GENERAL BIOLOGICAL RESOURCES ASSESSMENT REPORT

AGINCOURT SOLAR PROJECT

Cougar Buttes USGS 7.5' quadrangle
Section 34, Township 4 North, Range 1 East
APNs 0449-641-27 and 0449-641-04

SAN BERNARDINO COUNTY, CALIFORNIA

Submitted by the Project Applicant:

Agincourt Solar, LLC
P.O. Box 31159
Santa Barbara, California 93130
(805) 617-0309

Prepared for:

WDG Capital Partners, LLC
P.O. Box 31159
Santa Barbara, California 93130
(805) 617-0309

Prepared by:

130 Robin Hill Road, Suite 100
Santa Barbara, California 93455
(805) 692-0600 ◆ Fax: (805) 739-1135

Project Number 28907132

June 2012

TABLE OF CONTENTS

Section **Page**

Section **Page**

Section **Page**

List of Tables

List of Figures **Follows Page**

List of Appendices

CERTIFICATION

"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a nondisclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project."

DATE: 6/20/2012 SIGNED: _____

Report Author
Christopher Julian
Project Biologist/Regulatory Specialist

Prepared by:
URS Corporation
130 Robin Hill Road, Suite 100
Santa Barbara, CA 93117
(805) 692-0600

Fieldwork Performed by:

Julie Love
Senior Biologist/Restoration Ecologist

Ronald Cummings
Senior Wildlife Biologist

Greg Hoisington
Senior Biologist

William Fletcher
Staff Biologist

Cristina Slaughter
Senior Wildlife Biologist

Christopher Munson
Staff Biologist

Natalie Evans
Staff Environmental Scientist

Leonard Malo
NOREAS Senior Biologist

David Magney
NOREAS Senior Biologist

David Brown
NOREAS Biologist

EXECUTIVE SUMMARY

Agincourt Solar, LLC (the Applicant) has retained URS Corporation (URS) to prepare this General Biological Resources Assessment Report for the Agincourt Solar Project (Project), a proposed 10 megawatt (MW) alternative current (AC) solar photovoltaic (PV) electrical power generating facility on approximately 59 acres in unincorporated San Bernardino County, California. The site measures approximately 79 acres in size. The proposed Project will connect with an existing Southern California Edison 33-kilovolt (kV) transmission line. No new off-site transmission line is proposed.

The Project site supports two vegetation types, Joshua tree woodland and creosote bush-white burr sage scrub. No special-status plant species were detected on-site, with the exception of the silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), cottontop cactus (*Echinocactus polycephalus*), Engelmann's hedgehog cactus (*Echinocereus engelmannii*), Joshua tree (*Yucca brevifolia*), and Mojave yucca (*Yucca schedigera*), which maintain no formal sensitivity designation but are granted protection under the California Desert Native Plants Act and the San Bernardino County Development Code.

Wildlife use of this site appears to be limited. Aside from common insects, a total of nine wildlife species were observed on-site. Only one special-status wildlife species was detected on-site, the burrowing owl (*Athene cunicularia*), a California Species of Special Concern. An old, partial Mojave desert tortoise (*Gopherus agassizii*) skeleton was also discovered, indicating that tortoises likely used the site at some time in the past. Based on Berry and Woodman (1984), the carcass is more than four years old. Focused surveys for burrowing owl and desert tortoise were conducted; results are presented under separate cover (see URS 2012b and URS 2012a, respectively). California Natural Diversity Database (CNDDB) forms are included in those reports.

A total of 12 ephemeral drainages were mapped, traversing the site in a south-north direction. Because the site's watershed is intra-state and is isolated from navigable waters, the waters on-site are not subject to federal jurisdiction under the Clean Water Act. However, the 12 ephemeral desert washes encompass approximately 9.15 acres, and are subject to the permitting authority of the California Department of Fish and Game and the Colorado River Basin Regional Water Quality Control Board.

SECTION 1.0
INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The Applicant proposes to construct and operate a 10 megawatt (MW) alternating current (AC) solar photovoltaic (PV) electrical power generating facility on approximately 59 acres in unincorporated San Bernardino County, California. The proposed Project will connect with an existing Southern California Edison (SCE) 33-kilovolt (kV) transmission line. No new off-site transmission line is proposed.

This General Biological Resources Assessment Report presents the results of biological field investigations that have been undertaken within the Agincourt Solar Project site and surrounding vicinity, describes the Project's impacts on biological resources, and identifies feasible mitigation measures that would reduce impacts to less than significant levels.

The Applicant will submit a Conditional Use Permit (CUP) application to the County of San Bernardino, and the Planning Division of the County Land Use Services Department (Planning) will initiate review of the proposed Project as required under the California Environmental Quality Act (CEQA). The purpose of this General Biological Resources Assessment Report is to present the biological field studies that have been conducted for the Project, and to substantiate the baseline biological conditions within the Project site and surrounding area for CEQA purposes. Studies presented in this report include:

- A review of pertinent literature
- Full-coverage biological field surveys
- Delineation of jurisdictional waters and streambeds
- Joshua tree and California Desert Native Plants Act inventory

In addition to these general studies presented in this General Biological Resources Assessment Report, focused surveys for the Mojave desert tortoise (*Gopherus agassizii*) and burrowing owl (*Athene cunicularia*) were conducted within the Agincourt site. Focused survey reports for these species have been prepared under separate cover (URS 2012a and 2012b, respectively).

1.2 PROJECT SITE

The Project site evaluated in this General Biological Resources Assessment Report comprises approximately 79 acres in the Lucerne Valley, in the western Mojave Desert in unincorporated San Bernardino County. The site is located approximately six miles southeast of the intersection of State Routes (SR) 18 and SR 247, which occurs in the unincorporated

town of Lucerne Valley. Access to the site can be achieved via Camp Rock Road, which forms the site's eastern border. Rosewood Street, an unpaved County road, forms the northern border in the western portion of the site; however, the majority of the northern boundary and the entire western and southern boundaries are not marked by physical features. The site is located within Section 34, Township 4 North, Range 1 East (San Bernardino Base and Meridian), within the Cougar Buttes USGS 7.5-minute series quadrangle. The site exhibits a key-like shape, with a wider portion at the western end and a narrow neck extending to the east (see Figure 1).

The project site is comprised of two adjacent parcels, both of which are currently unimproved and vacant. The western portion of the site (parcel 0449-641-04) is zoned LV/RL-5 (Rural Living – 5 acre parcel minimum). The RL land use zoning district provides sites for rural residential uses, incidental agricultural uses, and similar and compatible uses. The easterly portion of the site (parcel 0449-641-27) is zoned LV/AG, which has a minimum 10-acre lot size and is intended for commercial agricultural operations, agriculture support services, rural residential uses and similar and compatible uses. Under County Code Chapters 82.03 and 82.04, electrical power generation is defined as a transportation, communications and infrastructure use, and is allowed in the RL-5 and AG zones upon approval of a Conditional Use Permit (CUP). The site is privately owned, and is not within or adjacent to any designated sensitive resource areas, ecological reserves, or other formally protected lands.

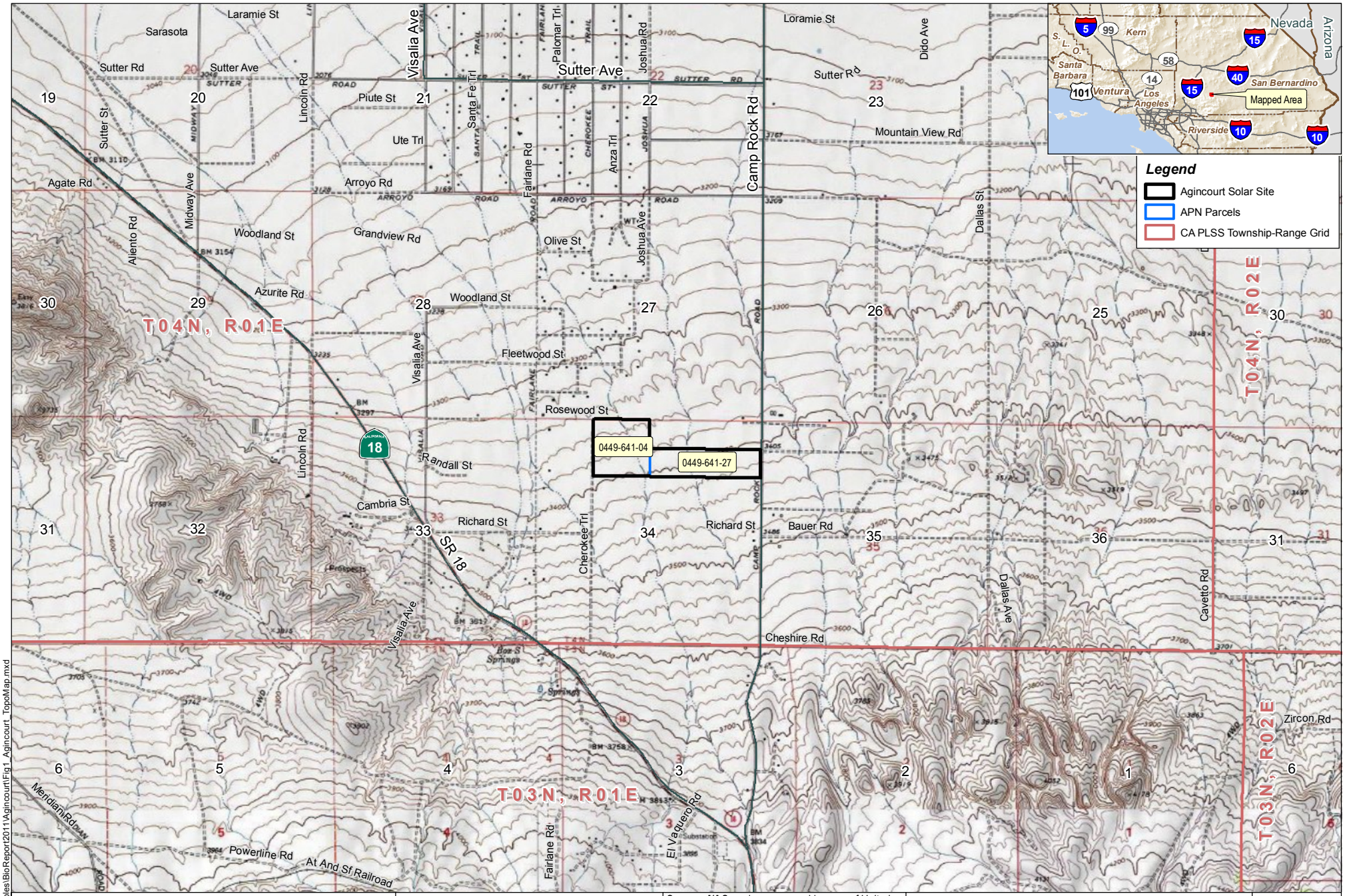
Elevations within the Project site range from approximately 3,350 to 3,440 feet above mean sea level, with the overall grade sloping gradually to the north-northwest at a grade of 4 percent. The northern foothills of the San Bernardino Mountains, a major regional mountain range with elevations exceeding 11,000 feet, are located approximately three miles south of the site. The site exhibits microtopography associated with several ephemeral drainage channels that traverse the site, but major landforms and topographic features are absent.

Much of the land surrounding the Project site has been subdivided into large residential lots for rural living, but only a few of these lots have been developed with residences. The closest residence to the Agincourt site is located approximately 0.15 mile north of the site boundary on Rosewood Street near the intersection with Camp Rock Road. Aside from scattered rural residences, the landscape surrounding the Project site is characterized by relatively intact desert vegetation.

1.3 TAXONOMIC NOMENCLATURE AND SPECIAL-STATUS SPECIES

Sources of taxonomic nomenclature for plants, animals, and vegetation communities used in this General Biological Resources Assessment Report are as follows:

- Plant nomenclature follows *The Jepson Manual, Higher Plants of California* (Hickman 1993) and the Jepson Online Interchange for name changes.



0 0.25 0.5 0.75 1 Mile

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

Biological Resources Assessment Report
Agincourt Solar Site
San Bernardino County

URS Corporation

Source: [1] Seamless, scanned images of United States Geological Survey (USGS) paper topographic 1:24,000-scale maps by National Geographic TOPO!, [2] California Geospatial Information Library PLS, [3] San Bernardino County Assessor. [4] ESRI StreetMap USA (2007).

Figure 1. Topographic Map of Project Area

2012

T:\WDGCP\deliverables\BioReport2011\Agincourt\Fig1_Agincourt_TopoMap.mxd

- Reptile nomenclature follows *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003) and the California Herps website for name changes (California Herps 2011).
- Bird nomenclature follows the American Ornithologists' Union (2011).
- Mammal nomenclature follows *Mammal Species of the World* (Wilson and Reeder 2005).
- Natural vegetation communities were characterized based on *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009).

The term "special-status species," as used in this General Biological Resources Assessment Report, includes:

- Those plants and wildlife listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the U.S. Endangered Species Act (ESA).
- Those plants and wildlife species listed or candidates for listing as threatened or endangered by the California Department of Fish and Game (CDFG) under the California Endangered Species Act (CESA).
- Those birds, mammals, reptiles and amphibians, and fishes listed as "fully protected" by the California Fish and Game Code (Sections 3511, 4700, 5050, and 5515, respectively).
- Wildlife species identified by the CDFG as California Species of Special Concern (CSC) or Special Animals (SA).
- Plant species identified by the CDFG as Special Plants (SP).
- Plants occurring on Lists 1, 2, and 4 of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CNPS 2001) and the on-line Inventory of Rare and Endangered Plants (CNPS 2011).

Common avian species that receive protection under the Migratory Bird Treaty Act during the nesting season, but otherwise maintain no sensitivity designation, are not treated as special-status species in this report.

SECTION 2.0
SUMMARY PROJECT DESCRIPTION

Agincourt Solar, LLC (Applicant) of Santa Barbara, California, proposes a 10-megawatt (MW) photovoltaic (PV) solar facility to be constructed on approximately 59 of the 79.2 acre site. The site is located in the South one half of the North one half of the Northeast one quarter of Section 34, Township 4 North, Range 1 East, San Bernardino Base and Meridian, in the Cougar Buttes USGS quadrangle, County of San Bernardino, California.

The site is bounded by Rosewood Street directly to the North, Camp Rock Road directly to the East, Richard Street to the South, and Cherokee Trail to the West. Figure 1 shows the local site vicinity, and the inset on this figure shows the regional map for context.

The proposed Project site is situated within the Mojave Desert. The watershed generally slopes in a northwesterly direction, with elevations of approximately 3,351 to 8,190 feet above mean sea level and an overall slope of approximately 14 percent. The site is comprised of creosote bush-white burr sage scrub and Joshua tree woodland vegetation.

2.1 PROJECT LOCATION AND LEGAL DESCRIPTION

The proposed Project site is situated in the western Mojave Desert, in the southern Lucerne Valley region of San Bernardino County. The site is about 5.5 miles southeast of the Lucerne Valley community. The primary access point to the Project site is from Camp Rock Road, which runs along the eastern boundary of the site. Camp Rock Road intersects State Route 18 (SR 18) approximately 1.7 miles south of the proposed Project site.

The project site includes the following Assessor Parcel Numbers (APNs):

- 0449-641-04 (40 acres, NE/4 of NW/4, Section 34, Township 4N, Range 1E)
- 0449-641-27 (39.2 acres, S/2 of N/2 of NE/4, Section 34, Township 4N, Range 1E, excepting County 50-foot road easement)

2.2 ENVIRONMENTAL SETTING AND SURROUNDING USES

The Mojave Desert is a subsection of the Basin and Range Physiographic Province, which is characterized by long, north-south-trending mountain ranges separated by broad valleys. The site is located on a broad gently sloping bajada of alluvial material originating from the San Bernardino Mountains to the south. Elevation of the project site ranges from approximately 3,340 feet above sea level (asl) at its northwest corner up to 3,446 asl at its southeast corner. The topography is generally flat, with a slope of about four percent towards the north-northwest. Numerous small braided channels cross the site.

The Project site is bordered to the north by vacant land and Rosewood Street. Land to the north of Rosewood Street is subdivided into five acre lots, but only a few of these have been developed with residences. To the west, the land is also subdivided with lot sizes ranging from 2.5 to 10 acres. Most of these lots are vacant, and about one dozen homes are located within one-half mile of the northern and western project boundaries. Immediately south of the project site are two large vacant lots. In general terms, land to the south and east is in larger lots with a lower density of development. About one dozen homes are located within one mile of the project to the south and east.

