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Subject: **DRAFT WEED MANAGEMENT PLAN**
PALEN SOLAR ELECTRIC GENERATING SYSTEM
DOCKET NO. (09-AFC-7C)

Enclosed for filing with the California Energy Commission is the electronic version of the **DRAFT WEED MANAGEMENT PLAN** , for the Palen Solar Electric Generating System
(09-AFC-7C).

Sincerely,

Marie Fleming

Draft Weed Management Plan
for the Palen Solar Electric Generating System

Riverside County, California

Docket 09-AFC-7C

Submitted by:

PALEN SOLAR HOLDINGS, LLC

Prepared by:

centerline

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ABBREVIATIONS AND ACRONYMS

BLM	Bureau of Land Management
BMPs	Best Management Practices
Cal-IPC	California Invasive Plant Council
CDCA	California Desert Conservation Area
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEC or Commission	California Energy Commission
CPM	Compliance Project Manager
DB	Designated Biologist
ECM	Environmental Compliance Manager
FLPMA	Federal Land and Policy Management Act
GIS	Geographic Informational System
I-10	Interstate 10
kV	kilovolt
LORS	Laws, Ordinances, Regulations, and Standards
MW	megawatt
NECO	Northern and Eastern Colorado Desert Coordinated Management
PAR	Pesticide Application Record
PEIS	Programmatic Environmental Impact Statement
PPA	Plant Protection Act of 2000
Project	Palen Solar Electric Generating System
Project Disturbance Area	PSEGS footprint
PSEGS	Palen Solar Electric Generating System
PSPP	Palen Solar Power Project
PSH	Palen Solar Holdings, LLC
PUP	Pesticide Use Proposal
SCE	Southern California Edison
SCG	Southern California Gas Company
SEIS	Supplemental Environmental Impact Statement
SRSG	solar receiver steam generator
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

WEAP	Worker Environmental Awareness Program
WMP	Weed Management Plan

1.0 INTRODUCTION

1.1 Project Background

In August 2009, Palen Solar I, LLC (PSI), filed an Application For Certification (AFC) with the California Energy Commission (CEC or Commission) to construct and operate the Palen Solar Power Project (PSPP), a nominal 500 megawatt (MW) concentrating solar thermal electric power generating facility, in Riverside County using solar parabolic trough technology. The Commission issued a Final Decision approving two alternative configurations for the PSPP on December 15, 2010 (CEC 2010). Approved Reconfigured Alternative 3 focused the development of project facilities on federal land managed by the United States Bureau of Land Management (BLM), while Approved Reconfigured Alternative 2 allowed development of project facilities on federal land and on adjacent private parcels should PSI acquire the private parcels in the future.

On April 2, 2012 PSI, along with other Solar Millennium US-based companies, petitioned for relief in federal bankruptcy court. On June 21, 2012, the bankruptcy court approved the transfer of the project to BrightSource. The Commission subsequently approved a petition to amend the Final Decision to transfer ownership of the Project to Palen SEGS I, LLC, a wholly owned, indirect subsidiary of BrightSource (Order No. 12-0711-3). After approval of the ownership transfer of the Final Decision to Palen SEGS I, LLC, BrightSource and Abengoa Solar LLC formed a joint venture to develop the site using BrightSource's solar power tower technology. The joint venture company is known as Palen Solar Holdings (PSH) and the project has been renamed the Palen Solar Electric Generating System (PSEGS or Project).

The PSEGS site is located in the Southern California inland desert, approximately 10 miles east of Desert Center, in eastern Riverside County, California (see Figure 1, Vicinity Map). Project facilities will be located entirely on land managed by BLM, CACA # 48810, in Townships 5 and 6 South, Range 17 East.

PSEGS will replace the previously approved parabolic trough solar collection system and associated heat transfer fluid system with the BrightSource technology. The BrightSource technology uses heliostats—elevated mirrors guided by a tracking system mounted on a pylon—to focus the sun's rays on a solar receiver steam generator (SRSG) located atop a solar tower near the center of each solar field to create steam. The Project will be comprised of two adjacent solar fields and associated facilities with a total combined nominal output of approximately 500 MW. PSH proposes to develop PSEGS in two operational phases: each phase will consist of one solar field and power block with approximately 250 MW of electricity. Each phase will also share common facilities, including a common area containing an administration building, warehouse, evaporation ponds, maintenance complex and a meter/valve station for incoming natural gas service to the site; an onsite switchyard; and a single-circuit 230-kilovolt (kV) generation tie-line to deliver power to the electricity grid. Other onsite facilities will include access and maintenance roads (either dirt, gravel or paved), perimeter fencing, tortoise fencing and other ancillary security facilities (see Figure 2, Site Plan). Access to the site will be the same as the original and the PSEGS will continue to

interconnect to the regional transmission grid at Southern California Edison's (SCE) Red Bluff Substation, which is currently under construction.

The Project Disturbance Area, which includes both permanent and temporary disturbance, will be approximately 3,794 acres, and includes approximately 3575 acres for the Plant Site and approximately 119 acres for the linear facilities. No private parcels will be developed as part of the PSEGs project.

A revised Plan of Development has been submitted to the BLM and concurrent with the ongoing CEC permitting process, the BLM is preparing a Supplemental Environmental Impact Statement (SEIS) to support the process to issue a Record of Decision as required for PSH to utilize public lands owned by the federal government for the Modified Project. As part of the environmental review process, BLM has requested that PSH prepare and submit a draft Weed Management Plan (WMP) that can be evaluated as part of the Draft SEIS.

1.2 Plan Goals and Objectives

Condition of Certification BIO-14 in the CEC Final Decision for the original project requires preparation and implementation of a WMP. PSH has prepared this draft WMP to address monitoring, prevention, and management strategies for weed control during construction and operation of the Project. This document was prepared following guidance from other documents, including the approved weed management plans for the Ivanpah Solar Electric Generating System and Genesis Solar Project.

The goal of the WMP is to protect the biological resources surrounding the Project Disturbance Area from the expansion of weeds that may result from Project construction and maintenance activities and to avoid unintended harm from weed management techniques. To achieve this goal, the WMP provides specific guidance on early detection protocols, containment strategies, and control methods for noxious weeds. Noxious weeds are opportunistic, exotic plant species that readily colonize disturbed areas. Their introduction and spread often result in adverse effects to the environment and may also result in economic impacts. These plant species may exclude or out-compete desired native species and decrease species diversity.

WMP objectives need to be consistent with existing and proposed future Site conditions, the specific biology of the identified weed species, and environmental context of the Project. The WMP also must be consistent with all applicable Laws, Ordinances, Regulations, and Standards (LORS) (see Section 2.0). Weed management objectives for the Project include the following:

- **Prevention**: Prevent the introduction and spread of invasive weeds to the Project by implementing sound construction and site management strategies.

- **Monitoring**: Monitor the Project Disturbance Area on a specific schedule to ensure early detection and treatment of incipient populations of weeds that may be new to the Project Disturbance Area and/or vicinity, plus populations of weeds already present that may be spreading into new areas.

- **Eradication**: Eliminate all individuals of a particular species within specified areas. This will be the goal for most weed species in the Project disturbance area, and is appropriate where the weed is of considerable economic and environmental concern and the population size is manageable. This method is also important to eliminate incipient populations before they can become problematic.

- **Suppression**: Reduce current infestation density, but not necessarily directed at reducing the total area occupied by the infestation. This applies to many widely distributed, high-density weeds where complete eradication is not feasible.

- **Containment**: Prevent infestation expansion and spread, with or without any attempt to reduce infestation density. Containment focuses on halting spread until suppression or eradication can be implemented, and is practical only to the extent that the spread of seeds or vegetative propagules can be prevented.

1.3 Management Roles

The Project Owner is ultimately responsible for implementing this WMP. It is anticipated that the Project's Contractors and other designees responsible for implementing components of the WMP will include the following:

- **Contractor(s)**: Contractual language will be included in all construction documents and ongoing maintenance contracts to ensure that all contractors, subcontractors, vendors, maintenance personnel and other parties performing either construction or ongoing maintenance or repairs at the Project site abide by and implement the provisions of this WMP. Implementing the construction provisions of this WMP will be a part of construction contracts.

- **Construction Manager**: The construction manager will have ultimate oversight of the construction contractor to ensure compliance with the provisions of this WMP.

- **Environmental Compliance Manager**: The Project Owner will designate an Environmental Compliance Manager (ECM) to provide oversight of construction practices and ensure compliance with the provisions of this WMP. The ECM (including support staff as needed) will be contracted directly and coordinate with the construction manager to ensure contractor compliance with environmental requirements for construction.

- **Designated Biologist**: PSEGS will designate a qualified biologist who will be responsible for the direction and oversight of compliance activities consistent with all onsite biological Conditions of Certification. The Designated Biologist (DB) will be responsible for compliance with the provisions of this plan and have authority to ensure compliance.

- **Bureau of Land Management (BLM)**: As the administering land management agency, BLM will provide ultimate approval of the contents of this WMP and compliance oversight of its provisions. BLM will provide timely review of work products including this WMP, modifications or amendments to this WMP, and subsequent reports as required by this WMP.

2.0 RELATED AND APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The WMP will be consistent with all applicable Laws, Ordinances, Regulations, and Standards (LORS) described in this section.

2.1 Federal Laws and Regulations

2.1.1 Federal Noxious Weed Act of 1974

The Federal Noxious Weed Act (7 United States Code [U.S.C.] §§ 2801-2814, January 3, 1975, as amended 1988 and 1994) provides for the control and management of non-indigenous weeds that injure, or have the potential to injure, the interests of agriculture and commerce, wildlife resources, or public health. The act gives the Secretary of Agriculture broad powers in regulating transactions in and movement of noxious weeds. It states that no person may import or move any noxious weed identified by regulations of the Secretary of Agriculture into or through the U.S. except in compliance with the regulations, which may require that permits be obtained. The act also requires each federal agency to develop a management program to control undesirable plants on federal lands under the agency's jurisdiction and to establish and adequately fund the program. Some of the provisions of this act were repealed by the Plant Protection Act of 2000 (PPA), including U.S.C. 2802 through 2813. However, Section 1 (findings and policy) and Section 15 (requirements of federal land management agencies to develop management plans) were not repealed (7 U.S.C. 2801 note; 7 U.S.C. 2814).

2.1.2 Plant Protection Act (PPA) of 2000

The PPA, as amended (7 U.S.C. 7701-7786) states that the detection, control, eradication, suppression, prevention, or retardation of the spread of plant pests or noxious weeds is necessary for the protection of the agriculture, environment, and economy of the U.S. This act defines the term ''noxious weed'' (7 U.S.C. 7702 § 403) to mean any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the U.S., the public health, or the environment. This act specifies that the Secretary of Agriculture may prohibit or restrict the importation, entry, exportation, or movement in interstate commerce of any noxious weed if it is determined "that the prohibition or restriction is necessary to prevent the introduction into the [U.S.] or the dissemination of a plant pest or noxious weed within the [U.S.]," and authorizes the issuance of implementing regulations. Subsequent regulations implemented by the Noxious Weed Control and Eradication Act of 2004 amended the PPA.

2.2 State and Local Laws and Regulations

2.2.1 California Food and Agricultural Code

The California Food and Agricultural Code contains some detail on noxious weed management. Specifically, Food and Agricultural Code Section 403 states that the Department of Food and

Agriculture should prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds. Under Sections 7270 through 7224, the California Commissioner of Agriculture is granted the authority to investigate and control noxious weeds, and specifically to provide funding, research, and assistance to weed management entities, including eligible weed management areas or county agricultural commissioners, for the control and abatement of noxious weeds according to an approved integrated weed management plan.

California Food and Agriculture Code Section 5101 and 5205 provide for the certification of weed-free forage, such as hay, straw, and mulch. This portion of the code recognizes that many noxious weeds are spread through forage and ground covers. The code allows for in-field inspection and certification of crops to ensure that live roots, rhizomes, stolons, seeds, or other propagative plant parts of noxious weeds are not present in the crop to be harvested. Certified weed-free storage is required on BLM land, and any mulch or hay bale materials used for erosion control at PSEGS will be required to meet this certification.

2.3 Conservation and Management Plans

2.3.1 Bureau of Land Management

To address the use of chemical treatments in noxious weed control, BLM prepared the Programmatic Environmental Impact Statement (PEIS) entitled *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States* (BLM 2007). This document was the result of extensive public involvement and outlined the specific decisions, standard operating procedures, and mitigation measures for use of herbicides on BLM administered lands. The selected alternative of the PEIS identifies the active herbicidal ingredients approved for use on BLM land, and the herbicidal ingredients that are no longer approved for use. The Record of Decision for the PEIS defers the determination of areas that are to be treated through BLM's integrated pest management program to approved land use plans, and makes no land use or resource allocations in this regard. Appendix B of the PEIS, *Herbicide Treatment Standard Operating Procedures*, specifies management of noxious weeds through prevention and application of pesticides on BLM administered land. The procedures listed are incorporated as requirements of this Plan and are attached for reference (see Appendix A).

2.3.2 Northern and Eastern Colorado Desert Coordinated Management Plan

The Northern and Eastern Colorado Desert Coordinated Management Plan (NECO Plan) (BLM 2002) is a landscape-scale, multi-agency planning effort that protects and conserves natural resources while simultaneously balancing human uses of the California portion of the Sonoran Desert ecosystem, in which the Project lies. The 25-million-acre California Desert Conservation Area (CDCA) was designated in 1976 by the Federal Land Policy and Management Act to allow BLM to manage the resources of the California deserts. BLM developed a management plan for the CDCA in 1980 (BLM 1980), but the plan has since been amended and subdivided into four bioregion planning areas. The BLM has completed a regional plan amendment for each bioregion, among them the NECO Plan, which encompasses 5.5 million acres in the southeastern California Desert and the entire Project Disturbance Area.

