

## 5.0 Consultation and Coordination

---

This chapter summarizes the consultation and coordination activities conducted with interested agencies, organizations, tribes, and individuals for the proposed Crescent Dunes Solar Energy Project. The primary goal of the NEPA public involvement process is to ensure that all interested and affected parties are aware of the proposed project. For the purposes of public involvement, the NEPA process is divided into two phases: the scoping period and the Draft EIS review period. The scoping period includes the initial presentation of the proposed project to the public and opportunities for the public and agency representatives to provide comments on the proposed project. The Draft EIS review period presents the public with opportunities to comment on the document. More information on these phases is presented in the sections below

### 5.1 Public Involvement Process

#### 5.1.1 Scoping

The *Federal Register* NOI was published on November 24, 2009, marking the beginning of the scoping period for the project. The scoping period ended on December 24, 2009. This period fulfilled the BLM minimum requirement of a 30-day scoping period.

Announcements for the public scoping meetings were published in a variety of local newspapers (see Table 5-1). Additionally, scoping meeting dates, times, and locations were posted on the BLM TFP Web site (BLM 2010b). A public service announcement was also made on News 88.9 KNPR Nevada Public Radio on November 24, 2009.

Public meetings are required when there is a substantial “environmental controversy concerning the proposed action or substantial interest in holding the [meeting]” or when there is a “request for a hearing by another agency with jurisdiction over the action” (40 CFR 1506.6). Public scoping meetings locations, dates, and number of attendees are provided in Table 5-1. In accordance with BLM requirements, sign-in sheets were provided and attendees were encouraged to sign in.

**Table 5-1. Public meeting information**

Meeting Location	Date	Number of Attendees
Tonopah Convention Center 301 Brougher Ave Tonopah, Nevada	Thursday, December 17, 2009	42
BLM Southern Nevada District Office 4701 N. Torrey Pines Drive Las Vegas, Nevada	Friday, December 18, 2009	6

Note: All meetings were held from 6–8 p.m.

### **5.1.2 Final Environmental Impact Statement**

Members of the public, agencies, organizations, tribes, and jurisdictions will be provided an opportunity to comment on the Draft EIS.

Upon receipt and consideration of the public comments on the DEIS, the BLM TFO will publish the FEIS. Concurrently, the BLM TFO may publish a ROD and authorize the ROW applications. The ROD would identify the selected alternative for the proposed project.

## **5.2 Formal Consultation with Interested Agencies and Tribal Government**

Formal consultation was initiated by the BLM TFO in November 2009, when the project information was relayed to five tribes and various other family members known to have interests in the Tonopah and/or Big Smoky Valley areas. Consultation letters were subsequently distributed to the tribes, requesting their respective input on the project.

The BLM TFO conducted a site visit with the Timbisha on April 7, 2010. Present at the meeting were representatives of the Timbisha: Barbara Durham (Tribal Historic Preservation Office), Grace Goad, Pauline Esteves, Ed Esteves, Madeline Esteves, and Ted James. BLM was represented by TFO Manager Thomas Seley, TFO Archaeologist Scott Stadler, and Susan Rigby. The BLM Battle Mountain District Office was represented by Renewable Energy Coordination Office Manager Timothy Coward, Wendy Seley of Lands and Realty, and William Coyle of GIS. The Timbisha representatives were given a brief overview of the project and its alternative areas, followed by a site visit to the project area.

BLM conducted a second field trip and meeting with the Yomba Shoshone Tribe on July 12, 2010. The Yomba Shoshone Tribe was represented by Teola Brady, and Ester Birchim. Attendees from BLM included TFO Manager Thomas Seley, and TFO Archaeologist Susan Rigby. The Battle Mountain District Office was represented by Renewable Energy Coordination Office Manager Timothy Coward, and Battle Mountain District Office Native American Coordinator Gerald Dixon.

## **5.3 List of Agencies, Organizations, and Persons to Whom Copies of the Environmental Impact Statement Were Sent**

### **5.3.1 Federal Government**

- BLM
- Mojave South – Great Basin Resource Advisory Council
- NRCS
- U.S. Air Force, 98th Range Wing, Nellis Air Force Base (98th RANW/XPL)
- U.S. Air Force (HQ-USAF/LEEV) Environmental Division
- U.S. Army Corps of Engineers
- U.S. Army Corps of Engineers, Regulatory Section
- U.S. Department of Energy, Office of Environmental Compliance (EH-23)
- EPA
- EPA, Region IX

- USFWS
- U.S. Air Force, Office of the Deputy A/S Environment, Safety, Occupational Health
- U.S. Department of Agriculture, Humboldt Toiyabe National Forest
- U.S. Department of the Interior, Bureau of Reclamation, Denver Federal Center (D-150)
- U.S. Department of the Interior, Geological Survey, Environmental Affairs Program
- U.S. Department of the Interior, National Park Service (2310), Division of Environmental Quality
- U.S. Department of the Interior, Natural Resources Library
- U.S. Department of the Interior, Office of Environmental Policy and Compliance

### **5.3.2 State Government**

- Nevada Outdoor Recreation Association
- NDOW
- NDOT
- NDEP, Bureau of Air Pollution Control
- NDEP, Bureau of Mining Regulation and Reclamation
- NDEP, Bureau of Waste Management
- Nevada Division of Minerals
- Nevada Legislature
- Nevada SHPO
- State of Nevada/Department/Administration State Clearinghouse
- Wild Horse Commission

### **5.3.3 Local Government**

- Nye County Environmental Department
- Tonopah Chamber of Commerce
- Tonopah Public Utilities
- Tonopah Town Board
- Town of Manhattan
- Town of Round Mountain

### **5.3.4 Tribal Government**

- Ely Shoshone Tribe
- Duckwater Shoshone Tribe
- Timbisha Shoshone Tribe
- Yomba Shoshone Tribe

### **5.3.5 Other Organizations**

- Earthworks
- Friends of Nevada Wilderness
- Great Basin Resource Watch

- High Country Hay
- Lahontan Audubon Society
- Nevada Cattlemen’s Association
- Nevada Miner’s & Prospector’s Association
- Nevada Mining Association
- Nevada Wilderness Project
- Sierra Club
- Nevada Wildlife
- Truckee River Ranches
- Western Mining Action Project
- Western Watersheds Project

**5.3.6 *Elected Government Officials***

- Joni Eastley, Nye County Commissioner
- Lorinda Wichman, Nye County Commissioner
- Nancy Boland, Esmeralda County Commissioner
- John Ensign, U.S. Senator
- Ed Goedhart, Assemblyman
- Jim Gibbons, Governor
- Dean Heller, U.S. Congressman
- Harry Reid, U.S. Senator

**5.3.7 *Availability***

Copies of the Crescent Dunes Solar Energy Project EIS are available for public review at the following public libraries and BLM offices:

Tonopah Library  
 167 South Central Street  
 Tonopah, NV 89049

The Beatty Library District  
 400 North Fourth Street  
 PO Box 129  
 Beatty, NV 89003-0129

BLM Battle Mountain District Office  
 50 Bastian Road  
 Battle Mountain, NV 89820