2.3 EXISTING LAND USES

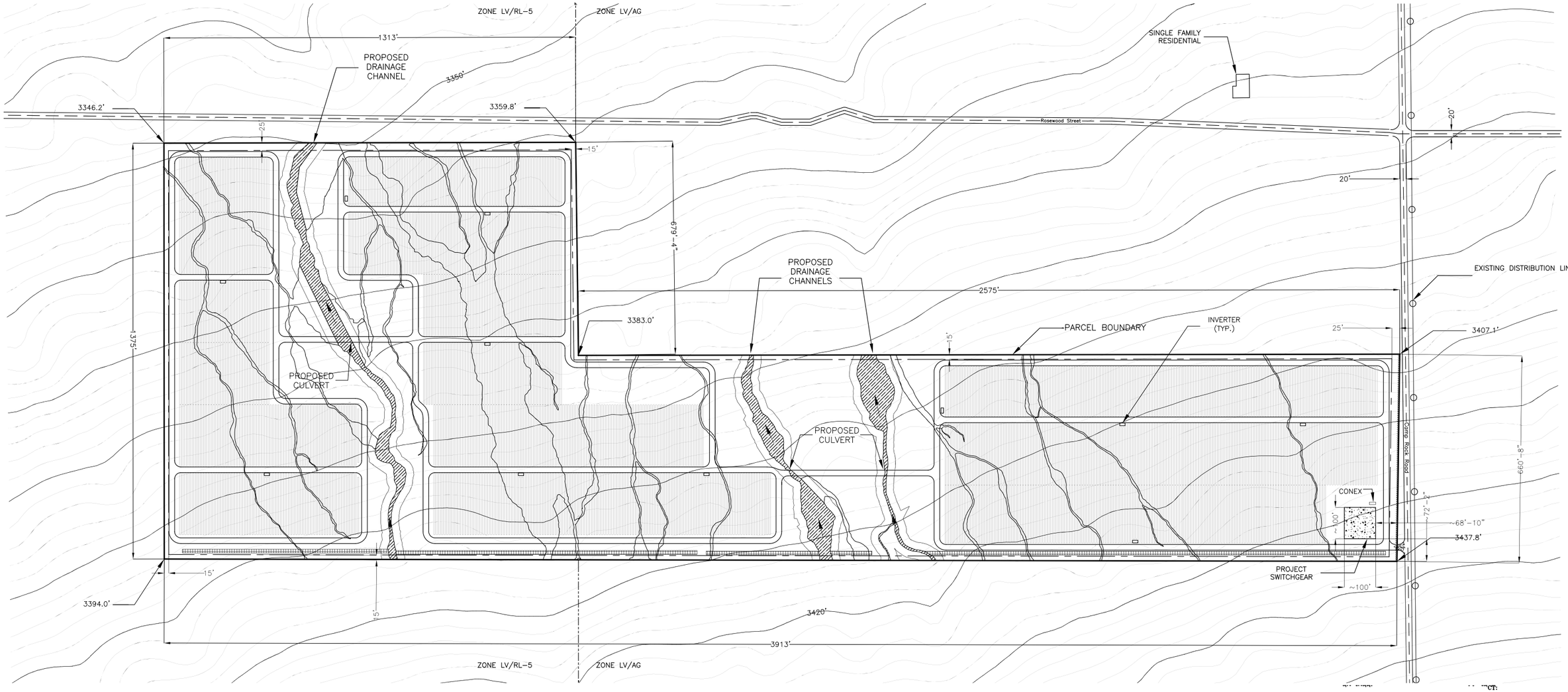
The project site is currently vacant. The western portion of the site (parcel 04) is zoned LV/RL-5 (Rural Living – 5 acre parcel minimum). The RL land use zoning district provides sites for rural residential uses, incidental agricultural uses, and similar and compatible uses. The easterly portion of the site is zoned LV/AG, which has a minimum 10-acre lot size and is intended for commercial agricultural operations, agriculture support services, rural residential uses and similar and compatible uses. Under County Code Chapters 82.03 and 82.04, electrical power generation is defined as a transportation, communications and infrastructure use, and is allowed in the AG and RL-5 zones upon approval of a Conditional Use Permit (CUP).

2.4 PROJECT LAYOUT AND CONSTRUCTION

The proposed 79-acre solar power generation facility would be comprised of the following major components: non-reflective PV solar module arrays mounted on fixed-tilt or single-axis trackers and a racking system supported by embedded piers. The site would also include approximately 10 inverters on small concrete pads, a switching station in an enclosure measuring approximately 200 by 200 feet in plan view, an unmanned communications enclosure measuring approximately 20 by 30 feet in plan view, a Conex box for equipment storage, and buried collector lines. Concrete pads would be sized and installed to accommodate associated equipment (inverters and switchgear). The top-of-concrete elevation would be approximately 6 inches above-grade-level locally to maintain flow away from the foundation.

The project's site plan is provided in Figure 2 (note: locations of solar panels and other elements within the site may be refined during final design). The layout of the solar panels would be aligned in rows in the north-south direction throughout the site. Each solar panel would be attached to embedded piers using a support structure. The rows of solar panels would be separated by access ways. Internal site circulation would include a 25-foot-wide perimeter gravel road. Maintenance roads with access to the solar panels would be improved (minimally graded, dirt or gravel) to provide truck access. Upon completion of the proposed

TLadd\WDG BRAR\Agincourt\612-098B



LEGEND

- SETBACK
- ROAD CENTERLINE
- CONSTRUCTED CHANNEL
- PARCEL BOUNDARY
- PROPOSED DRAINAGE CHANNELS
- ZONING BOUNDARY
- ASPHALT APRON

Site Location

0 160 320 640

APPROXIMATE SCALE: 1" = 320'

Agincourt Solar Project
Biological Resources Assessment Report
San Bernardino County, CA

URS Corporation

Source:
Lincoln Renewable Energy, LLC
June 2012.
Document Number: D1-0502-002 Rev. E

Figure 2. Proposed Site Plan

2012

Project, vegetation or dust palliatives or other best management practices may be used if needed to control wind and water erosion during operations.

No off-site improvements are anticipated with the exception of the development of site access points. Typical site access will be 25 feet wide, accommodating 75-foot turning radii in both directions. The proposed site access will include a 75-foot-long drive apron and a roadway section paved with asphalt. The actual depth of roadway sections would be determined during final design based on anticipated loading and traffic indices. However, it is anticipated that the road base course would be a minimum of six inches thick. The top course thickness would be a minimum of two inches thick.

A six foot high chain link security fence topped with one foot of barbed wire will be installed at the property setback. Signs will be installed to achieve the appropriate safety and security as expected in a solar power plant. Proposed signage includes high voltage danger signs, site under surveillance, caution electric shock, etc. Any signs as required by the National Electrical Code will be installed.

The Project's lighting system will provide operation and maintenance personnel with illumination for both normal and emergency conditions. Lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting will be directed downward and shielded to focus illumination on the desired areas only to avoid light spillage on adjacent properties. Project lighting will be located at each inverter station and switchyard. Lighting will be no brighter than required to meet safety and security requirements, and the lamp fixtures and lumens will be selected accordingly. All project lighting will be switched and without timers.

2.5 SUPPORT PEDESTAL DRAINAGE AND EROSION DESIGN

The solar panels would drain freely to the ground. They would be almost parallel to the ground with a slight sloping orientation. In general, rain would run off the lower edge of the PV panel. The edge of the panel would be approximately 24 inches above the ground, and the runoff would be approximately 25 gallons in a 10-year storm (5-minute – 10-year rain event per 200 square feet of panels). This volume of water is expected to run off the panels over a 5-minute period. Based on the volume of water falling from each panel, the height of the fall, and the soil conditions, it is not expected that erosion beyond a micro level will occur. It is expected that water will fall from the PV panels and pond at a drip point before infiltrating or gradually migrating into the existing drainage patterns. If, over time, minor erosion were noted at the drip points, small gravel pads could be added to help dissipate the energy of the falling water. If minor erosion were noted near the foundations, minor grading could restore support for the individual foundations, and keep surface flows from undermining the foundations in future storm events.

2.6 INCREASE IN IMPERVIOUSNESS DUE TO CONSTRUCTION

Increase in impervious area of the site due to the construction of the project embedded piers, is estimated to be minimal, approximately 11 percent.

2.7 SITE DRAINAGE

A flood map search (FEMA 2011) for Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel ID numbers 06071C6575H and 06071C6600H confirms the proposed Project site area has not been mapped by FEMA for flood zone hazards, and is therefore classified as an "Undetermined Risk Area." The County of San Bernardino also has no flood zone hazard mapping for this area.

Typical of arid regions, the area experiences short-duration, high-intensity rainfall storm events producing potentially high rates of runoff when the initial infiltration rates are exceeded. During these periods the small, incised washes become conduits for water flow.

The soil in the watershed is predominantly Soil Group D. This soil type is characterized as having high runoff potential due to very slow infiltration rates when thoroughly wetted. It is expected that drainage conditions present at the site, which have been formed by past storm events, would not be disturbed and would continue to convey storm flows following project construction. Because construction essentially leaves flow patterns unaltered, mitigation is considered unnecessary for this site.

Based on visual observations during a site visit and the type of facility proposed, it is expected that the proposed solar panel construction would not significantly change offsite runoff characteristics during a major storm event. Because the imperviousness of the site would not be greatly changed as a result of the construction, the impact of increased rainfall runoff due to construction would be negligible. As noted above, the site design indicates that project construction would result in a minor (11 percent) increase in impervious surfaces at the site.

The site topography can be characterized as uniform in surface profile, with a slight slope in a northwesterly direction. Based on field observations, the site is characterized by naturally developed riverine channels that direct rainfall runoff through the site. Some of the existing drainage flow paths would be filled during the development of the site based on the final layout of the solar panels and the project's Conceptual Drainage Plan would redirect their existing flows to other existing drainages. With incorporation of the Conceptual Drainage Plan, the proposed Project is not expected to significantly affect offsite flow patterns.

The Project's lighting system will provide operation and maintenance personnel with illumination for both normal and emergency conditions. Lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting will be directed downward and shielded to focus illumination on the desired areas only to avoid light

spillage on adjacent properties. Project lighting will be located at each inverter station and switchyard. Lighting will be no brighter than required to meet safety and security requirements, and the lamp fixtures and lumens will be selected accordingly. All project lighting will be switched and without timers. The solar facility would be unmanned. A six foot high chain link security fence topped with one foot of barbed wire will be installed at the property setback. The Applicant will arrange for security patrols as needed. Signs will be selected to achieve the appropriate safety and security as expected in an solar power plant. Proposed signage includes high voltage danger signs, site under surveillance, caution electric shock, etc. Any signs as required by the National Electrical Code will be installed.

Several part-time employees would visit the site periodically (e.g., monthly or bi-monthly) and several times a year the employees or a contractor would visit the site to wash the PV panels. Panel washing would require approximately 2 acre-feet of water per year and, based on an assumed use of medium-sized water tankers, would require approximately 130 truckloads (260 truck trips) for delivery of this water. Water would be purchased from a local purveyor. No on-site wells would be used.

2.8 PROJECT CONSTRUCTION AND SCHEDULE

Construction of the proposed Project is estimated to require approximately 80-100 workers at its peak. Construction is estimated to start in 2013 and would take approximately nine months to complete. Approximately 40 acre-feet of water would be used during construction for dust suppression and ancillary construction activities. Dust suppression during construction may also involve application of palliatives.

The development of the Project would require site grading, with limited impact to existing offsite drainage patterns and overall topography of the site. Minor cuts may be required at the locations of inverters and other equipment to provide level foundations. It is expected that the fill from these cuts will be placed around the pre-cast foundation in order to divert small, localized flows away from the foundation and prevent undermining of the same.

Where grading is required, cut-and-fills are expected be balanced onsite, resulting in little or no import or export of earthen material. A total of approximately 150,000 cubic yards of cut-and-fill may be balanced onsite. Final drainage design will be completed following a detailed topographic site survey overlaid with proposed site development grading.

Areas along major drainage channels outside of the developed footprint will be preserved. Vegetation would be cleared to allow for the construction of the solar panels and access roads. Grubbing would occur on all gravel access roads, and in any areas where the roots would impede the pier structure. The installation of the solar panels also requires trenching along and below access roads for the installation of multiple cable systems. Under and along

almost every internal roadway, trenches as deep as 48 inches would house the cables in a sand bed that would be backfilled with excavated material from the site.

Best management practices (BMPs) for erosion control would be used to avoid and minimize impacts on the environment during construction, operations and maintenance. For example, gravel pads or other track-out reduction measures at project construction site access points may be used to minimize dirt and mud deposits on public roads, as required to meet stormwater quality regulations and vegetation or dust palliatives may be used if needed to control wind and water erosion during operations. A Water Quality Management Plan that includes a Stormwater Pollution Prevention Plan and an Erosion and Sediment Control Plan would be prepared and implemented to avoid and minimize impacts on water quality during construction and operations.

SECTION 3.0
STUDY METHODS

To document the existing biological conditions within the Agincourt site, URS relied upon a review of available literature, as well as seasonally timed biological field investigations of the site. The methods employed are described below.

3.1 LITERATURE REVIEW

Prior to conducting biological field surveys within the Agincourt site, URS biologists performed a literature review to identify sensitive plants, animals, or habitats that could occur within the site. The literature review included topographic maps, aerial photographs, species-specific technical literature, and publicly available environmental documentation for other recent projects in the region. In addition, a search of the California Native Plant Society (CNPS) Inventory of Rare Plants Database (CNPS 2001 and 2011) and a five-mile radius query of the California Natural Diversity Database (CNDDB; CDFG 2011) were performed. These resources were used to identify documented occurrences special-status plants and wildlife species within or in the vicinity of the Project site. The CNDDB five-mile query also provided locations of designated critical habitat for federally listed species, sensitive natural communities, ecologically sensitive areas, and state-managed lands. The results of the CNDDB query are presented on Figure 3.

Special-status species lists generated from database and literature review were cross-referenced with vegetation and habitat types present on the Project site to create a list of special-status plant and wildlife species with potential to occur on the Project site. Each special-status species with potential for occurrence on or near the Project site is discussed individually in Section 4.4.4 of this General Biological Resources Assessment Report. A broad-scale wildlife movement analysis entitled *South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion* (SC Wildlands 2008) was a primary source for information relating to the role the Project site as a possible wildlife movement corridor.

The information gained through the literature review and subsequent analysis described above was used to determine an appropriate scope of biological field investigations for the site.

3.2 FIELD INVESTIGATIONS

A total of six biological field surveys were conducted within the Agincourt site between 2010 and 2012. Field investigations were initiated with a reconnaissance-level survey performed by URS biologists on February 16, 2010, and subsequent investigations included a full-coverage, spring season biological survey, a delineation of jurisdictional waters and streambeds, a Joshua tree (*Yucca brevifolia*) and California Desert Native Plants Act

inventory, and focused Mojave desert tortoise and burrowing owl surveys. The methods used during these efforts are described below. Table 1 provides a summary of the field investigations.

TABLE 1
FIELD INVESTIGATION SUMMARY

Survey Type	Date	Time	Weather Conditions	Investigators
Reconnaissance-level survey	February 16, 2010	~1000–1700	Temperatures ranged from 15.6°C to 20°C. Winds ranged from calm to 10 mph (NNE).	Cristina Slaughter Ronald Cummings
Full-coverage biological survey	May 5, 2011	~0800–1900	Temperatures ranged from 20°C to 32.8°C. Winds ranged from calm to 14 mph (SW).	David Kisner Kelly Kephart
Delineation of jurisdictional waters and streambeds	September 13, 2011	~1200–1830	Temperatures ranged from 21.7°C to 27.8°C. Winds ranged from 4 mph (ESE) to 19 mph (SE).	Julie Love Greg Hoisington
Joshua tree and California Desert Native Plants Act inventory	October 21, 2011	~0800–1730	Temperatures ranged from 13.9°C to 27.8°C. Winds ranged from calm to 9 mph (N).	Julie Love William Fletcher Chris Munson Natalie Evans
California Desert Native Plants Act inventory	April 11–12, 2012	1130-1710, 0815-1615	Temperatures ranged from 10.5°C to 18°C. Winds ranged from 9 to 15 mph from the west.	Christopher Julian Julie Love William Fletcher
Protocol Mojave desert tortoise survey	April 11–12, 2012	See URS 2012a	Temperatures ranged from 10.5°C to 18°C. Winds ranged from 9 to 15 mph from the west.	Christopher Julian Julie Love William Fletcher
Protocol burrowing owl surveys	April 11–12, 2012 (Phase II), April 17–19, 2012 (Phase III)	See URS 2012b	Temperatures ranged from 10.5°C to 30°C. Winds ranged from 2 to 15 mph from the west.	Julie Love William Fletcher

Note: Weather source (Weather Underground 2012).

3.2.1 Initial Site Reconnaissance

A reconnaissance-level survey was conducted on the site by URS biologists Cristina Slaughter and Ronald Cummings on February 16, 2010 to assess the site for potential biological constraints. The site was surveyed by vehicle from accessible roadways, and areas representative of the site's major vegetative and topographic zones and hydrologic features were investigated on foot. Biological resources and conditions that were visible this time of

year and could be identified within the limitations of a reconnaissance-level survey effort (e.g., Joshua trees, ephemeral streams) were documented in the field. Habitat suitability for special-status species was also assessed. Information obtained from the field surveys was cross-referenced with CNDDB query results and discussed informally with responsible agencies.