3.0 NOXIOUS WEED INVENTORY AND BASELINE CONDITIONS

3.1 Noxious Weed Definitions

The term "weed" has many different definitions. In the broadest sense, it is any plant growing where it is not wanted. Weeds can be native or non-native, invasive or non-invasive, and noxious or not noxious. A noxious weed is any plant designated by a federal, state or county government as injurious to public health, agriculture, recreation, wildlife, or property (Sheley et al. 1999). A noxious weed is "competitive, persistent, and pernicious" (James et al. 1991). Invasive weeds are any non-native plant species that are injurious to the public health, agriculture, recreation, wildlife habitat, or the biodiversity of native habitats. New invasive weeds are discovered in California every year. Any weed new to the site or new to the region will be handled through prevention and monitoring strategies as outlined in Sections 6 and 7 of this WMP.

Various regulatory agencies maintain definitions of "noxious weeds" and how they affect the environment. The California Department of Food and Agriculture (CDFA) Code Section 5004 maintains the most relevant definition to this WMP and defines noxious weeds as, "any species of plant which is, or is liable to be, detrimental or destructive and difficult to control or eradicate" (CDFA 2009). Noxious weeds are typically characterized as non-native plants that aggressively colonize new areas and can grow to dominate native plant communities, if uncontrolled. Noxious weeds can out-compete native vegetation, alter physical or chemical soil conditions, and dominate the landscape to the detriment of native plants and wildlife. Noxious weeds are often quick to colonize disturbed areas, including construction sites, roadsides, irrigated sites, or any other area with altered hydrology, soil structure, or soil chemistry.

Many invasive plant species share the trait of being adapted to disturbance and also out-compete some native species in these environments. The California Invasive Plant Council (Cal-IPC) categorizes invasive plants as high, moderate, or limited according to the severity of their ecological impact (Cal-IPC 2006):

- **High** – Invasive plants classified as high consist of species that have severe ecological impacts on physical processes, plant and animal communities and vegetation structure, and have a moderate to high rate of dispersal and establishment.

- **Moderate** – These species consist of species that have substantial and apparent (but not severe) ecological impacts and have a moderate to high rate of dispersal and establishment, although establishment is generally dependent upon a disturbance regime such as soil disruption or fire.

- **Limited** – These consist of species that are invasive, but their ecological impacts are minor on a state-wide level. Dispersal and establishment of species classified as limited are generally low to moderate.

These classifications are based on cumulative state-wide trends and can vary at local scales. As a result, a species classified as limited may be more invasive on a local scale than a species classified as high, depending on local conditions (Cal-IPC 2006). For this reason, all plants Cal-IPC classified invasive, even those classified as limited, can potentially impact a local ecosystem.

3.2 Noxious Weed Species of Concern

A list of noxious weeds of concern within the Project vicinity was compiled based on a review of a list of noxious weeds ranked by CDFA (CDFA 2009), the California Invasive Plant Council (Cal-IPC) (Cal-IPC 2009), the U.S. Department of Agriculture (USDA) California list (USDA 2009), weeds of special concern identified by the BLM, and field surveys of the Project disturbance area were conducted in support of the original AFC (AECOM 2009a).

An initial field assessment was followed by focused special-status plant surveys in April 2009. No invasive species on the Cal-IPC List (High, Moderate, and Limited [Cal-IPC 2009]) were noted as occurring in high concentrations (107.64 square feet) or nearly monotypic stands (AECOM 2009b). Table 3.2-1 lists the four non-native species detected during Project surveys in 2009 and 2010.

TABLE 3.2-1
WEED SPECIES OBSERVED WITHIN PROJECT BOUNDARIES

Scientific Name	Common Name	CDFA Rank*	Cal-IPC Rating*	USDA CA Rating*
Brassica tournefortii	Sahara mustard	-	High	-
Salsola tragus	Russian thistle	C	Limited	CW
Schismus barbatus	Mediterranean grass	-	Limited	-
Tamarix sp.	tamarisk	B	High	-

*** Ranks/Ratings**

CDFA

- B – More wide spread. Eradication, containment, control or other holding action at the discretion of the commissioner. State endorsed holding action and eradication only when found in a nursery.
- C – Generally widespread throughout the state. Action to retard spread outside of nurseries at the discretion of the commissioner. Reject only when found in a crop seed for planting or at the discretion of the commissioner.

Cal-IPC

- High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

USDA CA

- CW – C list (noxious weeds)

Source: AECOM 2009b. Palen Solar Power Project Botanical Survey Report, Riverside County, California.

4.0 WEED MANAGEMENT AREAS

Weed management will occur site-wide and in all areas directly or indirectly affected by the project; however, different areas will require different specific management considerations depending on a range of factors described in this section. Weed Management Areas will include a 100-foot buffer surrounding the project site, including linear elements, except in downwind or downstream areas, in which case the buffer will expand as appropriate, to accommodate seed transport. In the event that weed species are noted to proliferate off the project site within the buffers, the project owner shall be held responsible for control of invasive species, and will need to timely notify and coordinate remedial action with BLM.

4.1 Temporary Disturbance Areas

Soil disturbance during construction and temporary use may create habitat well suited to disturbance-adapted invasive species and, therefore, measures to minimize the potential for weed introduction by personnel and equipment will be needed. Transmission line and natural gas pipeline construction will involve some temporary disturbance along with permanent tower placement and an access road for maintenance. Areas temporarily disturbed will promote weed invasion and establishment, and ongoing monitoring and management will be required. In addition, ongoing maintenance has the potential for ongoing introduction of weedy species through soil disturbance and equipment entrance, with ongoing weed management requirements. Potential areas meeting these criteria are described below.

Gas Pipeline

Southern California Gas Company (SCG) will construct a new approximately 2960 foot -long, 8-inch gas pipeline extension from its main transmission gas pipeline located approximately just south of I-10 A 50 foot- wide construction corridor will be used and most major pieces of construction equipment will remain along the pipeline route during construction. Regular weed monitoring and management during construction will be required, and weed management will be a key requirement of the revegetation effort after construction is complete.

Gen-tie Line and Telecommunications Cable

A single-circuit 230 kV generation tie-line will be constructed from the PSEGS switchyard to SCE's Red Bluff Substation. A telecommunications cable will be installed entirely underground entirely in the same right of way as the gen-tie line in a trench approximately 12 inches wide. Regular weed monitoring and management during construction will be required. Some areas temporarily disturbed during construction will require revegetation, and weed management will be required at revegetated areas. Access for gen-tie line tower inspection and cleaning will occur along the transmission line. This has the potential for ongoing introduction of weedy species through soil disturbance and equipment entrance, and will necessitate ongoing implementation of weed management requirements.

Staging and Laydown Areas

An approximately 218 acre temporary construction laydown area will serve as the location for laydown of materials, staging of traffic to avoid congestion on the I-10/Corn Springs interchange, and may be the temporary location of the concrete batch plant. This area has the potential for ongoing introduction of weedy species through soil disturbance and equipment entrance, and will necessitate ongoing implementation of weed management requirements. Approximately 169 acres of the total 218 area is not planned for temporary or permanent use but will be inside the desert tortoise and security fence.

4.2 Long-term Disturbed Areas

The areas described in this section would be permanently developed, but could support weedy species function as seed reservoirs to adjacent natural habitats if not managed. Further, without management, the disturbance associated with the construction of the associated facilities would likely promote density increases and population spread of weedy species.

Heliostat Arrays and Service Tanks

The PSEGS will replace the parabolic trough solar collection system and associated HTF with BrightSource Inc. technology. The BrightSource technology uses heliostats—elevated mirrors guided by a tracking system mounted on a pylon—to focus the sun's rays on the SRSG located atop a solar tower near the center of each solar field to create steam. Each of the heliostat assemblies is composed of two mirrors, each approximately 12 feet high by 8.5 feet wide, with a total reflecting surface of 204.7 square feet. Each heliostat assembly is mounted on a single pylon, along with a computer-programmed aiming control system that directs the motion of the heliostat to track the movement of the sun. The final layout will be completed during detailed design but is expected to consist of approximately 85,000 heliostats in each solar field.

Heliostat arrays will set atop existing soil surfaces. Vegetation clearing, grubbing, and contour smoothing in the heliostat fields will occur where necessary to allow for equipment access and storm water management. Surface preparation will consist of shallow (less than 6 inches deep) blading of curvilinear, concentric service tracks (referred to as "drive zones"), and parallel rows of heliostats. The drive zones will be cleared, grubbed, smoothed and rolled to permit safe and efficient installation of the heliostats and washing of the mirrors. In areas where these activities are not required for access or construction, the vegetation will not be removed but will be mowed (if needed) to a height of approximately 12 to 18 inches. Post-construction cleaning and other routine maintenance activities will result in continuing disturbance of much smaller areas.

Soil disturbance during construction will create habitat well suited to disturbance-adapted invasive species, and the continual use of the area by personnel and heavy equipment has the potential to introduce weed propagules. During operations, equipment and personnel will continue to access the area for heliostat cleaning and other maintenance. Wash water overflow from the ongoing cleaning of heliostat mirrors will provide a water source to support weed establishment and growth.

Roads and Other Internal Features

Roadsides and the medians of unpaved service tracks are vulnerable to weed invasion. Internal roads may alter local hydrology; are subject to initial and ongoing disturbance during construction, maintenance, and use; provide topographic variation that could capture windborne or waterborne seed; and may be subject to seed distribution from passing vehicles. Other features of the solar field may enhance weed establishment. This may include soils that have been cleared, compacted, or otherwise disturbed, areas where hydrology is altered, such as from increased drainage from developed areas, or areas where continued vehicle or foot traffic persist.

4.3 As-Built Mapping

Upon completion of construction, the applicant will prepare “as built” maps designating temporary disturbance, permanent disturbance, landscaped areas, other permanent facilities, and buffer areas. This map will be appended to the WMP to facilitate compliance monitoring. The map will have the following features:

- maximum map scale of 1 inch = 400 feet
- boundaries of the Weed Management Area (WMA), including buffer areas
- Vegetation mapping in the WMA
- land ownership boundaries
- non-native weed populations found during the AFC studies and classified as noxious
- boundaries of any conservation plan or special management areas
- location of high-risk area relating to project operation
- clearly depict the location of special-status plant and animals that remain in the area
- any other sensitive biological resources found within the WMA

5.0 MONITORING AND SURVEY METHODS

5.1 Weed Identification

The Designated Biologist will assure that weed identifications are conducted by qualified botanists. Unknown species will be collected, pressed and dried, and delivered to the UC Riverside Herbarium or the California Department of Agriculture Weed Herbarium in Davis, with a specimen label, as a permanent scientific specimen. Upon identification by qualified botanists, the Designated Biologist will determine a course of action. Monitoring and removal of weeds requires skill and training in plant identification. Training in plant identification and field manuals with photographs of native desert plants and of common weeds will be provided to all field staff including biological monitors, weed abatement contractors, plant operators and staff, and construction workers.

5.2 Surveys and Monitoring

5.2.1 Monitoring Methods

Surveys and monitoring will ensure timely detection and prompt eradication of weed infestations, which are essential to a long-term strategy for weed management.

Construction Areas

The ECM and DB will oversee biological monitors who will be on-site during site clearing and construction activities. Biological monitors will be responsible for inspecting all construction areas, identifying the presence of noxious weeds, and inspecting equipment cleaning facilities for weed seed removal. The ECM will be responsible for prescribing management activities consistent with this plan when weeds become established. Monitoring of all construction areas, including access routes, will be conducted every other week for four weeks following storms of any intensity (including summer monsoons) and also every third week during March, April, and May if there has been any winter rain. This monitoring will consist of walking or driving slowly over construction areas and observing for seedlings of exotic species. This will continue until ground-disturbing construction activities are completed.

Revegetation Areas

As part of monitoring for revegetation, the density and/or frequency of non-native species will be quantitatively measured in selected sampling sites throughout the revegetation area and compared to control areas. At a minimum, additional monitoring also will occur every third week during each March, April, and May when there has been no revegetation monitoring and similarly in the fall after summer/fall monsoons; this will occur every year during construction and for a minimum of six years following the completion of construction. Monitoring schedules will be sufficiently flexible to take advantage of the variable precipitation regime of the eastern Mojave Desert. Surveys will identify areas of significant weed invasion or establishment and the weed species involved.

As part of monitoring for revegetation, the density and/or frequency of non-native species will be quantitatively measured and compared to control areas.

General Operations Monitoring

Monitoring of all potential weed enhancement areas will be conducted every other week for four weeks following storms of any intensity (including summer monsoons) and also every third week during March, April, and May if there has been any winter rain. This monitoring will consist of walking or driving slowly over construction areas and observing for seedlings of exotic species. This will continue for the life of the Project or until success criteria (as set forth in the separate Revegetation and Rehabilitation Plan) are met.

Treatment Areas

Where weed treatments are implemented, the treated areas will be monitored to ensure that treatments are effective. Monitoring will continue at pre-treatment frequencies until noxious weeds in the area are eliminated or satisfactorily controlled. Monitoring will occur at the same frequency as defined above.

Offsite Areas

Because potential exists for weed infestations on the PSEGS site to spread to adjacent areas or enhance existing populations outside the project ROW, weed monitoring will include monitoring adjacent BLM lands for a minimum of 100 feet outside of the Project Disturbance Area, and an extended area in downstream and downwind areas, until the infestation is fully eradicated or populations do not exceed baseline or control populations. Monitoring will occur at the same frequency as defined above.

5.2.2 Database and Mapping

Locations of noxious weed occurrences, with data on species, detection date, growth stage, infestation extent, treatments implemented, results of treatment, and current status, will be maintained during the construction and operation phases. A geographic information system (GIS) will be used to map and store data.

A priority system of areas populated by noxious weeds will be established based on species, vulnerability of the site to invasion, growth stage, and effectiveness of treatment. Vulnerability will be assessed on the following: (1) availability of weed propagule sources, such as along roadsides, near soil stockpiles; (2) areas with enhanced microsite suitability; (3) areas outside the WMA that have existing weed populations or, prior or treated weed.