BLM Tonopah Field Office  
 1553 South Main Street  
 Tonopah, NV 89049

## 6.0 List of Preparers and Reviewers

**Table 6-1. List of BLM Reviewers.**

Resource/Responsibility	BLM Team Member	Degree and Experience	BLM Office Location
BLM Project Lead, National Environmental Policy Act Compliance Lead	Dave Davis	BS Forest Resources & Conservation, Wildlife, Range 30+ years experience	Battle Mountain District Office
Native American Traditional Values	Gerald Dixon	BS Cultural Anthropology 14 years experience	Battle Mountain District Office
Hydrology - Water Quality (Surface and Ground) and Water Use	Jon Sherve	MS Hydrology/Hydrogeology BA Biological Sciences 16 years experience	Battle Mountain District Office
	Tom Olsen	PhD Geology, Engineering, MS, BS Geology 28 years experience	Nevada State Office
Recreation/VRM/Wilderness	Barb Kelleher	BS Recreation 20 + years experience	Nevada State Office
Floodplains/Wetlands/Riparian	Robert Hassmiller	BS Resource Conservation (emphasis in Terrestrial Systems and Hydrology) 5 years experience	Battle Mountain District Office
Hazmat	Daniel Tecca	BS Chemistry 19 years experience	Battle Mountain District Office
Migratory Birds, Wildlife, Threatened and Endangered Species (Plants and Animals), Special Status Species	Susan Cooper	MS Zoology 10 years experience	Mount Lewis Field Office
Access and Land Use	Wendy Seley	BA Business Management (emphasis Outdoor Recreation) 25 years experience	Battle Mountain District Office (RECO)
GIS	William Coyle	MS GIS/Cartography BS Park and Resource Management 1 year experience	Battle Mountain District Office (RECO)
Project Manager	Timothy Coward	31 years project management experience	Battle Mountain District Office (RECO)

<b>Resource/Responsibility</b>	<b>BLM Team Member</b>	<b>Degree and Experience</b>	<b>BLM Office Location</b>
Cultural Resources, Paleontological Resources, Native American Traditional Values	Scott Stadler	MS Anthropology 18 years experience	Tonopah Field Office
	Susan Rigby	MA Anthropology BS Biology BS Geology 16 years experience	Tonopah Field Office
Migratory Birds, Wildlife, Threatened and Endangered Species (Plants and Animals), Special Status Species	Devin Englestead		Tonopah Field Office
Minerals	Alan Buehler	BS Geology 30 years experience	Tonopah Field Office
	Duane Bays	MS Environmental Science BS Environmental Science BS Geology 9 years experience	Tonopah Field Office
Range	Sheryl Post	BS Range Science 15 years experience	Tonopah Field Office
Noxious Weeds, Invasive, Non- native species	Sheryl Post	BS Range Science 15 years experience	Tonopah Field Office
Vegetation	Sheryl Post	BS Range Science 15 years experience	Tonopah Field Office
	Marc Pointel	BS Range Science/ Wildlife Science 35 years experience	Tonopah Field Office
Threatened and Endangered Species (Plants), Special Status Species	Marc Pointel	BS Range Science/ Wildlife Science 35 years experience	Tonopah Field Office
Soils	Marc Pointel	BS Range Science/ Wildlife Science 35 years experience	Tonopah Field Office
Wild Horse and Burros	Dustin Hollowell	BS Forestry, Wildlife Mgmt MS Range/Wildlife Science	Tonopah Field Office
Renewable Energy Coordinator	Erin Eastvedt	J.D. (Law) 1 year experience	Nevada State Office
Planning and Environmental Coordinator	Brian Amme	BA Cultural Anthropology 22 years experience	Nevada State Office
Hydrologist	Sarah Peterson	MS Hydrology 11 years experience	Nevada State Office
State Lead Travel Management	Leo Drumm	BS Recreation 31 years experience	Nevada State Office

**Table 6-2. Environmental Impact Statement Contractor and Subcontractors**

<b>Role/Responsibility</b>	<b>Name/Firm</b>	<b>Degree(S)</b>	<b>Years of Exp.</b>
Project Manager, NEPA Compliance, Hazardous Materials/Waste	Henrik Christensen HDR	B.S. Environmental Mgmt	20
Assistant Project Manager, Vegetation, Wildlife, Special Status Species, Visual, Recreation and Wilderness	Stephanie Locke HDR	M.S. Biology B.S. Biology	6
Range Resources, Biological Resources	Danny Rakestraw HDR	M.S. Wildlife Ecology B.S. Wildlife Ecology	21
Land Use, Recreation	Sherri McMahon HDR	M.A. Business Admin/Mgmt	19
GIS Support	Preston Kessinger HDR	B.S. Geography	11
Environmental Justice	Audrey Unger HDR	MEP. Environmental Policy and Management B.S. Environmental Sciences/Studies	8
Geology, Soils, Paleontology	Gregg Mitchell HDR	B.S. Environmental Technology A.A. Liberal Arts/Sciences	22
Air Quality, Noise	Dustin Watson HDR	MEP Environmental Sciences/Studies BS Planning	19
Socio/Economic Resources	Amy Edwards HDR	M.S. Civil Engineering B.S. Civil Engineering	19
Water Resources, Wetlands/Riparian Habitats	Scott Mars HDR	M.S. Environmental Engineering B.S. Environmental Engineering	22
Transportation/Traffic	Laycee Kolkman, PE HDR	M.S. Civil Engineering B.S. Civil Engineering	7
Visual Resources	Pam Cecere HDR	M.S. Community/Reg. Planning B.A. Political Science/Government	6
Cultural Resources	Marc Brodbeck HDR	M.A. Anthropology B.A. Anthropology	24
Native American Consultation	Ginny Bengston Bengston Consulting	M.A Anthropology B.S. Anthropology	21

**Table 6-3. Technical Studies and Design Contractor(s)**

Role/Responsibility	Name/Firm	Degree(S)	Years of Exp.
Engineering Manager, Project Description, Figures	Bob Anders, WorleyParsons	B.S. Civil Engineering	26
Environmental Manager	Deborah Builder, WorleyParsons	J.D. Law M.S. Environmental Studies B.S. Biology	12
Groundwater Resources - impact evaluation preparation and technical peer review	Mike Tietze, WorleyParsons	B.S. Geology	26
Air Quality Review	Joel Reisman, WorleyParsons	M.S. Mechanical Engineering B.S. Mechanical Engineering	42 total; 30 in air quality
Wastewater Plan which included design of the evaporation ponds	Janine Forrest, WorleyParsons	B.S. Environmental Engineering	7
Groundwater modeling, GER report review, GER work planning assistance	Dennis Jamison, WorleyParsons	M.S. Engineering Science B.S. Geology	31
Groundwater modeling, GER report review, GER work planning assistance	Andie Gehlhausen, WorleyParsons	B.A. Geology, M.S. Hydrogeology,	7
Groundwater Basin Profile	Miles Kenney, WorleyParsons	B.S. Geological Science & Chemistry Ph.D Geological Sciences	20
Civil Engineer re: Site Design (survey coordination, drainage design, grading design, roadways and utilities, etc.)	Dave Alcoa, WorleyParsons	B.S. Engineering M.S. Civil Engineering Professional licenses in NV & CA	45
Project Manager - Test Well Program	Ed Baquerizo	B.S. Environmental Biology M.S. Water Resource Engineering	25
Senior Technical Specialist	Richard Antoline	B.S. Chemical Engineering	10

**Table 6-4. Project Proponent(s)**

Role/Responsibility	Name/Firm	Degree(S)	Years of Exp.
Project Director	Rob Howe SolarReserve	B.S. Mechanical Engineering; B.S Foreign Service M. A. International Economics	22
Consultant (former Project Director)	Julie Way SolarReserve (consultant)	B.S. Mechanical Engineering; M.B.A.	25