3.2.2 Full-coverage Biological Surveys

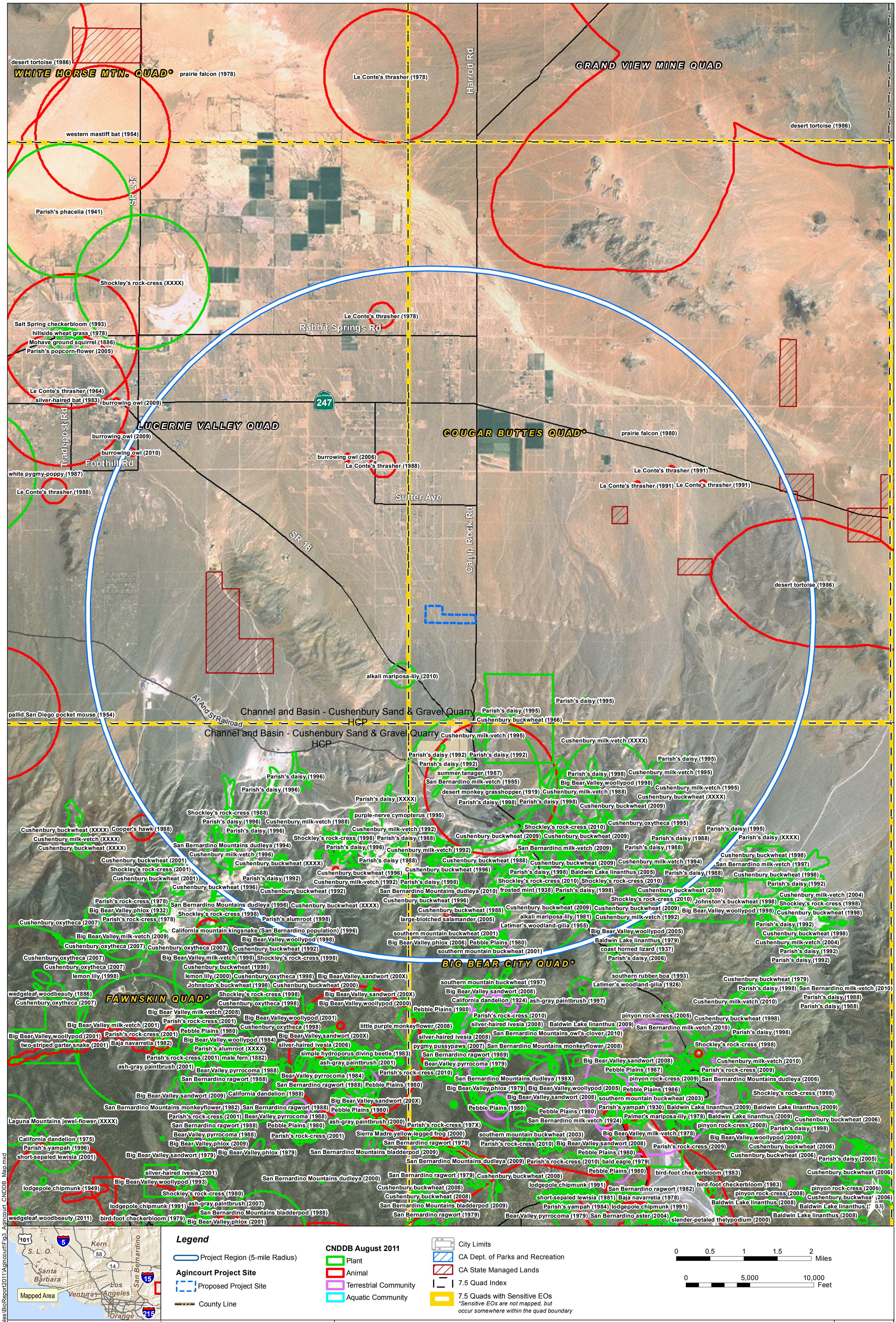
Full-coverage biological surveys of the Agincourt site were conducted on April 13, 2011 by senior biologists that walked parallel transects across the site, identifying and documenting all plants and wildlife observed. Wildlife signs, such as distinctive burrows, tracks, scat, carcasses, or other identifying features, were also documented. Where special-status species were detected, the locations were recorded using GPS technology. Because the initial site reconnaissance indicated that the Agincourt site has the potential to support the desert tortoise, a federally and state-listed threatened species, transect spacing during the field surveys was limited to ten meters as required by the USFWS survey protocol for this species. Where necessary, biologists collected specimens of plant species observed on-site for taxonomic identification under a microscope.

3.2.3 Delineation of Waters and Streambeds

A formal delineation of waters of the U.S. (including wetlands) and CDFG-jurisdictional streambeds was performed on the Agincourt site by URS senior biologists Julie Love and Greg Hoisington on September 12 and 13, 2011. This section summarizes the methods used to complete the delineation; a more detailed description is provided in the stand-alone Draft Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2011b). A description of applicable federal and state laws and regulations is also provided for context.

3.2.3.1 Summary of Agency Permitting Authority

Streams and waterways, including ephemeral drainages, dry streambeds, and wetlands, can possess unique ecological functions and values, and are protected from human-induced destruction or degradation by a number of federal and state statutes. The federal and state agencies charged with administering these statutes and their responsibilities are described briefly below. For a more complete description of the Project's regulatory setting with regard to waters and streams, please refer to the Draft Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2011b).



Biological Resources Assessment Report
Agincourt Solar Site
San Bernardino County

URS Corporation

Source: [1] CNDDB August 2011, [2] LADeptOfRegionalPlanning, 11-26-2007, [3] Tele Atlas North America, Inc./Geographic Data Technology, Inc., ESRI (2005-06-01), [4] I-cubed Nationwide Prime - Aerials Express (2009-04-15 image date, 0.3m resolution).

Figure 3. Special-status species in the Project Vicinity

2012

T:\WDCGP\deliverables\BioReport2011\AgincourtFig3_Agincourt_CNDDB_Map.mxd

3.2.3.1.1 U.S. Army Corps of Engineers Responsibility and Jurisdiction. Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into waters of the U.S. Section 404 requires that any person proposing such a discharge first obtain a permit from the USACE. Generally speaking, waters of the U.S. are defined to include navigable waterways and their tributaries and adjacent wetlands. Intrastate waters that are not tributary to navigable waterways are generally not waters of the U.S. The lateral limits of waters of the U.S., in the absence of adjacent wetlands, are defined by the ordinary high-water mark (OHWM) on the stream bank. The USACE's regulations define wetlands using a three-parameter approach, which requires a site to possess a predominance of hydrophytic vegetation, wetland hydrology, and hydric soils to qualify as a wetland.

3.2.3.1.2 Colorado River Basin Regional Water Quality Control Board Responsibility and Jurisdiction. Under Section 401 of the CWA, every applicant for a federal permit or license for any activity which may result in a discharge of dredge or fill material to a water body must obtain a State-issued Water Quality Certification that the proposed activity will comply with state water quality standards (i.e., beneficial uses, water quality objectives, and anti-degradation policy). In California, the State Water Resources Control Board (SWRCB) has delegated the responsibility for issuing Section 401 Certifications to nine Regional Water Quality Control Boards (RWQCB) throughout the state. The Colorado River Basin RWQCB issues Section 401 Certifications for projects in southern San Bernardino County. Because a Section 404 Permit is a federal permit subject to the terms of Section 401 as described above, the USACE cannot issue Section 404 Permits in the Project region unless the permit applicant also receives a Section 401 Certification from the Colorado River Basin RWQCB.

Because Section 401 of the CWA is restricted to activities requiring a federal license or permit, this section does not apply to activities affecting waters outside federal jurisdiction, such as isolated, intrastate waters. However, the SWRCB has jurisdiction over all "waters of the State," defined as any surface water or groundwater, including saline waters, within the boundaries of the state, under the Porter-Cologne Water Quality Control Act (a state statute). Recent guidance from the SWRCB (2004) requires persons proposing to discharge construction fill into waters of the State to file a Report of Waste Discharge with the appropriate RWQCB and obtain Waste Discharge Requirements authorizing the fill.

3.2.3.1.3 California Department of Fish and Game Responsibility and Jurisdiction. Pursuant to Sections 1600–1616 of the California Fish and Game Code, any entity proposing to divert, obstruct, or substantially alter the bed, bank, or channel of a stream or lake must first obtain a Streambed Alteration Agreement from the CDFG. Regulations promulgated by the CDFG define streams to include bodies of water that flow at least periodically or intermittently through a bed or channel having banks and supporting aquatic life, including watercourses having surface or subsurface flow that supports or has supported riparian vegetation. Jurisdiction under this statute encompasses all portions of the bed, banks, and

channel of any stream, extending laterally to the upland edge of riparian vegetation. The upstream limit of CDFG jurisdiction is the point upstream of which there is no evidence of a defined bed and bank, and riparian vegetation is not present.

3.2.3.2 Delineation Methods

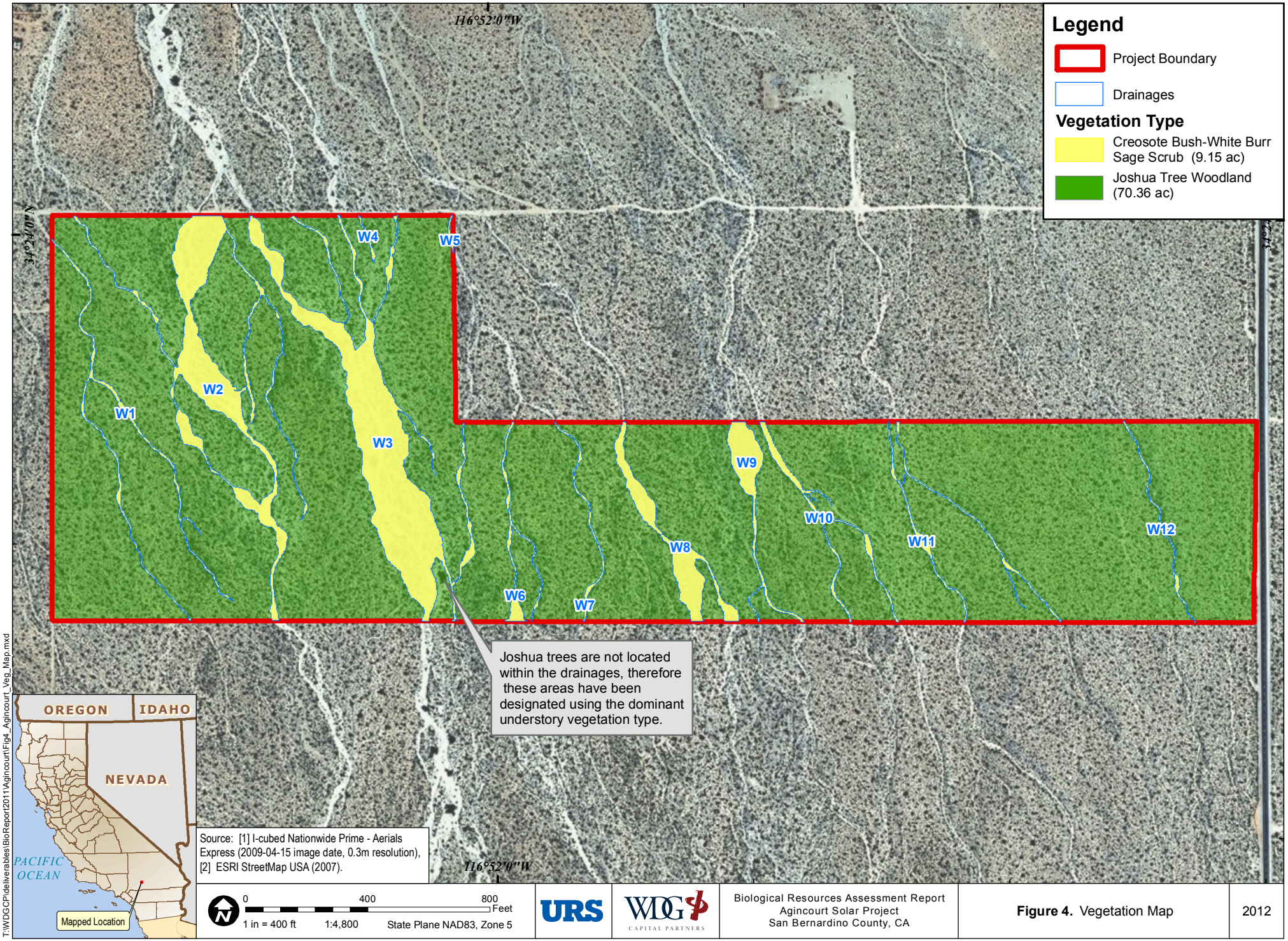
Waters of the U.S., CDFG-jurisdictional streambeds, and waters of the state within the Agincourt Project site were delineated using a combination of desktop literature review and field mapping methods. Vegetation mapping within the site was also undertaken during this effort to provide biological context for the delineation data.

3.2.3.2.1 Literature Review for Hydrologic Features. Prior to field efforts, the United States Geologic Survey (USGS) Cougar Buttes, CA 7.5 minute quadrangle map (USGS 1994), the Soil Survey for the San Bernardino County, California, Mojave River Area (USDA-NRCS 1986, USDA-NRCS SSURGO 2008), the National Hydrography Dataset (NHD; USGS 2000), and a high quality aerial photograph of the Project site and the surrounding area (USDA-NAIP 2009) were reviewed to determine the locations of potential hydrologic features. The reconnaissance-level field investigation conducted on February 16, 2010 (described in Section 3.2.1 above) was also relied upon for this purpose.

The USGS 7.5 minute quadrangle map (USGS 1994) and the National Hydrography Dataset (NHD; USGS 2000) indicated the presence of two potential hydrological features on the Project site designated as intermittent streams. During the initial reconnaissance-level survey, approximately eleven other hydrologic features were found on the Project site. See Figure 4 for onsite drainage locations.

3.2.3.2.2 Field Delineation of Potentially Jurisdictional Features. A formal field delineation of waters of the U.S., waters of the state, and CDFG-jurisdictional streambeds was performed within the Agincourt site on September 12 and 13, 2011 by URS biologists Julie Love and Greg Hoisington. Because it was immediately evident that no areas within the Agincourt exhibited a predominance of hydrophytic vegetation, a formal delineation of wetlands was not conducted. (For federally protected wetlands to be present, a site must exhibit a predominance of hydrophytic vegetation, wetland hydrology, and hydric soils.)

At each potentially jurisdictional watercourse within the Agincourt site, the location of the ordinary high water mark (OHWM) was determined in accordance with regulations promulgated by the USACE. The channel banks were examined for signs of flow, terraces, drift deposits, changes in vegetation, and other indicators that would determine the location of the OHWM. The upstream and downstream ends of each drainage were explored, and locations where the drainages either crossed the site boundary (i.e., entered or exited the site) or ceased to exhibit an OHWM were documented. Once the OHWM was identified in the


116°52'0"W
34°2'0"N
Legend
Project Boundary
Drainages
Vegetation Type
Creosote Bush-White Burr Sage Scrub (9.15 ac)
Joshua Tree Woodland (70.36 ac)
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12
Joshua trees are not located within the drainages, therefore these areas have been designated using the dominant understory vegetation type.
OREGON
IDAHO
NEVADA
PACIFIC OCEAN
Mapped Location
Source: [1] I-cubed Nationwide Prime - Aerials Express (2009-04-15 image date, 0.3m resolution), [2] ESRI StreetMap USA (2007).
0
400
800
Feet
1 in = 400 ft
1:4,800
State Plane NAD83, Zone 5
URS
WDG
CAPITAL PARTNERS
Biological Resources Assessment Report
Agincourt Solar Project
San Bernardino County, CA
Figure 4. Vegetation Map
2012
T:\WDGCP\deliverables\BioReport2011\Agincourt\Fig4_Agincourt_Veg_Map.mxd

field, the boundary was walked with a Trimble GeoXH Geoexplorer 2008 handheld GPS unit set to collect positional data in a "streaming" fashion. At each drainage feature, average channel width and depth were estimated in the field and features such substrate type and topography were recorded, and photographs were taken to document site conditions. In addition to the hydrologic features indicated on the USGS and NHD maps and found during the initial reconnaissance-level survey, the entire Project site was surveyed for additional hydrologic features.

Each drainage feature within the Agincourt site was examined for the presence of a defined bed, bank, or channel, as these elements indicate that CDFG-jurisdictional streambeds may be present. Upon investigation, it became evident that the OHWM and the top of the stream bank were coterminous in the on-site drainages. Thus, the GIS shapefiles created from the OHWM boundaries were used to determine the boundaries of streambeds within the site.

Following completion of the field delineation, statutory and regulatory criteria were reviewed to determine whether the delineated hydrologic features were subject to state or federal permitting authority. Watershed maps, aerial photographs, and other applicable literature were reviewed to ascertain whether waters identified in the field were tributary to navigable waters. When field data collection was complete, jurisdictional boundaries were downloaded from the Trimble GPS unit and converted into a GIS shape file using ArcGIS software. Properties such as length and acreage of each drainage were calculated through ArcGIS.

3.2.4 Joshua Tree Inventory

Joshua trees (*Yucca brevifolia*) are granted protection under the California Desert Native Plants Act (Section 80001 *et seq.* of the California Food and Agriculture Code), and are also addressed in Sections 88.01.050 and 88.01.060 of the San Bernardino County Development Code. Both of these laws prohibit the removal of Joshua trees without a County-issued permit, and the Development Code contains specific provisions governing the terms under which removal of Joshua trees may be authorized. Generally, these provisions require that all Joshua trees proposed for removal be appropriately transplanted or stockpiled for future transplanting wherever possible. Where removal of "specimen" size trees is requested (defined as having either a circumference at breast height exceeding 50 inches, a height exceeding 15 feet, a bark-like trunk, or a cluster of ten or more trees of any size in close proximity), the Development Code additionally requires a finding that no other reasonable alternative exists for development of the land.

Because the reconnaissance-level biological investigation described in Section 3.2.1 indicated the presence of Joshua trees within the Agincourt site, a subsequent field effort was conducted to ascertain the number, location, and characteristics of the trees present. On October 20, 2011, URS scientists Julie Love, William Fletcher, Chris Munson, and Natalie Evans performed a full-coverage inventory of all Joshua trees within the Agincourt site. The

location of each tree was documented using GPS technology and physical characteristics of the trees were measured and recorded. Tree height was measured using a stadia rod, with one biologist holding the rod against the tree and another recording the height from a distance, and predetermined height classes were used to expedite the collection of data. Diameter at breast height (4.5 feet above the ground surface) was measured by placing a flexible measuring tape around the trunk of each tree. Where more than one trunk was present at breast height, the largest trunk was measured. Other characteristics, such as apparent vigor and the presence or absence of a bark-like trunk, were visually assessed and recorded. Where multiple trees occurred in very close proximity, a single set of GPS coordinates was recorded to represent the tree cluster. The number of trees present in the cluster, as well as individual measurements of those trees, was documented.