6.0 NOXIOUS WEED MANAGEMENT

6.1 Species Descriptions and Management Strategy

Descriptions of the more common or troublesome noxious weeds occurring or potentially occurring at the Site are provided in this section, along with the basic weed management strategy applicable to each. Appendix B provides a complete list of the weed species of concern in this area. Management strategies must encompass not only eradication, but also identify the means of eradication and the plant species to be eradicated.

Not all invasive plant species can or, arguably, should be eradicated. Certain exotic species at the Project site are beyond the control of a single project, if controllable at all. This applies specifically to *Schismus barbatus*, a ubiquitous Mediterranean annual that is now a dominant understory species throughout the southwestern deserts. Schismus also can play a beneficial role as a forage species for desert tortoise and other herbivores and by enhancing surface stabilization, thereby helping to reduce soil erosion caused by sheet flow or high winds. Complete eradication of large areas where infestations are already established would likely adversely affect other pioneer species, and is likely to be impractical because the area is likely to be re-invaded from adjacent lands in the absence of physical barriers that isolate the area.

The following list provides brief descriptions of the weed species of particular concern at the PSEGS site and control objectives:

- Sahara mustard, (*Brassica tournefortii*) was observed onsite and in the vicinity and is of high concern. Cal-IPC has declared this plant highly invasive (Cal-IPC 2009). This species will be eradicated whenever encountered.
- Russian thistle (*Salsola tragus*) is a dominant species in the dunes along Palen lake (AECOM 2009a:44 and 81) and was identified as a scattered understory species in the microphyll woodland (AECOM 2009b:7). Although it has a Cal-IPC “Limited” rating, it is highly invasive given suitable germination substrates. This species will be eradicated whenever encountered.
- Tamarisk (*Tamarix* sp.) is probably a rare species at the Project, but occurs in nearby agricultural areas as a windbreak. (AECOM [2009a:43] listed it as interspersed throughout the microphyll woodland, but this seems unlikely or, at least, the species is uncommon. AECOM did not discuss it this species in the results and analyses sections. It most commonly germinates where water is available, so it has a low likelihood of occurring at the Project, but is easily eradicated when controlled early during its growth. It has a Cal-IPC “High” rating. This species will be eradicated whenever encountered.

6.1.1 New Weeds

Weeds not previously reported for the area or anticipated could colonize the site or invade site facilities, both during construction as well as during operation. During construction, the Designated Biologist will be required to regularly update the list of noxious weeds that are present, and identify any new potential threats. This will include developing a management

strategy and management methods appropriate to the plant species and the nature of any potential invasion. Similarly, the facility plant manager or appropriate designee during operations will be required to continually update the noxious weed list and provide monitoring and management appropriate to any new species.

6.2 Preventative Measures

General measures which may be implemented to prevent the spread of weed propagules and inhibit their establishment on the Project include the following:

- Conducting pre-construction surveys and treating potential sources on or near the Project prior to ground disturbance.
- Limiting disturbance areas during construction to the minimal area required to perform work and limiting ingress and egress to designated routes.
- Maintaining vehicle wash and inspection stations and closely monitoring the types of materials brought onto the Project to minimize the potential for weed introduction.
- Educating workers about invasive weeds potentially problematic at the Project and enlisting their help in preventing their introduction and spread.
- Reestablishing vegetation as quickly as practicable on disturbed sites as an effective long-term strategy to avoid weed invasions.

Some guidelines for preventing weeds from entering public lands and spreading to new uninfested areas are listed below (BLM 2009).

- Preventing introduction through contaminated seed, feed, mulch, gravel or fill
- Preventing introduction through movement of animals, people or machinery
- Preventing introduction through minimizing disturbance
- Preventing introduction through proper planning.

All of these methods have been considered during preparation of this draft WMP and will be implemented during construction, operation and decommissioning of the project.

6.2.1 Construction

Worker Environmental Training

Noxious weed management will be incorporated as a part of mandatory site Worker Environmental Awareness Program (WEAP) for all contractors or related personnel entering the Project during construction. This will include all contractors, subcontractors, inspection personnel, construction managers, construction personnel, and individuals bringing vehicles or equipment onto the Project. It may also include general delivery personnel if delivery requires accessing any roads beyond immediate construction office locations.

The WEAP will be required upon first entry of any construction personnel onto the site. Training will include instruction on weed identification and a training module on the impacts of noxious weeds on agriculture, livestock, wildlife, and fire hazard. Impacts of noxious weeds on native

vegetation, wildlife, and fire activity will be discussed including an explanation of how invasive grasses provide a fine fuel understory which can spread fire from shrub to shrub and how this has historically been absent in the native desert ecosystem. The measures to prevent the spread of noxious weeds in areas currently un-infested, and controls on their proliferation when already present, will also be explained. Personnel having completed WEAP training will be required to visibly show evidence of WEAP completion on their person at all times while on the construction site (e.g., through a hardhat sticker).

The ECM will be responsible to implement the WEAP and ensure all site workers are appropriately trained.

Wash Stations

The contractor, with ECM oversight and the DB and/or Biological Monitors, will ensure that vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment are allowed travel onto or off of the Project, including access roads on the gen-tie. Plates will be installed at the entry to the access road from the freeway that are designed to shake seeds and dirt from the vehicles as they travel over them. Inspection and wash station(s) will be set up in staging areas to remove any dirt or mud that could be attached to construction vehicles and which may contain weed seeds and all vehicles entering from offsite locations will be required to stop for inspection and cleaning. Heavy equipment entering the site on trailers also will require cleaning if verification of cleaning prior to entering the site cannot be provided.. Wash station locations will be determined during final design, but will be located to cover all entry of construction personnel or vehicles onto the site. As many inspection and wash stations as necessary will be set up to cover all outside entries onto the construction site or to efficiently service vehicles entering.

Wash stations will not be located in or adjacent to any natural drainages and will be located away from any sensitive biological resources. They will be constructed with either a concrete wash pad, or a completely cleared and compacted soil or gravel pad. Silt fencing, weed-free certified hay bales, or other means of trapping wash water sediment and seeds will be installed around the perimeter of wash stations. A concept design of a wash station is shown on Figure 3, Conceptual Wash Station Plan . Alternatively, self-contained wash stations with the design approved by the ECM and DB may be used.

The ECM will have ultimate oversight of the vehicle wash program and ensure it is fully and effectually implemented, with contractor compliance. Wash stations and vehicle washing will be conducted during all construction phases.

Infestation Containment and Control

During construction, areas of concern will be identified and flagged in the field by biological monitors and immediate control measures will be implemented as described in the sections below. As much as possible, contractors will avoid or minimize all types of travel through weed-infested areas where treatments are incomplete. The Contractor will begin project operations in weed-free areas whenever feasible before operating in weed-infested areas, until the DB has verified completion of weed treatments.

Site Soil and Cleared Vegetation Management

The Contractor will limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. The Contractor will also avoid creating soil conditions that promote weed germination and establishment as practicable. Soil conditions that promote weed germination and establishment include soil excavation/ disturbance, vegetation removal, soil compaction, loss or removal of topsoil, introduction of any chemical compounds, including fertilizer, and soil stockpiling. In areas where infestations are identified, the Contractor will stockpile cleared vegetation and salvaged topsoil adjacent to the area from which they are stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes. During reclamation, the Contractor will return topsoil and vegetative material from infestation sites to the areas from which they were stripped. Vegetation material from weed-infested sites will not be used as vertical mulch in other areas that are also not populated by the same weed species.

Weed-Free Products

The Contractor will ensure that straw or hay bales and coirs used for sediment barrier installations are obtained from certified sources that are free of primary noxious weeds. Additional products such as gravel, mulch, and soil, may also carry weeds. Such products should be obtained from suppliers who can provide weed-free certified materials. Where feasible, mulch will be generated from native vegetation cleared from the Project itself. Soil will not be imported onto the site except in instances where it can be ensured to be free of weeds that are not currently at the site, and also free of weed seeds in high concentrations.

Weed-Free Seed

Seed purchased from commercial vendors for site restoration and revegetation will be labeled in compliance with the relevant provisions of the California Agriculture Code. In addition to having the correct label, the seed should be required to be free of noxious weeds and the label should so state. Preferably, seed should be collected from adjacent areas, which provides the additional benefit of ensuring local genetic stock. The DB, Energy Commission Compliance Project Manager (CPM), and BLM Authorized Officer will have access to proof of use of weed-free seed, and any other weed treatment information, schedules, or relevant information upon request.

6.2.2 Operations

Facility Staff Training

Noxious weed management will be incorporated as a part of mandatory WEAP training for groundskeepers and maintenance personnel. Training will include weed identification and the impacts on agriculture, livestock, wildlife, and fire frequencies. The importance of preventing the spread of noxious weeds in areas currently un-infested, and controlling the proliferation of weeds already present, will also be explained.

Infestation Containment and Control

During operations, areas of concern will be identified and flagged in the field by trained Project personnel or the DB. The flagging will alert personnel that weeds are present and will prevent access into these areas until noxious weed management control measures have been implemented. Immediate control measures will be implemented. Immediate control measures will be implemented as described in Section 6 of this WMP.

6.2.3 Site Closure

Site decommissioning and closure will involve implementation of the PSEGS Decommissioning and Reclamation Plan as required by the BLM. This plan will include measures to avoid weed establishment throughout the site and to implement long-term site rehabilitation and revegetation of all decommissioned facilities. Control of noxious weed establishment will be a central goal of long-term site rehabilitation, the long-term success of which will be enhanced by revegetation measures promoting surface stability and soil development.

6.3 Eradication and Control Methods

Mowing will be used as a management tool for other site operation requirements at PSEGS (e.g., preserving access to heliostat arrays).

In general, mowing for weed control is a poor solution and will not be implemented at PSEGS for that purpose. It is sometimes used as a fire control method, but will result in proliferation of weed seed and aggravation of weed infestation problems if it occurs following seed set, when fire control by mowing would generally occur. Instead of using mowing to control weeds, the manual methods discussed below will be implemented.

6.3.1 Physical Removal of Weeds

Physical control methods will include manual hand pulling of weeds and hoeing. For localized weed control, this is an effective, if labor-intensive method. Hand-pulling is less effective in large areas with high weed density. Hand pulling and weeding must only be employed before the seed has set, otherwise this disturbance would only serve to further disperse and promote the establishment of the weed species. Removed plant material should be bagged and removed.

6.3.2 Chemical Methods for Weed Prevention or Removal

The Project Owner is not proposing the use of herbicides as part of this Weed Management Plan.

6.3.3 Competitive Vegetation

With site rehabilitation and revegetation of temporarily disturbed areas, soil structure and native plant communities will reestablish. While full recovery may take decades, early successional communities can be established on the site within one to a few years and, over time, weed control may require less effort.

7.0 REPORTING REQUIREMENTS

Implementation of the WMP will include the following data collection and reporting. Reports will be subject to the Revegetation and Project Adaptive Management process described in the Site Rehabilitation and Revegetation Plan. Each party will retain reports in their files according to respective internal policies.

7.1 Construction Reports

During the construction phase, ongoing reporting on noxious weed management will be included in monitoring reports. Construction weed monitoring reports will include the following information:

- Survey findings on location, type, extent, and density of noxious weeds. This data will include mapping and photographs, as appropriate, as well as textual and tabular data content to fully describe conditions on the Project.
- Management efforts, including date, location, type of treatment implemented, and results. Ongoing evaluation of success of treatment will be included.
- Information on implementation and success of preventative measures, including status of equipment wash facilities and summary data of use; data on the worker environmental training program, including participants.
- Summary description of restoration efforts undertaken, adaptive measures employed based on on-the-ground conditions, and the current status of the effort.

7.2 Long-term Monitoring Reports

After implementation of site revegetation, long-term monitoring reports will be focused on success of revegetation sites. These reports will include:

- Survey findings on location, type, extent, and density of noxious weeds. These data will include mapping and photographs, newly identified species, submissions to herbaria, as appropriate, as well as textual and tabular data content to fully describe conditions on the project site.
- Management efforts, including date of efforts, location, types of treatment implemented, and results. Ongoing evaluation of success of treatment will be included.
- The reports will also include a complete description of restoration efforts and status with regard to performance criteria.

7.3 Reporting Periods

7.2.1 Construction Period

The ECM and monitoring team will maintain all monitoring records. These records will be summarized into monthly summary reports, where relevant, describing information relevant to noxious weed management. All data will be included in annual reports.

A single post-construction report will be produced after each phase of construction is completed at PSEGS, with a section summarizing the overall results of noxious weed management and weed status at the site. Construction reports will be made available to agency personnel. Agency personnel and contact information will be identified and would include the BLM and the CEC.

7.2.2 Long-term Monitoring Reports

Annual monitoring reports will be produced for the duration of the monitoring period. These reports will discuss the results of monitoring and weed control activities. Once success criteria are met, a final monitoring report will be produced to describe the outcome to date of proposed restoration, including status of noxious weed management on the project site. All annual monitoring reports will be made available to agency personnel. Agency personnel and contact information will be identified and would include the BLM and the CEC.