<b>Role/Responsibility</b>	<b>Name/Firm</b>	<b>Degree(S)</b>	<b>Years of Exp.</b>
Senior Engineer (Technical/System Review Air Quality Review)	Charles Diep SolarReserve	B.S. Chemical Engineering P.E. Mechanical Engineering	21
Project Engineer	David De Andrade SolarReserve	M.S. Electrical Engineering; P.E. license in Control Systems (registered in CA)	7.5
Project Engineer	Scott Kaminski SolarReserve	B.S. Human Resources Management	25
Development Manager	Vaughan Johnson SolarReserve	B.S. Civil Engineering; P.E. license in Civil Engineering (registered in NJ, CA)	13
VP Development	Tom Georgis SolarReserve	B.A. International Studies; M.B.A.	20

## 7.0 References

---

- Beck, C., and G. T. Jones. 1997. Western pluvial lakes traditional occupation in Butte Valley, Eastern Nevada. In *Early human occupation in far Western North America: the Clovis-Archaic interface*, eds. J. A. Willig, C. M. Aikens, and J. L. Fagan, 273–302. Nevada State Museum Anthropological Papers No. 21. Carson City, Nevada.
- Bradley, P. V., M. J. O’Farrell, J. A. Williams, and J. E. Newmark, eds. 2006. *The revised Nevada bat conservation plan*. Nevada Bat Working Group. Reno, Nevada.
- Buqo, T. S. 2004. *Nye County water resources plan*. August.
- Bureau of Land Management (BLM), United States Department of the Interior. 1984. *BLM manual 8400 visual resource management*.
- . 1986a. *Bureau of Land Management manual H-8410-1 visual resource inventory*.
- . 1986b. *Bureau of Land Management manual H-8431-1 visual resource contrast rating*.
- . 1992. *Bureau of Land Management manual 9015 – integrated weed management*.
- . 1997. *Tonopah resource management plan and decision (approved): Battle Mountain District, Tonopah Field Station, Tonopah, Nevada*. October.
- . 2000. *Management guidelines for sage grouse and sagebrush ecosystems in Nevada*. State of Nevada Office.
- . 2007. *Instructional memorandum no. 2007-097: solar energy development policy*.
- . 2008a. *Bureau of Land Management manual H-1790-1 National Environmental Policy Act*.
- . 2008b. *Integrated weed management plan*. Battle Mountain District, Nevada, Mt. Lewis Field Office and Tonopah Field Office. Prepared by Michael Vermeys.
- . 2008c. *Bureau of Land Management manual 6840 special status species management*.
- . 2010a. *Golden eagle surveys for Crescent Dunes Solar Project*. File Number N-86292. Tonopah Field Office.
- . 2010b. Western states water laws: Federal reserved water rights and the Bureau of Land Management. Site accessed February 12, 2010, at <[www.blm.gov/nstc/WaterLaws/fedreservedwater.html](http://www.blm.gov/nstc/WaterLaws/fedreservedwater.html)>
- . 2010c. LR2000, Bureau of Land Management’s land & mineral legacy rehost 2000 system – LR2000. Site accessed March 28, 2010, at <[www.blm.gov/lr2000/](http://www.blm.gov/lr2000/)>.

- . 2010d. GeoCommunicator. Site accessed March 18, 2010, at <[www.geocommunicator.gov/GeoComm/index.shtm](http://www.geocommunicator.gov/GeoComm/index.shtm)>.
- . 2010e. Mining claim geographic report (list of mining claims by section). Run Date: February 4, 2010.
- . 2010f. Personal communication with David Hall, Battle Mountain District Ranger, BLM email to Henrik Christensen, Project Manger, Engineering. August 12, 2010
- California Climate Action Registry (CCAR). 2009. General reporting protocol, reporting entity-wide greenhouse gas emissions. Version 3.1. Site accessed March 11, 2010, at <[http://www.climateregistry.org/resources/docs/protocols/grp/GRP\\_3.1\\_January2009.pdf](http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf)>
- City-Data.com. 2010. Work and jobs in Tonopah Nevada (NV) detailed stats: occupations, industries, unemployment, workers, communte. Site accessed March 4, 2010, at <<http://www.city-data.com/work/work-Tonopah-Nevada.html#top#ixzz0mzm9ybJQ>>
- Connelly, J. W., M.A. Schroeder, A.R. Sands and C.E. Braun. 2000. Guidelines to manage sage-grouse populations and their habitats. *Wildlife Society Bulletin* 28(4):967–985
- Council on Environmental Quality (CEQ). 1981. Memorandum to agencies: Forty most asked questions concerning CEQ’s National Environmental Policy Act Regulations. Answer to question #2. Site accessed March 12, 2010, at <[ceq.hss.doe.gov/nepa/regs/40/40p1.htm](http://ceq.hss.doe.gov/nepa/regs/40/40p1.htm)>.
- . 1997. *Considering cumulative effects under the National Environmental Policy Act*.
- Doherty, P., and T. Grubb. 1997. Reproductive success of cavity-nesting birds breeding under high-voltage power lines. *American Midland Naturalist* 140:122–128.
- EDEN, Inc. of Nevada. 2009. Major employers. Site accessed on April 5, 2010, at <[www.eden-nv.com](http://www.eden-nv.com)>.
- . 2010. Economic Development Authority for Nye County. Site accessed on April 5, 2010, at <[www.eden-nv.com/Nye.htm](http://www.eden-nv.com/Nye.htm)>.
- Electric Power Research Institute (EPRI). 1982. *Socioeconomic impacts of power plants*.
- Esmeralda County. 2010. Esmeralda County employment. Site accessed on April 5, 2010, at <[www.accessesmeralda.com/Employ.htm](http://www.accessesmeralda.com/Employ.htm)>.
- Faught, M. K., and A. Freeman. 1998. Paleoindian complexes of the Terminal Wisconsin and Early Holocene. In *Paleoindian and Archaic sites in Arizona*, ed. J. Mabry, 33–54. Center for Desert Archaeology Technical Report No. 97-7, Tucson. Prepared for the State Historic Preservation Office, Arizona State Parks, Phoenix.