Upon completion of the field inventory, a GIS map of Joshua tree locations was created from the spatial data gathered in the field. Each point within the GIS layer represented a single Joshua tree, and the each point was attributed with the tree's height, circumference, and presence/absence of a bark-like trunk. An additional attribute was included to identify those trees meeting the definition of "specimen" size trees in the County Development Code. The Joshua tree location map was analyzed in conjunction with development plans for the Project to determine the extent of the Project's impacts on Joshua trees.

3.2.5 California Desert Native Plants Act Inventory

Several species are granted protection under the California Desert Native Plants Act (Section 80001 *et seq.* of the California Food and Agriculture Code), and are also addressed in Section 88.01.060 of the San Bernardino County Development Code. Both of these laws prohibit the removal of the defined species without a County-issued permit, and the Development Code contains specific provisions governing the terms under which removal of the defined species may be authorized.

Because the reconnaissance-level biological investigation described in Section 3.2.1 indicated the presence of California Desert Native Plants Act species within the Agincourt site, a subsequent field effort was conducted to ascertain the number and location of the individuals present. On April 11 through 12, 2012, URS scientists Christopher Julian, Julie Love, and William Fletcher performed a full-coverage inventory of all California Desert Native Plants Act species within the Agincourt site. The location of each individual was documented using GPS technology.

Upon completion of the field inventory, a GIS map of individual locations was created from the spatial data gathered in the field. Each point within the GIS layer represented a single individual defined by species. The California Desert Native Plants Act species location map was analyzed in conjunction with development plans for the Project to determine the extent of the Project's impacts on California Desert Native Plants Act species.

3.2.6 Protocol Mojave Desert Tortoise Survey

Surveys for the Mojave desert tortoise were conducted in April 2012 in accordance with the USFWS (2010) survey protocol for this species. The surveys consisted of pedestrian transects, spaced at 10-meter intervals, covering the entirety of the Agincourt site. For a complete description of the methods employed, please refer to the Focused Desert Tortoise Survey Report for the project (URS 2012a).

3.2.7 Protocol Burrowing Owl Survey

Surveys for the burrowing owl were conducted in April 2012, and adhered to the methods set forth in the CDFG's (1995) *Staff Report on Burrowing Owl Mitigation* and the California Burrowing Owl Consortium's (1993) survey protocol for the species. These methods involve a four-phase survey approach, consisting of a habitat assessment (Phase I), transect surveys to determine burrow locations (Phase II), census and observation of owls present (Phase III), and preparation of a survey report (Phase IV). For a detailed description of the survey methodology, please refer to the Focused Burrowing Owl Survey Report for the project (URS 2012b).

SECTION 4.0
EXISTING BIOLOGICAL CONDITIONS

This section presents the results of specific and general biological surveys that were conducted within the Agincourt site between February 2010 and October 2011. The survey effort began on February 16, 2010, when a biological reconnaissance survey was conducted to assess the potential for sensitive biological resources and to recommend appropriate future surveys. Based on this initial investigation, and on comments received during early coordination with USFWS and CDFG representatives, a list of recommended surveys was prepared that included:

- A literature review, performed prior to conducting field investigations and intended to identify special-status species with potential to occur on the Project site and any specific survey requirements for those species
- A vegetation map of the Project site, delineating on-site vegetation communities consistent with accepted methods (e.g., Sawyer et al. 2009)
- A delineation of any jurisdictional waters or streambeds within the Project site
- Full-coverage floristic and wildlife surveys of the entire Project site
- Inventory and mapping of all Joshua trees on-site

Biological field investigations for the proposed Project were completed on October 20, 2011. Survey results are described below.

4.1 REGIONAL SETTING

The Project site is located in the Lucerne Valley, at the western edge of the Mojave Desert. Because this area is in proximity to montane, foothill, and desert habitats, the Project region contains plants, plant communities, and animals adapted to each of these general habitat classes.

4.1.1 Topography

The Lucerne Valley is located in the western Mojave Desert, and is bounded by the Granite, Ord, and Rodman Mountains to the north and the San Bernardino Mountains to the south. The San Bernardino Mountains are the larger of these two ranges, reaching elevations in excess of 11,000 feet at the top of Mt. San Gorgonio, and receive considerable winter snowfall. Because the Agincourt is located within three miles of the northern edge of the San Bernardino Foothills, slope and drainage within the site is influenced by these mountains. The topography of the Agincourt site slopes gradually from the southeast to the northwest, away from the San Bernardino Mountains and towards the floor of the Lucerne Valley.

Topography of the site itself is relatively flat, and elevations on-site range from 3,350 to 3,440 feet above mean sea level.

4.1.2 Hydrology

According to the Watershed Boundary Dataset prepared by the California Interagency Watershed Mapping Committee (CalWater), which is responsible for watershed mapping and dataset creation in the state of California, the Project site is within the Lucerne Lake hydrologic unit of the Colorado River hydrologic region. More specifically, the site is within the Lucerne Lake planning watershed in the Lucerne Lake super planning watershed (CalWater 2004)1. This watershed is not tributary to the ocean or any other water body; rather, all water either infiltrates into the groundwater basin, evaporates, or flows toward the dry lakebed of Lucerne Lake located to the northwest of the Project site. All flow channels on-site are intermittent or ephemeral and likely only receive stream flow during and following significant rain events. Drainage patterns within the site are well-defined in most cases, with many tributaries and interconnected/braided systems occurring on-site.

4.1.3 Soils

The Project site is located in the Lucerne Valley, which is characterized by relatively flat-lying topography, punctuated by alluvial systems associated with the southern face of the San Bernardino Mountains. The Soil Survey for the San Bernardino County, California, Mojave River Area (USDA-NRCS SSURGO 2008) indicates that three soil types occur within the Project site, including the Arizo, Cajon, and Trigger series, which are described below. None of the soil series within the Project site are identified as hydric soils by the Soil Survey. The descriptions of these soils below are abridged from the USDA-NRCS Official Soil Series Description database (USDA-NRCS 2011).

4.1.3.1 Arizo Series

The Arizo series (100) consists of very deep, excessively drained soils that formed in mixed alluvium. Arizo soils occur on recent alluvial fans, inset fans, fan apron, fan skirts, stream terraces, and floodplains of intermittent streams and channels. Slopes range from 0 to 15 percent. The mean annual precipitation is approximately 18 cm (7 in) and the mean annual temperature is about 17°C (62°F). Arizo soils tend to be used for rangeland and wildlife habitat. The associated vegetation is mainly creosote bush and white burr sage. These soils

1 The California Interagency Watershed Map is the State of California's working definition of watershed boundaries. The California Interagency Watershed Map describes California watersheds, beginning with the division of the State's 101 million acres into ten Hydrologic Regions (HR). Each HR is progressively subdivided into six smaller, nested levels: the Hydrologic Unit (HU, major rivers), Hydrologic Area (HA, major tributaries), Hydrologic Sub-Area (HSA), Super Planning Watershed (SPWS), and Planning Watershed (PWS). At the Planning Watershed level (the most detailed level), where implemented, polygons range in size from approximately 3,000 to 10,000 acres. At all levels, a total of 7,035 polygons represent the State's watersheds (CalWater 2004).

are classified as Sandy-skeletal, mixed, thermic Typic Torriorthents. Arizo soils occur in a majority of the Agincourt Project site.

4.1.3.2 Cajon Series

The Cajon series (115) consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. Cajon soils occur on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. Slopes range from 0 to 15 percent. The average annual precipitation is approximately 15.24 cm (6 in) and the mean annual temperature is approximately 18°C (65°F). Cajon soils are used mostly for range, watershed, and recreation. A few areas are irrigated and are used for growing alfalfa and other crops. The associated vegetation is mostly desert shrubs including creosote bush, saltbush (*Atriplex* spp.), Mormon tea (*Ephedra* spp.), Joshua trees, some Indian ricegrass (*Stipa* [*Achnatherum*] *hymenoides*), annual grasses, and forbs. Cajon soils are classified as mixed, thermic Typic Torripsamments. Cajon soils occur in a small portion of the eastern side of the Agincourt site.

4.1.3.3 Trigger Series

The Trigger series (164) consists of shallow, well drained soils that formed in material weathered from hard sedimentary rocks. Trigger soils occur on uplands. Slopes range from 5 to 50 percent. The average annual precipitation is approximately 10.2 cm (4 in) and the average annual temperature is approximately 17°C (63°F). Trigger soils are used for wildlife habitat, limited grazing, and recreation. The associated vegetation is creosote bush, cactus, annual grasses, and forbs. Trigger soils are classified as Loamy, mixed, superactive, calcareous, thermic Lithic Torriorthents. Trigger soils occur in a small portion of the eastern side of the Agincourt site.

4.1.4 Vegetation Communities in the Project Region

The climate of the western Mojave Desert is characterized by cool winter temperatures, warm summer temperatures that are moderated somewhat by the marine influence, with its rainfall occurring almost entirely in the winter (UCSB 2011). Due to its climate, the western Mojave Desert supports a unique desert plant community. Juniper and pinyon pines are found at higher elevations, while creosote bush scrub, yuccas, Joshua trees, grasslands, and cholla are found at lower elevations. In addition, some of the larger washes within the desert support desert riparian woodlands. However, the Joshua tree (*Yucca brevifolia*) is the signature plant of the Mojave Desert and often defines its boundaries.

In the Lucerne Valley, vegetation is mainly comprised of creosote bush scrub, a vegetation type that is common and widespread throughout the Mojave Desert. Creosote bush scrub maintains no federal or state sensitivity designation. Joshua trees are a common component of the desert vegetation, and some areas contain sufficient density of these trees to be mapped

as Joshua tree woodlands. (The most recent vegetation classification system [Sawyer et al. 2009] requires Joshua tree cover to exceed one percent for an area to qualify as a Joshua tree woodland). Although the Lucerne Valley generally contains habitats that are common and widespread in the region, some types, such as Joshua tree woodlands, are designated by the CDFG as sensitive natural communities (CDFG 2010).

4.2 VEGETATION COMMUNITIES

The Project site is located within the Mojave Desert geographical region, a distinct vegetation region (Sawyer and Keeler-Wolf 1995). The Project site is relatively undisturbed, and native trees and shrubs are abundant with a low lying understory of native and non-native herbaceous species. Vegetation within the site is relatively homogeneous, and is characterized by the presence of two distinct plant communities. Within the site's drainages, the vegetation is dominated by shrubs and herbaceous understory and most closely corresponds with Sawyer et al.'s (2009) creosote bush-white burr sage scrub (*Larrea tridentata-Ambrosia dumosa* shrubland alliance). In the upland portions of the site, vegetation is dominated by shrubs and trees and most closely corresponds with Sawyer et al.'s (2009) Joshua tree woodland (*Yucca brevifolia* woodland alliance). More detailed descriptions of the site's vegetation communities are provided below. Figure 4 illustrates the extent and location of vegetation communities within the Project site, and acreages are presented in Table 2.

TABLE 2
VEGETATION COMMUNITIES WITHIN THE PROJECT SITE

Vegetation Community	Aerial Extent (Acres)	Percent of Site Cover
Joshua Tree Woodland	70.36	88.5
Creosote Bush-White Burr Sage Scrub	9.15	11.5
Total	79.51	100.0

4.2.1 Joshua Tree Woodland

Joshua tree woodland vegetation is characterized by the dominance of Joshua trees (*Yucca brevifolia*) in the tree stratum, over an understory of shrubs or herbaceous vegetation. Joshua tree cover must exceed one percent, and pines and junipers, if present, must not exceed one percent of the vegetative cover. The shrub layer is open to intermittent, and the herbaceous layer is open to intermittent with annual and perennial grasses and forbs (Sawyer *et al.* 2009). This vegetative alliance occurs at elevations between 750 and 1,800 meters (2,475 and 5,940 feet). In California, Joshua tree woodlands are distributed within the Mojave Desert and surrounding transitional areas, but are absent from San Diego, Imperial, and the easternmost portions of Riverside and San Bernardino counties. The CDFG's most recent List of

California Terrestrial Natural Communities (CDFG 2010) identifies Joshua tree woodlands as a sensitive natural community.

In the Joshua tree woodlands within the Agincourt site, dominant species include native trees such as Joshua trees (*Yucca brevifolia*), native shrubs such as creosote bush (*Larrea tridentata*), white burr sage (*Ambrosia dumosa*), cheesebush (*Ambrosia* [*Hymenoclea*] *salsola* var. *salsola),* and Mojave yucca (*Yucca schedigera*), and non-native herbs such as red brome (*Bromus madritensis* ssp. *rubens*), red-stem fillaree (*Erodium cicutarium*), and Arab grass (*Schismus arabicus*). The site contains 792 Joshua trees, distributed approximately evenly throughout the site (excepting the desert washes), and this species exceeds one percent of the site's total vegetative cover. For more information regarding the distribution of Joshua trees on-site, please refer to Section 4.4.3 of this General Biological Resources Assessment Report.

4.2.2 Creosote Bush-White Burr Sage Scrub

This vegetation community is dominated by shrubs, primarily creosote bush (*Larrea tridentata*) and white burr sage (*Ambrosia dumosa*), which are usually co-dominant in the canopy (Sawyer *et al.* 2009). In California, creosote bush-white burr sage scrub is limited to the Mojave Desert, and occurs in Inyo, eastern Kern, northeastern Los Angeles, San Bernardino, Riverside, San Diego, and Imperial counties. This vegetation community usually occurs at elevations between 75 and 1,200 meters (247 and 3,960 feet), and is commonly observed in minor desert washes, alluvial fans, and on upland slopes (Sawyer *et al.* 2009). Creosote bush-white burr sage scrub is a common and widely distributed vegetation type throughout much of the Mojave desert, and this vegetation maintains no federal, state, or local sensitivity designation.

Within the Agincourt site, creosote bush-white burr sage scrub occurs along the several desert washes that traverse the site in a north-south direction. Joshua trees are not abundant in these areas, and dominant species include native shrubs such as creosote bush, white burr sage, cheesebush (*Ambrosia* [*Hymenoclea*] *salsola* var. *salsola*), and Mojave yucca (*Yucca schedigera*). The understory is comprised mainly of non-native herbs such as red brome (*Bromus madritensis* ssp. *rubens*), red-stem fillaree (*Erodium cicutarium*), and Arab grass (*Schismus arabicus*). Desert willows (*Chilopsis linearis*) are also uncommon but present in some of these washes.

4.3 JURISDICTIONAL WATERS AND STREAMBEDS

As stated previously, the Agincourt site is located within the Lucerne Lake watershed. This watershed is not tributary to the ocean or any other water body; rather, all surface flows in the watershed either infiltrate into the groundwater basin, evaporate, or flow toward the dry lakebed of Lucerne Lake to the northwest of the Project site. During a field delineation of jurisdictional features within the site a total of 12 ephemeral drainages were mapped,

traversing the site in a south-north direction. Because the site's watershed is intra-state and is isolated from navigable waters, the waters on-site are not subject to federal jurisdiction under the Clean Water Act. However, the 12 ephemeral desert washes are under state jurisdiction and are subject to the permitting authority of the CDFG and the Colorado River Basin RWQCB.

4.3.1 Descriptions of Jurisdictional Features

The Lucerne Valley is an arid region, receiving only about 7.5 inches of precipitation annually (Spatial Climate Analysis Service 1998). As a result, the majority of the stream channels that traverse this area exhibit ephemeral hydrology, containing surface flows for only a short duration following storm events. The region's low gradient topography and porous, sandy soils contribute to this phenomenon, as these factors increase the rate at which surface flows infiltrate into the substrate. The absence of relatively permanent surface flows limits the suitability of the on-site drainages for use by wildlife. Use of these features as a source of drinking water is limited to the periods when surface flows are present, and the flow duration is not sufficient to support aquatic and semi-aquatic species such as fishes and amphibians. However, the site's drainages provide topographic structure in an otherwise uniform environment, and these features may be used as travel routes by wildlife crossing the site.

The 12 jurisdictional streambeds within the Agincourt site are described below, and drainage characteristics are summarized in Table 3. Locations of these drainages are illustrated on Figure 4.