8.0 REFERENCES

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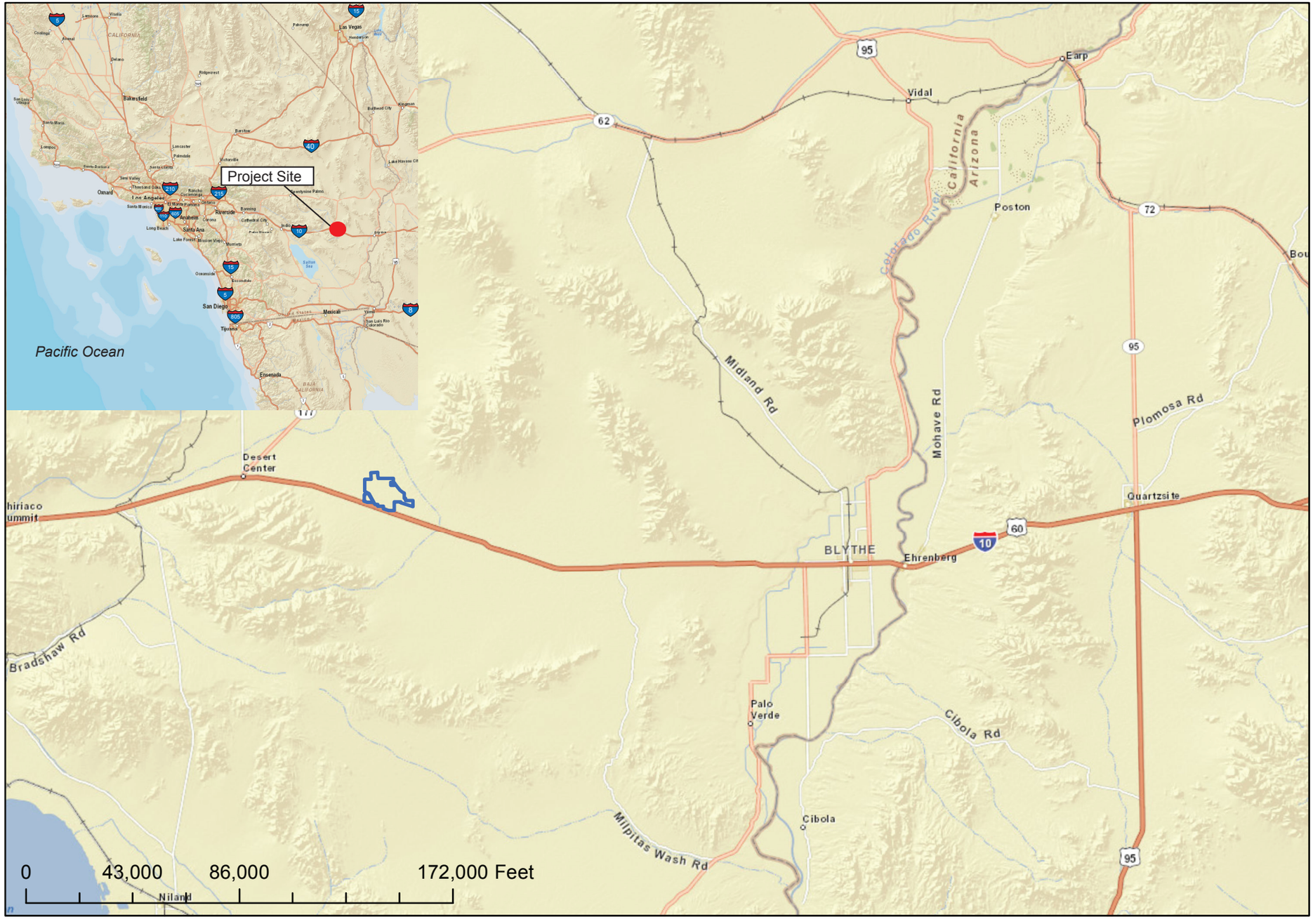
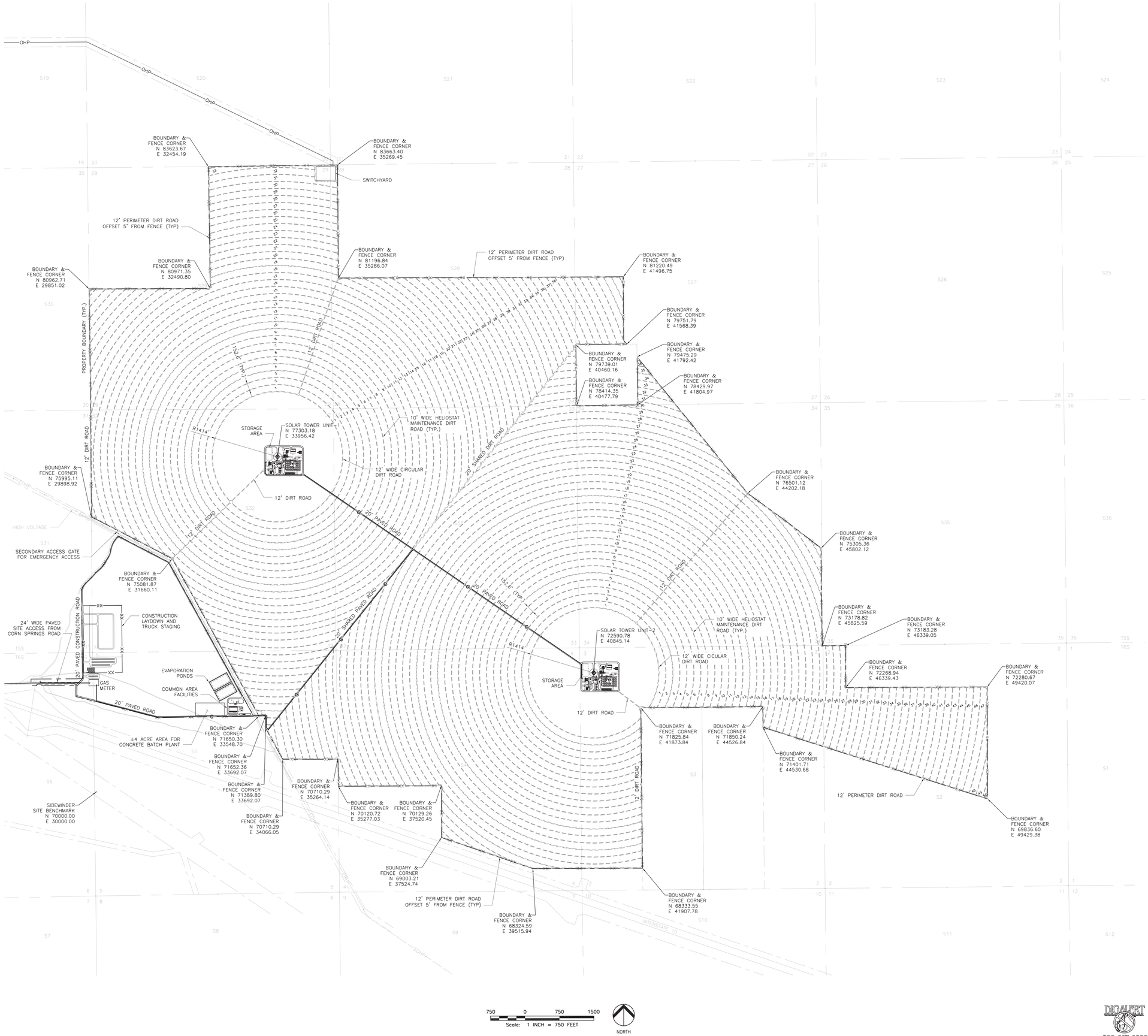


Legend

Palen Solar Electric Generating System

FIGURE 1

VICINITY MAP



GENERAL NOTES:

1. FOR CIVIL PROJECT INFORMATION, ABBREVIATIONS AND LEGEND SEE SHEET C-0001.
2. ALL EXISTING SITE INFORMATION: TOPOGRAPHY, BUILDING LOCATIONS, ROADS & PAVEMENT LOCATIONS, SITE UTILITIES, AND PROPERTY LINE INFORMATION WERE OBTAINED FROM OWNER PROVIDED DOCUMENTS/DRAWINGS.
3. FOR CIVIL OVERALL GRADING AND DRAINAGE PLAN SEE SHEET C-2000.
4. ALL NECESSARY LICENSES SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF WORK.
5. VERIFY ALL MEASUREMENTS AND DIMENSIONS PRIOR TO ORDERING ANY MATERIALS OR CONDUCTING ANY WORK.
6. ALL WORK SHALL BE PERFORMED IN A FINISHED AND WORKMAN LIKE MANNER AND CONSISTENT WITH THE BEST RECOGNIZED TRADE PRACTICES.
7. COORDINATES SHOWN ARE IN PALEN / PROJECT LOCAL GRID SYSTEM.
8. NO BOUNDARY SURVEY INFORMATION IS SHOWN OR IMPLIED ON THESE DRAWINGS.

*NOTE:

QUANTITIES SHOWN ARE FOR PRELIMINARY INTERNAL ESTIMATING AND NOT TO BE USED FOR BIDING PURPOSES. IT IS THE CONTRACTORS RESPONSIBILITY TO ESTABLISH THERE OWN QUANTITY TAKE-OFF'S FROM APPROVED PLANS.

*HARDSCAPE AREA DATA:

1. TOWER UNIT #1
   HEAVY DUTY ASPHALT PAVEMENT AREA: ±10,100 S.Y.
   LIGHT DUTY ASPHALT PAVEMENT AREA: ±900 S.Y.
   CONCRETE PAVEMENT AREA: ±2,850 S.Y.
   GRAVEL (INTERIOR ISLANDS) AREA: ±47,000 S.Y.
2. TOWER UNIT #2
   HEAVY DUTY ASPHALT PAVEMENT AREA: ±10,100 S.Y.
   LIGHT DUTY ASPHALT PAVEMENT AREA: ±900 S.Y.
   CONCRETE PAVEMENT AREA: ±2,850 S.Y.
   GRAVEL (INTERIOR ISLANDS) AREA: ±47,000 S.Y.
3. PAVED ROADS
   HEAVY DUTY ASPHALT PAVEMENT AREA: ±45,000 S.Y.
4. COMMON AREA
   HEAVY DUTY ASPHALT PAVEMENT AREA: ±8,900 S.Y.
   LIGHT DUTY ASPHALT PAVEMENT AREA: ±1,450 S.Y.
   CONCRETE PAVEMENT AREA: ±100 S.Y.
   GRAVEL (INTERIOR ISLANDS) AREA: ±5,300 S.Y.

*EARTHWORK QUANITITIES:

1. TOWER UNIT #1
   CUT: 9,260 CUBIC YARDS
   FILL: 45,589 CUBIC YARDS
   NET (FILL) 36,329 CUBIC YARDS
2. TOWER UNIT #2
   CUT: 3,169 CUBIC YARDS
   FILL: 95,925 CUBIC YARDS
   NET (FILL) 92,756 CUBIC YARDS
3. COMMON AREA-ADMIN/MAINTENANCE WAREHOUSE BLDG.
   CUT: 35,665 CUBIC YARDS
   FILL: 23,459 CUBIC YARDS
   NET (CUT) 12,206 CUBIC YARDS

DIGALERT 800-227-2600 Call 2 Full Working Days In Advance

PRELIMINARY NOT FOR CONSTRUCTION

NO	DATE	REVISION	BY	CK.	APPR.
D	13-DEC-2012	ISSUE FOR PERMIT	T.O.C.	D.E.M.	C.S.H.
C	04-DEC-2012	ADDED EARTHWORK QUANTITIES	T.O.C.	D.E.M.	C.S.H.
B	27-NOV-2012	REVISED PER MEETING ON 19-NOV-2012	T.O.C.	D.E.M.	C.S.H.
A	19-NOV-2012	ISSUE FOR REVIEW	T.O.C.	D.E.M.	C.S.H.

BrightSource

DESIGNED BY	T.O.C
CHECKED BY	D.E.M
APPR. BY	C.S.H.
CLIENT APPR.	

CH2MHILL
Atlanta, Georgia

SHEET TITLE
CIVIL
OVERALL SITE PLAN
FIGURE 2

JOB NAME
PALEN
SOLAR ELECTRIC GENERATION STATION

JOB NO.	459892
FILENAME	C-1000.dwg
SCALE	1" = 750'
REV. NO.	D
DWG. NO.	C-1000

LGAE_3, ANSI E, 34 x 44 in.

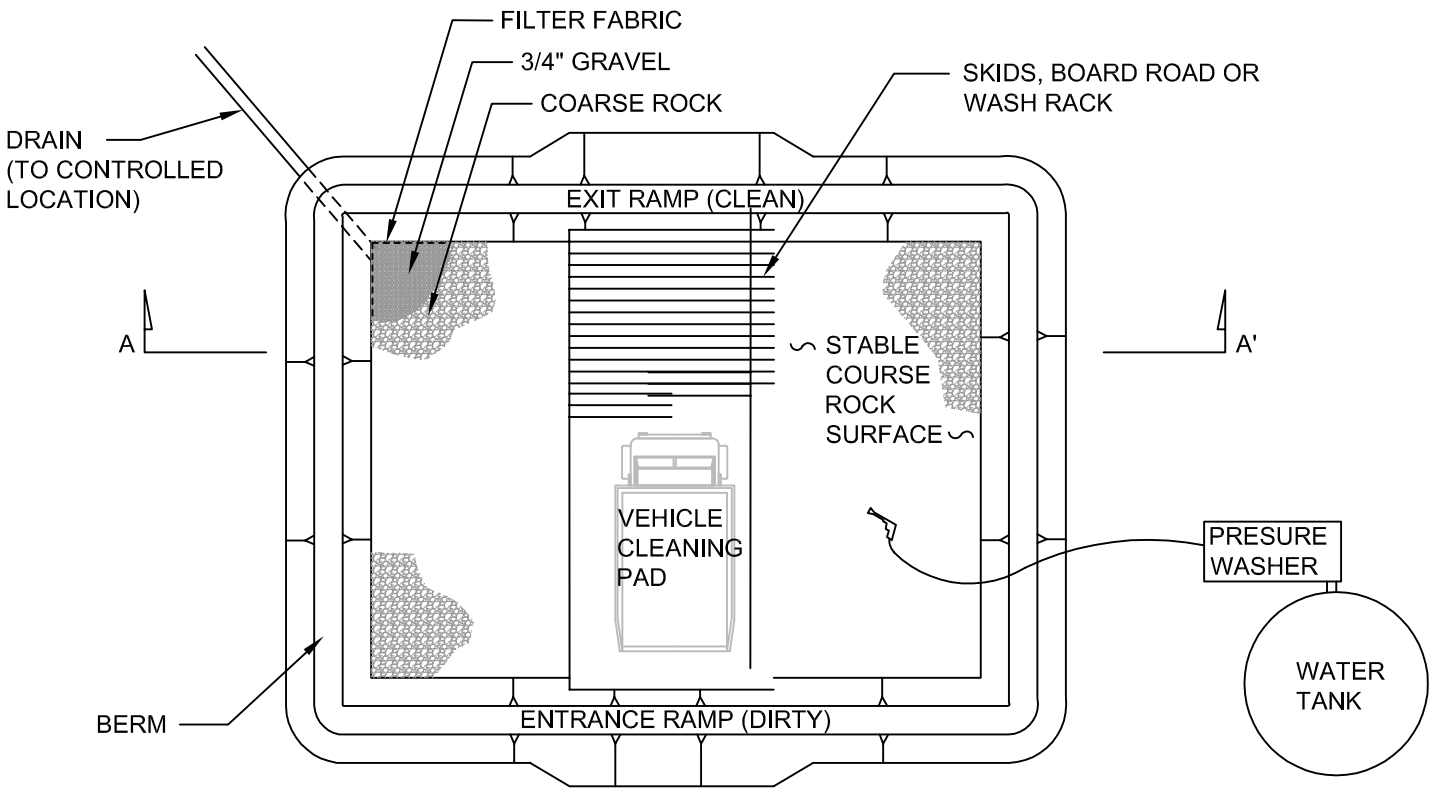


FIGURE 3
CONCEPTUAL WASH STATION PLAN
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

APPENDIX A

Herbicide Treatment Standard Operating Procedures (Appendix B of the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement)

APPENDIX B

HERBICIDE TREATMENT STANDARD OPERATING PROCEDURES

This section identifies standard operating procedures (SOPs) that will be followed by the U.S. Department of the Interior Bureau of Land Management (USDI BLM) under all alternatives to ensure that risks to human health and the environment from herbicide treatment actions will be kept to a minimum. Standard operating procedures are the management controls and performance standards required for vegetation management treatments. These practices are intended to protect and enhance natural resources that could be affected by future vegetation treatments.