- Federal Aviation Administration. 2010a. DOD preliminary screening tool. Site accessed February 12, 2010, at <<https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showLongRangeRadarToolForm>>.
- — — 2010b. Letter from Sheri Edgett-Baron, Acting Manager for Obstruction Evaluation Service, to Julie Way, Solar Reserve, regarding a Determination of no hazard to air navigation for the proposed alternative, dated
- — — 2010c. Letter from Sheri Edgett-Baron, Acting Manager for Obstruction Evaluation Service, to Julie Way, Solar Reserve, regarding a Determination of no hazard to air navigation for alternative 1, dated March 31, 2010.
- — — 2010d. Letter from Sheri Edgett-Baron, Acting Manager for Obstruction Evaluation Service, to Julie Way, Solar Reserve, regarding a determination of no hazard to air navigation for alternative 2, dated June 28, 2010.
- Federal Emergency Management Agency. 2010. *Flood insurance rate map, Nye County, Nevada*. Map Number 32023C4450E, effective date February 17, 2010.
- Fernie, K., D. Bird, R. Dawson, and P. Lague. 2000. Effects of electromagnetic fields on the reproductive success of American kestrels. *Physiological and Biochemical Zoology* 73(1):60–65.
- Ghiselin. 1970. *Edaphic control of habitat selection by kangaroo mice (Microdipodops) in three Nevada populations*, 248–261. Department of Zoology, University of Wisconsin. Madison, Wisconsin.
- Grayson, D. K. 1993. *The desert's past, a natural prehistory of the Great Basin*. Washington, D.C.: Smithsonian Institution Press.
- Great Basin Bird Observatory (GBBO). 2010. Nevada breeding bird atlas data. Site accessed March 20, 2010, at <<http://www.gbbo.org/data.html>>.
- Griffith, G. E., and J. M. Omernik (lead authors); Environmental Protection Agency (content source); M. McGinley (topic editor). 2009. Ecoregions of Nevada (EPA). In *Encyclopedia of Earth*, ed. C. J. Cleveland. Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment. Site updated on February 3, 2009, and site accessed on April 5, 2010, at <[www.eoearth.org/article/Ecoregions\\_of\\_Nevada\\_\(EPA\)](http://www.eoearth.org/article/Ecoregions_of_Nevada_(EPA))>.
- Hall and Linsdale. 1929. Notes on the life history of the kangaroo mouse (Microdipodops). *Journal of Mammalogy* 1929.
- Harness, R. E., and K. R. Wilson. 2001. Electric-utility structures associated with raptor electrocutions in rural areas. *Wildlife Society Bulletin* 29:612–623.
- HDR Engineering, Inc. 2010. *Visual resources report for the Crescent Dunes Solar Energy Project*.

- Janss, G., and M. Ferrer. 1998. Rate of bird collisions with power lines: Effects of conductor-marking and static wire-marking. *Journal of Field Ornithology* 69(1):8–17.
- JBR Environmental Consultants, Inc. 2009. *Environmental baseline survey report*. Crescent Dunes Solar Energy Project. Nye County, Nevada.
- . 2010a. *Wildlife, botanical, and sensitive species surveys*. Crescent Dunes Solar Energy Project. Survey report.
- . 2010b. *Phase I environmental site assessment: Solar Reserve Crescent Dunes Project*. Nye County, Nevada. March 8, 2010.
- Kleinhampl, F. J., and J. I. Ziony. 1984. *Mineral resources of Northern Nye County, Nevada*. Bulletin 99B. 1st ed. Nevada Bureau of Mines and Geology, University of Nevada, Reno.
- . 1985. *Mineral resources of Northern Nye County, Nevada*. Bulletin 99B. Nevada Bureau of Mines and Geology, University of Nevada, Reno.
- Mabry, J. B. 1998. *Paleoindian and Archaic sites in Arizona*. Center for Desert Archaeology Technical Report No. 97-7, Tucson. Prepared for the State Historic Preservation Office, Arizona State Parks, Phoenix.
- Malinky, B. E., and M. Rothwell Harmon. 2009. *A cultural resources inventory for a solar development near Crescent Dunes, Nye County, Nevada*. Kautz Environmental Consultants, Inc., Reno.
- McCrary, M. D., R. L. McKernan, R. W. Schreiber, W. D. Wagner, and T. C. Sciarrotta. 1986. Avian mortality at a solar energy power plant. *Journal of Field Ornithology* 57(2):135–141.
- National Renewable Energy Laboratory (NREL). 2004. The potential economic impact of constructing and operating solar power generation facilities in Nevada. Site accessed on March 8, 2010, at <[www.nrel.gov/csp/pdfs/35037.pdf](http://www.nrel.gov/csp/pdfs/35037.pdf)>.
- Natural Resources Conservation Service. 2008. *Geomorphic description system*. Eds. P. J. Schoeneberger and D. A. Wysocki. National Soil Survey Center, Lincoln, Nebraska.
- . 2010. Web soil survey: Custom soil survey report for Big Smoky Valley, Nye County, Nevada. Site accessed January 18, 2010, at <[websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx](http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)>.
- Nevada Department of Agriculture (NDA). 2010. Noxious weed list. Site accessed April 12, 2010, at <[agri.nv.gov/nwac/PLANT\\_NoXWeedList.htm](http://agri.nv.gov/nwac/PLANT_NoXWeedList.htm)>.
- Nevada Department of Employment, Training, and Rehabilitation – Research and Analysis Bureau. 2009. Local area unemployment statistics. Site accessed on April 7 2010, at <[www.Nevadaworkforce.com](http://www.Nevadaworkforce.com)>.

Nevada Department of Wildlife (NDOW). 2009. Letter from Bradford Hardenbrook, Supervisory Biologist for NDOW, to Richard Duncan, JBR Environmental Consultants, regarding a species request for Solar Reserve Project, Nye County, Nevada, dated May 14, 2009.

———. 2010a. Nevada hunter information sheet. Desert bighorn sheep unit 173. Site accessed April 12, 2010, at <[www.ndow.org/hunt/resources/infosheets/dbh/south/dbh\\_173.pdf](http://www.ndow.org/hunt/resources/infosheets/dbh/south/dbh_173.pdf)>.

———. 2010b. Nevada hunter information sheet. Mule deer units 171, 172, 173. Site accessed April 12, 2010, at <[www.ndow.org/hunt/resources/infosheets/deer/south/md\\_171\\_172\\_173.pdf](http://www.ndow.org/hunt/resources/infosheets/deer/south/md_171_172_173.pdf)>.

———. 2010c. Pronghorn antelope hunter information sheet units 171–173. Site accessed April 12, 2010, at <[www.ndow.org/hunt/resources/infosheets/ant/south/ant\\_171\\_172\\_173.pdf](http://www.ndow.org/hunt/resources/infosheets/ant/south/ant_171_172_173.pdf)>.

Nevada Division of Environmental Protection (NDEP). 2008a. *Permit guidance: Modeling guidelines (environmental evaluation)*. Revised September 2008.

———. 2008b. *Greenhouse gas emissions: Mandatory reporter monitoring guidelines*. Draft. Site accessed Feb 16, 2010, at <[http://ndep.nv.gov/baqp/technical/GHG\\_Monitoring\\_Guidelines\\_11-01-08-1.pdf](http://ndep.nv.gov/baqp/technical/GHG_Monitoring_Guidelines_11-01-08-1.pdf)>

———. 2010a. Permit guidance: Getting started. Site accessed March 12, 2010, at <[ndep.nv.gov/bapc/qa/getting.html#2](http://ndep.nv.gov/bapc/qa/getting.html#2)>.

———. 2010b. Welcome to the Bureau of Air Quality Planning. Site accessed March 12, 2010, at <[ndep.nv.gov/BAQP](http://ndep.nv.gov/BAQP)>.

———. 2010c. Personal communication with Aaron Hoberg, April 30, 2010.

Nevada Division of State Lands. 2010. Public lands identified for public acquisition. Site accessed March 10, 2010 at <[lands.nv.gov/program/landsdoc.htm](http://lands.nv.gov/program/landsdoc.htm)>.

Nevada Natural Heritage Program (NNHP). 2001. 2009. Web soil survey. Site accessed February 12, 2010, at <[websoilsurvey.nrcs.usda.gov/app/HomePage.htm](http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm)>.

———. 2010. Rare plant fact sheet: *Oryctes nevadensis*. Site accessed June 16, 2010, at <<http://heritage.nv.gov/atlas/oryctnevad.pdf>>.

