small to affect the results presented here. Given this small change, remodeling was not warranted, and the modeled air quality impacts and conclusions presented in the Draft Solar PEIS (as summarized below) remain valid.[1]

Results

Predicted 24-hour and annual PM_{10} and 24-hour $PM_{2.5}$ concentration levels could exceed the standard levels at the SEZ boundaries and in the immediate surrounding areas during the construction of solar facilities. To reduce potential impacts on ambient air quality and in compliance with programmatic design features, aggressive dust control measures would be used. Potential particulate air quality impacts on nearby communities would not exceed standard levels. Impacts from construction activities are not anticipated to exceed Class I PSD PM_{10} increments at the nearest federal Class I area (John Muir WA in California). Construction activities are not subject to the PSD program, and the comparison provides only a screen for gauging the magnitude of the impact. Accordingly, it is anticipated that impacts of construction activities on ambient air quality would be moderate and temporary.

Given the small areal change, emissions from construction equipment and vehicles would be almost the same as those identified in the Draft Solar PEIS. Any potential impacts on AQRVs at nearby federal Class I areas would be about the same as those estimated in the Draft Solar PEIS, and the conclusions there remain valid. Construction-related emissions are temporary in nature and thus would cause some unavoidable but short-term impacts.

[1] At this programmatic level, detailed information on construction activities, such as facility size, type of solar technology, heavy equipment fleet, activity level, work schedule, and the like, is not known; thus air quality modeling cannot be conducted. Therefore, it has been assumed that an area of 3,000 acres (12.14 km^2) in total would be disturbed continuously; thus the modeling results and discussion here should be interpreted in that context. During the site-specific project phase, more detailed information would be available and more realistic air quality modeling analysis could be conducted. It is likely that predicted impacts on ambient air quality for specific projects would be much lower than those in this Final Solar PEIS.

11.6.13.2.2 Operations

The reduction in developable area of the Gold Point SEZ by about 4% reduces the generation capacity and annual power generation by a similar percentage and thus reduces the potentially avoided emissions presented in the Draft Solar PEIS. Updated estimates for emissions potentially avoided by full solar development of the proposed Gold Point SEZ can be obtained from the table in the Draft Solar PEIS by reducing the tabulated emissions shown in Table 11.6.13.2-2 of the Draft Solar PEIS by 4.4%. For example, depending on the technology used, up to 866 tons per year of NO_X (= 95.6% × the lower-end value of 906 tons/yr tabulated in the Draft Solar PEIS) could be avoided by full solar development of the proposed Gold Point SEZ as revised. These tabulated results are consistent with, but slightly smaller than, the results presented in the Draft Solar PEIS. Solar facilities built in the Gold Point SEZ could be more important than those built in other states in terms of reducing fuel combustion–related emissions.

11.6.13.2.3 Decommissioning and Reclamation

The discussion in the Draft Solar PEIS remains valid. Decommissioning and reclamation activities would be of short duration, and their potential impacts would be moderate and temporary.

11.6.13.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce air quality impacts are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Limiting dust generation during construction and operations is a required programmatic design feature under the BLM Solar Energy Program. These extensive fugitive dust control measures would keep off-site PM levels as low as possible during construction.

On the basis of impact analyses conducted for the Draft Solar and consideration of comments received as applicable, no SEZ-specific design features for air quality have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.14 Visual Resources

11.6.14.1 Affected Environment

No boundary revisions were identified for the proposed SEZ within the Supplement to the Draft Solar PEIS; however, a non-development area was identified. For the proposed SEZ, 214 acres (0.87 km^2) along a significant unnamed intermittent stream passing east–west through the center of the SEZ was identified as a non-development area. The remaining developable area within the SEZ is 4,596 acres (18.6 km^2).

VRI information was not available at the time of publication of the Draft Solar PEIS. Since that time, VRI data have been collected and finalized. A map for the SEZ and surrounding lands is shown in Figure 11.6.14.1-1; it provides information collected in BLM's 2010 and 2011 VRI, which was finalized in October 2011 (BLM 2011b). As shown, the VRI values for the SEZ are primarily VRI Class IV, indicating low visual values; however, a portion at the southern end of the SEZ is VRI Class II, indicating relatively high visual values. The inventory indicates moderate scenic quality for the SEZ and its immediate surroundings. Positive scenic quality attributes included its vegetation, color, and adjacent scenery. The Lida Valley is characterized as a typical flat-bottomed area. The inventory indicates low sensitivity for the SEZ. However, immediately to the south of the SEZ, the town of Gold Point is located within an area characterized as highly sensitive due to the presence of the old mining town.

In accordance with the collected VRI information, lands in the Battle Mountain District Office within the 25-mi (40-km), 650-ft (198-m) viewshed of the SEZ include 48,146 acres (195.9 km^2) of VRI Class II areas; 26,458 acres (107.1 km^2) of VRI Class III areas; and 133,607 acres (540.7 km^2) of VRI Class IV areas.

As indicated in the Draft Solar PEIS, the Tonopah RMP (BLM 1997) indicates that the SEZ and surrounding area are managed as VRM Class IV, which permits major modification of the existing character of the landscape. Since the publication of the Draft Solar PEIS, the Battle Mountain District Office has been preparing a new comprehensive RMP and associated EIS. The RMP/EIS will replace the existing 1997 Tonopah RMP and 1986 Shoshone-Eureka RMP. The RMP revision process began in December 2010 (BLM 2011a).

11.6.14.2 Impacts

The summary of impacts provided in the Draft Solar PEIS remains valid, as follows. Development within the SEZ could create a visually complex landscape that would contrast strongly with the strongly horizontal landscape of the flat valley in which the SEZ is located. Large visual impacts on the SEZ and surrounding lands within the SEZ viewshed would be associated with solar energy development within the proposed Gold Point SEZ because of major modification of the character of the existing landscape. The potential exists for additional impacts from construction and operation of transmission lines and access roads within and outside the SEZ.

Utility-scale solar energy development within the proposed Gold Point SEZ is likely to result in moderate visual contrasts for some viewpoints within the Queer Mountain WSA, which is within 7 mi (11 km) of the SEZ at the point of closest approach. Moderate visual contrast levels would also be expected for viewpoints on Magruder Mountain. Minimal to weak visual contrasts would be expected for some viewpoints within other sensitive visual resource areas within the SEZ 25-mi (40-km) viewshed.

Residents of the community of Gold Point would likely experience strong visual contrasts from solar energy development within the SEZ. About 18 mi (29 km) of State Route 266 are within the SEZ viewshed at distances of 2 to 9.5 mi (3.2 to 15.3 km) from the SEZ. Travelers on