Prevention of Weeds and Early Detection and Rapid Response

Once weed populations become established, infestations can increase and expand in size. Weeds colonize highly disturbed ground and invade plant communities that have been degraded, but are also capable of invading intact communities. Therefore, prevention, early detection, and rapid response are the most cost-effective methods of weed control. Prevention, early detection, and rapid response strategies that reduce the need for vegetative treatments for noxious weeds should lead to a reduction in the number of acres treated using herbicides in the future by reducing or preventing weed establishment.

As stated in the BLM's *Partners Against Weeds: An Action Plan for the BLM*, prevention and public education are the highest priority weed management activities. Priorities are as follows:

- Priority 1: Take actions to prevent or minimize the need for vegetation control when and where feasible, considering the management objectives of the site.
- Priority 2: Use effective nonchemical methods of vegetation control when and where feasible.
- Priority 3: Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.

Prevention is best accomplished by ensuring the seeds and vegetatively reproductive plant parts of new weed species are not introduced into new areas.

The BLM is required to develop a noxious weed risk assessment when it is determined that an action may introduce or spread noxious weeds or when known habitat exists. If the risk is moderate or high, the BLM may modify the project to reduce the likelihood of weeds infesting the site, and to identify control measures to be implemented if weeds do infest the site.

To prevent the spread of weeds, the BLM takes actions to minimize the amount of existing non-target vegetation that is disturbed or destroyed during project or vegetation treatment actions (Table B-1). During project planning, the following steps are taken:

- Incorporate measures to prevent introduction or spread of weeds into project layout, design, alternative evaluation, and project decisions.
- During environmental analysis for projects and maintenance programs, assess weed risks, analyze potential treatment of high-risk sites for weed establishment and spread, and identify prevention practices.
- Determine prevention and maintenance needs, to include the use of herbicides if needed, at the onset of project planning.
- Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

During project development, weed infestations are prioritized for treatment in project operating areas and along access routes. Weeds present on or near the site are identified, a risk assessment is completed, and weeds are controlled as necessary. Project staging areas are weed free, and travel through weed infested areas is avoided or minimized. Examples of prevention actions to be followed during project activities include cleaning all equipment and clothing before entering the project site; avoiding soil disturbance and the creation of other

soil conditions that promote weed germination and establishment; and using weed-free seed, hay, mulch, gravel, soil, and mineral materials on public lands where there is a state or county program in place.

Conditions that enhance invasive species abundance should be addressed when developing mitigation and prevention plans for activities on public lands. These conditions include excessive disturbance associated with road maintenance, poor grazing management, and high levels of recreational use. If livestock grazing is managed to maintain the vigor of native perennial plants, particularly grasses, the chance of weeds invading rangeland is much less. By carefully managing recreational use and educating the public on the potential impacts of recreational activities on vegetation, the amount of damage to native vegetation and soil can be minimized at high use areas, such as campgrounds and off-highway vehicle (OHV) trails. Early detection in recreation areas is focused on roads and trails, where much of the weed spread occurs.

The BLM participates in the National Early Warning and Rapid Response System for Invasive Plants (Figure B-1). The goal of this System to minimize the establishment and spread of new invasive species through a coordinated framework of public and private processes by:

- Early detection and reporting of suspected new plant species to appropriate officials;
- Identification and vouchering of submitted specimens by designated specialists;
- Verification of suspected new state, regional, and national plant records;
- Archival of new records in designated regional and plant databases;
- Rapid assessment of confirmed new records; and
- Rapid response to verified new infestations that are determined to be invasive.

Herbicide Treatment Planning

BLM Manual 9011 (*Chemical Pest Control*) outlines the policies, and BLM Handbook H-9011-1 (*Chemical Pest Control*) outlines the procedures, for use of herbicides on public lands. As part of policy, the BLM is required to thoroughly evaluate the need for chemical treatments and their potential for impact on the environment. The BLM is required to use only U.S. Environmental Protection Agency (USEPA)-registered herbicides that have been properly evaluated under National Environmental Policy Act (NEPA), and to carefully follow label directions and additional BLM requirements.

An operational plan is developed and updated for each herbicide project. The plan includes information on project specifications, key personnel responsibilities, and communication, safety, spill response, and emergency procedures. For application of herbicides not approved for aquatic use, the plan should also specify minimum buffer widths between treatment areas and water bodies. Recommended widths are provided in BLM Handbook H-9011-1 (*Chemical Pest Control*), but actual buffers are site and herbicide active ingredient specific, and are determined based on a scientific analysis of environmental factors, such as climate, topography, vegetation, and weather; timing and method of application; and herbicide risks to humans and non-target species. Table B-2 summarizes important SOPs that should be used when applying herbicides to help protect resources of concern on public lands.

Revegetation

Disturbed areas may be reseeded or planted with desirable vegetation when the native plant community cannot recover and occupy the site sufficiently.

Determining the need for revegetation is an integral part of developing a vegetation treatment. The most important component of the process is determining whether active (seeding/planting) or passive (natural recovery) revegetation is appropriate.

U.S. Department of the Interior policy states, “Natural recovery by native plant species is preferable to planting or seeding, either of natives or non-natives. However, planting or seeding should be used only if necessary to prevent unacceptable erosion or resist competition from non-native invasive species” (620 Departmental Memorandum 3 2004). This policy is reiterated in the USDI *Burned Area Emergency Stabilization and Rehabilitation* Manual, the BLM *Burned Area Emergency Stabilization and Rehabilitation* Manual (BLM H-1742-1), and the *Interagency Burned Area Rehabilitation Guidebook.*

TABLE B-1
Prevention Measures

BLM Activity	Prevention Measure
Project Planning	• Incorporate prevention measures into project layout and design, alternative evaluation, and project decisions to prevent the introduction or spread of weeds. • Determine prevention and maintenance needs, including the use of herbicides, at the onset of project planning. • Before ground-disturbing activities begin, inventory weed infestations and prioritize areas for treatment in project operating areas and along access routes. • Remove sources of weed seed and propagules to prevent the spread of existing weeds and new weed infestations. • Pre-treat high-risk sites for weed establishment and spread before implementing projects. • Post weed awareness messages and prevention practices at strategic locations such as trailheads, roads, boat launches, and public land kiosks. • Coordinate project activities with nearby herbicide applications to maximize the cost-effectiveness of weed treatments.
Project Development	• Minimize soil disturbance to the extent practical, consistent with project objectives. • Avoid creating soil conditions that promote weed germination and establishment. • To prevent weed germination and establishment, retain native vegetation in and around project activity areas and keep soil disturbance to a minimum, consistent with project objectives. • Locate and use weed-free project staging areas. Avoid or minimize all types of travel through weed-infested areas, or restrict travel to periods when the spread of seeds or propagules is least likely. • Prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material. • Inspect material sources on site, and ensure that they are weed-free before use and transport. Treat weed-infested sources to eradicate weed seed and plant parts, and strip and stockpile contaminated material before any use of pit material. • Survey the area where material from treated weed-infested sources is used for at least 3 years after project completion to ensure that any weeds transported to the site are promptly detected and controlled. • Prevent weed establishment by not driving through weed-infested areas. • Inspect and document weed establishment at access roads, cleaning sites, and all disturbed areas; control infestations to prevent weed spread within the project area. • Avoid acquiring water for dust abatement where access to the water is through weed-infested sites. • Identify sites where equipment can be cleaned. Clean equipment before entering public lands. • Clean all equipment before leaving the project site if operating in areas infested with weeds. • Inspect and treat weeds that establish at equipment cleaning sites. • Ensure that rental equipment is free of weed seed. • Inspect, remove, and properly dispose of weed seed and plant parts found on workers' clothing and equipment. Proper disposal entails bagging the seeds and plant parts and incinerating them.
Revegetation	• Include weed prevention measures, including project inspection and documentation, in operation and reclamation plans. • Retain bonds until reclamation requirements, including weed treatments, are completed, based on inspection and documentation. • To prevent conditions favoring weed establishment, reestablish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques. • Maintain stockpiled, uninfested material in a weed-free condition.

TABLE B-1 (Cont.)
Prevention Measures

BLM Activity	Prevention Measure
Revegetation (Cont.)	• Revegetate disturbed soil (except travel ways on surfaced projects) in a manner that optimizes plant establishment for each specific project site. For each project, define what constitutes disturbed soil and objectives for plant cover revegetation. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. • Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas (e.g., road embankments or landings). • Inspect seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, dams, etc.) and certify that they are free of weed seed and propagules. • Inspect and document all limited term ground-disturbing operations in noxious weed infested areas for at least 3 growing seasons following completion of the project. • Use native material where appropriate and feasible. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available. • Provide briefings that identify operational practices to reduce weed spread (for example, avoiding known weed infestation areas when locating fire lines). • Evaluate options, including closure, to regulate the flow of traffic on sites where desired vegetation needs to be established. Sites could include road and trail rights-of-way (ROW), and other areas of disturbed soils.

In addition to these handbooks and policy, use of native and non-native seed in revegetation and restoration is guided by BLM Manual 1745 (*Introduction, Transplant, Augmentation and Reestablishment of Fish, Wildlife and Plants)*. This manual states that native species shall be used, unless it is determined through the NEPA process that: 1) suitable native species are not available; 2) the natural biological diversity of the proposed management area will not be diminished; 3) exotic and naturalized species can be confined within the proposed management area; 4) analysis of ecological site inventory information indicates that a site will not support reestablishment of a species that historically was part of the natural environment; or 5) resource management objectives cannot be met with native species.

When natural recovery is not feasible, revegetation can be used to stabilize and restore vegetation on disturbed sites and to eliminate or reduce the conditions that favor invasive species. Reseeding or replanting may be required when there is insufficient vegetation or seed stores to naturally revegetate the site.

To ensure revegetation success, there must be adequate soil for root development and moisture storage, which provides moisture to support the new plants. Chances for revegetation success are improved by selecting seed with high purity and percentage germination; selecting native species or cultivars adapted to the area; planting at proper depth, seeding rate, and time of the year for the region; choosing the appropriate planting method; and, where feasible, removing competing vegetation. Planting mixtures are adapted for the treatment area and site uses. A combination of forbs, perennial grasses, and shrubs is typically used on rangeland sites, while shrubs and trees might be favored for riparian and forestland sites. A mixture of several native plant species and types or functional groups enhances the value of the site for fish and wildlife and improves the health and aesthetic character of the site. Mixtures can better take advantage of variable soil, terrain, and climatic conditions, and thus are more likely to withstand insect infestations and survive adverse climatic conditions.

The USDI BLM Native Seed program was developed in response to Congressional direction to supply native plant material for emergency stabilization and longer-term rehabilitation and restoration efforts. The focus of the program is to increase the number of native plant species for which seed is available and the total amount of native seed available for these efforts. To date, the program has focused on native plant material needs of emergency stabilization and burned area rehabilitation in the Great Basin, but is expanding to focus on areas such as western Oregon, the Colorado Plateau, and most recently the Mojave Desert. The Wildland Fire Management Program funds and manages the effort.