Nevada State Demographer's Office. 2008. Nevada County population projections 2008 to 2028. Site accessed March 9, 2010, at <[www.nsbdc.org/what/data\\_statistics/demographer/pubs/docs/NV\\_Projections\\_2020\\_Report.pdf](http://www.nsbdc.org/what/data_statistics/demographer/pubs/docs/NV_Projections_2020_Report.pdf)>.

———. 2009. Annual population estimates for Nevada's counties, cities, and unincorporated towns. Site April at <[www.nsbdc.org/what/data\\_statistics/demographer/pubs/pop\\_increase](http://www.nsbdc.org/what/data_statistics/demographer/pubs/pop_increase)>.

Nevada State Historic Preservation Office. 2010. Letter from Ronald M. James, State Historic Preservation Officer, to Thomas J. Seley, BLM Tonopah Office Field Manger, regarding solar

- development near Crescent Dunes and Crescent Dunes Extensions, Solar Reserve LLC, Nye County (Bureau of Land Management Report #6-2901 and 6-2901-1) (Undertaking #2010-632).
- Nevada Weed Action Committee (NWAC). 2001. Noxious weed control activities. Site accessed April 12, 2010, at <[agri.state.nv.us/nwac/noxious\\_weed\\_control\\_activites.htm](http://agri.state.nv.us/nwac/noxious_weed_control_activites.htm)>.
- NV Energy. 2010. Integrated resource plan. Site accessed on March 9, 2010, at <[www.nvenergy.com/company](http://www.nvenergy.com/company)>.
- Nye County. 2009. Nye County annual financial report. Site accessed on April 2, 2010, at <[nv-nyecounty.civicplus.com/index.aspx?NID=617](http://nyecounty.civicplus.com/index.aspx?NID=617)>.
- . 2009. *County code*. Updated November 3, 2009b.
- Nye County Board of Commissioners. 1994. Nye County comprehensive plan. Site accessed February 12, 2010, at <[www.co.nye.nv.us/DocumentView.aspx?DID=10894](http://www.co.nye.nv.us/DocumentView.aspx?DID=10894)>.
- . 2010. Nye County comprehensive plan. Site accessed August 13, 2010, at <<http://www.co.nye.nv.us/DocumentView.aspx?DID=10881>>
- Nye County School District. 2010. Nye County School District. Site accessed April 5, 2010, at <[nyecounty.schoolinsites.com](http://nyecounty.schoolinsites.com)>.
- Parker, P., and T. King. 1998. *Guidelines for evaluating and documenting traditional cultural properties*. National Register Bulletin 38. Washington, DC: National Park Service.
- Peterson, E. B. 2003. *Mapping percent-cover of the invasive species Bromus tectorum (cheatgrass) over a large portion of Nevada from satellite imagery*. Report for the U.S. Fish and Wildlife Service, Nevada State Office, Reno, by the Nevada Natural Heritage Program, Carson City.
- Risse, D. 2010. *Crescent Dunes Extensions, Nye County, Nevada (Draft)*. Kautz Environmental Consultants, Inc., Reno.
- SolarReserve. 2010. *Tonopah Solar Energy Project air emissions sources and inventory*.
- South Central Planning Team. 2004. *The South Central Nevada sage grouse conservation plan*. Draft 4.5.
- State of Nevada Department of Conservation and Natural Resources Division of Water Resources. 2010. Well log database query tool. Site accessed February 12, 2010, at <[water.nv.gov/Engineering/wlog/wlog.cfm](http://water.nv.gov/Engineering/wlog/wlog.cfm)>.
- State of Nevada Environmental Commission. 1994. *Handbook of best management practices*.
- Steenhof, K., M. Koochert, and G. Roppe. 1993. Nesting by raptors and common ravens on electrical transmission line towers. *Journal of Wildlife Management* 57(2):271–281.

- Steward, J. H. 1938. Basin-Plateau aboriginal sociopolitical groups. *Bureau of American Ethnology Bulletin* 120. Washington, D.C.
- Tonopah Solar Energy, LLC. 2009. *Tonopah Solar Energy, LLC, Crescent Dunes Solar Energy Project, N-86292, plan of development*. Submitted to BLM Tonopah Field Office. Revised November 21, 2009.
- United States Department of Commerce, Bureau of Economic Analysis. 2009. Regional economic accounts. Site accessed April 8, 2010, at <[www.bea.gov/regional/reis](http://www.bea.gov/regional/reis)>.
- United States Department of Housing and Urban Development (HUD). 1974. *The noise guidebook*.
- . 2003. *Environmental criteria and standards, noise abatement and control*. 24 CFR § 51, subpart B. Latest revision October 29, 2003.
- United States Environmental Protection Agency (EPA). 2006. Emissions factors and AP 42, compilation of air pollutant emission factors. Site accessed at <[www.epa.gov/ttnchie1/ap42/](http://www.epa.gov/ttnchie1/ap42/)>.
- . 2008. *Inventory of greenhouse gas emissions and sinks, 1990–2006*. Washington D.C.
- . 2010. AirData. Site accessed February 10, 2010, <[www.epa.gov/air/data/reports.html](http://www.epa.gov/air/data/reports.html)>.
- United States Fish and Wildlife Service (USFWS). 2009a. Letter from Robert D. Williams, State Supervisor for USFWS, to Richard Duncan, JBR Environmental Consultants, regarding species list request for Solar Reserve Project, Nye County, Nevada, dated May 5, 2009.
- . 2009b. Migratory bird mortality in oilfield wastewater disposal facilities. Wyoming Ecological Field Office, Cheyenne, Wyoming. Site accessed May 11, 2010, at <[www.fws.gov/contaminants/Documents/COWDFBirdMortality.pdf](http://www.fws.gov/contaminants/Documents/COWDFBirdMortality.pdf)>.
- United States Geological Survey (USGS). 1987. *7.5 Minute Topographic Quadrangles: Crescent Dunes, Liberty Springs, San Antonio Ranch, and Millers*.
- . 2004. *National Gap Analysis Program. Provisional digital land cover map for the Southwestern United States*. Version 1.0. RS/GIS laboratory, College of Natural Resources, Utah State University.
- . 2005. *National Gap Analysis Program, Southwest Regional GAP Analysis Project – land cover descriptions*. RS/GIS Laboratory. College of Natural Resources, Utah State University.
- . 2010. National hydrography dataset. Site accessed February 12, 2010, at <[nhd.usgs.gov](http://nhd.usgs.gov)>.
- Western Regional Climate Center. 2010a. 1971–2000 monthly climate summary for Tonopah AP, Nevada (268170). Site accessed February 10, 2010, at <[www.wrcc.dri.edu](http://www.wrcc.dri.edu)>.
- . 2010b. Tonopah Nevada [Station 268160]. Site accessed April 12, 2010, at <[www.wrcc.dri.edu](http://www.wrcc.dri.edu)>.

Wilson, D. E., and S. Ruff. 1999. *The Smithsonian book of North American mammals*. Smithsonian Institution Press.

WorleyParsons. 2010a. *Groundwater resources literature review technical memo, Crescent Dunes Solar Energy Project*. March 1, 2010.

———. 2010b. *Crescent Dunes Solar Energy Project wastewater plan*. July 9, 2010.

———. 2010c. *Technical approach for analytical groundwater modeling memorandum, Crescent Dunes Solar Energy Project*. March 9, 2010.

## 8.0 Glossary

---

**Acre-foot:** A unit commonly used for measuring the volume of water; equal to the quantity of water required to cover one acre (43,560 square feet or 4,047 square meters) to a depth of 1 foot (0.30 meter) and equal to 43,560 cubic feet (1,234 cubic meters), or 325,851 gallons.