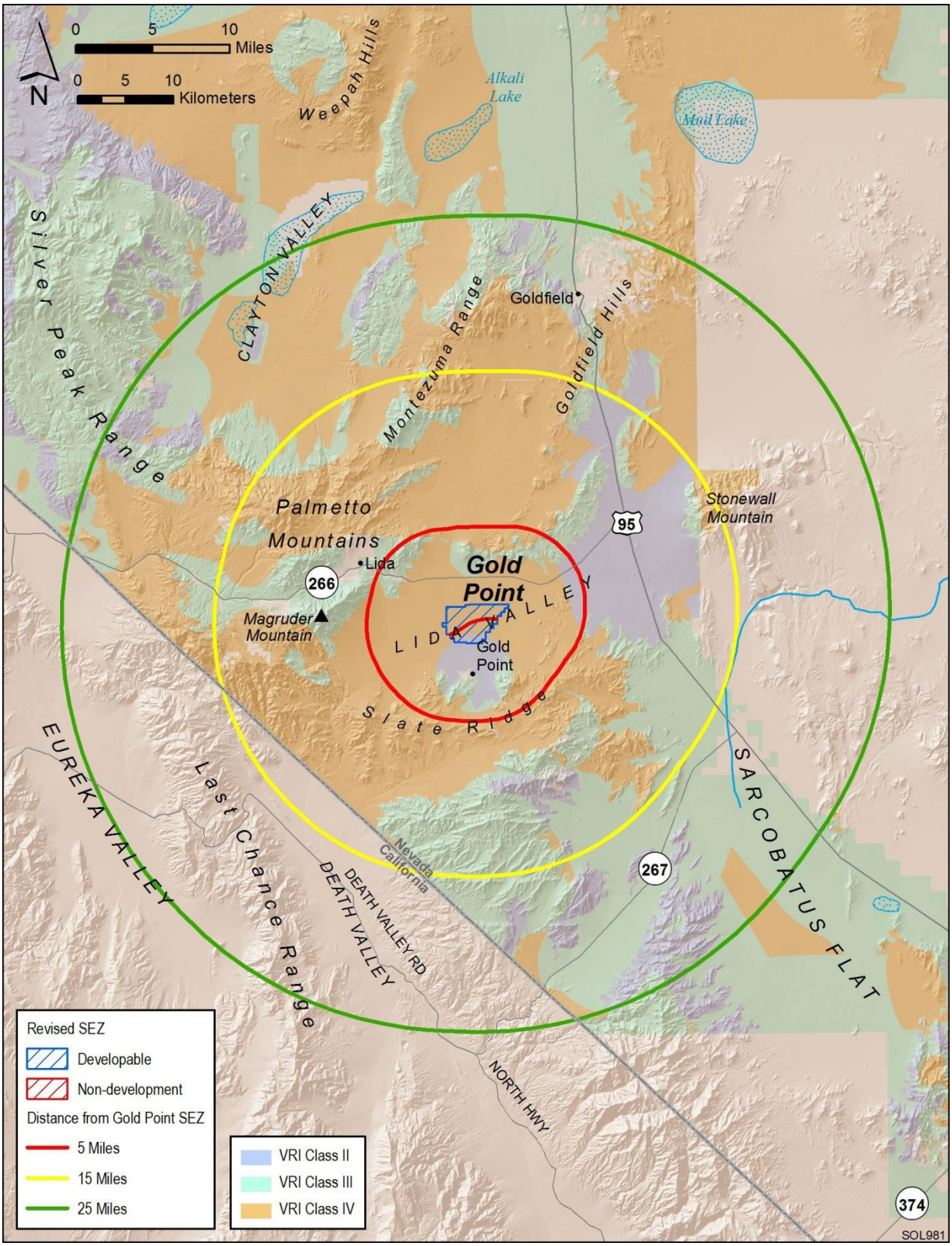


FIGURE 11.6.14.1-1 Visual Resource Inventory Values for the Proposed Gold Point SEZ as Revised

State Route 266 could be subjected to strong visual contrasts from solar energy development within the SEZ. Visitors to the area, workers, and residents of the community of Gold Point may experience visual impacts from solar energy facilities located within the SEZ (as well as any associated access roads and transmission lines) as they travel other area roads.

11.6.14.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on visual resources are described in Section A.2.2 of Appendix A of this Final Solar PEIS. While application of the programmatic design features would reduce potential visual impacts somewhat, the degree of effectiveness of these design features could be assessed only at the site- and project-specific level. Given the large scale, reflective surfaces, and strong regular geometry of utility-scale solar energy facilities and the lack of screening vegetation and landforms within the SEZ viewshed, siting the facilities away from sensitive visual resource areas and other sensitive viewing areas would be the primary means of mitigating visual impacts. The effectiveness of other visual impact mitigation measures generally would be limited.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features to address impacts on visual resources have been identified in this Final Solar PEIS. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.15 Acoustic Environment

11.6.15.1 Affected Environment

The developable area of the proposed Gold Point SEZ was reduced by about 4% from 4,810 acres (19.5 km^2) to 4,596 acres (18.6 km^2); the boundaries of the SEZ were not changed, and thus the information for acoustic environment remains the same as presented in the Draft Solar PEIS.

11.6.15.2 Impacts

11.6.15.2.1 Construction

Since the boundaries of the proposed Gold Point SEZ remain unchanged and the reduction in the developable area was small, the noise impacts from solar development in the proposed Gold Point SEZ remain the same as those presented in the Draft Solar PEIS. Construction within the SEZ would cause minimal unavoidable, but localized, short-term noise

impacts on neighboring communities. No adverse vibration impacts are anticipated from construction activities, including pile driving for dish engines.

11.6.15.2.2 Operations

The conclusions presented in the Draft Solar PEIS remain valid. Operating parabolic trough or power tower facilities using TES could result in some adverse noise impacts on the nearest residences, depending on background noise levels and meteorological conditions. In the permitting process, refined noise propagation modeling considering topographical features might be warranted, along with measurement of background noise levels.

Noise from dish engines could cause some adverse impacts on the nearest residences, depending on background noise levels and meteorological conditions. Thus, consideration of minimizing noise impacts is very important in the siting of dish engine facilities. Direct mitigation of dish engine noise through noise control engineering could also be considered.

Small changes in the developable area of the proposed SEZ would not affect the discussions of vibration, transformer and switchyard noise, and transmission line corona discharge presented in the Draft Solar PEIS. Noise impacts from these sources would be negligible.

11.6.15.2.3 Decommissioning and Reclamation

The conclusions presented in the Draft Solar PEIS remain valid. Decommissioning and reclamation activities would be of short duration, and their potential noise impacts would be minor and temporary.

11.6.15.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce noise impacts are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will provide some protection from noise impacts.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, the following SEZ-specific design feature was identified for noise:

- Because of the differences in elevation between the proposed Gold Point SEZ and nearby residences to the south, refined modeling will be warranted along with background noise measurements as a part of project-specific analyses.

The need for additional SEZ-specific design features will be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.16 Paleontological Resources

11.6.16.1 Affected Environment

Data provided in the Draft Solar PEIS remain valid, with the following update:

- The BLM Regional Paleontologist may have additional information on the paleontological potential of the SEZ and be able to verify the PFYC of the SEZ as Class 2 as used in the Draft Solar PEIS.

11.6.16.2 Impacts

The assessment provided in the Draft Solar PEIS remains valid. Few, if any, impacts on significant paleontological resources are likely to occur in the proposed Gold Point SEZ. However, a more detailed look at the geological deposits of the SEZ is needed to determine whether a paleontological survey is warranted.

11.6.16.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on paleontological resources are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Impacts would be minimized through the implementation of required programmatic design features, including a stop-work stipulation in the event that paleontological resources are encountered during construction, as described in Section A.2.2 of Appendix A.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features for paleontological resources have been identified. If the geologic deposits in the proposed Gold Point SEZ are determined to be thick alluvial deposits as described in Section 11.6.16.1 of the Draft Solar PEIS and are classified as PFYC Class 2, mitigation of paleontological resources within the SEZ is not likely to be necessary. The need for and nature of any SEZ-specific design features would depend on the results of future paleontological investigations. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

As additional information on paleontological resources (e.g., from regional paleontologists or from new surveys) becomes available, the BLM will post the data to the project Web site (http://solareis.anl.gov) for use by applicants, the BLM, and other stakeholders.