The National Seed Warehouse is a storage facility for the native seed supply. Through a Memorandum of

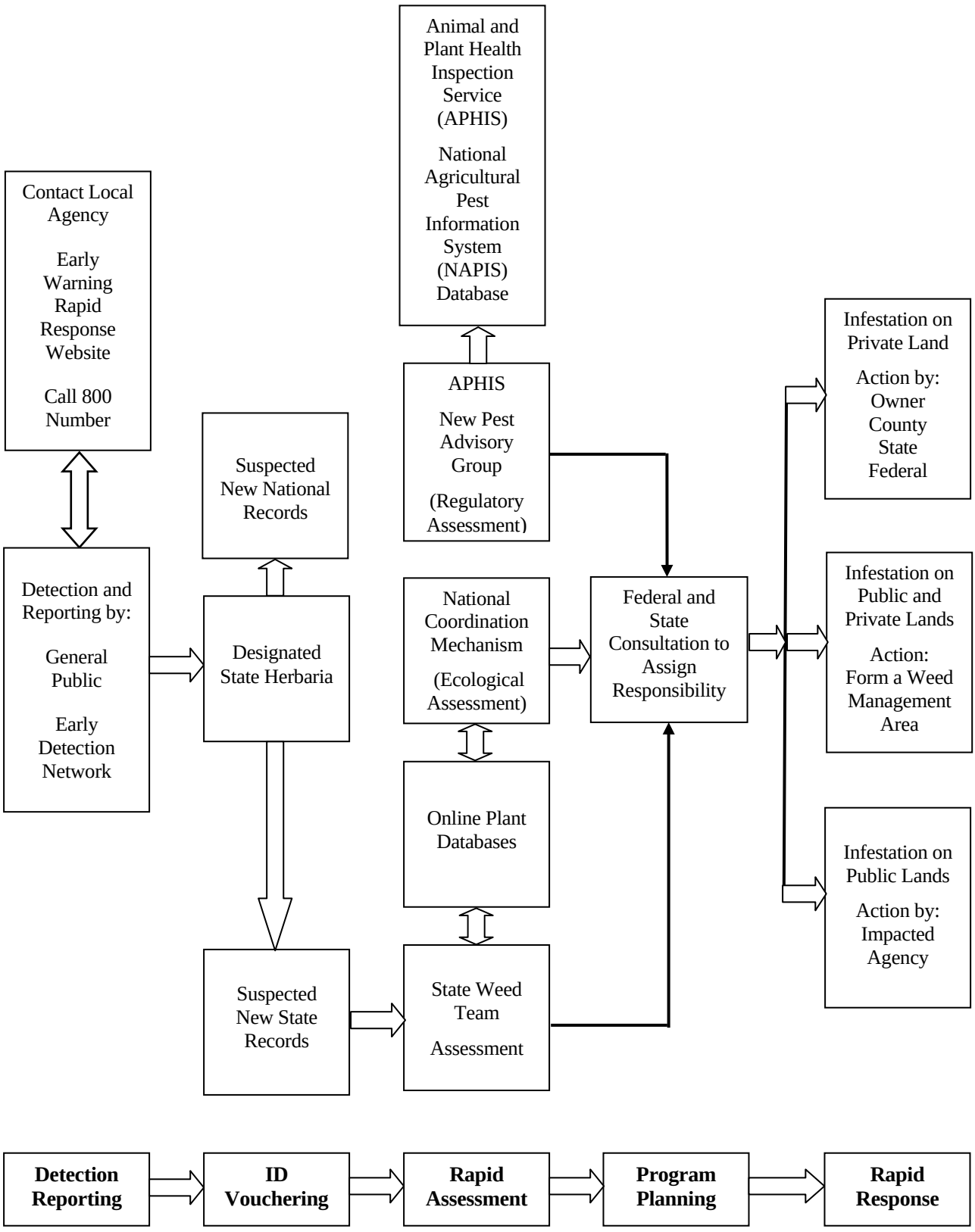


Figure B-1. National Early Warning and Rapid Response System for Invasive Plants.

Understanding with the BLM Idaho State Director, each state (Idaho, Oregon, Nevada, Utah and Colorado) can reserve an annual seed supply for purchase based on a reasonable projection of annual acreage to be stabilized or rehabilitated over a 5-year period.

The Great Basin Restoration Initiative (GBRI) grew out of concern for the health of the Great Basin after the wildfires of 1999. The goal of GBRI is to implement treatments and strategies to maintain functioning ecosystems and to proactively restore degraded ones at strategic locations. Native plants are emphasized in restoration projects where their use is practical and the potential for success is satisfactory. Monitoring is recommended to measure treatment success. To increase the availability of native plants, especially native forbs, the GBRI has established a collaborative native plant project, the Great Basin Native Plant Selection and Increase Project, to increase native plant availability and the technology to successfully establish these plants. This project is supported by funding from the BLM's Native Plant Initiative.

The BLM will follow the following SOPs when revegetating sites:

- Cultivate previously disturbed sites to reduce the amount of weed seeds in the soil seedbank.
- Revegetate sites once work is completed or soon after a disturbance.
- When available, use native seed of known origin as labeled by state seed certification programs.
- Use seed of non-native cultivars and species only when locally adapted native seed is not available or when it is unlikely to establish quickly enough to prevent soil erosion or weed establishment.
- Use seed that is free of noxious and invasive weeds, as determined and documented by a seed inspection test by a certified seed laboratory.
- Limit nitrogen fertilizer applications that favor annual grass growth over forb growth in newly seeded areas, especially where downy brome (cheatgrass) and other invasive annuals are establishing.
- Use clean equipment, free of plants and plant parts, on revegetation projects to prevent the inadvertent introduction of weeds into the site.
- Where important pollinator resources exist, include native nectar and pollen producing plants in the seed mixes used in restoration and reclamation projects. Include non-forage plant species in seed mixes for their pollinator/host relationships as foraging, nesting, or shelter species. Choose native plant species over manipulated cultivars, especially of forbs and shrubs, since natives tend to have more valuable pollen and nectar resources than cultivars. Ensure that bloom times for the flowers of the species chosen match the activity times for the pollinators. Maintain sufficient litter on the soil surfaces of native plant communities for ground-nesting bees.
- Where feasible, avoid grazing by domestic and wild animals on treatment sites until vegetation is well established. Where total rest from grazing is not feasible, efforts should be made to modify the amount and/or season of grazing to promote vegetation recovery within the treatment area. Reductions in grazing animal numbers, permanent or temporary fencing, changes in grazing rotation, and identification of alternative forage sources are examples of methods that could be used to remove, reduce or modify grazing impacts during vegetation recovery.

Special Precautions

Special Status Species

Federal policies and procedures for protecting federally-listed threatened and endangered plant and animal species, and species proposed for listing, were established by the Endangered Species Act of 1973 and regulations issued pursuant to the Act. The purposes of the Act are to provide mechanisms for the conservation of threatened and endangered species and their habitats. Under the Act, the Secretary of the Interior is required to determine which species are threatened or endangered and to issue recovery plans for those species.

Section 7 of the Act specifically requires all federal agencies to use their authorities in furtherance of the Act to carry out programs for the conservation of listed

species, and to ensure that no agency action is likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. Policy and guidance (BLM Manual 6840; *Special Status Species*) also stipulates that species proposed for listing must be managed at the same level of protection as listed species.

The BLM state directors may designate special status in cooperation with their respective state. These special status species must receive, at a minimum, the same level of protection as federal candidate species. The BLM will also carry out management for the conservation of state-listed species, and state laws protecting these species will apply to all BLM programs and actions to the extent that they are consistent with Federal Land Policy and Management Act (FLPMA) and other federal laws.

The BLM consulted with the U.S. Fish and Wildlife Service (UFWS) and National Marine Fisheries Service (NMFS) during development of the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) as required under Section 7 of the Endangered Species Act. As part of this process, the BLM prepared a formal consultation package that included a description of the program; species listed as threatened or endangered, species proposed for listing, and critical habitats that could be affected by the program; and a Biological Assessment (BA) that evaluated the likely impacts to listed species, species proposed for listing, and critical habitats from the proposed vegetation treatment program. Over 300 species were evaluated in the BA. The BA also provides broad guidance at a programmatic level for actions that will be taken by the BLM to avoid adversely impacting species or critical habitat.

Before any vegetation treatment or ground disturbance occurs, BLM policy requires a survey of the project site for species listed or proposed for listing, or special status species. This is done by a qualified biologist and/or botanist who consults the state and local databases and visits the site at the appropriate season. If a proposed project may affect a proposed or listed species or its critical habitat, the BLM consults with the USFWS and/or NMFS. A project with a "may affect, likely to adversely affect" determination requires formal consultation and receives a Biological Opinion from the USFWS and/or NMFS. A project with a "may affect, not likely to adversely affect" determination requires informal consultation and receives a concurrence letter from USFWS and/or NMFS, unless that action is implemented under the authorities of the alternative consultation agreement pursuant to counterpart regulations established for *National Fire Plan* projects.

Wilderness Areas

Wilderness areas, which are designated by Congress, are defined by the Wilderness Act of 1964 as places "where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." The BLM manages 175 Wilderness Areas encompassing over 7.2 million acres.

Activities allowed in wilderness areas are identified in wilderness management plans prepared by the BLM. The BLM does not ordinarily treat vegetation in wilderness areas, but will control invasive and noxious weeds when they threaten lands outside wilderness area or are spreading within the wilderness and can be controlled without serious adverse impacts to wilderness values.

Management of vegetation in a wilderness area is directed toward retaining the natural character of the environment. Tree and shrub removal is usually not allowed, except for fire, insect, or disease control. Reforestation is generally prohibited except to repair damage caused by humans in areas where natural reforestation is unlikely. Only native species and primitive methods, such as hand planting, are allowed for reforestation.

Tools and equipment may be used for vegetation management when they are the minimum amount necessary for the protection of the wilderness resource. Motorized tools may only be used in special or emergency cases involving the health and safety of wilderness visitors, or the protection of wilderness values.

Habitat manipulation using mechanical or chemical means may be allowed to protect threatened and endangered species and to correct unnatural conditions, such as weed infestations, resulting from human influence.

The BLM also manages a total of 610 Wilderness Study Areas (WSAs) encompassing nearly 14.3 million acres. These are areas that have been determined to have wilderness characteristics worthy of consideration for wilderness designation. The BLM's primary goals in WSAs are to manage them so as to not impair their wilderness values and to maintain their suitability for

preservation as wilderness until Congress makes a determination on their future.

In WSAs, the BLM must foster a natural distribution of native species of plants and animals by ensuring that ecosystems and processes continue to function naturally.

Cultural Resources

The effects of BLM actions on cultural resources are addressed through compliance with the National Historic Preservation Act, as implemented through a national Programmatic Agreement (*Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*) and state-specific protocol agreements with State Historic Preservation Officers (SHPOs). The BLM's responsibilities under these authorities are addressed as early in the vegetation management project planning process as possible.

The BLM meets its responsibilities for consultation and government-to-government relationships with Native American tribes by consulting with appropriate tribal representatives prior to taking actions that affect tribal interests. The BLM's tribal consultation policies are detailed in BLM Manual 8120 (*Tribal Consultation Under Cultural Resource Authorities)* and Handbook H-8120-1 (*Guidelines for Conducting Tribal Consultation).* The BLM consulted with Native American tribes and Alaska Native groups during development of the PEIS. Information gathered on important tribal resources and potential impacts to these resources from herbicide treatments is presented in the analysis of impacts.

When conducting vegetation treatments, field office personnel consult with relevant parties (including tribes, native groups, and SHPOs), assess the potential of the proposed treatment to affect cultural and subsistence resources, and devise inventory and protection strategies suitable to the types of resources present and the potential impacts to them.

Herbicide treatments, for example, are unlikely to affect buried cultural resources, but might have a negative effect on traditional cultural properties comprised of plant foods or materials significant to local tribes and native groups. These treatments require inventory and protection strategies that reflect the different potential of each treatment to affect various types of cultural resources.

Impacts to significant cultural resources are avoided through project redesign or are mitigated through data recovery, recordation, monitoring, or other appropriate measures. When cultural resources are discovered during vegetation treatment, appropriate actions are taken to protect these resources.