**Action:** In the context of the National Environmental Policy Act (NEPA), describes activities proposed to meet a specific purpose and need and that may have effects on the environment, which are potentially subject to Federal control and responsibility. Federal actions generally fall into the categories of adoption of official policy, formal plans, and programs; or approval of specific projects. For this document, the term action applies to this specific project.

**Affected environment:** Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action.

**Air quality:** A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

**Allotment:** A unit of land suitable and available for livestock grazing that is managed as one grazing unit.

**Alluvium:** A general term for clay, silt, sand, gravel, or similar consolidated material deposited during comparatively recent geologic time by a stream or other body of running water in the bed of the stream, river, or floodplain, or as a cone or fan at the base of a mountain slope.

**Alternative:** Any one of a number of options for a project.

**Ambient:** The surrounding natural conditions (or environment) in a given place and time, most commonly applied to air quality and noise.

**American Indian tribe (or tribe):** Any American Indian group in the conterminous United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

**Animal Unit Month:** Grazing of a 1,000 pound cow with suckling calf for 1 month (or equivalent metabolic weight of other kinds of livestock).

**Angle of Incidence:** The angle that a ray of sun makes with a line perpendicular to the surface.

**Aquifer:** A water-bearing rock unit (unconsolidated or bedrock) that will yield water in a usable quantity to a well or spring.

**Archaeological site:** A discrete location that provides physical evidence of past human use.

**Archaeology:** The scientific study of the life and culture of past, especially ancient, peoples, as by excavation of ancient cities, relics, artifacts, etc.

**Area of Critical Environmental Concern (ACEC):** A Bureau of Land Management (BLM) designation pertaining to areas where specific management attention is needed to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish or wildlife resources, or other natural systems or processes, or to protect human life and safety from natural hazards.

**A-Weighted Sound Levels:** Decibels (referenced to 20 micro-Pascals) as measured with an A-weighting network of a standard sound level meter, abbreviated dB(A).

**Background (visual):** That portion of the visual landscape lying from the outer limit of the middleground to infinity. Color and texture are subdued in this area, and visual sensitivity analysis here is primarily concerned with the two-dimensional shape of landforms against the sky.

**Base Load:** The average amount of electric power that a utility must supply in any period.

**Baseline:** The existing conditions against which impacts of the proposed action and its alternatives can be compared.

**Basin:** A depressed area having no surface outlet (topographic basin); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (water); a depression in the earth's surface, the lowest part often filled by a lake or pond (lake basin); a part of a river or canal widened (drainage, river, stream basin).

**Best Management Practices (BMPs):** A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes and help to protect the environmental resources by avoiding or minimizing impacts of an action.

**Borrow:** Earth material, such as sand or gravel, which has been taken from one location to be used as at another location.

**Borrow Pit:** An excavated area from which borrow has been obtained.

**Clean Air Act of 1990:** Federal legislation governing air pollution. The Clean Air Act established National Ambient Air Quality Standards for carbon monoxide, nitrogen oxide, ozone, particulate matter, sulfur dioxide, and lead. Prevention of Significant Deterioration classifications define the allowable increased levels of air quality deterioration above legally established levels and include the following:

Class I – minimal additional deterioration in air quality (certain national parks and wilderness areas).

Class II – moderate additional deterioration in air quality (most lands)

Class III – greater deterioration for planned maximum growth (industrial areas)

**Clean Water Act of 1987:** National environmental law enforced by the U.S. Environmental Protection Agency that regulates water pollution.

**Code of Federal Regulations:** The compilation of federal regulations adopted by federal agencies through a rule-making process.

**Cone of Depression:** The depression of groundwater levels around a pumping well caused by the withdrawal of water.

**Cooperating Agency:** Assists the lead Federal agency in developing an environmental assessment or environmental impact statement. The Council on Environmental Quality regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any Federal, state, or local government jurisdiction with such qualification may become a cooperating agency by agreement with the lead agency.

**Council on Environmental Quality (CEQ):** An advisory council to the President of the United States established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effort on environmental studies, and advises the President on environmental matters.

**Cultural resources:** Remains of human activity, occupation, or endeavor as reflected in districts, sites, buildings, objects, artifacts, ruins, works of art, architecture, and natural features important in human events.

**Cumulative effect (or impact):** The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions. Cumulative impacts are evaluated as part of the environmental impact statement (EIS), and may include consideration of additive or interactive effects regardless of what agency or person undertakes the other actions.

**Decibel:** A unit for expressing the relative intensity of sounds on a logarithmic scale from zero for the average least perceptible sound to about 130 for the average level at which sound causes pain to humans. For traffic and industrial noise measurements, the A-weighted decibel, a frequency-weighted noise unit, is widely used. The A-weighted decibel scale corresponds approximately to the frequency response of the human ear and thus correlates well with loudness.

**Discharge:** Outflow of surface water from a stream or canal (water). Discharge from an industrial facility that may contain pollutants harmful to fish or animals if it is released into nearby water bodies usually requires a permit issued by the U.S. Environmental Protection Agency and is monitored.

**Distance zone:** A visibility threshold distance where visual perception changes. They usually are defined as foreground, middleground, and background.

**Drainage:** The natural channel through which water flows some time of the year; natural and artificial means for affecting discharge of water as by a system of surface and subsurface passages.

**Drawdown:** The lowering of the water level in a well as a result of withdrawal; the reduction in groundwater level at a point caused by the withdrawal of water from an aquifer.

**Easement:** A right afforded a person, agency, or organization to make limited use of another's real property for access or other purposes.

**Ecology:** The relationship between living organisms and their environment.

**Effect (or impact):** A modification of the existing environment as it presently exists, caused by an action (such as construction or operation of facilities). An effect may be direct, indirect, or cumulative. The terms effect and impact are synonymous under the NEPA. A direct effect is caused by an action and occurs at the same time and same place (40 CFR 1508.8(a)). An indirect effect is caused by the action later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

**Electrical grid:** An integrated system of electricity distribution, usually covering a large area.

**Emission:** Effluent discharged into the atmosphere, usually specified by mass per unit time, and considered when analyzing air quality.

**Endangered Species:** Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act; Any species in danger of extinction throughout all or a significant portion of its range.

**Endangered Species Act of 1973:** The Endangered Species Act requires Federal agencies to seek to conserve threatened and endangered species, use applicable authorities in furtherance of the purposes of the Endangered Species Act, and avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened and endangered or destroying or adversely modifying its designated or proposed critical habitat. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service are responsible for administration of this act.

**Environment:** The surrounding conditions, influences, or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.

**Environmental Impact Statement (EIS):** A document prepared to analyze the impacts on the environment of a proposed action and released to the public for review and comment. An EIS must meet the requirements of NEPA, CEQ, and the directives of the agency responsible for the proposed action.

**Environmental justice:** The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies (see Executive Order 12898).

**Ephemeral wash or stream:** A stream that flows only in direct response to precipitation in the immediate watershed or in response to the melting of a cover of snow and ice, and that has a channel bottom that is always above the local water table.

**Erosion:** The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as “gravitation creep.”

**Eutectic:** A single chemical composition that solidifies at a lower temperature than any other composition.

**Federal Register:** Published by the Office of the Federal Register, National Archives and Records Administration, the Federal Register is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.

**Floodplain:** That portion of a river or stream valley, adjacent to a river channel, that is built of sediments and is inundated with water when the stream overflows its banks.