4.3.1.1 Drainage W1

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W1 is comprised of two drainages that originate off-site (south) and merge into one drainage that conveys flows downstream (northwest) and off-site. Near the northern (downstream) boundary of the Project site, a dirt road crosses the drainage. Under moderate flow conditions, flow from the drainage would flow over the dirt road to connect with the remainder of the drainage located downstream. Drainage W1 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.25 foot to 3 feet on average, with heights up to 5 feet. The length of Drainage W1 within the Project site is approximately 1,445 feet, and the width varies from 1 to 10 feet on average, with widths up to 15 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

TABLE 3
DRAINAGE DESCRIPTIONS

Drainage	Length (Feet)	Width (Feet)	Depth (Feet)	Acreage	Description
W1	1,445	1 to 10 average, up to 15	0.25 to 3 average, up to 5	0.35	Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel. Banks are gradual in most areas, some incision evident. Some cobbles and boulders on banks.
W2	1,620	Highly variable, 1 to 5 average, up to 148	0.5 to 3 average	2.44	Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel. Outer banks are vertical and clearly defined, complex braided system. Some cobbles and boulders in channels and on banks.
W3	1,476	Highly variable, 5 to 10 average, up to 210	0.5 to 3 average, up to 4	3.96	Complex, braided system. Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel. A main channel exhibits defined but gradual banks, some incised banks; side channels have mostly incised banks.
W4	160	3 to 13		0.03	Single drainage channel with gradual, sloped banks. Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel.
W5	128	2 to 8	Up to 4	0.02	Single drainage channel with gradual, sloped banks. Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel.
W6	701	2 to 5 average, up to 50	0.25 to 1	0.21	Drainage with two branches, banks incised. Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel. Some boulders present.
W7	733	3 to 5 average, up to 17	0.25 to 1	0.10	Single channel with gradual banks in most areas, some incision evident. Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel. Some boulders present.
W8	796	up to 95	0.25 to 4	0.85	Drainage with two branches, banks incised in most areas. Channel is unvegetated and composed of loose sand and gravel with many boulders.
W9	734	3 to 8	0.25 to 1	0.54	Drainage with two branches, banks

TABLE 3 (CONTINUED)
DRAINAGE DESCRIPTIONS

Drainage	Length (Feet)	Width (Feet)	Depth (Feet)	Acreage	Description
		average, up to 106			mostly gradual but incised in some areas. Channel is mostly unvegetated and is composed of loose sand and gravel, some boulders present.
W10	832	3 to 8 average, up to 28	0.25 to 1	0.31	Drainage with two branches, banks mostly gradual but incised in some areas. Channel is mostly unvegetated and is composed of loose sand and gravel, some boulders present.
W11	891	3 to 5 average, up to 40	0.25 to 1	0.26	Drainage with two branches connected by a high-flow channel, banks mostly gradual but incised in some areas. Channel is mostly unvegetated and is composed of loose sand and gravel, some boulders present.
W12	717	3 to 5 average, up to 17	0.25 to 0.5	0.08	Single channel with gradual banks in most areas, some incision evident. Channel is mostly unvegetated, and is composed of loosely consolidated sand and gravel. Some boulders present.

Note: Length and acreage was determined using GIS, width was determined in the field and using GIS, and depth was determined in the field.

4.3.1.2 Drainage W2

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W2 is complex braided system that originates off-site (south) and conveys flows northwest (downstream) and off-site. Near the northern (downstream) boundary of the Project site, a dirt road crosses the drainage. Under moderate flow conditions, flow from the drainage would flow over the dirt road to connect with the remainder of the drainage located downstream. Drainage W2 has mostly defined cut banks. Bank heights range from 0.5 foot to 3 feet on average. The length of Drainage W2 within the Project site is approximately 1,620 feet, making it the longest on-site drainage, and the width varies from 1 to 5 feet on average, with widths up to 148 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.3 Drainage W3

This drainage is identified as the eastern most intermittent stream on the USGS topographic map. Drainage W3 is a complex braided system that originates off-site (south) and conveys flows northwest (downstream) and off-site. Near the northern (downstream) boundary of the Project site, a dirt road crosses the drainage. Under moderate flow conditions, flow from the drainage would flow over the dirt road to connect with the remainder of the drainage located downstream. Drainage W3 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.5 foot to 3 feet on average, with heights up to 4 feet. The length of Drainage W3 within the Project site is approximately 1,476 feet, and the width varies from 5 to 10 feet on average, with widths up to 210 feet, making it the widest on-site drainage. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.4 Drainage W4

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W4 is a single drainage that appears to be an old channel that may have at one time been connected to Drainage W3. There is potential for connection between the drainages during high flows. Flow is conveyed northwest (downstream) and off-site. Near the northern (downstream) boundary of the Project site, a dirt road crosses the drainage. Under moderate flow conditions, flow from the drainage would flow over the dirt road to connect with the remainder of the drainage located downstream. Drainage W4 has mostly defined gradual sloped banks with some cut banks. The length of Drainage W4 within the Project site is approximately 160 feet, and the width varies from 3 feet to 13 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.5 Drainage W5

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W5 is a single drainage that potentially connects upstream with Drainages W3, W6, and W7. Flows are conveyed northwest (downstream) and off-site. Near the northern (downstream) boundary of the Project site, a dirt road crosses the drainage. Under moderate flow conditions, flow from the drainage would flow over the dirt road to connect with the remainder of the drainage located downstream. Drainage W5 has mostly defined gradual sloped banks. Bank heights range up to 4 feet. The length of Drainage W5 within the Project site is approximately 128 feet, making it the shortest on-site drainage, and the width varies from 2 feet to 8 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks

and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.6 Drainage W6

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W6 is comprised of two drainages that originate off-site (south) and merge into one drainage that conveys flows northwest (downstream) and off-site. Drainage W6 has mostly defined cut banks. Bank heights range from 0.25 foot to 1 foot. The length of Drainage W6 within the Project site is approximately 701 feet, and the width varies from 2 feet to 5 feet on average, with widths up to 50 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.7 Drainage W7

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W7 is comprised of a single drainage that originates off-site (south) and conveys flows northwest (downstream) and off-site. Drainage W7 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.25 foot to 1 foot. The length of Drainage W7 within the Project site is approximately 733 feet, and the width varies from 3 feet to 5 feet on average, with widths up to 17 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.8 Drainage W8

This drainage is identified as the western most intermittent stream on the USGS topographic map. Drainage W8 is comprised of two drainages that originate off-site (south) and merge into one drainage that conveys flows northwest (downstream) and off-site. Drainage W8 has mostly defined cut banks with some defined gradual sloped banks. Bank heights range from 0.25 foot to 4 feet. The length of Drainage W8 within the Project site is approximately 796 feet, and the width varies up to 95 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand with many boulders.

4.3.1.9 Drainage W9

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W9 is comprised of two drainages that originate off-site

(south) and merge into one drainage that conveys flows northwest (downstream) and off-site. Drainage W9 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.25 foot to 1 foot on average. The length of Drainage W9 within the Project site is approximately 734 feet, and the width varies from 3 feet to 18 feet on average, with widths up to 106 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.10 Drainage W10

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W10 is comprised of two drainages that originate off-site (south) and merge into one drainage that conveys flows northwest (downstream) and off-site. Drainage W10 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.25 foot to 1 foot. The length of Drainage W10 within the Project site is approximately 832 feet, and the width varies from 3 feet to 8 feet on average, with widths up to 28 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.11 Drainage W11

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W11 is comprised of two drainages that originate off-site (south) that are connected by a small drainage. Flows are conveyed northwest (downstream) and off-site. Drainage W11 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.25 foot to 1 foot. The length of Drainage W11 within the Project site is approximately 891 feet, and the width varies from 3 feet to 5 feet on average, with widths up to 40 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.1.12 Drainage W12

This ephemeral drainage was not mapped on the USGS topographic map, but was delineated in the field by URS staff. Drainage W12 is a single drainage that originates off-site (south) and conveys flows northwest (downstream) and off-site. Drainage W12 has mostly defined gradual sloped banks with some cut banks. Bank heights range from 0.25 foot to 0.5 foot. The length of Drainage W12 within the Project site is approximately 717 feet, and the width varies from 3 feet to 5 feet on average, with widths up to 17 feet. Sinuosity is mild, as the

channel is relatively straight. The channel bottom is mostly un-vegetated with upland plant species on the banks and the drainage does not support any riparian vegetation. The substrate within the channel bottom is composed mostly of sand.

4.3.2 Extent of Agency Jurisdiction

As described above, the Project site contains twelve drainages that exhibit bed/bank characteristics. A summary of the total acreage of waters subject to the permitting authority of the USACE, CDFG, and the Colorado River Basin RWQCB is presented below. All jurisdictional areas are displayed on Figure 4 and summarized in Table 4.

TABLE 4
ACREAGES OF JURISDICTIONAL AREAS WITHIN THE PROJECT SITE

Drainage	Waters of the U.S. (Acres)	Waters of the State (Acres)	CDFG Jurisdictional Streams (Acres)
W1	--	0.35	0.35
W2	--	2.44	2.44
W3	--	3.96	3.96
W4	--	0.03	0.03
W5	--	0.02	0.02
W6	--	0.21	0.21
W7	--	0.10	0.10
W8	--	0.85	0.85
W9	--	0.54	0.54
W10	--	0.31	0.31
W11	--	0.26	0.26
W12	--	0.08	0.08
Total Jurisdictional Area	--	9.15	9.15

4.3.2.1 Waters of the United States

Because no hydrophytic vegetation (with the exception of a few desert willows), hydric soil, or wetland hydrology was observed on-site, no USACE-jurisdictional wetlands are present within the Project site. Further, because drainages within the Agincourt site are contained within an isolated, intra-state watershed that is not tributary to any navigable body of water, these ephemeral streams are not subject to Clean Water Act jurisdiction pursuant to draft joint regulatory guidance issued by the USACE and U.S. Environmental Protection Agency (USACE/USEPA 2011). Thus, waters of the U.S. do not occur within the Agincourt site.

4.3.2.2 Waters of the State

Although they lack federal CWA protection, the defined stream channels exhibited by Drainages W1 through W12 exhibit defined beds and banks and are waters of the state. The jurisdictional acreage in these areas under the Porter-Cologne Water Quality Control Act was determined to be coterminous with the extent of CDFG jurisdictional streambeds (see Section 4.4.3 below), due to the simple nature of the drainages present and the absence of any aquatic features that would be under the jurisdiction of one agency but not the other. A total of approximately 9.15 acres of waters of the state under the jurisdiction of the Colorado River Basin RWQCB are present on the Project site (Figure 4).

4.3.2.3 California Department of Fish and Game Jurisdictional Streams

Because they exhibit a defined bed, banks, and channel, Drainages W1 through W12 are subject to the CDFG's permitting authority under Section 1600 *et seq*. of the California Fish and Game Code. A total of approximately 9.15 acres of CDFG jurisdictional streams are present on the Project site (Figure 4). As stated above, the boundaries of CDFG-jurisdictional streambeds are coterminous with the limits of waters of the state in this case. A few riparian trees were present within the drainages on-site, but were within the physical banks and did not affect the lateral limits of CDFG jurisdiction.

4.4 PLANTS AND WILDLIFE

During the biological field investigations described in Section 3.2 of this General Biological Resources Assessment Report, biologists recorded the occurrence of over 100 plant and wildlife taxa within the Agincourt site. The species detected are described below, with emphasis on those species which are afforded protection by federal, state, or local laws or regulations.

4.4.1 Survey Results – Plant Species

In general, the plant species found on the Project site were native shrubs and trees, with an understory of native and non-native grasses and forbs. No special-status plant species were detected on-site, although several species granted protection under the California Desert Native Plants Act and the San Bernardino County Development Code were identified and mapped. These species included the silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), cottontop cactus (*Echinocactus polycephalus*), Engelmann's hedgehog cactus (*Echinocereus engelmannii*), Joshua tree (*Yucca brevifolia*), and Mojave yucca (*Yucca schedigera*). A complete list of the plant species observed within the Agincourt site is presented in Table 5 below.

TABLE 5
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE

Scientific Name	Common Name	Growth Habit	Dominant Species?
Family Agavecea – Agave			
Yucca brevifolia	Joshua tree	T	N
Yucca schidigera	Mojave yucca	T	Y
Family Asteracea – Asters, Daisies, and Sunflowers			
Acamptopappus sphaerocephalus	Goldenhead	S	N
Ambrosia acanthicarpa	Annual burr sage	AH	N
Ambrosia dumosa	White burr sage	S	Y
Baileya pleniradiata	Woolly desert marigold	PH	N
Chaenactis carphoclinia	Pebble pincushion	AH	N
Encelia farinosa	Brittlebush	S	N
Eriophyllum wallacei	Wallace's woolly daisy	AH	N
Hymenoclea salsola	Cheesebush	S	Y
Malacothrix glabrata	Desert dandelion	AH	N
Perityle sp.	Rockdaisy	AH	N
Rafinesquia neomexicana	Desert chicory	AH	N
Stephanomeria exigua	Wirelettuce	AH	N
Stephanomeria pauciflora	Desert straw	PH	N
Xylorhiza tortifolia	Mohave aster	PH	N
Family Anacardiacea – Sumacs			
Rhus trilobata	Skunkbrush	S	N
Family Boraginacea – Borages			
Amsinckia tessellata	Fiddleneck	AH	N
Cryptantha circumscissa	Cushion cryptantha	AH	N
Nama demissum	Purple mat	AH	N
Phacelia crenulata	Notch leaved phacelia	AH	N
Family Brassicacea – Mustards			
Brassica tournefortii	Sahara mustard	AH	N
Descurainia pinnata	Yellow tansy mustard	AH	N
Lepidium fremontii	Desert allysum	PH	N
Lepidium nitidum	Pepperweed	AH	N
Sisymbrium sp.	Tumble mustard	AH	N
Stanleya pinnata	Desert princesplume	PH	N
Family Cactacea – Cacti			
Cylindropuntia bigelovii	Teddybear cholla	S	N

TABLE 5 (CONTINUED)
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE

Scientific Name	Common Name	Growth Habit	Dominant Species?
Cylindropuntia ramocissima	Pencil cholla	S	N
Echinocactus polycephalus	Many-headed barrel cactus	S	N
Ferocactus cylindraceus	Barrel cactus	S	N
Opuntia basilaris	Beavertail cactus	S	N
Family Chenopodiacea – Goosefoots			
Grayia spinosa	Hop sage	S	N
Krascheninnikovia lanata	Winterfat	S	N
Cucurbitaceae – Cucumber			
Cucurbita palmata	Coyote melon	PH	N
Family Ephedracea – Ephedras			
Ephedra sp.	Ephedra	S	N
Family Euphorobiacea – Spurges			
Croton californicus	Doveweed	PH	N
Family Fabacea – Legumes			
Psorothamnus arborescens	California dalea	S	N
Psorothamnus fremontii	Fremont indigobush	S	N
Family Geraniacea – Geraniums			
Erodium cicutarium	Red-stem fillaree	AH	Y
Family Krameriacea – Rhatanies			
Krameria erecta	Little leaved ratany	S	N
Family Lamiaceae – Mint			
Scutellaria (Salazaria) mexicana	Paper bag bush	S	Y
Family Loasacea – Eveningstars			
Mentzelia albicaulis	Small flowered blazing star	AH	N
Petalonyx thurberi	Sandpaper plant	AH	N
Family Malvacea – Mallows			
Sphaeralcea ambigua	Apricot mallow	PH	N
Family Nyctaginacea – Four O'Clock			
Abronia villosa	Desert sand verbena	AH	N
Mirabilis multiflora	Desert four o'clock	PH	N
Family Onagracea – Evening Primroses			
Camissonia boothii	Booth's evening primrose	AH	N
Family Orobanchacea – Broomrapes			
Orobanche cooperi	Desert broomrape	PH	N

TABLE 5 (CONTINUED)
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE

Scientific Name	Common Name	Growth Habit	Dominant Species?
Family Papaveracea – Poppies			
Eschscholzia minutiflora	Pygmy poppy	AH	N
Family Poacea – Grasses			
Achnatherum speciosum	Desert needlegrass	PG	N
Achnatherum hymenoides	Indian ricegrass	PG	N
Bromus madritensis ssp. rubens	Red brome	AG	Y
Bromus tectorum	Cheatgrass	AG	N
Pleuraphis rigida	Woolly galleta	PG	N
Schismus barbatus	Mediterranean grass	AG	Y
Family Polemoniacea – Phloxes			
Eriastrum eremicum	Desert woollystar	AH	N
Linanthus filiformis	Yellow gilia	AH	N
Loeseliastrum matthewsii	Desert calico	AH	N
Family Polygonacea – Knotweeds			
Chorizanthe brevicornu	Brittle spineflower	AH	N
Eriogonum fasciculatum var. *polifolium*	California buckwheat	S	N
Eriogonum inflatum	Desert trumpet	PH	N
Eriogonum mohavense	Western Mohave buckwheat	AH	N
Family Ranunculacea – Buttercups			
Delphinium parishii	Parish's delphinium	PH	N
Family Scrophulariacea – Figworts			
Castilleja exserta	Purple owl's clover	AH	N
Family Solanacea –Nightshades			
Datura wrightii	Western jimsonweed	PH	N
Lycium andersonii	Anderson thornbush	S	N
Family Zygophyllacea – Caltrops			
Larrea tridentata	Creosote bush	S	Y

[1] Non-native species.

Notes:
Scientific nomenclature, native status, and habit follows Hickman 1993.
Habit definitions:

AG = annual grass or graminoid	PG= perennial grass or graminoid	S = shrub
AH = annual herb	PH = perennial herb	T = tree

4.4.2 Survey Results – Wildlife Species

Based on results of the biological investigations performed within the Agincourt site, wildlife use of this site appears to be limited. Aside from common insects, wildlife species observed on-site were observed on-site, and were primarily birds, mammals, and reptiles typically found in the Mojave Desert. Due to the absence of intermittent or perennial watercourses, the Agincourt site does not contain suitable habitat for aquatic or semi-aquatic animals such as fishes and amphibians. Protocol surveys for the Mojave desert tortoise (see URS 2012a) indicate that a Mojave desert tortoise expired on the site many years ago, but that the species does not currently occur on-site. Protocol survey for the burrowing owl (see URS 2012b) indicate that at least one burrowing owl currently forages within the Agincourt site. A complete list of the wildlife species observed within the Agincourt site is presented in Table 6 below.