11.6.17 Cultural Resources

11.6.17.1 Affected Environment

Data provided in the Draft Solar PEIS remain valid, with the following updates:

- A tribally approved ethnographic study of the proposed Gold Point SEZ was conducted with the Timbisha Shoshone Tribe (SWCA and University of Arizona 2011), and a summary of that study was presented in the Supplement to the Draft Solar PEIS. Important ceremonial areas near the SEZ include Pigeon Spring and possibly Indian Spring, as well as Doctor Rock and Red Volcano. Culturally important geologic features in the vicinity of the SEZ include Mount Jackson, Stonewall Mountain, Magruder Mountain, Mount Jackson Ridge, Tule Canyon, and Mount Dunfee. Tribal members acknowledged that numerous trail systems intersect the Gold Point study area. The completed ethnographic study is available in its entirety on the Solar PEIS Web site (http://solareis.anl.gov)

- Additional information to characterize the area surrounding the proposed SEZ may be available in the future (after the Final Solar PEIS has been completed), as follows:
  - Results of a Class I literature file search to better understand (1) the site distribution pattern in the vicinity of the SEZ, (2) trail networks through existing ethnographic reports, and (3) overall cultural sensitivity of the landscape.
  - Results of a Class II stratified random sample survey of 230 acres (0.9 km^2) or roughly 5% of the SEZ. The Class II survey is being conducted by the BLM to meet its ongoing Section 110 responsibilities under the NHPA. The objectives of the Class II surveys currently under contract are to reliably predict the density, diversity, and distribution of archaeological sites within each SEZ in Arizona, California, and Nevada and create sensitivity zones based on projected site density, complexity, likely presence of human burials, and/or other tribal concerns. The BLM will continue to request funding to support additional Class II sample inventories in the SEZ areas. Areas of interest, such as historic resources pertaining to mining, as determined through a Class I review, and, if appropriate, some subsurface testing of dune and/or colluvium areas should be considered in sampling strategies for future surveys.
  - Continuation of government-to-government consultation as described in Section 2.4.3 of the Supplement to the Draft Solar PEIS and IM 2012-032 (BLM 2011c) may be continued, including follow-up to recent ethnographic studies covering some SEZs in Nevada and Utah with tribes not included in the original studies to determine whether those tribes have similar concerns.

11.6.17.2 Impacts

As stated in the Draft Solar PEIS, impacts on significant cultural resources could occur in the proposed Gold Point SEZ; however, further investigation is needed. For this updated analysis, impacts on the Goldfield Historic District are no longer projected, because a new transmission line close to that area is no longer assumed. However, on the basis of the new ethnographic study, impacts on Native American trail networks are possible.

11.6.17.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce impacts on cultural resources are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Programmatic design features assume that the necessary surveys, evaluations, and consultations will occur. Design features for visual resources would also reduce some impacts on cultural resources, especially for the Gold Point Town site.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features for cultural resources have been identified. SEZ-specific design features would be determined in consultation with the Nevada SHPO and affected tribes and would depend on the results of future investigations. Information in the ethnographic reports would suggest that impacts on Pigeon Spring, Doctor Rock, Red Volcano, Mount Jackson, Stonewall Mountain, Magruder Mountain, Mount Jackson Ridge, Tule Canyon, and Mount Dunfee, trail systems, and culturally sensitive plant and animal species would need to be avoided, minimized, or otherwise mitigated if solar energy development were to be initiated in the proposed Gold Point SEZ. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.18 Native American Concerns

11.6.18.1 Affected Environment

Data provided in the Draft Solar PEIS remain valid, with the following updates:

- A tribally approved ethnographic study of the proposed Gold Point SEZ and surrounding landscape was conducted with the Timbisha Shoshone Tribe (SWCA and University of Arizona 2011), and a summary of that study was presented in the Supplement to the Draft Solar PEIS. Important ceremonial areas identified near the SEZ include Pigeon Spring and possibly Indian Spring, as well as Doctor Rock and Red Volcano. Culturally important geologic features in the vicinity of the SEZ include Mount Jackson, Stonewall Mountain, Magruder Mountain, Mount Jackson Ridge, Tule Canyon, and Mount Dunfee. Tribal members acknowledged that numerous trail systems

intersect the Gold Point study area, and several culturally important plant and animal species. The completed ethnographic study is available in its entirety on the Solar PEIS Web site (http://solareis.anl.gov).

- The tribal representatives from the Timbisha Shoshone Tribe believe that all cultural resources and landscapes within and surrounding the proposed Gold Point SEZ are important in helping the tribes understand their past, present, and future.

- Major concerns of the tribal representatives of the Timbisha Shoshone Tribe include the potential destruction of traditional plant and animal habitat, the amount of water that will be needed to sustain the solar facility and where it will come from, and the effect of solar energy development on Doctor Rock and the surrounding valley.

- Areas that contain evidence of volcanic activity have been identified as culturally important parts of the landscape. Volcanic events are thought to bring new *Puha* to the surface of the Earth. *Puha* follows the flow of magma, as it does with water, connecting places and elements. Doctor Rock is an example of volcanic *Puha*, although other places exist throughout the valley.

- Saline Valley has been identified as the creation point of the Shoshone people. Saline Valley is located approximately 52 mi (84 km) southwest of the proposed SEZ, west of Death and Eureka Valleys.

- Pigeon Springs, Shakespeare's Spring, Jackson Wash, and the Stonewall Mountain Hydrological System have been identified as important water sources. In particular, Pigeon Spring has been identified as a small Shoshone settlement and the location of an important community Round Dance in 1890. Tribal representatives described the Round Dance as a "Death Dance" meant to prepare the Shoshone for death and destruction by European and American soldiers. Early ethnographies describe the Round Dance as a world-balancing ceremony similar to the Ghost Dance.

- The following traditional plants have been identified in addition to those listed in Table 11.6.18.1-2 of the Draft Solar PEIS: buckbrush (*Purshia glandulosa*), bud sagebrush (*Picrothamnus desertorum*), creosote (*Larrea tridentate*), desert Indian paintbrush (*Castilleja angustifolia*), desert prince's plume/Indian spinach (*Stanleya pinnata*), Gold cholla/silver cholla (*Opuntia echinocarpa*), hairspine pricklypear (*Opuntia polyacantha*), horsebrush (*Tetradymia* sp.), Indian ricegrass (*Achnatherum hymenoides*), Indian tea (*Ephedra viridis*), locoweed (*Astragalus* sp.), orange lichen (*Caloplaca trachyphylla*), rattlesnake weed, rubber rabbitbrush (*Ericameria nauseosa*), shadescale (*Atriplex confertifolia*), and spiny menodora (*Mendora spinescens*).

- The following traditional animals have been identified in addition to those listed in Table 11.6.18.1-3 of the Draft Solar PEIS: American kestrel (*Falco sparverius*), killdeer (*Charadrius vocifeous*), red-tailed hawk (*Buteo jamaicensis*), and long-nosed leopard lizard (*Gambelia wislizenii*).

11.6.18.2 Impacts

The description of potential concerns provided in the Draft Solar PEIS remains valid. In the past, the Western Shoshone and Owens Valley Paiute have expressed concerns over project impacts on a variety of resources. While no comments specific to the proposed Gold Point SEZ have been received from Native American tribes to date, the Big Pine Paiute Tribe of the Owens Valley has commented on the scope of this PEIS. The tribe recommends that the BLM preserve undisturbed lands intact and that recently disturbed lands such as abandoned farm fields, rail yards, mines, and airfields be given primary consideration for solar energy development. Potential impacts on water supply are also a concern (Moose 2009). The construction of utility-scale solar energy facilities within the proposed SEZ would result in the destruction of some plants important to Native Americans and the habitat of some traditionally important animals.

In addition to the impacts discussed in the Draft Solar PEIS, the ethnographic study conducted for the proposed Gold Point SEZ identified the following impacts:

- Development within the proposed Gold Point SEZ will result in visual impacts on the valley when viewed from Magruder Mountain, Mount Jackson, Red Volcano, Doctor Rock, and Stonewall Mountain.

- Development within the proposed Gold Point SEZ may affect the spiritual connection of the Shoshone with water and magma through *Puha*. This possibility is especially true for developments near water sources such as Jackson Wash or near prominent volcanic features located within the SEZ.