TABLE B-2
Standard Operating Procedures for Applying Herbicides

Resource Element	Standard Operating Procedure
Guidance Documents	BLM Handbook H-9011-1 (*Chemical Pest Control*); and manuals 1112 (*Safety*), 9011 (*Chemical Pest Control*), 9012 (*Expenditure of Rangeland Insect Pest Control Funds*), 9015 (*Integrated Weed Management)*, and 9220 (*Integrated Pest Management*).
General	• Prepare operational and spill contingency plan in advance of treatment. • Conduct a pretreatment survey before applying herbicides. • Select herbicide that is least damaging to the environment while providing the desired results. • Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures. • Apply the least amount of herbicide needed to achieve the desired result. • Follow herbicide product label for use and storage. • Have licensed applicators apply herbicides. • Use only USEPA-approved herbicides and follow product label directions and "advisory" statements. • Review, understand, and conform to the "Environmental Hazards" section on the herbicide product label. This section warns of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment. • Consider surrounding land use before assigning aerial spraying as a treatment method and avoid aerial spraying near agricultural or densely populated areas. • Minimize the size of application area, when feasible. • Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners. • Post treated areas and specify reentry or rest times, if appropriate. • Notify adjacent landowners prior to treatment. • Keep a copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs are available for review at http://www.cdms.net/. • Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location. • Avoid accidental direct spray and spill conditions to minimize risks to resources. • Consider surrounding land uses before aerial spraying. • Avoid aerial spraying during periods of adverse weather conditions (snow or rain imminent, fog, or air turbulence). • Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground. • Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent. • Use drift control agents and low volatile formulations. • Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas. • Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation. • Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species. • Turn off applied treatments at the completion of spray runs and during turns to start another spray run. • Refer to the herbicide product label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Clean OHVs to remove seeds.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Air Quality See Manual 7000 (*Soil, Water, and Air Management*)	• Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks. • Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph (>6 mph for aerial applications) or rainfall is imminent. • Use drift reduction agents, as appropriate, to reduce the drift hazard. • Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]). • Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources).
Soil See Manual 7000 (*Soil, Water, and Air Management*)	• Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected. • Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility. • Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas.
Water Resources See Manual 7000 (*Soil, Water, and Air Management*)	• Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs. • Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments. • Use local historical weather data to choose the month of treatment. Considering the phenology of the target species, schedule treatments based on the condition of the water body and existing water quality conditions. • Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential stormwater runoff and water turbidity. • Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction. Minimize treating areas with high risk for groundwater contamination. • Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body. • Do not rinse spray tanks in or near water bodies. Do not broadcast pellets where there is danger of contaminating water supplies. • Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide- and site-specific criteria to minimize impacts to water bodies. • Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment.
Wetlands and Riparian Areas	• Use a selective herbicide and a wick or backpack sprayer. • Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications.
Vegetation See Handbook H-4410-1 (*National Range Handbook*), and manuals 5000 (*Forest Management*) and 9015 (*Integrated Weed Management*)	• Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Use native or sterile species for revegetation and restoration projects to compete with invasive species until desired vegetation establishes. • Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for revegetation and other activities. • Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, to maintain desirable vegetation on the treatment site.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Pollinators	• Complete vegetation treatments seasonally before pollinator foraging plants bloom. • Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily. • Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment. • Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources. • Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources. • Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula. • Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants (if invasive species) and in their habitats.
Fish and Other Aquatic Organisms See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*)	• Use appropriate buffer zones based on label and risk assessment guidance. • Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast or aerial treatments. • Use appropriate application equipment/method near water bodies if the potential for off-site drift exists. • For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management, 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and 3) follow water use restrictions presented on the herbicide label.
Wildlife See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*)	• Use herbicides of low toxicity to wildlife, where feasible. • Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area. • Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife.
Threatened, Endangered, and Sensitive Species See Manual 6840 (*Special Status Species*)	• Survey for special status species before treating an area. Consider effects to special status species when designing herbicide treatment programs. • Use a selective herbicide and a wick or backpack sprayer to minimize risks to special status plants. • Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for special status species in area to be treated.
Livestock See Handbook H-4120-1 (*Grazing Management*)	• Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible. • As directed by the herbicide product label, remove livestock from treatment sites prior to herbicide application, where applicable. • Use herbicides of low toxicity to livestock, where feasible. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources. • Avoid use of diquat in riparian pasture while pasture is being used by livestock. • Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary. • Provide alternative forage sites for livestock, if possible.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Wild Horses and Burros	• Minimize using herbicides in areas grazed by wild horses and burros. • Use herbicides of low toxicity to wild horses and burros, where feasible. • Remove wild horses and burros from identified treatment areas prior to herbicide application, in accordance with herbicide product label directions for livestock. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contaminating non-target food and water sources.
Cultural Resources and Paleontological Resources See handbooks H-8120-1 (*Guidelines for Conducting Tribal Consultation*) and H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*), and manuals 8100 (*The Foundations for Managing Cultural Resources*), 8120 (*Tribal Consultation Under Cultural Resource Authorities*), and 8270 (*Paleontological Resource Management*) See also: *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*	• Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act* and state protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes. • Follow BLM Handbook H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*) to determine known Condition I and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts. • Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments. • Work with tribes to minimize impacts to these resources. • Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments.
Visual Resources See handbooks H-8410-1 (*Visual Resource Inventory*) and H-8431-1 (*Visual Resource Contrast Rating*), and manual 8400 (*Visual Resource Management*)	• Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation. • Consider the surrounding land use before assigning aerial spraying as an application method. • Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area. • If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II). • Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) revegetating the site following treatment. • When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Wilderness and Other Special Areas See handbooks H-8550-1 (*Management of Wilderness Study Areas (WSAs)*), and H-8560-1 (*Management of Designated Wilderness Study Areas*), and Manual 8351 (*Wild and Scenic Rivers*)	• Encourage backcountry pack and saddle stock users to feed their livestock only weed-free feed for several days before entering a wilderness area. • Encourage stock users to tie and/or hold stock in such a way as to minimize soil disturbance and loss of native vegetation. • Revegetate disturbed sites with native species if there is no reasonable expectation of natural regeneration. • Provide educational materials at trailheads and other wilderness entry points to educate the public on the need to prevent the spread of weeds. • Use the "minimum tool" to treat noxious and invasive vegetation, relying primarily on the use of ground-based tools, including backpack pumps, hand sprayers, and pumps mounted on pack and saddle stock. • Use chemicals only when they are the minimum method necessary to control weeds that are spreading within the wilderness or threaten lands outside the wilderness. • Give preference to herbicides that have the least impact on non-target species and the wilderness environment. • Implement herbicide treatments during periods of low human use, where feasible. • Address wilderness and special areas in management plans. • Maintain adequate buffers for Wild and Scenic Rivers (¼ mile on either side of river, ½ mile in Alaska).
Recreation See Handbook H-1601-1 (*Land Use Planning Handbook, Appendix C*)	• Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species. • Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas. • Adhere to entry restrictions identified on the herbicide product label for public and worker access. • Post signs noting exclusion areas and the duration of exclusion, if necessary. • Use herbicides during periods of low human use, where feasible.
Social and Economic Values	• Consider surrounding land use before selecting aerial spraying as a method, and avoid aerial spraying near agricultural or densely-populated areas. • Post treated areas and specify reentry or rest times, if appropriate. • Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per herbicide product label instructions. • Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Control public access until potential treatment hazards no longer exist, per herbicide product label instructions. • Observe restricted entry intervals specified by the herbicide product label. • Notify local emergency personnel of proposed treatments. • Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources, especially vegetation over areas larger than the treatment area. • Consult with Native American tribes and Alaska Native groups to locate any areas of vegetation that are of significance to the tribes and Native groups and that might be affected by herbicide treatments. • To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies, including chemicals, for herbicide treatment projects through local suppliers. • To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated pest management program for projects proposing local use of herbicides.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Rights-of-way	• Coordinate vegetation management activities where joint or multiple use of a ROW exists. • Notify other public land users within or adjacent to the ROW proposed for treatment. • Use only herbicides that are approved for use in ROW areas.
Human Health and Safety	• Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted. • Use protective equipment as directed by the herbicide product label. • Post treated areas with appropriate signs at common public access areas. • Observe restricted entry intervals specified by the herbicide product label. • Provide public notification in newspapers or other media where the potential exists for public exposure. • Have a copy of MSDSs at work site. • Notify local emergency personnel of proposed treatments. • Contain and clean up spills and request help as needed. • Secure containers during transport. • Follow label directions for use and storage. • Dispose of unwanted herbicides promptly and correctly.

APPENDIX B

List of Noxious Weeds Potentially Occurring Onsite

Scientific Name	Common Name	CDFA Rating	USDA CA Rating	Cal-IPC Rating
Acacia dealbata	silver wattle			Moderate
Acacia melanoxylon	black acacia			Limited
Acacia paradoxa	kangaroothorn		BW	Eval-No List
Acaena novae-zelandica	biddy biddy		AW	
Acaena pallida	pale biddy-biddy		AW	
Achnatherum brachychaetum	punagrass	A	AW	
Acroptilon repens	Russian knapweed		BW	Moderate
Aegilops cylindrica	jointed goatgrass		BW	
Aegilops ovata	ovate goatgrass		BW	
Aegilops triuncialis	barb goatgrass		BW	
Aeginetia			Q	
Aeschynomene rudis	rough jointvetch		BW	
Ageratina adenophora	crofton weed		Q	Moderate
Agrostis avenacea	Pacific bentgrass			Limited
Agrostis stolonifera	creeping bentgrass			Limited
Ailanthus altissima	tree-of-heaven			Moderate
Aira caryophyllea	silver hairgrass			Eval-No List
Albizia lopantha	plume acacia			Eval-No List
Alectra Thunb.			Q	
Alhagi maurorum	camelthorn	A	AW, PN	Moderate
Allium paniculatum	panicled onion		BW	
Allium vineale	wild garlic		BW	
Alternanthera philoxeroides	alligatorweed		AW	High
Alternanthera sessilis	sessile joyweed		Q	
Ambrosia trifida	giant ragweed		BW	
Ammophila arenaria	European beachgrass			High
Antehmis cotula	mayweed			Eval-No List
Araujia sericifera	bladderflower		BW	
Arctotheca calendula	capeweed	A	AW	Moderate
Arundo donax	giant reed			High
Asparagus asparagoides	bridal creeper			Moderate
Asphodelus fistulosus	onionweed		Q	Moderate
Atriplex semibaccata	Australian saltbush			Moderate
Avena sterilis	animated oat		Q	
Azolla pinnata	mosquito fern		Q	
Bassia hysopifolia	fivehook bassia			Limited
Bellis perennis	English daisy			Eval-No List
Brachypodium sylvaticum	slender false brome	A		
Brassica nigra	black mustard			Moderate
Brassica rapa	field mustard			Limited
Brassica tournefortii	Saharan mustard			High
Briza maxima	big quackinggrass			Limited
Bromus diandrus	ripgut brome			Moderate
Bromus hordeaceus	soft brome			Limited
Bromus japonicus	Japanese brome			Limited
Bromus madritensis ssp. rubens	red brome			High
Bromus tectorum	downy brome			High
Cabomba caroliniana	Carolina fanwort		QW	
Cakile maritima	European sea-rocket			Limited
Cardaria chalapensis	lens podded hoarycress		BW	Moderate
Cardaria draba	lens podded hoarycress		BW	
Carduus acanthoides	plumeless thistle	A	AW	
Carduus nutans	musk thistle	A	AW	
Cardaria pubescens	lens podded hoarycress		BW	Limited
Carduus pycnocephalus	Italian thistle		CW	Moderate
Carduus tenuiflorus	slenderflowered thistle		CW	Limited
Carpobrotus chilensis	sea-fig			Moderate
Carpobrotus edulis	iceplant			High
Carthamus baeticus	smooth distaff thistle		BW	
Carthamus lanatus	woolly distaff thistle		BW	
Carthamus leucocaulos	whitestem distaff thistle		AW	
Carthamus oxyacantha	wild safflower		Q	
Caucus carota	wild carrot			Eval-No List
Centaurea calcitrapa	purple starthistle		BW	Moderate
Centaurea diffusa	diffuse knapweed	A	AW	Moderate

Centaurea iberica	Iberian starthistle	A	AW	
Centaurea maculosa	spotted knapweed	A	AW	High
Centaurea monktonii	meadow knapweed	A		
Centaurea solstitialis	yellow starthistle		CW	High
Centaurea squarrosa	squarrose knapweed	A	AW	
Centaurea sulphurea	Sicilian starthistle		BW	
Cenchrus echinatus	southern sandbur		CW	
Cenchrus incertus	coast sandbur		CW	
Cenchrus longispinus	mat sandbur		CW	
Chondrilla juncea	skeletonweed	A	AW	
Chorispora tenella	purple mustard		BW	Eval-No List
Chrysanthemum coronarium	crown daisy			Moderate
Chrysopogon aciculatus	pilipiliula		Q	
Cirsium arvense	Canada thistle		BW	Moderate
Cirsium japonicum	Japanese thistle		QW	
Cirsium ochrocentrum	yellowspine thistle	A	AW	
Cirsium undulatum	wavyleaf thistle		AW	
Cirsium vulgare	bull thistle			Moderate
Cistus ladanifer	gum rockrose			Eval-No List
Crupina vulgaris	crupina	A		Moderate
Commelina benghalensis	Benghal dayflower		Q	
Conium maculatum	poison-hemlock			Moderate
Convolvulus arvensis	field bindweed		CW	Eval-No List
Coronopus squamatus	swinecress		BW	
Cortaderia jubata	jubatagrass			High
Cortaderia selloana	pampasgrass			High
Cotoneaster lacteus	Parney's cotoneaster			Moderate
Cotoneaster pannosus	silverleaf			Moderate
Cotula coroonopifolia	brassbuttons			Limited
Crocosmia x crocosmiiflora	montretia			Limited
Crupina vulgaris	bearded creeper,		AW, Q	
Cucumis melo var. dudaim	dudaim melon		AW	
Cucumis myriocarpus	paddy melon		BW	
Cuscuta	dodder		CW, Q	
Cuscuta reflexa	giant dodder		AW	
Cynara cardunculus	artichoke thistle		BW	Moderate
Cynodon dactylon	bermudagrass		CW	Moderate
Cynosorus echinatus	hedgehog			Moderate
Cyperus esculentus	yellow nutsedge		BW	
Cyperus rotundus	purple nutsedge		BW	
Cytisus scoparius	Scotch broom		CW	High
Cytisus striatus	Portugese broom			Moderate
Dactylis glomerata	orchardgrass			Limited
Delairea odorata	cape-ivy			High
Descurainia sophia	flixweed			Limited
Digitalis purpurea	foxglove			Limited
Digitaria scalarum	African couch grass		Q	
Digitaria velutina	velvet fingergrass		Q	
Dimorphotheca sinuata	African daisy			Eval-No List
Dipsacus fullonum	common teasel			Moderate
Dipsacus sativus	fuller's teasel			Moderate
Dittricia graveolens	stinkwort			Moderate
Drymaria arenarioides	alfombrilla		Q	
Echium candicans	pride-of-Madeira			Limited
Egeria densa	Brazilian egeria			High
Eichhornia azurea	anchored waterhyacinth		Q	
Eichhornia crassipes	waterhyacinth		CW	
Elytrigia repens	quackgrass		BW	
Emex australis	three-cornered jack		Q	
Emex spinosa	devil's thorn		Q	
Ehrharta erecta	erect veldtgrass			Moderate
Ehrharta longiflora	long-flowered veldtgrass			Moderate
Eichornia crassipes	water hyacinth			High
Elaegnus angustifolia	Russian-olive			Moderate
Emex spinosa	spiny emex			Moderate
Erechtites glomerata	Australian fireweed			Moderate
Erodium brachycarpum	short-fruited filaree			Eval-No List