**Fluid Minerals:** A BLM regulatory and legal term used to denote petroleum and natural gas resources.

**Foreground:** The visible area from a viewpoint or use area out to a distance of 0.5 mile. The ability to perceive detail in a landscape is greatest in this zone.

**Fossil:** Any remains, trace, or imprint of a plant or animal that has been preserved by natural processes in the earth’s crust since some past geologic time.

**Geographic information system:** A system of computer hardware, software, data, people and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information.

**Geology:** The science that relates to the earth, the rocks of which it is composed, and the changes that the earth has undergone or is undergoing.

**Global warming:** An increase in the average temperature of the earth’s atmosphere and oceans. The term also is used to describe the theory that increasing temperatures are the result of a strengthening greenhouse effect caused primarily by manmade increases in carbon dioxide and other greenhouse gases.

**Groundwater:** Subsurface water that fills available openings in rock or soil materials to the extent that they are considered saturated.

**Habitat:** A specific set of physical conditions in a geographic area(s) that surrounds a single species, group of species, or large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

**Heliostat:** A mirror that reflects solar rays onto a central receiver. A heliostat automatically adjusts its position to track daily or seasonal changes in the sun's position. The arrangement of heliostats around a central receiver is also called a solar collector field or array.

**Hydrology:** The study of the movement, distribution, and quality of water throughout the earth, addresses both the hydrologic cycle and water resources.

**Impact (or effect):** A modification of the existing environment as it presently exists, caused by an action (such as construction or operation of facilities). An impact may be direct, indirect, or cumulative. The terms effect and impact are synonymous under NEPA.

**Indirect effect (or impact):** Secondary effects that occur in locations other than the initial action or later in time, but that are caused by the proposed action.

**Infrastructure:** The facilities, services, and equipment needed for a community or facility to function, such as and including roads, sewers, water lines, and electric lines.

**Insolation:** The solar power density incident on a surface of stated area and orientation, usually expressed as Watts per square meter or Btu per square foot per hour.

**Invasive species:** Describes a large number of nonnative plant species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

**Irrecoverable:** Applies primarily to the lost production of renewable natural resources during the life of the project.

**Irreversible:** Applies primarily to the use of nonrenewable resources, such as minerals, cultural resources, wetlands, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options.

**Key Observation Point:** An observer position on a travel route used to determine visible area.

**Kilowatt (kW):** A standard unit of electrical power equal to 1000 watts, or to the energy consumption at a rate of 1000 joules per second.

**Kilowatt-Hour (kWh):** 1,000 thousand watts acting over a period of 1 hour. The kWh is a unit of energy. 1 kWh=3600 kJ.

**Labor force:** All persons 16 years of age or over who are either employed or unemployed and actively looking for a job.

**Land use plan:** A plan or document developed by a government entity that outlines specific functions, uses, or management-related activities of an area, and may be identified in combination when joint or seasonal uses occur and may include land used for support facilities that are an integral part of the use.

**Landform:** A term used to describe the many land surfaces that exist as a result of geologic activity and weathering (e.g., plateaus, mountains, plains, and valleys).

**Landscape:** An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern, which are determined by interacting ecosystems.

**Lease:** An authorization or contract by which one party (lessor) conveys the use of property to another (lessee) in return for rental payments. In cases of resource production, lessees pay royalties to the lessor in addition to rental payments.

**LEQ:** The equivalent sound level, or the time-integrated continuous sound level, that represents the same sound energy as the varying sound levels, over a specified monitoring period.

**Megawatt (MW):** A unit for measuring power equal to 1,000 kilowatts, or 1 million watts. The productive capacity of electrical generators is measured in megawatts.

**Mineral resources:** Any inorganic or organic substance occurring naturally in the earth that has a consistent and distinctive set of physical properties. Examples of mineral resources include coal, nickel, gold, silver, and copper.

**Minimal (impact):** Unless otherwise specified, “minimal” shall mean non-deleterious impacts that are measurable on the short term.

**Mitigation:** The abatement or reduction of an impact on the environment by (1) avoiding a certain action or parts of an action, (2) employing certain construction measures to limit the degree of impact, (3) restoring an area to preconstruction conditions, (4) preserving or maintaining an area throughout the life of a project, (5) replacing or providing substitute resources to the environment, or (6) gathering data (e.g., archaeological or paleontological) prior to disturbance.

**Molten salt:** A heat transfer medium found inside the central receiver. Can be heated up to 1,200°F. Molten salt is primarily used due to the fact that it can remain heated for a long period of time, even after the sun has set.

**Multi-Use:** Land use where a combination of use types can be found in close proximity together: commercial, residential, public, industrial, etc.

**National Ambient Air Quality Standards:** The allowable concentrations of air pollutants in the air specified by the Federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

**National Environmental Policy Act of 1969 (NEPA):** An Act that establishes policy, sets goals, and provides means for carrying out the environmental protection policy of the Nation. In accordance with NEPA, all Federal agencies must prepare a written statement on the environmental impacts of a proposed action. The provisions to ensure that Federal agencies act according to the letter and spirit of NEPA are in the CEQ regulations for implementing NEPA (43 CFR 1500-1508).

**National Pollutant Discharge Elimination System:** As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Industrial, municipal and other facilities must obtain permits if their discharges go directly to surface waters of the United States. These permits are referred to as NPDES permits and are administered by the USEPA.

**National Register of Historic Places:** A listing, maintained by the Secretary of the Interior, of districts, sites, buildings, structures, and objects worthy of preservation. To be eligible a property must normally be at least 50 years old, unless it has exceptional significance, and have national, State, or local significance in American history, architecture, archaeology, engineering, or culture; and possess integrity of location, design, setting, material, workmanship, feeling, and association; and (a) be associated with events that have made a significant contribution to the broad patterns of history, (b) be associated with the lives of persons significant in our past, or (c) embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction; or (d) have yielded, or may be likely to yield, information important to prehistory or history.

**Native American Graves Protection and Repatriation Act:** A Federal law passed in 1990 that provides a process for museums and Federal agencies to return certain Native American cultural items -- human remains, funerary objects, sacred objects, or objects of cultural patrimony -- to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations.

**Negligible (impact):** Unless otherwise specified, "negligible" shall mean impacts of such a small scale such as to be non-measurable.

**Nevada Administrative Code:**The text of the regulations implementing the laws passed by the Nevada legislature.

**Nevada Revised Statutes:**The text of laws passed by the Nevada legislature.

**Noise Emission:** The industry standard format of sound power level, which is the total acoustic power radiated from a given sound source as relates to a reference power level of 10 picowatts. Sound power level differs from sound pressure level, which quantifies the fluctuations in air pressure caused by acoustic energy.

**Noise Level Measurements:** Unless otherwise indicated, the use of A-weighted and "slow" response of a noise monitoring instrument complying with at least Type 2 requirements as defined by the latest revision of American National Standard Institute (ANSI) S1.4 Specification for Sound Level Meters.

**Nonattainment area:** An air quality control region (or portion thereof) in which the U.S. Environmental Protection Agency has determined that ambient air concentrations exceed national ambient air quality standards for one or more criteria pollutants.

**Noxious weed:** Nonnative plant species that negatively impact crops, native plant communities, and/or management of natural or agricultural systems. Noxious weeds are officially designated by a number of states (including Nevada) and Federal agencies.