- Development within the proposed Gold Point SEZ will likely adversely affect Jackson Wash, because several large segments of the wash are spread throughout the proposed SEZ.

- Development within the proposed SEZ will directly affect culturally important plant and animal resources, because it will likely require the grading of the project area, the removal of vegetation, and the destruction of burrows, nests, and migratory habitat.

11.6.18.3 SEZ-Specific Design Features and Design Feature Effectiveness

Tribal representatives believe that solar energy development within the Gold Point SEZ will have adverse impacts on water, culturally important geologic features, and traditionally important plant and animal resources (SWCA and University of Arizona 2011). Required

programmatic design features that would reduce impacts on resources of concern to Native Americans are described in Section A.2.2 of Appendix A of this Final Solar PEIS. For example, impacts will be minimized through the avoidance of sacred sites, water sources, and tribally important plant and animal species. Programmatic design features require that the necessary surveys, evaluations, and consultations would occur. The Tribes would be notified regarding the results of archaeological surveys, and they would be contacted immediately upon the discovery of Native American human remains and associated cultural items.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features to address Native American concerns have been identified. The need for and nature of SEZ-specific design features would be determined during government-to-government consultation with affected tribes as part of the process of preparing parcels for competitive offer and subsequent project specific analysis. Potentially significant sites and landscapes in the vicinity of the SEZ associated with trails and trail features, Pigeon Spring, Indian Spring, Mount Jackson, Mount Jackson Ridge, Mount Dunfee, Magruder Mountain, Stonewall Mountain, Doctor Rock, Red Volcano, Lida Valley, and Tule Canyon, as well as other rock art sites, ceremonial areas and healing places, places of historic encounters, and plant and animal resources, should be considered and discussed during consultation.

11.6.19 Socioeconomics

11.6.19.1 Affected Environment

The boundaries of the proposed Gold Point SEZ have not changed. The socioeconomic ROI, the area in which site employees would live and spend their wages and salaries, and into which any in-migration would occur, includes the same counties and communities as described in the Draft Solar PEIS, meaning that no updates to the affected environment information given in the Draft Solar PEIS are required.

11.6.19.2 Impacts

Socioeconomic resources in the ROI around the SEZ could be affected by solar energy development through the creation of direct and indirect employment and income, the generation of direct sales and income taxes, SEZ acreage rental and capacity payments to the BLM, the in-migration of solar facility workers and their families, and impacts on local housing markets and local community service employment. Since the boundaries of the proposed Gold Point SEZ remain unchanged and the reduction of the developable area was small (less than 5%), the impacts estimated in the Draft Solar PEIS remain valid. During construction, between 124 and 1,641 jobs and between $10.5 and $139 million in income could be associated with solar development in the SEZ. During operations at full build-out, between 8 and 160 jobs and between $0.3 million and $7.2 million in income could be produced. In-migration of workers

and their families would mean between 48 and 631 rental housing units would be needed during construction and between 3 and 63 owner-occupied units during operations.

11.6.19.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce socioeconomic impacts are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will reduce the potential for socioeconomic impacts during all project phases.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features to address socioeconomic impacts have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.20 Environmental Justice

11.6.20.1 Affected Environment

The data presented in the Draft Solar PEIS for the proposed Gold Point SEZ have not changed substantially. There are no minority or low-income populations in the Nevada or California portions of the 50-mi (80-km) radius of the SEZ.

11.6.20.2 Impacts

Potential impacts (e.g., from noise and dust during construction and operations, visual impacts, cultural impacts, and effects on property values) on low-income and minority populations could be incurred as a result of the construction and operation of solar facilities involving each of the four technologies. Impacts are likely to be small, and there are no minority populations defined by CEQ guidelines(CEQ 1997) or low-income populations (see Section 11.6.20.1 of the Draft Solar PEIS) within the 50-mi (80-km) radius around the boundary of the SEZ. This means that any adverse impacts of solar projects could not disproportionately affect minority and/or low-income populations.

11.6.20.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce potential environmental justice impacts are described in Section A.2.2 of Appendix A of this Final Solar PEIS. Implementing the programmatic design features will reduce the potential for such impacts.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features for environmental justice impacts have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.21 Transportation

11.6.21.1 Affected Environment

The reduction of about 4% in developable area of the proposed Gold Point SEZ does not change the information on affected environment for transportation provided in the Draft Solar PEIS.

11.6.21.2 Impacts

As stated in the Draft Solar PEIS, the primary transportation impacts are anticipated to be from commuting worker traffic. Single projects could involve up to 1,000 workers each day, with an additional 2,000 vehicle trips per day (maximum). The increase in the volume of traffic on U.S. 95 east of the proposed Gold Point SEZ, on State Route 266 past the northern border of the SEZ, and along State Route 744 along the eastern edge of the SEZ would represent increases in traffic of about 100%, 1,000%, and 10,000%, respectively. Also, higher traffic volumes would be experienced during shift changes. Thus, traffic on U.S. 95 could experience slowdowns during these periods in the vicinity of the junction with State Route 266, and local road improvements would be necessary on State Routes 266 and 774 in order not to overwhelm the local access roads near any site access points.

Solar development within the SEZ would affect public access along OHV routes that are designated open and available for public use. Although open routes crossing areas granted ROWs for solar facilities could be redesignated as closed (see Section 5.5.1 of the Draft Solar PEIS), a programmatic design feature has been included under Recreation (Section A.2.2.6.1 of Appendix A) that requires consideration of replacement of lost OHV route acreage and of access across and to public lands.

11.6.21.3 SEZ-Specific Design Features and Design Feature Effectiveness

Required programmatic design features that would reduce transportation impacts are described in Section A.2.2 of Appendix A of this Final Solar PEIS. The programmatic design features, including local road improvements, multiple site access locations, staggered work schedules, and ride-sharing, would all provide some relief to traffic congestion on local roads leading to the SEZ. Depending on the location of solar facilities within the SEZ, more specific access locations and local road improvements could be implemented.

On the basis of impact analyses conducted for the Draft Solar PEIS and consideration of comments received as applicable, no SEZ-specific design features to address transportation impacts have been identified. Some SEZ-specific design features may be identified through the process of preparing parcels for competitive offer and subsequent project-specific analysis.

11.6.22 Cumulative Impacts

The analysis of potential impacts in the vicinity of the proposed Gold Point SEZ presented in the Draft Solar PEIS is still generally applicable for this Final Solar PEIS. The size of the developable area of the proposed SEZ has been reduced by about 4%. The following sections include an update to the information presented in the Draft Solar PEIS regarding cumulative effects for the proposed Gold Point SEZ.

11.6.22.1 Geographic Extent of the Cumulative Impact Analysis

The geographic extent of the cumulative impact analysis has not changed. The extent varies on the basis of the nature of the resource being evaluated and the distance at which the impact may occur (e.g., impacts on air quality may have a greater geographic extent than impacts on visual resources). The BLM, the NPS, the DOE, and the DoD administer most of the land around the SEZ. The BLM administers approximately 47% of the lands within a 50-mi (80-km) radius of the SEZ.

11.6.22.2 Overview of Ongoing and Reasonably Foreseeable Future Actions

The Draft Solar PEIS included six other proposed SEZs in Nevada. Two of these, the Delamar Valley SEZ and the East Mormon Mountain SEZ, have been removed from consideration.

There are no reasonably foreseeable future actions related to energy development and distribution near the proposed Gold Point SEZ.

The list of other major ongoing and foreseeable future actions within 50 mi (80 km) of the proposed Gold Point SEZ has been updated and is presented in Table 11.6.22.2-1. Projects listed in the table are shown in Figure 11.6.22.2-1.

11.6.22.3 General Trends

The information on general trends presented in the Draft Solar PEIS remains valid.