TABLE 6
WILDLIFE SPECIES OBSERVED WITHIN THE PROJECT SITE

Common Name	Scientific Name	Applicable Regulatory Status (Federal/State)
Insects		
Pollen wasp	*Pseudomasaris maculifrons*	None/None
Say's stink bug	*Chlorocroa sayi*	None/None
Flower fly	Family syrphidae	None/None
Weevil	Family curculionidae	None/None
Aphid	Family aphididae	None/None
Tenebrionid beetle	Family tenebrionidae	None/None
Flower beetle	Suborder Polyphaga	None/None
Reptiles		
Southern desert horned lizard	*Phrynosoma platyrhinos calidiarum*	None/None
Western side-blotched lizard	*Uta stansburiana elegans*	None/None
Western zebra-tailed lizard	*Callisaurus draconoides rhodostictus*	None/None
Birds		
Burrowing owl	*Athene cunicularia*	None/CSC
Barn swallow	*Hirundo rustica*	None/None
Cactus wren	*Campylorhynchus brunneicapillus*	None/None
Common raven	*Corvus corax*	None/None
Sage sparrow	*Amphispiza belli*	None/None
Swallow sp.	Family Hirundinidae	–
Western gull	*Larus occidentalis*	None/None
Mammals		
Kangaroo rat	*Dipodomys* sp.	None/None

TABLE 6
WILDLIFE SPECIES OBSERVED WITHIN THE PROJECT SITE

Common Name	Scientific Name	Applicable Regulatory Status (Federal/State)
Black-tailed jackrabbit	*Lepus californicus*	None/None
Ground squirrel	Family Sciuridae	None/None

Regulatory Status:
FT = Federally listed threatened
ST = State-listed threatened
CSC = California Species of Special Concern

4.4.3 Special-status Species Observed within the Project Site

Only one special-status wildlife species, the burrowing owl (*Athene cunicularia*), was detected within the Agincourt project site during biological field investigations; no special-status plants were detected. However, abundant Joshua trees (*Yucca brevifolia*) were documented on-site, and this species is protected by state and local laws despite its lack of a formal sensitivity designation. Several other plants that receive protection under the California Desert Native Plants Act were also detected and mapped. The regulatory status and biology of the Joshua tree and burrowing owl, as well as the documented occurrences of these species within the Agincourt site, are described below.

4.4.3.1 Joshua Tree (*Yucca brevifolia*)

The species is an evergreen monocot endemic to the Mojave Desert, and generally occurs from 600 to 1,800 meters (2,000 to 6,000 feet) elevation. The species prefers well-drained soils, and Joshua tree woodland is often outcompeted by other plant communities in soils where water retention is greater (Royo 1997). Studies conducted in Joshua Tree National Park have indicated that the growth rate for Joshua trees is approximately two feet for every ten years, and that trees can remain in a "juvenile" state (having not produced a flower) for many years (Gossard 1992). Reproduction in this species is achieved through a symbiotic relationship with the yucca moth (in the western U.S., *Tegeticula synthetica*). In this mutualistic partnership, the fruit of the Joshua tree provides the developing seeds that serve as the sole source of food for the moth's larvae (Godsoe et al. 2008). In return, the female yucca moth uses specialized mouth parts to pollinate the Joshua tree's flowers, enabling the consequent production of fruit and seeds. The adult moth travels among blooming Joshua trees collecting pollen, then selects a bloom and lays eggs within the ovary. Several days later, the larval yucca moths hatch and take up residence within the Joshua tree's fruit, where they feed on the plant's seeds. Eventually, the larval moths leave the fruit of the Joshua tree and drop to the ground. The larvae burrow into the desert soil, where each larva creates a cocoon and continues to develop before emerging as an adult moth to repeat the cycle (Sharp 2009).

The Joshua tree has no formal state or federal sensitivity designation. Despite the absence of a formal sensitivity designation, the Joshua tree receives protection under the California

Desert Native Plants Act (Section 80001 *et seq.* of the California Food and Agriculture Code) and under Sections 88.01.050 and 88.01.060 of the San Bernardino County Development Code. These laws prohibit the destruction of Joshua trees without a County-issued permit and require that Joshua trees within lands proposed for development be transplanted. Further, where removal of "specimen" size trees is proposed, the Development Code requires a finding that no reasonable alternative means of developing the land exists. "Specimen" trees are defined to include those Joshua trees meeting the following criteria (San Bernardino County Development Code Section 88.01.050(f)(3)(C)):

1. A circumference measurement equal to or greater than 50 inches measured at 4.5 feet above natural grade level.
2. Total tree height of 15 feet or greater.
3. Trees possessing a bark-like trunk.
4. A cluster of 10 or more individual trees, of any size, growing in close proximity to each other.

The October 20, 2011 Joshua tree inventory of the Agincourt site, described in Section 3.2.4 of this General Biological Resources Assessment Report, identified a total of 792 Joshua tree individuals within the 80-acre site. The distribution of Joshua trees within the site is approximately uniform (see Figure 5), and the overall tree density on-site is approximately 9.9 trees per acre. These trees are limited to upland portions of the site, which contains mapped Joshua tree woodland, and no Joshua trees are present within the drainage channels on-site. Approximately half of the trees detected (395 of 792 trees) were very young seedlings less than five feet in height, although trees between five and ten feet tall were also relatively abundant (321 of 792 trees). Trees exceeding ten feet in height were substantially less common (76 trees), and only one tree within the Agincourt site was more than 15 feet tall. A summary of all Joshua trees detected within the site is provided in Table 7. Appendix B includes details, such as height and diameter at breast height (DBH), for all Joshua trees shown on Figure 5.

Among the 792 Joshua trees inventoried within the Agincourt site, 357 trees met the criteria for "specimen" size trees set forth in the San Bernardino County Development Code. These trees are depicted on Figure 5, and are spatially distributed in a scattered manner throughout the site. A summary of the number of trees on-site meeting each of the County's criteria is presented in Table 8.

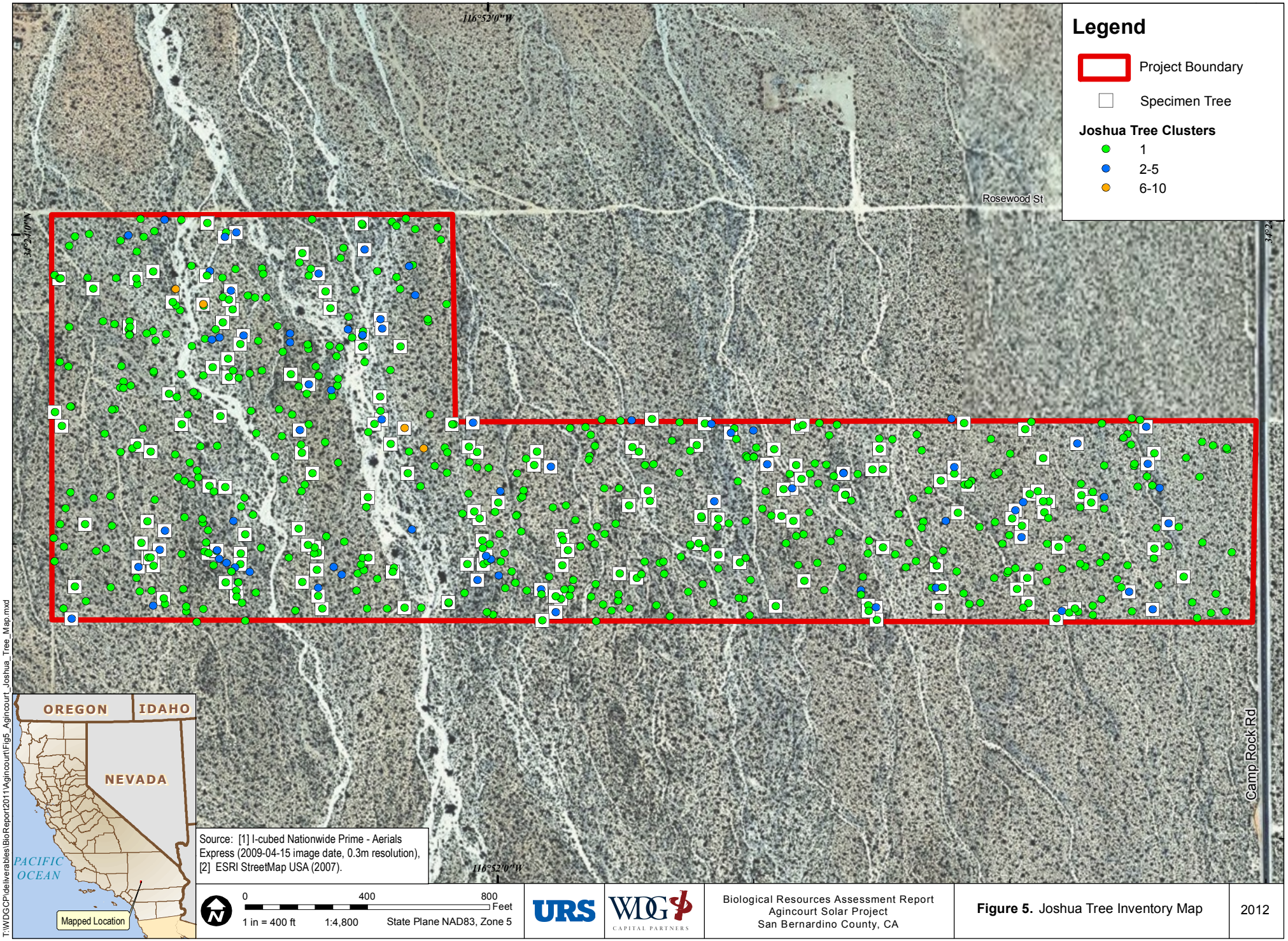

Legend
Project Boundary
Specimen Tree
Joshua Tree Clusters
1
2-5
6-10
116°52'0"W
34°24'0"N
Rosewood St
Camp Rock Rd
OREGON
IDAHO
NEVADA
PACIFIC OCEAN
Mapped Location
Source: [1] I-cubed Nationwide Prime - Aerials Express (2009-04-15 image date, 0.3m resolution), [2] ESRI StreetMap USA (2007).
0
400
800
Feet
1 in = 400 ft
1:4,800
State Plane NAD83, Zone 5
URS
WDG
CAPITAL PARTNERS
Biological Resources Assessment Report
Agincourt Solar Project
San Bernardino County, CA
Figure 5. Joshua Tree Inventory Map
2012
T:\WDGCP\deliverables\BioReport2011\Agincourt\Fig5_Agincourt_Joshua_Tree_Map.mxd

TABLE 7
JOSHUA TREES BY HEIGHT CLASS

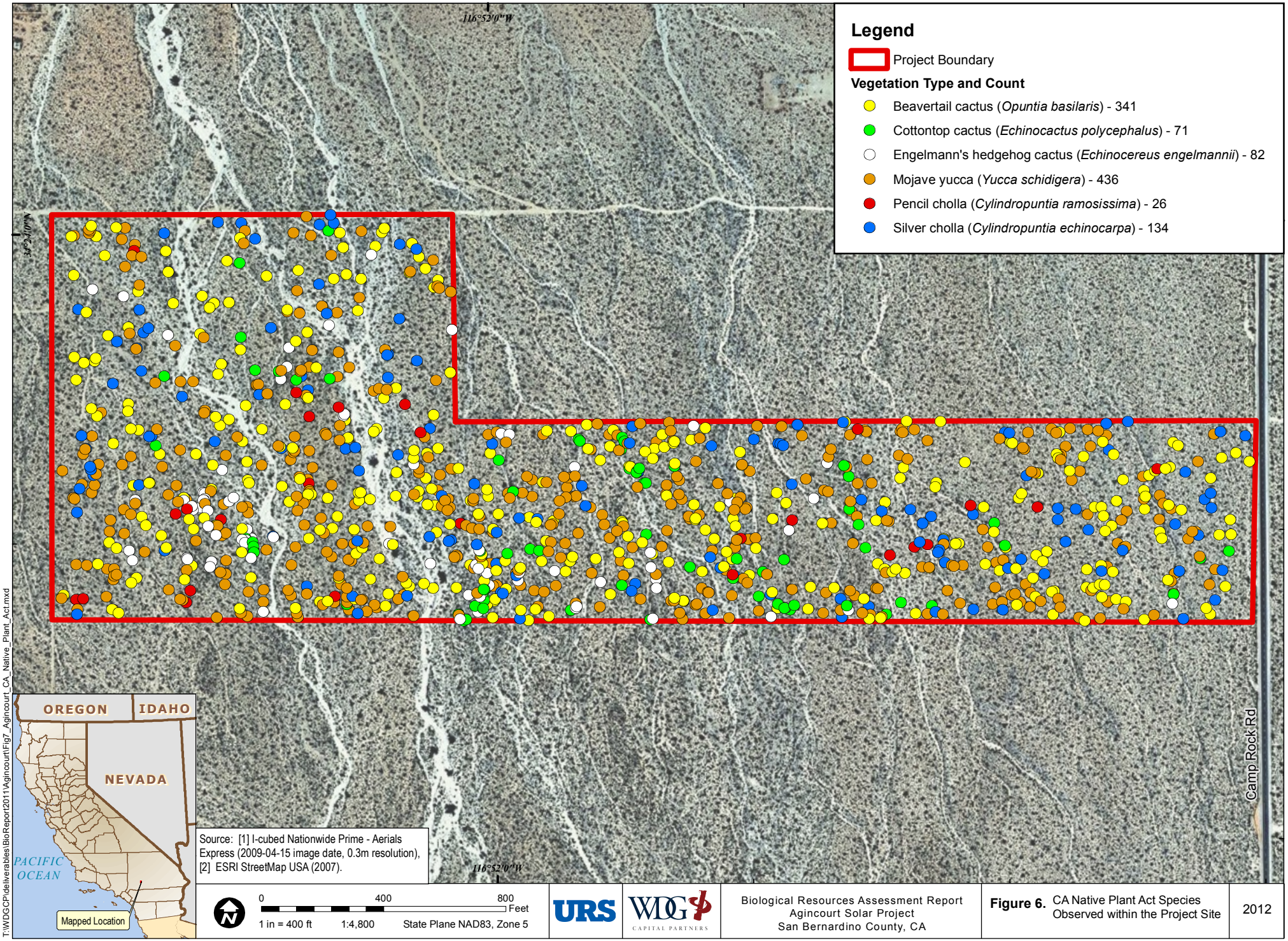
Height Class	Number of Trees
Greater than 15 feet	1
10 to 15 feet	75
5 to 10 feet	321
Less than 5 feet	395
Total	792

TABLE 8
"SPECIMEN" SIZE JOSHUA TREES

Development Code Section 88.01.050(f)(3)(C) Criterion	Number of Trees
Height greater than 15 feet	1
Circumference greater than 50 inches	3
Presence of bark-like trunk	348
Cluster of ten or more trees in close proximity	1 cluster with 10 trees
Trees meeting 2 or more criteria	5
Total specimen trees	357

4.4.3.2 Plants Protected by the California Desert Native Plants Act

Although they maintain no federal or state sensitivity designations, a number of the plant species detected within the Agincourt site are protected by the California Desert Native Plants Act, and by the San Bernardino County Development Code. The California Desert Native Plants Act is intended to prohibit the unlawful harvest of certain native desert plant species, and the species protected are generally either woody or succulent. Protected species identified on-site include silver cholla (134 individuals), pencil cholla (26 individuals), cottontop cactus (71 individuals), Engelmann's hedgehog cactus (82 individuals), beavertail cactus (341 individuals), Mojave yucca (436 individuals), and Joshua tree, discussed in Section 4.4.3.1 above. Harvest of these species must be authorized by the County Sheriff or Agricultural Commissioner through issuance of a permit. Locations of protected species detected within the Agincourt site are shown graphically on Figure 6.