**Particulates:** Minute, separate particles, such as dust or other air pollutants.

**Perennial stream:** A stream or that part of a stream that flows continuously during all of the calendar year as a result of groundwater discharge or surface runoff.

**Perennial yield:** The amount of usable water from a groundwater aquifer that can be withdrawn economically and consumed each year for an indefinite period of time. It cannot exceed the natural recharge to that aquifer and ultimately is limited to maximum amount of discharge that can be used for beneficial use.

**Playa:** The shallow central lake basin of a desert plain, in which water gathers after a rain and is evaporated.

**Public land:** Land or interest in land owned by the United States and administered through the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands on the Outer Continental Shelf, and land held in trust for the benefit of American Indians, Aleuts, and Eskimos.

**Range:** A large, open area of land over which livestock can wander and graze.

**Rare:** A plant or animal of limited distribution and/or abundance. May be locally abundant in a limited area or few in number over a wide area.

**Recharge:** Replenishment of a groundwater reservoir (aquifer) by the addition of water, through either natural or artificial means.

**Reclamation:** Restoration of land disturbed by natural or human activity (e.g., mining, pipeline construction) to original contour, use, or condition. Also describes the return of land to alternative uses that may, under certain circumstances, be different from those prior to disturbance.

**Recontouring:** Return a surface to or near to its original form through some type of action such as grading.

**Record of Decision:** A document separate from, but associated with, an EIS that publicly and officially discloses the responsible official's decision on a proposed action.

**Region of Influence:** Area which is impacted by activities related to the project. Varies by species and activity.

**Revegetation:** The reestablishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as reseeding.

**Reverse osmosis:** A separation process that uses pressure to force a solvent through a membrane that retains the solute on one side and allows the pure solvent to pass to the other side. More formally, it is the process of forcing a solvent from a region of high solute concentration through a membrane to a region of low solute concentration by applying a pressure in excess of the osmotic pressure.

**Right-of-way:** Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, such as a road or utility.

**Riparian:** Situated on or pertaining to the bank of a river, stream, or other body of water. Riparian is normally used to refer to plants of all types that grow along streams, rivers, or at spring and seep sites.

**Rural:** Sparsely settled places away from the influence of large cities and towns. Such areas are distinct from more intensively settled urban and suburban areas, and also from unsettled lands such as outback or wilderness. People tend to live in villages, on farms, and in other isolated houses on large plots of land.

**Scoping:** The process open to the public early in the preparation of an EIS for determining the scope of issues related to a proposed action and identifying significant issues to be addressed in an EIS.

**Sediment:** Particulate matter that can be transported by fluid flow, and which eventually is deposited; Material suspended in or settling to the bottom of a liquid. Sediment input comes from natural sources, such as soil erosion and rock weathering, construction activities, or anthropogenic sources, such as forestry or agricultural practices.

**Sediment Load:** The amount of sediment (sand, silt, and fine particles) carried by a stream or river.

**Sedimentation:** The result when soil or mineral is transported by moving water, wind, gravity, or glaciers and deposited in streams or other bodies of water, or on land. Also, letting solids settle out of wastewater by gravity during treatment.

**Sensitive receptor:** In terms of noise, people or animals that may hear a noise or be sensitive to increased noise levels within their range of hearing.

**Sensitive Receptor Location:** A location of regulatory compliance where particular sensitivities to noise exist, such as residential areas, institutions, hospitals, parks, or other environmentally sensitive areas.

**Sensitivity:** The state of being readily affected by the actions of external influence.

**Special Development Area:** sets aside public or private areas of special interest that would be subject to a specific plan of development or a Development Agreement in accordance with Nye County Code Title 16.32. SDA is a mixed-use designation and a variety of land uses might be proposed for approval, such as the Yucca Mountain Project Gateway Area Concept Plan, and projects under review by the Bureau of Land Management, such as the Solar Energy Facilities. A property owner/developer must provide a specific plan of development for the subject property and obtain recommendations from the Planning Committee and the Town Advisory Board prior to Nye County Commission approval.

**Solar Energy:** Electromagnetic energy transmitted from the sun (solar radiation). The amount that reaches the earth is equal to one billionth of total solar energy generated, or the equivalent of about 420 trillion kilowatt-hours.

**Solar power tower:** A solar energy conversion system that uses a large field of independently adjustable mirrors(heliostats) to focus solar rays on a near single point atop a fixed tower (receiver). The concentrated energy may be used to directly heat the working fluid of a Rankine cycle engine or to heat an intermediary thermal storage medium (such as a molten salt).

**Sound Pressure Level (SPL):** The observable effect of acoustic energy radiation, quantifying the sound level as perceivable by the receiver. When Sound Pressure is used to describe a noise source, the distance between source and receiver must be known in order to yield useful information about the power rating of the source.

**Solar Thermal Electric Systems:** Solar energy conversion technologies that convert solar energy to electricity by heating a working fluid to power a turbine that drives a generator. Examples of these systems include central receiver systems, parabolic dish, and solar trough.

**Special status species:** Wildlife and plant species either federally listed or proposed for listing as endangered or threatened; state-listed; or priority species of concern to Federal agencies or tribes.

**Species:**A group of individuals of common ancestry that closely resemble each other structurally and physiologically, and in nature interbreed producing fertile offspring.

**Sound power Level (PWL):** A specialized analytical metric used to fully quantify the acoustic energy emitted by a source which is considered a complete value without the accompanying information on the position of measurement relative to the source. It may be used to calculate the sound pressure level at any desired distance away from the source.

**Surface water:** All bodies of water on the surface of the earth and open to the atmosphere such as rivers, lakes, reservoirs, ponds, seas, and estuaries.

**Surfactant:** Any substance that when dissolved in water or an aqueous solution reduces its surface tension or the interfacial tension between it and another liquid.

**Terrain:** Used to describe the geophysiographic characteristics of land in terms of elevation, slope, and orientation.

**Thermal storage:** Storage of heated material for later heating or generation of steam for power production, potentially at night.

**Threatened Species:** Any species of plant or animal that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Animal or plant species that are listed under the Federal Endangered Species Act of 1973, as amended (federally listed), or under similar state laws (statelisted).

**Total dissolved solids:** A term that describes the quantity of dissolved material in a sample of water.

**Traditional cultural places:** These named places (landscape features) comprise the cultural landscape that provides the context for evaluating specific traditional cultural properties.

**Transmissivity:** The rate at which water is transmitted through a unit width of the aquifer under a unit hydraulic gradient.

**Tribe:** Any Indian tribe, band, group, or community having a governing body recognized by the Secretary of Interior.

**Vegetation community or association:** Species of plants that commonly live together in the same region or ecotone.

**Visibility:** The distance to which an observer can distinguish objects from their background. The determinants of visibility include the characteristics of the target object (shape, size, color, pattern), the angle and intensity of sunlight, the observer's eyesight, and any screening present between the viewer and the object (i.e., vegetation, landform, even pollution such as regional haze).

**Visual resource management classes:** Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes, each of which has an objective that prescribes the amount of change allowed in the characteristic landscape.

**Waters of the United States:** All water bodies that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including adjacent wetlands and tributaries; and all waters by which the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce.

**Watershed:** All land and water within the confines of a drainage.

**Well field:** Area containing one or more wells that produce usable amounts of water or oil.

**Wetlands:** Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Examples of wetlands include marshes, shallow swamps, lakeshores, wet meadows, estuaries, and riparian areas.

**Wilderness:** An area formally designated by Congress as part of the National Wilderness Preservation System.