TABLE 11.6.22.2-1 Ongoing and Reasonably Foreseeable Future Actions Related to Energy Development and Distribution and Other Major Actions near the Proposed Gold Point SEZ as Revised[a]

Description	Status	Resources Affected	Primary Impact Location
Beatty Water and Sanitation District Water Treatment Plant	**Operating[b]**	Drinking water	43 mi[c] southeast of the SEZ
Chemetall Foote Lithium Carbonate Facility Expansion	**Under construction[d]**	Terrestrial habitats, wildlife, air quality	25 mi northwest of the SEZ
Mineral Ridge Project	**Mining has resumed[e]**	Terrestrial habitats, water, air quality	28 mi northwest of the SEZ
Caliente Rail Realignment	FEIS June 2008	Terrestrial habitats, wildlife, cultural resources	8 mi northwest of the SEZ
120-kV Transmission Line	Operating	Disturbed areas, terrestrial habitats along transmission line ROW	Corridor passes from east to west–north of the SEZ
120-kV Transmission Line	Operating	Disturbed areas, terrestrial habitats along transmission line ROW	Corridor passes from north to south–north of the SEZ
Producing Geothermal Lease (NVN 8421)	Operating	Terrestrial habitats, wildlife	45 mi (72 km) northwest of the SEZ
Producing Geothermal Lease (NVN 8428)	Operating	Terrestrial habitats, wildlife	45 mi (72 km) northwest of the SEZ
Producing Geothermal Lease (NVN 9647)	Operating	Terrestrial habitats, wildlife	45 mi (72 km) northwest of the SEZ
Producing Geothermal Lease (NVN 31991)	Operating	Terrestrial habitats, wildlife	45 mi (72 km) northwest of the SEZ
Producing Geothermal Lease (NVN 31993)	Operating	Terrestrial habitats, wildlife	45 mi (72 km) northwest of the SEZ

[a] Projects with status changed from that given in the Draft Solar PEIS are shown in bold text.

[b] See Stephens (2011) for details.

[c] To convert mi to km, multiply by 1.6093.

[d] See Chemetall (2010) for details.

[e] See Scorpio Gold Corporation (2011) for details.

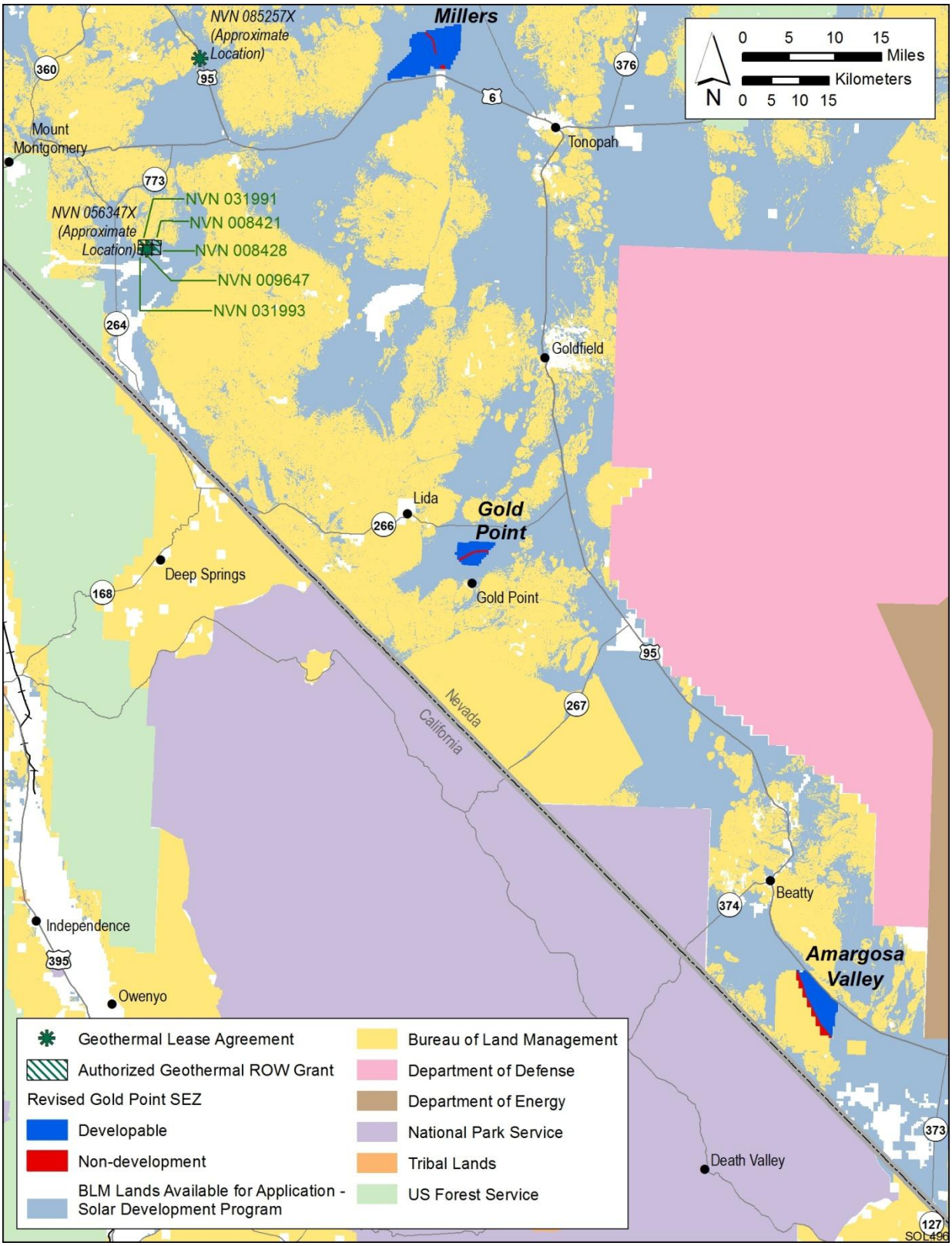


FIGURE 11.6.22.2-1 Locations of Existing and Reasonably Foreseeable Energy Projects on Public Land within a 50-mi (80-km) Radius of the Proposed Gold Point SEZ as Revised

11.6.22.4 Cumulative Impacts on Resources

Total disturbance in the proposed Gold Point SEZ over 20 years would be about 3,677 acres (14.9 km^2) (80% of the entire proposed SEZ). This development would contribute incrementally to the impacts from other past, present, and reasonably foreseeable future actions in the region as described in the Draft Solar PEIS. Primary impacts from development in the Gold Point SEZ may include impacts on water quantity and quality, air quality, ecological resources such as habitat and species, cultural and visual resources, and specially designated lands.

No additional major actions have been identified within 50 mi (80 km) of the SEZ. Therefore, the incremental cumulative impacts associated with development in the proposed Gold Point SEZ during construction, operation, and decommissioning are expected to be the same as those discussed in the Draft Solar PEIS.

11.6.23 Transmission Analysis

The methodology for this transmission analysis is described in Appendix G of this Final Solar PEIS. This section presents the results of the transmission analysis for the Gold Point SEZ, including the identification of potential load areas to be served by power generated at the SEZ and the results of the DLT analysis. Unlike Sections 11.6.2 through 11.6.22, this section is not an update of previous analysis for the Gold Point SEZ; this analysis was not presented in the Draft Solar PEIS. However, the methodology and a test case analysis were presented in the Supplement to the Draft Solar PEIS. Comments received on the material presented in the Supplement were to improve the methodology for the assessment presented in this Final Solar PEIS.

On the basis of its size, the assumption of a minimum of 5 acres (0.02 km^2) of land required per MW, and the assumption of a maximum of 80% of the land area developed, the Gold Point SEZ is estimated to have the potential to generate 735 MW of marketable solar power at full build-out.