116°52'0"W
34°24'0"N
Legend
Project Boundary
Vegetation Type and Count
Beavertail cactus (Opuntia basilaris) - 341
Cottontop cactus (Echinocactus polycephalus) - 71
Engelmann's hedgehog cactus (Echinocereus engelmannii) - 82
Mojave yucca (Yucca schidigera) - 436
Pencil cholla (Cylindropuntia ramosissima) - 26
Silver cholla (Cylindropuntia echinocarpa) - 134
Camp Rock Rd
OREGON
IDAHO
NEVADA
PACIFIC OCEAN
Mapped Location
Source: [1] I-cubed Nationwide Prime - Aerials Express (2009-04-15 image date, 0.3m resolution), [2] ESRI StreetMap USA (2007).
0
400
800
Feet
1 in = 400 ft
1:4,800
State Plane NAD83, Zone 5
URS
WDG
CAPITAL PARTNERS
Biological Resources Assessment Report
Agincourt Solar Project
San Bernardino County, CA
Figure 6. CA Native Plant Act Species Observed within the Project Site
2012
T:\WDGCP\deliverables\BioReport2011\Agincourt\Fig7_Agincourt_CA_Native_Plant_Act.mxd

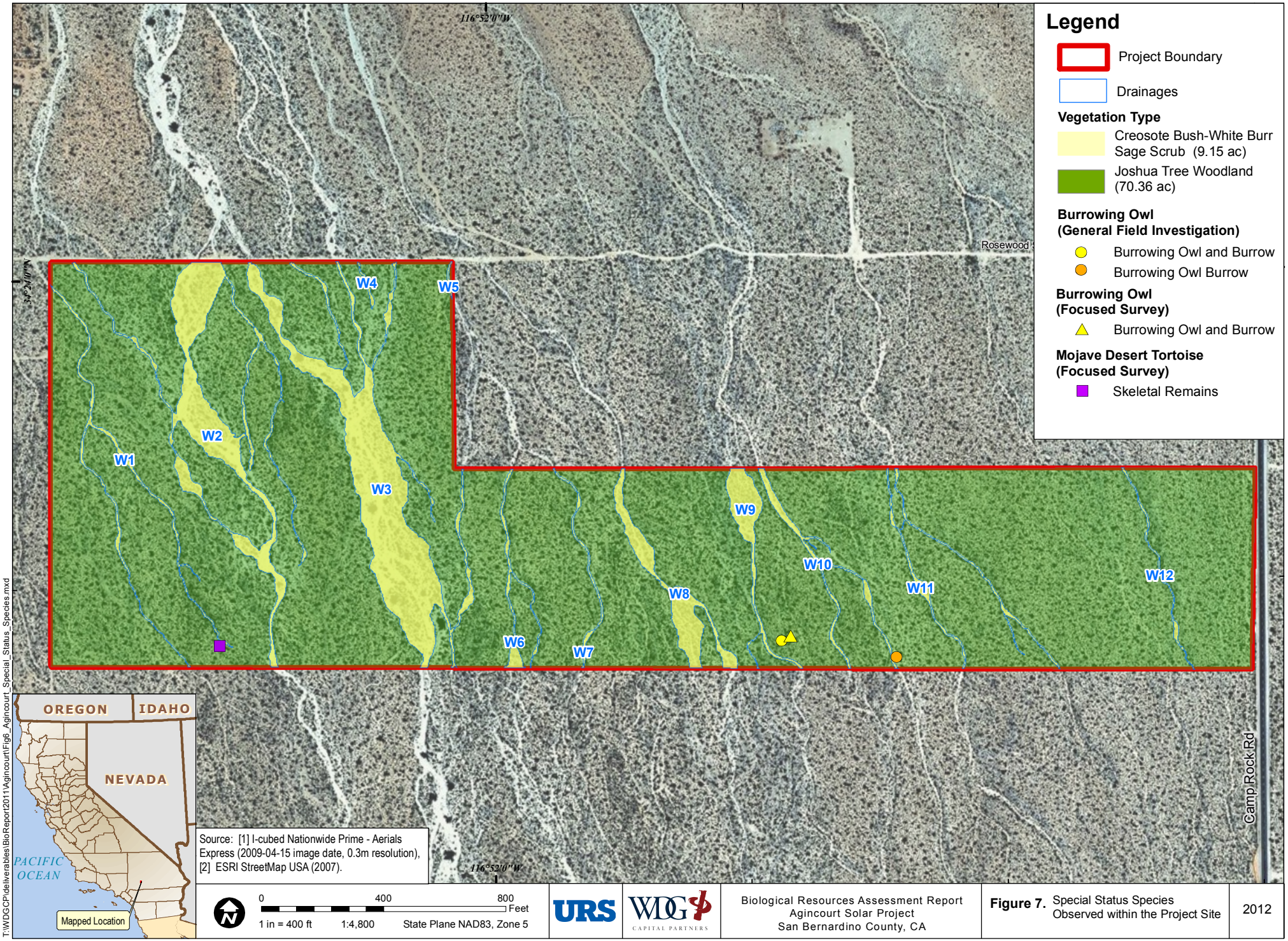
4.4.3.3 Burrowing owl (*Athene cunicularia*, CSC)

The burrowing owl is a small owl that inhabits open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Burrowing owls usually nest in burrows excavated by ground squirrels, badgers, or other small or medium-sized mammals, although they may dig their own burrows in soft soil. Their prey consists mostly of insects, small mammals, reptiles, birds, and carrion. In the breeding season, burrowing owls frequently forage hundreds of yards from their burrows, and some have been recorded foraging up to 2 miles from their nests. This has been noted in particular in cases where owls live in small colonies, such as in the Central Valley and the Imperial Valley in California (Gervais et al. 2003; Rosenberg and Haley 2004).

Within the Project site, two burrows showing evidence of use by burrowing owls were detected, and one adult burrowing owl was flushed. Both of the active burrows were associated with ephemeral drainage channels on-site, and both were located in the eastern portion of the site. The presence of active burrows indicates that habitats on-site are capable of supporting this species, and it is expected that burrowing owls may occupy the site for nesting as well as during the winter months. The locations of the burrowing owl and burrows detected are presented on Figure 7. A CNDDB field survey form for this occurrence is included in Appendix C. Additional information regarding the use of the Agincourt site by burrowing owls is provided in the Focused Burrowing Owl Survey Report for the project (URS 2012b). A burrowing owl was discovered occupying a burrow during these focused surveys and a CNDDB field survey form for the owl is included in the Focused Burrowing Owl Survey Report. The location of the burrowing owl and burrow detected during these focused surveys are also presented on Figure 7.

4.4.3.4 Mojave Desert Tortoise (*Gopherus agassizii*)

The Mojave desert tortoise is a reptile listed as threatened under both the Endangered Species Act and the California Endangered Species Act. The species occurs in the Mojave Deserts of southeastern California, southern Nevada, and western Utah, and is most commonly found in desert washes, canyon bottoms, and rocky hillsides below 3,530 feet elevation. The dominant shrub commonly associated with desert tortoise habitat is creosote bush (*Larrea tridentata*). Other shrubs including white bursage, cheese bush (*Hymenoclea salsola*), Desert senna (*Cassia armata*), and Mojave prickly-pear (*Opuntia mojavensis*) provide suitable habitat for the species. Desert tortoises spend 95 percent of their lives underground; therefore, suitable soil is a requirement for burrow construction. Throughout most of the Mojave Desert, desert tortoises occur most commonly on gently sloping terrain with soils ranging from sand to sandy-gravel and with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Desert tortoises can also be found in steeper, rockier areas throughout their range.


Legend
Project Boundary
Drainages
Vegetation Type
Creosote Bush-White Burr Sage Scrub (9.15 ac)
Joshua Tree Woodland (70.36 ac)
Burrowing Owl (General Field Investigation)
Burrowing Owl and Burrow
Burrowing Owl Burrow
Burrowing Owl (Focused Survey)
Burrowing Owl and Burrow
Mojave Desert Tortoise (Focused Survey)
Skeletal Remains
116°52'0"W
34°2'40"N
Rosewood
Camp Rock Rd
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12
OREGON
IDAHO
NEVADA
PACIFIC OCEAN
Mapped Location
Source: [1] I-cubed Nationwide Prime - Aerials Express (2009-04-15 image date, 0.3m resolution), [2] ESRI StreetMap USA (2007).
0
400
800
Feet
1 in = 400 ft
1:4,800
State Plane NAD83, Zone 5
URS
WDG
CAPITAL PARTNERS
Biological Resources Assessment Report
Agincourt Solar Project
San Bernardino County, CA
Figure 7. Special Status Species Observed within the Project Site
2012
T:\WDGCP\deliverables\BioReport2011\Agincourt\Fig6_Agincourt_Special_Status_Species.mxd

Protocol surveys for this species conducted within the Agincourt site in spring 2012 did not identify any desert tortoises, burrows, scat, or tracks. However, a weathered partial disarticulated skeleton was detected, indicating that a tortoise had occupied the site at some point in the past. For additional information, please refer to the Focused Desert Tortoise Survey Report for the project (URS 2012a). The locations of the skeletal remains detected during focused surveys are also presented on Figure 7.

4.4.4 Special-status Species Not Observed but with the Potential to Occur within the Project Site

Special-status species and sensitive natural communities not observed on-site but with potential to occur based on range and habitat requirements are discussed below. Figure 3 displays the results of the query of CNDDB records for sensitive plant, native plant communities, and wildlife occurrences within a 5-mile radius of the Project site.

4.4.4.1 Plants

A total of 23 special-status plant species occur within the vicinity of the Agincourt site, based on the 5-mile radius query of CNDDB records (See Figure 3) and other sources as described in Section 3.1. However, no special-status plant species were identified during the 2011 full-coverage biological surveys on the Project site. The Agincourt site is in close proximity to the San Bernardino Mountains, which support a substantial number of sensitive plants, and the majority of the mapped sensitive occurrences within five miles of the site are located in the mountains. Owing to the substantial differences in elevation, climate, and vegetation communities between the San Bernardino Mountains and the floor of the Lucerne Valley, the majority of these plants have little probability of occurring within the Agincourt site. Descriptions of these species including habitat, range restrictions, blooming periods, known occurrences, and an evaluation of potential to occur on-site, are summarized in Table 9.

4.4.4.2 Wildlife

In addition to the burrowing owl and the Mojave desert tortoise skeleton described in Section 4.4.3.3 and 4.4.3.4 of this General Biological Resources Assessment Report, a total of seven special-status wildlife species have been documented in the vicinity of the Agincourt site, based on the 5-mile radius query of CNDDB records (See Figure 3) and other sources described in Section 3.1. Because of the site's proximity to the San Bernardino Mountains, many of the species occurring within five miles of the site are not desert species, and are very unlikely to occur on-site due to the absence of suitable habitat. Among those species for which the site provides suitable habitat, two are birds, which exhibit considerable mobility. The site is also suitable for use by the desert tortoise, a federally and state-listed reptile. Descriptions of these species, including preferred habitat, range restrictions, nesting or breeding periods, locations of known occurrences, and an evaluation of potential to occur on-site, are summarized in Table 10.

TABLE 9
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Growth Habit and Blooming Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	FE, CNPS 1B.1	Annual herb, May – October	Pinyon and juniper woodland (carbonate, talus) in sandy, carbonate soils from *1,219* to *2,377 meters (4,000* to *7,800 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, suitable elevation not present on-site. Closest occurrences are in the San Bernardino Mountains, most recently from 2001.	Unlikely
Cushenbury milk-vetch	*Astragalus albens*	FE, CNPS 1B.1	Perennial herb, March – June	Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland in usually carbonate, rarely granitic soils from *1,095* to *2,000 meters (3,500* to *6,560 feet) in elevation (CNPS 2011).*	Suitable Joshua tree woodland and Mojavean desert scrub habitat present on-site. Closely suitable elevation range requirements are present on-site. Closest occurrences are in the San Bernardino Mountains, most recently from 2010.	Moderate
San Bernardino milk-vetch	*Astragalus bernardinus*	CNPS 1B.2	Perennial herb, April – June	Joshua tree woodland, and pinyon and juniper woodland in often granitic or carbonate soils from *900* to *2,000 meters (2,950* to *6,560 feet) in elevation (CNPS 2011).*	Suitable Joshua tree woodland habitat present on-site, suitable elevations present on-site. Closest occurrences are in the San Bernardino Mountains, most recently from 2009.	Moderate
Big Bear Valley woollypod	*Astragalus leucolobus*	CNPS 1B.2	Perennial herb, *1,750 – 2,885 meters*	Lower montane coniferous forest, pebble (pavement) plain, pinyon and juniper woodland, and upper montane coniferous forest in rocky soils from *1,750* to *2,885 meters (5,740* to *9,465 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, no suitable elevations on-site. Closest occurrences are in the San Bernardino mountains from 1998.	Unlikely

TABLE 9 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Growth Habit and Blooming Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Tidestrom's milk-vetch	*Astragalus tidestromii*	CNPS 2.2	Perennial herb, April – July	Mojavean desert scrub in carbonate, sandy or gravelly soils from *600* to *1,585 meters (1,970* to *5,200 feet) in elevation (CNPS 2011).*	Suitable Mojavean desert scrub habitat present on-site, suitable elevations present. Closest occurrences are in the San Bernardino Mountains, most recently from 1998.	Moderate
Parish's brittlescale	*Atriplex parishii*	CNPS 1B.1	Annual herb, June – October	Chenopod scrub, playas, and vernal pools in alkaline soils from *25* to *1,900 meters (80* to *6,230 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, though elevations are suitable. Closest occurrence is in the San Bernardino Mountains (unknown date).	Unlikely
Fremont barberry	*Berberis fremontii*	CNPS 3	Perennial evergreen, April – June	Chaparral, Joshua tree woodland, and pinyon and juniper woodland in rocky soils from *840* to *1,850 meters (2,755* to *6,070 feet) in elevation (CNPS 2011).*	Suitable Joshua tree woodland habitat present on-site, and on-site elevations are suitable. However, the closest documented occurrence in the vicinity dates from 1925.	Unlikely
Pinyon rock-cress	*Boechera dispar*	CNPS 2.3	Perennial herb, March – June	Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland in granitic, gravelly soils from *1,200* to *2,540 meters* (3,940 to 8,330 feet) *in elevation (CNPS 2011).*	Suitable Joshua tree woodland and Mojavean desert scrub habitat present on-site. Suitable elevations are not present on-site. Closest occurrence is in the San Bernardino Mountains, from 1934.	Unlikely
Parish's rock-cress	*Boechera parishii*	CNPS 1B.2	Perennial herb, April – May	Pebble (pavement) plain, pinyon and juniper woodland, and upper montane coniferous forest in rocky, quartzite on clay, or sometimes carbonate soils from *1,770* to *2,990 meters (5,810* to *9,810 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrence is in the San Bernardino Mountains, from 1978.	Unlikely

TABLE 9 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Growth Habit and Blooming Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Shockley's rock-cress	*Boechera shockleyi*	CNPS 2.2	Perennial herb, May – June	Pinyon and juniper woodland in carbonate or quartzite, rocky or gravelly soils from *875* to *2,310 meters* (2,870 to 7,580 feet) in elevation *(CNPS 2011).*	No suitable habitat present on-site, although elevations are suitable. Closest occurrences are in the San Bernardino Mountains, most recently from 2004.	Unlikely
Alkali mariposa lily	*Calochortus striatus*	CNPS 1B.2	Perennial herb, April – June	Chaparral, chenopod scrub, Mojavean desert scrub, meadows and seeps in alkaline, mesic soils from 70 to 1,595 meters (230 to 5,235 feet) in elevation *(CNPS 2011).*	Suitable Mojavean desert scrub habitat present on-site, and the site's elevations are suitable for this species. Closest occurrences are in the San Bernardino Mountain foothills, most recently from 2004.	Moderate
Purple-nerve cymopterus	*Cymopterus multinervatus*	CNPS 2.2	Perennial herb, March – April	Mojavean desert scrub, and Pinyon and juniper woodland in sandy or gravelly soils from *790* to *1,800 meters* (2,590 to 5,905 feet) *in elevation (CNPS 2011).*	Suitable Mojavean desert scrub habitat is present on-site, and site elevations are suitable. Closest occurrence is in the San Bernardino Mountains, from 1995.	Moderate
San Bernardino Mountains dudleya	*Dudleya abramsii* ssp. *affinis*	CNPS 1B.2	Perennial herb, April – June	Pebble (pavement) plain, pinyon and juniper woodland, and upper montane coniferous forest in granitic, quartzite, or carbonate soils from *1,250* to *2,600 meters* (4,100 to 8,530 feet) *in elevation (CNPS 2011).*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrences are in the San Bernardino Mountain foothills, most recently from 1996.	Unlikely
Big Bear Valley sandwort	*Eremogone ursina*	FT, CNPS 1B.2	Perennial herb, May – August	Meadows and seeps, pebble (pavement) plain, and pinyon and juniper woodland in mesic, rocky soils from *1,800* to *2,900 meters (5,905* to *9,515 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrence is in the San Bernardino Mountains, from 1981.	Unlikely

TABLE 9 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Growth Habit and Blooming Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Parish's daisy	*Erigeron parishii*	FT, CNPS 1B.1	Perennial herb, May – August	Mojavean desert scrub, and pinyon and juniper woodland in usually carbonate, sometimes granitic soils from *800* to *2,000 meters* (2,625 to 6,560 feet) *in elevation (CNPS 2011).*	Suitable Mojavean desert scrub habitat present on-site, and site elevations are suitable. Closest occurrences are in the San Bernardino Mountain foothills, most recently from 1998.	Moderate
Southern mountain buckwheat	*Eriogonum kennedyi* var. *austromontanum*	FT, CNPS 1B.2	Perennial herb, June – September	Lower montane coniferous forest, and pebble (pavement) plain in gravelly soils from *1,770* to *2,890 meters (5,810* to *9,480 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrence is in the San Bernardino Mountains, from 2001.	Unlikely
Johnston's buckwheat	*Eriogonum microthecum* var. *johnstonii*	CNPS 1B.3	Perennial deciduous shrub, July – September	Subalpine coniferous forest and upper montane coniferous forest in rocky soils from *1,829* to *2,926 meters (6,000* to *9,600 feet) in elevation (CNPS 2011).*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrence is in the San Bernardino Mountains, from 1998.	Unlikely
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	FE, CNPS 1B.1	Perennial herb, May – August	Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland in carbonate soils from *1,400* to *2,440 meters (4,595* to *8,005 feet) in elevation (CNPS 2011).*	Suitable Joshua tree woodland and Mojavean desert scrub habitat present on-site, but this species occurs at higher elevations. Closest occurrences are in the San Bernardino Mountain foothills, most recently from 2009.	Unlikely
Lemon lily	*Lilium parryi*	CNPS 1B.2	Perennial bulbiferous herb, July – August	Lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest in mesic soils from 1,220 to 2,745 meters (4,005 to 9,005 feet) *in elevation (CNPS 2011)*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrences are in the San Bernardino Mountain foothills, most recently from 2000.	Unlikely

TABLE 9 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Growth Habit and Blooming Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Big Bear Valley phlox	*Phlox dolichantha*	CNPS 1B.2	Perennial herb, May – July	Pebble (pavement) plain and upper montane coniferous forest (openings) from 1,830 to 2,970 meters (6,005 to 9,745 feet) *in elevation (CNPS 2011)*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrence is in the San Bernardino Mountains, from 2006.	Unlikely
Frosted mint	*Poliomintha incana*	CNPS 1A	Perennial shrub, June – July	Lower montane coniferous forest in mesic soils from 1,600 to 1,700 meters (5,250 to 5,580 feet) *in elevation (CNPS 2011)*	No suitable habitat present on-site, and site elevations are not suitable. Closest occurrence is in the San Bernardino Mountains, from 1938.	Unlikely
Latimer's woodland-gilia	*Saltugilia latimeri*	CNPS 1B.2	Annual herb, March – June	Chaparral, Mojavean desert scrub, pinyon and juniper woodland, and sometimes in washes in rocky or sandy, often granitic, soils from 400 to 1,900 meters (1,315 to 6,235 feet) *in elevation (CNPS 2011).*	Suitable Mojavean desert scrub habitat is present on-site, and site elevations are suitable for this species. However, the most recent documented occurrence in the vicinity dates from 1955.	Unlikely
San Bernardino aster	*Symphyotrichum defoliatum*	CNPS 1B.2	Perennial rhizomatous herb, July – November	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic), and near ditches, streams, springs from 2 to 2,040 meters (7 to 6,695 feet) *in elevation (CNPS 2011).*	No suitable habitat is present on-site, although elevations are suitable. Closest occurrence in the site vicinity dates from 1932.	Unlikely

Regulatory Status Definitions:
Federal
FE = Federally listed Endangered.
FT = Federally listed Threatened.
State
SE = State-listed Endangered.
ST = State-listed Threatened.