Erodium botrys	broadleaf filaree			Eval-No List
Erodium cicutarium	redstem filaree			Limited
Erodium moschatum	whitestem filaree			Eval-No List
Eucalyptus camaldulensis	red gum			Limited
Eucalyptus globulus	Tasmanian blue gum			Moderate
Euphorbia esula	leafy spurge	A	AW	High
Euphorbia lathyris	caper spurge			Eval-No List
Euphorbia oblongata	oblong spurge		BW	
Euphorbia serrata	serrate spurge		AW	
Euphorbia terracina	Geraldton carnation		QW	Moderate
Festuca arundinacea	tall fescue			Moderate
Ficus carica	edible fig			Moderate
Foeniculum vulgare	fennel			High
Fumaria officinalis	fumitory			Eval-No List
Galega officinalis	goatsrue		Q	
Gaura coccinea	scarlet gaura		BW	
Gaura drummondii	Drummond's gaura		BW	
Gaura sinuata	wavy-leaved gaura		BW	
Genista monspessulana	French broom		CW	High
Geranium dissectum	cutleaf geranium			Moderate
Geranium molle	dovefoot geranium			Eval-No List
Geranium retrorsum	New Zealand geranium			Eval-No List
Glyceria declinata	waxy mannagrass			Moderate
Gypsophila paniculata	baby's breath		BW	
Halimodendron halodendron	Russian salt tree		AW	
Halogeton glomeratus	halogeton	A	AW	Moderate
Hedera helix	English ivy			High
Helianthus ciliaris	blueweed		AW	
Helichrysum petiolare	licoriceplant			Limited
Heracleum mantegazzianum	giant hogweed		Q	
Heteropogon contortus	tanglehead		AW	
Hirschfeldia incana	shortpod mustard			Moderate
Holcus lanatus	common velvet grass			Moderate
Homeria	Cape tulip		Q	
Hordeum marinum	Mediterranean barley			Moderate
Hydrilla verticillata	hydrilla		AW, NAW, Q	High
Hydrocharis morsus-ranae	frogbit		AW	
Hygrophila polysperma	Miramar weed		Q	
Hyoscyamus niger	black henbane		CW	
Hypericum canariense	Canary Island hypericum			Moderate
Hypericum perforatum	klamathweed		CW	Moderate
Hypochaeris glabra	smooth catsear			Limited
Hypochaeris radicata	rough catsear			Moderate
Imperata brasiliensis	Brazilian satintail		Q	
Imperata brevifolia	satintail		BW	
Imperata cylindrica	cogongrass		Q	
Ipomoea aquatica	Chinese waterspinach		Q	
Iris douglasiana	Douglas iris		CW	
Iris missouriensis	western blue flag		CW	
Iris pseudacorus	yellowflag iris			Limited
Isatis tinctoria	dyer's woad		BW	
Ischaemum rugosum	murain-grass		Q	
Iva axillaris	povertyweed		CW	
Kochia scoparia	kochia			Moderate
Lactuca serriola	prickly lettuce			Eval-No List
Lagarosiphon major	oxygen weed		Q	
Lepidium latifolium	perennial peppercress		BW	High
Leptochloa chinensis	Asian sprangletop		Q	
Leucanthemum vulgare	ox-eye daisy			Moderate
Limnobium spongia	spongeplant		QW	
Limnophila indica	ambulia		QW	
Limnophila sessiliflora	ambulia		Q	
Linaria genistifolia ssp. dalmatica	Dalmatian toadflax	A	AW	Moderate
Linaria vulgaris	yellow toadflax			Moderate
Lobularia maritima	sweet alyssum			Limited
Lolium multiflorum	Italian ryegrass			Moderate
Lotus corniculatus	birdsfoot trefoil			Eval-No List

Ludwigia hexapetala	Uruguay water-primrose			High
Ludwigia peploides ssp. montevidensis	creeping water-primrose			High
Lycium ferrocissimum	African boxthorn		Q	
Lythrum hyssopifolium	hyssop loosestrife			Limited
Lythrum salicaria	purple loosestrife		BW	High
Malephora crocea	coppery			Eval-No List
Malvella leprosa	alkali mallow		CW	
Marrubium vulgare				Limited
Medico polymorpha	California burclover			Limited
Melaleuca quinquenervia	melaleuca		Q	
Melastoma malabathricum			Q	
Melilotus officinalis	yellow sweetclover			Eval-No List
Mentha pulegium	pennyroyal			Moderate
Messembryanthemum crystallinum	crstalline iceplant			Moderate
Mikania cordata	mile-a-minute		Q	
Mikania micrantha	mile-a-minute		Q	
Mimosa invisa	giant sensitive plant		Q	
Mimosa pigra	catclaw mimosa		Q	
Monochoria hastata	monochoria		Q	
Monochoria vaginalis	pickerel weed		Q	
Muhlenbergia schreberi	nimblewil		BW	
Myoporum laetum	myoporum			Moderate
Myostis latifolia	common forget-me-not			Limited
Myriophylllum aquaticum	parrotfeather			High
Nassella trichotoma	serrated tussock		Q	
Nicotiana glauca	tree tobacco			Moderate
Nothoscordum gracile	false garlic			Eval-No List
Nothoscordum inodorum	false garlic		BW	
Nymphaea mexicana	banana waterlily		BW	Eval-No List
Olea europaea	olive			Limited
Ononis alopecuroides	foxtail restharrow		QW	
Onopordum acanthium	Scotch thistle	A	AW	
Onorpordum illyricum	Illyrian thistle	A	AW	
Onopordum tauricum	Taurian thistle	A	AW	
Opuntia aurantiaca	jointed prickly pear		Q	
Orobanche	broomrape		Q	
Orobanche cooperi	Cooper's broomrape		AW	
Orobanche ramosa	branched broomrape		AW	
Oryza longistaminata	red rice		Q	
Oryza punctata	red rice		Q	
Oryza rufipogon	perennial wild red rice, red		BW, Q	
Ottelia alismoides	duck-lettuce		Q	
Oxalis corniculata	creeping woodsorrel			Eval-No List
Oxalis pes-caprae	Bermuda buttercup			Moderate
Panicum antidotale	blue panicgrass		BW	
Parentucellia viscosa	yellow glandweed			Limited
Parkinsonia aculeata	Mexican Palo Verde			Eval-No List
Paspalum scrobiculatum	Kodo-millet		Q	
Peganum harmala	harmel	A	AW	
Pennisetum clandestinum	kikuyugrass		CW, Q	Limited
Pennisetum macrourum	African feathergrass		Q	
Pennisetum pedicellatum	kyasuma-grass		Q	
Pennisetum polystachyon	missiongrass		Q	
Pennisetum setaceum	crimson fountaingrass			Moderate
Phalaris aquatica	hardinggrass			Moderate
Phoenix canariensis	Canary Island date palm			Limited
Phragmites australis	common reed			Native
Physalis longifolia	long-leaf groundcherry		AW	
Physalis viscosa	grape groundcherry		BW	
Phytolacca americana	common pokeweed			Limited
Picris echioides	bristly oxtongue			Limited
Piptatherum miliaceum	smilograss			Limited
Pistia stratiotes	water lettuce		BW	
Plantago coronopus	cutleaf plantain			Eval-No List
Plantago lanceolata	buckhorn plantain			Limited
Poa pratensis	Kentucky bluegrass			Limited
Polygonum amphibium var. emersum	kelp		CW	

Polygonum cuspidatum	Japanese knotweed		BW	
Polygonum polystachyum	Himalayan knotweed		BW	
Polygonum sachalinense	giant knotweed		BW	
Polypogon monspeliensis	annual beardgrass			Limited
Potamogeton crispus	curlyleaf pondweed			Moderate
Prosopis alpataco	mesquite		Q	
Prosopis argentina	mesquite		Q	
Prosopis burkartii	mesquite		Q	
Prosopis caldenia	mesquite		Q	
Prosopis calingastana	mesquite		Q	
Prosopis campestris	mesquite		Q	
Prosopis castellanosii	mesquite		Q	
Prosopis denudans	mesquite		Q	
Prosopis elata	mesquite		Q	
Prosopis farcta	Syrian mesquite		Q	
Prosopis ferox	mesquite		Q	
Prosopis fiebrigii	mesquite		Q	
Prosopis hassleri	mesquite		Q	
Prosopis humilis	mesquite		Q	
Prosopis kuntzei Harms ex Hassler	mesquite		Q	
Prosopis pallida (Humb. & Bonpl. ex Willd.) Ku	kiawe		Q	
Prosopis palmeri S. Watson	mesquite		Q	
Prosopis reptans Benth.	tornillo		Q	
Prosopis rojasiana Burkart	mesquite		Q	
Prosopis ruizlealii Burkart	mesquite		Q	
Prosopis ruscifolia Griseb.	mesquite		Q	
Prosopis sericantha	mesquite		Q	
Prosopis strombulifera	Argentine screwbean		AW, Q	
Prosopis torquata	mesquite		Q	
Prosopis articulata	velvet mesquite		Q	
Prunus cerasifera	cherry plum			Limited
Pyracantha angustifolia	firethorn			Limited
Ranunculus repens	creeping buttercup			Limited
Raphanus sativus	radish			Limited
Retama monosperma	bridal broom			Moderate
Ricinus communis	castorbean			Limited
Robinia pseudoacacia	black locust			Limited
Rorippa austriaca	Austrian field cress		BW	
Rorippa sylvestris	creeping yellow field cress		QW	
Rottboellia cochinchinensis	itchgrass		Q	
Rubus armeniacus	Himalaya blackberry			High
Rubus fruticosus	wild blackberry complex		Q	
Rubus moluccanus	wild blackberry		Q	
Rumex acetosella	red shorrel			Moderate
Rumex crispus	curly dock			Limited
Saccharum spontaneum	wild sugarcane		Q	
Sagittaria sagittifolia	arrowhead		Q	
Salsola collina	spineless Russianthistle		QW	
Salsola paulsenii	barbwire Russianthistle		CW	Limited
Salsola tragus	common Russianthistle		CW	Limited
Salsola vermiculata	wormleaf salsola,	A	AW, Q	
Salvia aethiopis	Mediterranean sage		BW	
Salvia virgata	southern meadow sage		AW	
Salvinia auriculata	giant salvinia, salvinia		Q, QW	
Salvinia biloba	giant salvinia		Q	
Salvinia herzogii	giant salvinia		Q	
Salvinia molesta	giant salvinia		Q	
Saponaria officinalis	bouncingbet			Limited
Schinus molle	Peruvian peppertree			Limited
Schinus terebinthifolius	Brazilian peppertree			Limited
Schismus arabicus	Mediterranean grass			Limited
Scolymus hispanicus	golden thistle	A	AW	
Senecio jacobaea	tansy ragwort		BW	Limited
Senecio squalidus	Oxford ragwort		BW	
Sesbania punicea	scarlet wisteria			High
Setaria faberi	giant foxtai		BW	
Setaria pallidifusca	cattail grass		Q	

Silybum marianum	blessed milkthistle			Limited
Sinapis arvensis	wild mustard			Limited
Sisymbrium irio	London rocket			Moderate
Solanum cardiophyllum	heartleaf nightshade		AW	
Solanum carolinense	Carolina horsenettle		BW	
Solanum dimidiatum	Torrey's nightshade		AW	
Solanum elaeagnifolium	white horsenettle		BW	Eval-No List
Solanum lanceolatum	lanceleaf nightshade		BW	
Solanum marginatum	white-margined		BW	
Solanum tampicense	wetland nightshade		Q	
Solanum torvum	turkeyberry		Q	
Solanum viarum	tropical soda apple		Q	
Sonchus arvensis	perennial sowthistle	A	AW	
Sonchus asper	spiny sowthistle			Eval-No List
Sorghum halepense	johnsongrass		CW	
Sparganium erectum	exotic bur-reed		Q	
Spartium junceum	Spanish broom			High
Spermacoce alata	borreria		Q	
Sphaerophysa salsula	Austrian peaweed		AW	
Striga	witchweed		Q	
Striga asiatica	witchweed		AW	
Symphytum asperum	rough comfrey		BW	
Taeniatherum caput-medusae	medusahead		CW	High
Tagetes minuta	wild marigold		AW	
Tamarix aphylla	Athel tamarisk			Limited
Tamarix parviflora	smallflower tamarisk			High
Tamarix ramosissima	salt cedar			High
Taraxacum officinale	common dandelion			Eval-No List
Torilis arvensis	hedge parsely			Moderate
Tragopogon dubius	yellow salsify			Eval-No List
Tribulus terrestris	puncturevine		CW	
Tridax procumbens	coat buttons		Q	
Trifolium hirtum	rose clover			Moderate
Ulex europaeus	gorse		BW	
Undaria pinnatifida	wakame			Limited
Urochloa panicoides	liverseed grass		Q	
Verbascum thapsus	common mullein			Limited
Vicia villosa	hairy vetch			Eval-No List
Vinca major	big periwinkle			Moderate
Viscum album	European mistletoe		BW	
Vulpia bromoides	squirretail fescue			Eval-No List
Vulpia myuros	rattail fescue			Moderate
Washingtonia robusta	Mexican fan palm			Moderate
Zantedeschia aethiopica	calla lily			Limited
Zygophyllum fabago	Syrian beancaper		AW	

Definitions:

†Code	Weed Status
AW	A list (noxious weeds
BW	B list (noxious weeds
CW	C list (noxious weeds
NAW	Noxious aquatic weed
PN	Public nuisance
Q	Quarantine
QW	Q list (temporary "A" list noxious weed, pending fina

High-These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed.

Moderate-These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, although establishment is generally dependent on ecological disturbance. Ecological amplitude and distribution may range from limited to widespread

Limited-These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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PALEN SOLAR ELECTRIC GENERATING SYSTEM AMENDMENT

Docket No. 09-AFC-7C
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(Revised 05/23/2013)

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DECLARATION OF SERVICE

I, Marie Fleming, declare that on May 28, 2013, I served and filed copies of the attached **DRAFT WEED MANAGEMENT PLAN**, dated May 2013. This document is accompanied by the most recent Proof of Service, which I copied from the web page for this project at: http://www.energy.ca.gov/sitingcases/palen/compliance/.

The document has been sent to the other persons on the Service List above in the following manner:

(C*heck one*)

For service to all other parties and filing with the Docket Unit at the Energy Commission:

__X__ I e-mailed the document to all e-mail addresses on the Service List above and personally delivered it or deposited it in the U.S. mail with first class postage to those parties noted above as "hard copy required"; **OR**

___ Instead of e-mailing the document, I personally delivered it or deposited it in the U.S. mail with first class postage to all of the persons on the Service List for whom a mailing address is given.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am over the age of 18 years.

Dated: May 28, 2013

Marie Fleming