11.6.23.1 Identification and Characterization of Load Areas

The primary candidates for Gold Point SEZ load areas are the major surrounding cities. Figure 11.6.23.1-1 shows the possible load areas for the Gold Point SEZ and the estimated portion of their market that could be served by solar generation. Possible load areas for the Gold Point SEZ include Phoenix, Arizona; Salt Lake City, Utah; Las Vegas and Reno, Nevada; and Los Angeles, San Jose, San Francisco, Oakland, and Sacramento, California.

The two load area groupings examined for the Gold Point SEZ are as follows:

1. Las Vegas, Nevada; and

2. Reno, Nevada; and Sacramento, California.

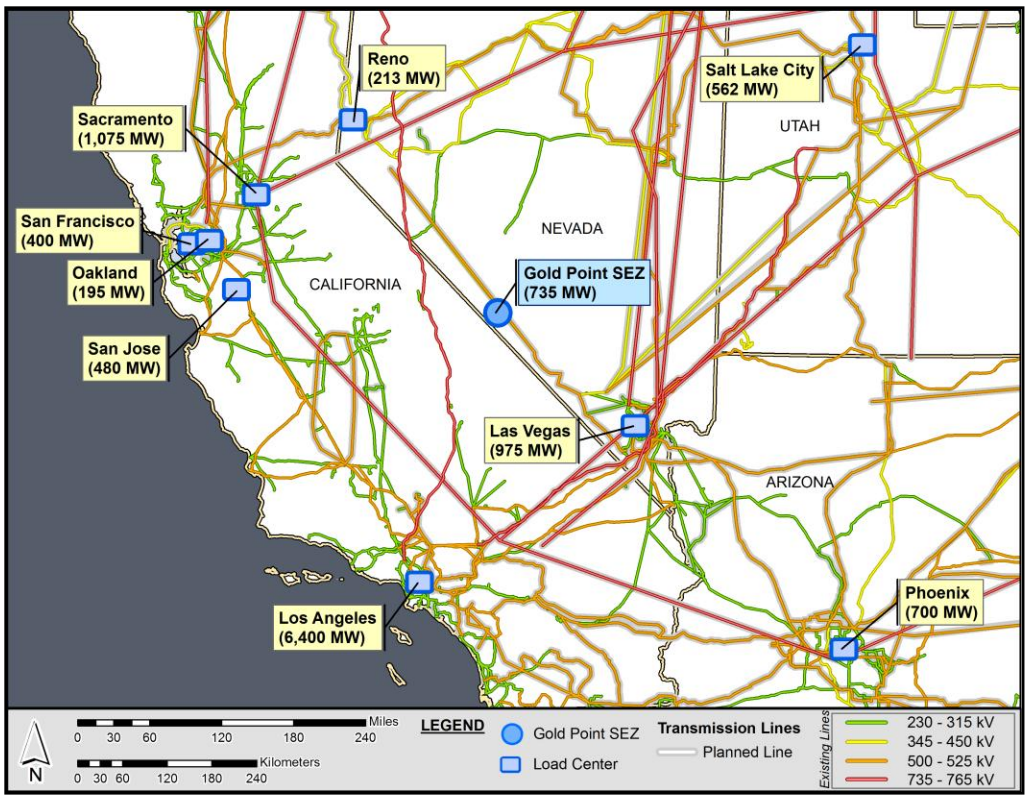


FIGURE 11.6.23.1-1 Location of the Proposed Gold Point SEZ and Possible Load Areas (Source for background map: Platts 2011)

Figure 11.6.23.1-2 shows the most economically viable transmission scheme for the Gold Point SEZ (transmission scheme 1), and Figure 11.6.23.1-3 shows an alternative transmission scheme (transmission scheme 2) that represents a logical choice should transmission scheme 1 be infeasible. As described in Appendix G, the alternative shown in transmission scheme 2 represents the optimum choice if one or more of the primary linkages in transmission scheme 1 are excluded from consideration. The groups provide for linking loads along alternative routes so that the SEZ's output of 735 MW could be fully allocated.

Table 11.6.23.1-1 summarizes and groups the load areas according to their associated transmission scheme and provides details on how the megawatt load for each area was estimated.

11.6.23.2 Findings for the DLT Analysis

The DLT analysis approach assumes that the Gold Point SEZ will require all new construction for transmission lines (i.e., dedicated lines) and substations. The new transmission lines(s) would directly convey the 735-MW output of the Gold Point SEZ to the prospective load areas for each possible transmission scheme. The approach also assumes that all existing transmission lines in the WECC region are saturated and have little or no available capacity to accommodate the SEZ's output throughout the entire 10-year study horizon.

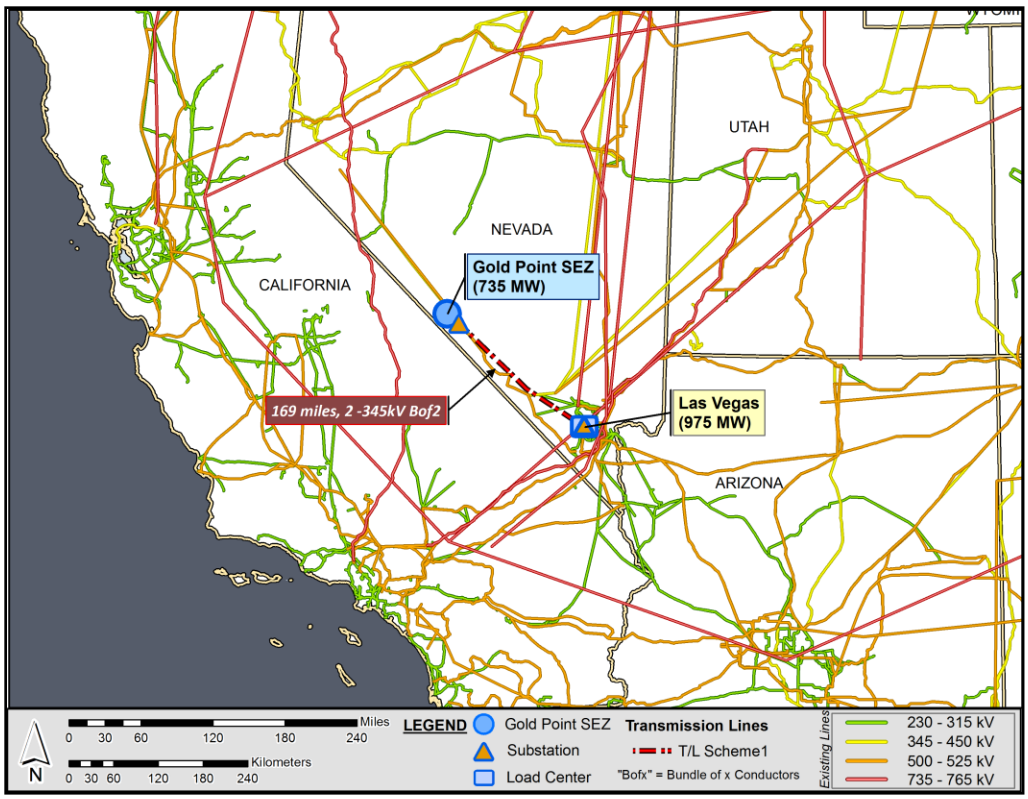


FIGURE 11.6.23.1-2 Transmission Scheme 1 for the Proposed Gold Point SEZ (Source for background map: Platts 2011)

Figures 11.6.23.1-2 and 11.6.23.1-3 display the pathways that new dedicated lines might follow to distribute solar power generated at the Gold Point SEZ via the two identified transmission schemes described in Table 11.6.23.1-1. These pathways parallel existing 500-kV, 345-kV, and/or lower voltage lines. The intent of following existing lines is to avoid pathways that may be infeasible due to topographical limitations or other concerns.

For transmission scheme 1, a new line would be constructed to connect with Las Vegas (975 MW), so that the 735-MW output of the Gold Point SEZ could be fully utilized (Figure 11.6.23.1-2). This particular scheme has one segment that extends to the southeast from the SEZ to Las Vegas (975 MW) over a distance of about 169 mi (272 km). This segment would require a double-circuit 345-kV (2-345-kV) bundle of two conductors (Bof2) transmission line design based on engineering and operational considerations. In general, the transmission configuration options were determined by using the line "loadability" curve provided in American Electric Power's *Transmission Facts* (AEP 2010). Appendix G documents the line options used for this analysis and describes how the load area groupings were determined.

For transmission scheme 2, serving load centers to the northwest, Figure 11.6.23.1-3 shows that new lines would be constructed to connect with Reno (213 MW) and Sacramento (1,075 MW), so that the 735-MW output of the Gold Point SEZ could be fully utilized. This scheme has three segments. The first segment extends to the northwest from the SEZ to Reno

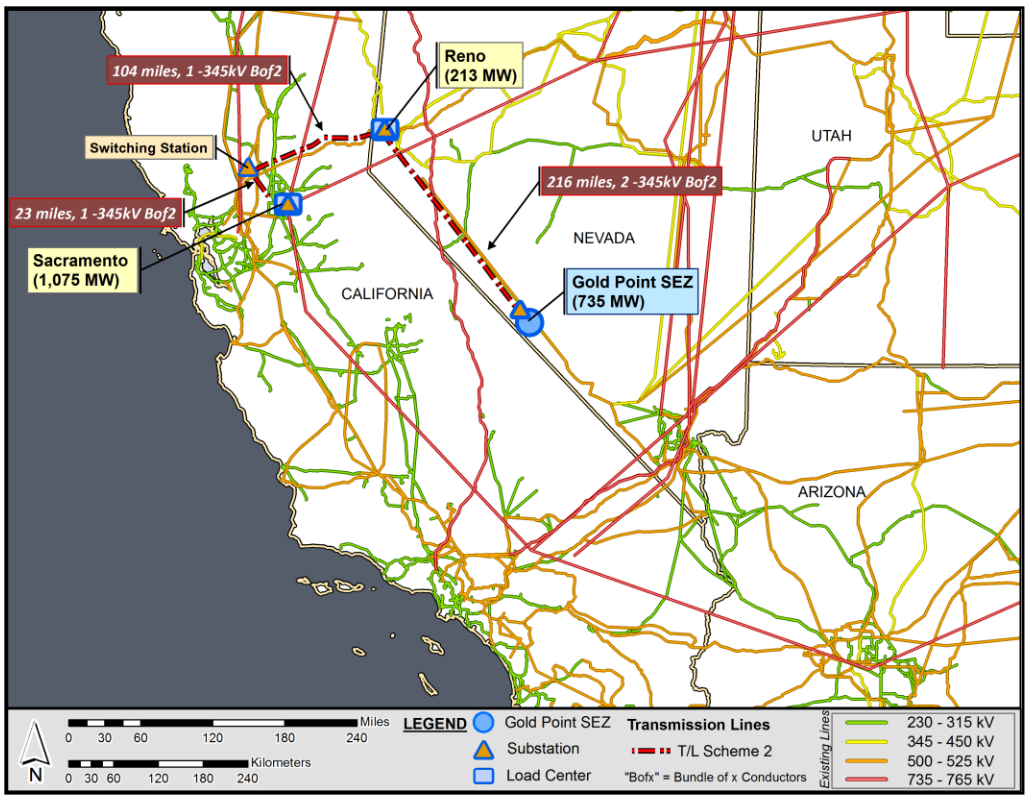


FIGURE 11.6.23.1-3 Transmission Scheme 2 for the Proposed Gold Point SEZ (Source for background map: Platts 2011)

TABLE 11.6.23.1-1 Candidate Load Area Characteristics for the Proposed Gold Point SEZ

Transmission Scheme	City/Load Area Name[a]	Position Relative to SEZ	2010 Population[b]	Estimated Total Peak Load (MW)	Estimated Peak Solar Market (MW)
1	Las Vegas, Nevada	Southeast	1,950,000	4,875	975
2	Reno, Nevada	Northwest	425,000	1,063	213
	Sacramento, California	Northwest	2,150,000	5,375	1,075

[a] The load area represents the metropolitan area (i.e., the identified city plus adjacent communities).

[b] City and metropolitan area population data are from 2010 Census data (U.S. Bureau of the Census 2010).

(213 MW) over a distance of about 216 mi (348 km). This segment would require a double-circuit 345-kV (2-345 kV) bundle of two (Bof2) transmission line design. The second segment runs about 104 mi (167 km) east from Reno to a switching station located just north of Sacramento area, while the third segment extends from the switching station south about 23 mi (37 km) to Sacramento (1,075 MW). The second and third segments require a single-circuit 345-kV bundle of two (Bof2) transmission line design.

Table 11.6.23.2-1 summarizes the distances to the various load areas over which new transmission lines would need to be constructed, as well as the assumed number of substations that would be required. One substation is assumed to be installed at each load area and an additional one at the SEZ. In general, the total number of substations per scheme is simply equal to the number of load areas associated with the scheme plus one. Substations at the load areas would consist of one or more step-down transformers, while the originating substation at the SEZ would consist of several step-up transformers. The originating substation would have a rating of at least 735 MW (to match the plant's output), while the combined load substations would have a similar total rating of 735 MW. For schemes that require branching of the lines, a switching substation is assumed to be constructed at the appropriate junction. In general, switching stations carry no local load but are assumed to be equipped with switching gears (e.g., circuit breakers and connecting switches) to reroute power as well as, in some cases, additional equipment to regulate voltage.

Table 11.6.23.2-2 provides an estimate of the total land area disturbed for construction of new transmission facilities under each of the schemes evaluated. The most favorable transmission scheme with respect to minimizing costs and the area disturbed would be scheme 1, which would serve Las Vegas. This scheme is estimated to potentially disturb about 3,603 acres (14.6 km^2) of land. The less favorable transmission scheme with respect to minimizing costs and the area disturbed would be scheme 2, which serves Reno and Sacramento loads. For this

TABLE 11.6.23.2-1 Potential Transmission Schemes, Estimated Solar Markets, and Distances to Load Areas for the Proposed Gold Point SEZ

Transmission Scheme	City/Load Area Name[a]	Estimated Peak Solar Market (MW)[b]	Total Solar Market (MW)	Sequential Distance (mi)[c]	Total Distance (mi)[c]	Line Voltage (kV)	No. of Substations
1	Las Vegas, Nevada	975	975	169	169	345	2
2	Reno, Nevada	213	1,288	216	343	345	4
	Sacramento, California	1,075		127			

[a] The load area represents the metropolitan area (i.e., the identified city plus adjacent communities).

[b] From Table 11.6.23.1-1.

[c] To convert mi to km, multiply by 1.6093.

TABLE 11.6.23.2-2 Comparison of the Various Transmission Line Configurations with Respect to Land Use Requirements for the Proposed Gold Point SEZ

Transmission Scheme	City/Load Area Name[a]	Total Distance (mi)[b]	No. of Substations	Land Use (acres)[c]		
				Transmission Line	Substation	Total
1	Las Vegas, Nevada	169	2	3,584.8	17.7	3,602.5
2	Reno, Nevada Sacramento, California	343	4	7,275.8	17.7	7,293.5

[a] The load area represents the metropolitan area (i.e., the identified city plus adjacent communities).

[b] To convert mi to km, multiply by 1.6093.

[c] To convert acres to km^2, multiply by 0.004047.

scheme, the construction of new transmission lines and substations is estimated to disturb a land area on the order of 7,294 acres (29.5 km^2).

Table 11.6.23.2-3 shows the estimated NPV of both transmission schemes and takes into account the cost of constructing the lines, the substations, and the projected revenue stream over the 10-year horizon. A positive NPV indicates that revenues more than offset investments. This calculation does not include the cost of producing electricity.

The most economically attractive configuration (transmission scheme 1) has the highest positive NPV and serves Las Vegas. The secondary case (transmission scheme 2), which excludes one or more of the primary pathways used in scheme 1, is less economically attractive and serves the Reno and Sacramento markets. For the assumed utilization factor of 20%, both

TABLE 11.6.23.2-3 Comparison of Potential Transmission Lines with Respect to NPV (Base Case) for the Proposed Gold Point SEZ

Transmission Scheme	City/Load Area Name[a]	Present Value Transmission Line Cost ($ million)	Present Value Substation Cost ($ million)	Annual Sales Revenue ($ million)	Present Worth of Revenue Stream ($ million)	NPV ($ million)
1	Las Vegas, Nevada	422.5	48.5	128.8	994.3	523.3
2	Reno, Nevada Sacramento, California	819.4	48.5	128.8	994.3	126.4

[a] The load area represents the metropolitan area (i.e., the identified city plus adjacent communities).

options exhibit positive NPVs, implying varying degrees of economic viability under the current assumptions.

Table 11.6.23.2-4 shows the effect of varying the value of the utilization factor on the NPV of the transmission schemes. It also shows that as the utilization factor is increased, the economic viability of the lines increases. Utilization factors can be raised by allowing the new dedicated lines to market other power generation outputs in the region in addition to that of its associated SEZ.

The findings of the DLT analysis for the proposed Gold Point SEZ are as follows:

- Transmission scheme 1, which identifies Las Vegas as the primary market, represents the most favorable option based on NPV and land use requirements. This configuration would result in new land disturbance of about 3,603 acres (14.6 km^2).

- Transmission scheme 2, which represents an alternative configuration if Las Vegas is excluded, serves Reno and Sacramento. This configuration would result in new land disturbance of about 7,294 acres (29.5 km^2).

- Other load area configurations are possible but would be less favorable than scheme 1 in terms of NPV and, in most cases, also in terms of land use requirements. If new electricity generation at the proposed Gold Point SEZ is not sent to either of the two markets identified above, the potential upper-bound impacts in terms of cost would be greater.

- The analysis of transmission requirements for the proposed Gold Point SEZ indicates no reduction of impacts from increasing the solar-eligible load assumption for transmission scheme 1, which brings power to Las Vegas. Increasing the solar-eligible percentage would have no effect, because an adequate load area was identified under the 20% assumption that would

TABLE 11.6.23.2-4 Effect of Varying the Utilization Factor on the NPV of the Transmission Schemes for the Proposed Gold Point SEZ

Transmission Scheme	City/Load Area Name[a]	NPV ($ million) at Different Utilization Factors					
		20%	30%	40%	50%	60%	70%
1	Las Vegas, Nevada	523	1,021	1,518	2,015	2,512	3,009
2	Reno, Nevada Sacramento, California	126	624	1,121	1,618	2,115	2,612

[a] The load area represents the metropolitan area (i.e., the identified city plus adjacent communities).

accommodate all of the SEZ's capacity. Thus, line distances and voltages would not be affected by increasing the solar-eligible load assumption, and similarly the associated costs and land disturbance would not be affected. However, for transmission scheme 2, which serves Reno and Sacramento, increasing the solar-eligible load assumption could result in lower cost and land disturbance estimates, because it is possible that fewer load areas would be needed to accommodate the SEZ's capacity.

11.6.24 Impacts of the Withdrawal

The BLM is proposing to withdraw 4,810 acres (19 km^2) of public land comprising the proposed Gold Point SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, for a period of 20 years (see Section 2.2.2.2.4 of the Final Solar PEIS). The public lands would be withdrawn, subject to valid existing rights, from settlement, sale, location, or entry under the general land laws, including the mining laws. This means that the lands could not be appropriated, sold, or exchanged during the term of the withdrawal, and new mining claims could not be filed on the withdrawn lands. Mining claims filed prior to the segregation or withdrawal of the identified lands would take precedence over future solar energy development. The withdrawn lands would remain open to the mineral leasing, geothermal leasing, and mineral material laws, and the BLM could elect to lease the oil, gas, coal, or geothermal steam resources, or to sell common-variety mineral materials, such as sand and gravel, contained in the withdrawn lands. In addition, the BLM would retain the discretion to authorize linear and renewable energy ROWs on the withdrawn lands.

The purpose of the proposed land withdrawal is to minimize the potential for conflicts between mineral development and solar energy development for the proposed 20-year withdrawal period. Under the land withdrawal, there would be no mining-related surface development, such as the establishment of open pit mining, construction of roads for hauling materials, extraction of ores from tunnels or adits, or construction of facilities to process the material mined, that could preclude use of the SEZ for solar energy development. For the Gold Point SEZ, impacts of the proposed withdrawal on mineral resources and related economic activity and employment are expected to be negligible to minor (BLM 2012). Although the western half of the SEZ historically contained load and placer claims, those claims are all closed, and there is no evidence of previous production from the site. And because the lands are currently segregated, no additional mining claims can be filed.

Although the mineral potential of the lands within the Gold Point SEZ is low, the proposed withdrawal of lands within the SEZ would preclude many types of mining activity over a 20-year period, resulting in the avoidance of potential mining related adverse impacts. Impacts commonly related to mining development include increased soil erosion and sedimentation, water use, generation of contaminated water in need of treatment, creation of lagoons and ponds (hazardous to wildlife), toxic runoff, air pollution, establishment of noxious weeds and invasive species, habitat destruction or fragmentation, disturbance of wildlife, blockage of migration corridors, increased visual contrast, noise, destruction of cultural artifacts and fossils and/or their

context, disruption of landscapes and sacred places of interest to tribes, increased traffic and related emissions, and conflicts with other land uses (e.g., recreational).

11.6.25 References

Note to Reader: This list of references identifies Web pages and associated URLs where reference data were obtained for the analyses presented in this Final Solar PEIS. It is likely that at the time of publication of this Final Solar PEIS, some of these Web pages may no longer be available or the URL addresses may have changed. The original information has been retained and is available through the Public Information Docket for this Final Solar PEIS.

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11.6.26 Errata for the Proposed Gold Point SEZ

This section presents corrections to material presented in the Draft Solar PEIS and the Supplement to the Draft. The need for these corrections was identified in several ways: through comments received on the Draft Solar PEIS and the Supplement to the Draft (and verified by the authors), through new information obtained by the authors subsequent to publication of the Draft Solar PEIS and the Supplement to the Draft, or through additional review of the original material by the authors. Table 11.6.26-1 provides corrections to information presented in the Draft Solar PEIS and the Supplement to the Draft.

TABLE 11.6.26-1 Errata for the Proposed Gold Point SEZ (Section 11.6 of the Draft Solar PEIS and Section C.4.4 of the Supplement to the Draft Solar PEIS)

Section No.	Page No.	Line No.	Table or Figure No.	Correction
11.6.1.3	11.6-5	NA	Table 11.6.1.3-1	Text under Specially Designated Areas stated "light from solar facilities could adversely affect night sky viewing in some specially designated areas." Further analysis and consideration of required programmatic design features (see Section A.2.2.13.1, Night Sky Protection) indicates that adverse impacts on night sky viewing would not be anticipated.
11.6.3.2.1	11.6-24	36-41		Text stated that light from solar development in the SEZ could adversely affect night sky viewing from Death Valley National Park and adjoining specially designated areas. Further review and consideration of required programmatic design features (see Section A.2.2.13.1, Night Sky Protection) indicates that adverse impacts on night sky viewing would not be anticipated.
11.6.11.2				All uses of the term "neotropical migrants" in the text and tables of this section should be replaced with the term "passerines."

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