TABLE 9 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Other
CNPS = California Native Plant Society.
1A = Presumed extinct/extirpated in California.
1B = Plants that are rare, threatened, or endangered in California and elsewhere.
2 = Rare, threatened, and endangered in California but more common elsewhere.
3 = Plants about which more information is needed.
4 = A watch list of plants of limited distribution.
.1 = Seriously endangered in California.
.2 = Fairly endangered in California.
.3 = Not very endangered in California.

TABLE 10
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Insects						
Desert monkey grasshopper	*Psychomastax deserticola*	SA	Not available	Occurs in very arid environments in the vicinity of the San Bernardino mountains; known to occur on chamise (*Adenostoma fasciculatum*) (CDFG 2011).	Suitable habitat present on-site. Closest documented occurrence is in the San Bernardino Mountains, and dates from 1919.	Unlikely
Amphibians						
Large-blotched salamander	*Ensatina klauberi*	CSC	Fall and Spring, but may also occur throughout the winter	Inhabits moist shaded evergreen and deciduous forests and oak woodlands; found under rocks, logs, other debris; eats a wide variety of invertebrates (California Herps 2011).	No suitable habitat present on-site. Closest occurrence is in the San Bernardino Mountains, and dates from 2005.	Unlikely
Reptiles						
Desert tortoise	*Gopherus agassizii*	FT, ST	March – October	Sandy or gravelly desert habitats, i.e., washes, oasis, canyons, alluvial fans; requires firm but not impenetrable ground for burrows, grasses, cacti, herbs, flowers, legumes. Agriculture renders habitat unsuitable due to soil disturbance (USFWS 2011).	Suitable habitat present on-site. A Habitat Conservation Plan for desert tortoise was prepared for the Cushenberry Sand and Gravel Quarry, located within two miles of the site. Potential burrows were detected on-site during biological surveys.	Moderate
Southern rubber boa	*Charina umbratica*	ST	April – June	Inhabits oak-conifer and mixed-conifer forests at elevations between roughly 5,000 to 8,200 ft. where rocks and logs or other debris provide shelter; eats small mammals, birds, and, lizards (California Herps 2011).	No suitable habitat present on-site. Closest occurrence dates from 1993 in the Big Bear City Quadrangle, location suppressed.	Unlikely

TABLE 10 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Birds						
Prairie falcon	*Falco mexicanus*	BCC, WL	March – June	Inhabits grasslands, shrub-steppe, deserts, and other open areas of the West up to about 10,000 feet elevation; During the winter, they also reside in cultivated fields, lakeshores, desert scrub; adults feed on birds, small mammals are also important; Most nest on overhanging, south-facing cliffs up to 500 feet high (Cornell 2011).	Suitable habitat for foraging and roosting present on-site, although nesting habitat is absent. Suitable nesting habitat may occur in the San Bernardino Mountains. Closest CNDDB occurrence dates from 1980 in the Cougar Buttes Quadrangle, location suppressed.	Moderate, foraging and roosting only
Le Conte's thrasher	*Toxostoma lecontei*	BCC, CSC	Early February – late June	**Permanent resident; gentle to rolling, well-drained slopes bisected with dry washes, conditions found most often on bajadas or alluvial fans; occupied habitats are generally moderately to sparsely vegetated by common saltbush (*Atriplex polycarpa*), and spiny saltbush (*Atriplex confertifolia*) (CDFG 2008). Species nests in shrubs.**	Suitable topographic habitat present on-site, although saltbush scrub habitat is not present on-site. Most recent occurrences near the site date from 1991.	Moderate
Yellow-breasted chat	*Icteria virens*	CSC (nesting)	Late April – early August	Occurs as a migrant and summer resident primarily from late March to late September; nesting yellow-breasted chats occupy early successional riparian habitats with a well-developed shrub layer and an open canopy; adults feed predominantly on insects and spiders, wild fruits and berries are also important (CDFG 2008).	No suitable habitat present on-site. Closest occurrence is in the San Bernardino Mountains and dates from 1987.	Unlikely

TABLE 10 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name	Scientific Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Summer tanager	*Piranga rubra*	CSC (nesting)	Mid-May – July	Primarily a summer visitor to California, arriving from mid-April to early May and departing usually in early October; breeds primarily in mature riparian woodland with an extensive canopy of Fremont Cottonwood; forage primarily for large insects through the canopy of tall riparian trees (CDFG 2008).	No suitable habitat present on-site. Closest occurrence is in the San Bernardino Mountains and dates from 1987.	Unlikely

Status Definitions:
Federal
BCC = USFWS Birds of Conservation Concern.
FE = Federally listed Endangered.
FT = Federally listed Threatened.
State
CSC = California Species of Concern.
FP = State Fully Protected.
SE = State-listed Endangered.
ST = State-listed Threatened.
SR = State-listed Rare.
SA = CDFG Special Animal.
WL = CDFG Watch List.

4.4.4.3 Natural Communities

A query of the CNDDB identified occurrences of "pebble plains," within five miles of the Agincourt site. Pebble plains are characterized by treeless openings within surrounding montane pinyon-juniper woodland or coniferous forest, where clay soils are covered by quartzite pebbles (USFWS 2008). No specific species composition defines pebble plains, although there are plant species, including several sensitive plants, associated with these areas. Occurrences of pebble plains are included in the CNDDB (CDFG 2011) because they were formally recognized by Holland (1986) as a vegetation type, and the CDFG once identified pebble plains as a sensitive natural community. However, efforts have been undertaken in recent years (see Sawyer et al. 2009) to classify California's vegetation in a manner more consistent with the National Vegetation Classification Standard (Federal Geographic Data Committee 2008), and the resulting refinements have removed this land cover from classification as a vegetation community. The CDFG's (2010) *List of California Terrestrial Natural Communities*, through which the CDFG designates which vegetation types are considered sensitive, has been updated to reflect these revisions. Thus, pebble plains are no longer formally listed as a sensitive natural community. Further, as pebble plains generally occur at elevations between 6,000 and 9,500 feet (USFWS 2008), more than two thousand feet higher than the highest point within the Agincourt site, and because vegetation mapping of the site did not detect pebble plains, the probability for pebble plains to occur on-site is remote.

4.5 WILDLIFE MOVEMENT

The ability to move is essential to wildlife survival. On a continuous basis, individuals must move to seek food, shelter, and mates. Offspring must disperse to find new homes. Groups or populations often move seasonally to find favorable conditions, or on short notice to avoid fires and other natural disasters. Wildlife movement is also essential in facilitating gene flow, recolonizing unoccupied habitat after localized extinctions, and allowing species to shift their geographic ranges in response to changing conditions. Disruption of these natural movement patterns by human developments, including roads, fences, removal of suitable habitat, or other impediments can alter these essential ecosystem functions and lead to losses of species and critical environmental values (SC Wildlands 2008).

The Lucerne Valley represents a topographic basin surrounded by mountain ranges, and is bounded by the San Bernardino, Granite, Ord, and Rodman mountains (Penrod *et al.* 2005). Three smaller valleys connect the Lucerne Valley to the rest of the Mojave Desert: the North Lucerne Valley to the north, Fifteen Mile Valley to the west, and Fry Valley to the east. The floor of the Lucerne Valley is comprised primarily of open, desert scrub habitats, and these habitats are similar to those occurring in adjacent portions of the Mojave Desert. Because desert habitats are only marginally suitable for many wildlife species that occur in the area's

mountains, much of the wildlife movement in the region occurs within mountainous areas, rather than on the floor of the Lucerne Valley.

Recent studies conducted by Save Connected Wildlands, an organization dedicated to protecting and restoring systems of connected wildlands that support native wildlife and the ecosystems on which they rely, have evaluated the regional habitat linkages that occur in the Lucerne Valley region, including connectivity between the San Bernardino Mountains on the valley's southern edge and the Granite Mountains to the north. These studies (SC Wildands 2008; Penrod *et al.* 2005) identified the mountain ranges surrounding the Lucerne Valley as important core habitat areas for a variety of species, and included modeling to determine the "least cost corridor" for travel by three representative wildlife species (Nelson's bighorn sheep, American badger, and Pacific kangaroo rat) between these ranges. The estimated size and location of the "least cost corridor" accounted for the vegetation communities, elevation, topography, and density of roads present within the corridor, in light of the specific biological needs of the three focal species studied. The results of the corridor analysis indicated that the "least cost" movement corridor for wildlife travelling between the San Bernardino Mountains and the Granite Mountains would traverse Fifteen Mile Valley at its narrowest point (Penrod *et al.* 2005). Thus, the least cost corridor would not pass through the Agincourt site, but would traverse the Fifteen Mile Valley approximately eight miles west of the site. A second corridor, found to be suitable for movement of bighorn sheep, occurs approximately six miles east of the Agincourt site.

The floor of the Lucerne Valley has little available surface water, lacks substantial vegetative cover, and experiences temperature extremes over a large part of the year. Thus, it is not surprising that most wildlife favors the mountain and foothill regions for travel since these areas are less impacted by human development and feature more topographic and vegetative cover.

Although the Agincourt site is not within a large-scale wildlife movement corridor, the potential exists for wildlife to traverse the site during the course of short-range movements in search of food, water, shelter, and mates. The flat terrain and intact habitats within the site and surrounding vicinity allow small and medium-sized mammals to move about freely. Routine, daily or seasonal movements of small and medium-sized animals are generally localized in nature, and are not substantially dictated by the topography of the region. Due the site's relatively long and narrow configuration, it is likely that wildlife may traverse the site in a north-south direction, rather than east-west. The 12 drainage channels present on-site provide some degree of cover, and may be used as north-south movement routes across the site. Because the site does not support any unique or especially valuable habitat features, such as perennial sources of drinking water, it is unlikely that wildlife are attracted to the site. The relatively small size of the site, and its presence within a relatively homogeneous landscape of similar habitats, further decreases the likelihood that the site functions as an important movement route for wildlife.

SECTION 5.0
PROJECT IMPACTS

Impacts of the proposed Agincourt Solar Project on biological resources are addressed below. To facilitate the County's environmental review of the project under CEQA, the analysis is organized to reflect the topics addressed in the Initial Study Checklist (Appendix G to the State CEQA Guidelines).

5.1 IMPACTS TO EXISTING ON-SITE VEGETATION COMMUNITIES AND LAND COVERS

Criterion: Impacts would be significant if the Project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.

As described in Section 4.2 above, the Agincourt site natural vegetation includes approximately 9.15 acres of creosote bush-white burr sage scrub and approximately 70.36 acres of Joshua tree woodland. These plant communities provide habitat for a variety of plant and wildlife species that are found throughout the region. To facilitate development of the Agincourt project site, existing vegetation within the development envelope would need to be removed. Taller-growing species, such as Joshua trees, inhibit installation of solar panels due to their height and would be removed during site preparation. Lower-growing species, such as grasses, forbs, and shrubs, would not be removed specifically but would be uprooted or buried during the minor grading activities proposed. Because development of the site would involve soil movement and compaction, and because the proposed solar panels would create shade over much of the site, it is unlikely that new growth of vegetation would occur within the solar arrays following completion of the project. Thus, vegetation losses in the development footprint are presumed to be permanent.

In total, implementation of the proposed Project would result in the permanent loss of approximately 63.88 acres of natural habitats within the Agincourt site. The acreages of each on-site vegetation community that would be removed by the Project are identified in Table 11, as are acreages of vegetation that would persist in preserved areas.

5.1.1 Impacts to Joshua Tree Woodland

As described in Section 4.2.1 above, Joshua tree woodland is identified on the CDFG's (2010) List of California Terrestrial Natural Communities as a sensitive natural community. The development activities proposed within the Agincourt site would permanently remove approximately 57.98 acres of Joshua tree woodland from the site. Because intact Joshua tree

TABLE 11
IMPACTS TO ON-SITE VEGETATION COMMUNITIES

Vegetation Community	Acreage Present On-site (acres)	Vegetation to be Removed		Vegetation to be Preserved	
		Acreage	Percent	Acreage	Percent
Joshua Tree Woodland	70.36	57.98	82.40	12.38	17.60
Creosote Bush-White Burr Sage Scrub	9.15	5.90	64.48	3.25	35.52
Total	79.51[1]	63.88	80.34	15.63	19.67

[1] County parcel data indicate the site totals 79.2 acres but the site has not been professionally surveyed. The slight difference in site size noted in this table reflects variance between GIS calculations and unsurveyed parcel data.

woodlands face ongoing threats of loss and degradation, and because Joshua trees receive protection under the County's Development Code, this loss of habitat would be ***significant, absent mitigation.*** However, mitigation measure BIO-1, identified in Section 6.0 of this General Biological Resources Assessment Report, could feasibly ensure compliance with the County's Development Code and reduce this impact to a less than significant level.

5.1.2 Impacts to Creosote Bush-White Burr Sage Scrub

Creosote bush-white burr sage scrub is a common habitat that is abundant and widely distributed throughout the Mojave Desert, and maintains no federal, state, or local sensitivity designation. Thus, the proposed removal of 5.90 acres of this habitat would not represent a substantial loss of biological resources, and impacts to this community would be ***less than significant.***

5.2 IMPACTS TO JURISDICTIONAL WATERS AND STREAMBEDS

Criterion: Impacts would be significant if the Project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Streams and water bodies are protected by several federal and state statutes, and are generally considered to be valuable habitat features. Streams can vary considerably in their characteristics, and different classes of streams provide different hydrologic, biogeochemical, and habitat-related functions. As described in Section 4.3 of this General Biological Resources Assessment Report and illustrated on Figure 4, the Project site contains portions of 12 unnamed ephemeral washes, which occupy a total of 9.15 acres. Because they are not hydrologically connected to any navigable waters, the streams on-site are not subject to the permitting authority of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. However, the streams on-site are regulated by the California Fish and Game Code, which specifies that a Streambed Alteration Agreement must be obtained from the

CDFG prior to undertaking an activity that would divert, obstruct, or substantially alter the streambed.

Implementation of the proposed Project would have the potential to substantially alter the drainages on-site through filling and other means. At the upstream (southern) edge of the site, a series of trapezoidal channels would direct streamflow into three of the site's drainage channels: drainages W2, W8, and W9. These three drainages would remain in an open and earthen state, although W2 would be narrowed and straightened. The remaining drainages on-site would be filled with native material, to allow site development. The acreages of each drainage that would be eliminated are presented in Table 12. Because the proposed activities would result in permanent losses of jurisdictional waters, these impacts would be ***significant, absent mitigation.*** However, compensatory mitigation through creation, restoration, or enhancement of aquatic resources, per mitigation measure BIO-2, could feasibly reduce these impacts to a less than significant level.

TABLE 12
IMPACTS TO JURISDICTIONAL WATERS AND STREAMBEDS

Drainage	Total Jurisdictional Waters[1] On-site (Acres)	Waters to be Filled/Removed (Acres)	Percentage to be Filled/Removed
W1	0.35	0.35	99.09
W2	2.44	0.66	27.11
W3	3.96	3.92	98.96
W4	0.03	0.02	90.09
W5	0.02	0.00	10.00
W6	0.21	0.18	89.19
W7	0.10	0.10	96.97
W8	0.85	0.06	7.40
W9	0.54	0.02	2.88
W10	0.31	0.24	79.54
W11	0.26	0.25	96.75
W12	0.08	0.08	95.78
Total Jurisdictional Area	9.15	5.89	64.45

[1] Waters are subject to the jurisdiction of the CDFG and the Colorado River Basin RWQCB; jurisdictional boundaries are coterminous. No federal jurisdictional waters are present on-site.

5.3 IMPACTS TO PLANTS AND WILDLIFE

Criterion: Impacts would be significant if the Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

As described more fully in Section 4.0 of this General Biological Resources Assessment Report, the Project site is a fairly representative sample of the western Mojave Desert from a biological perspective. The Joshua tree woodland that dominates the site's vegetative cover supports an assemblage of common desert plants and wildlife, as well as one special-status species: the burrowing owl (*Athene cunicularia*). Common wildlife species that currently utilize the Project site could be impacted by construction and operation of the proposed Project. Generally speaking, impacts could potentially include injury or mortality during construction, and long-term habitat loss due to the conversion to native habitats to a developed condition. These sorts of impacts would potentially affect all species occupying the site, including common and special-status species.

All existing plants within proposed disturbance zones would be eliminated, as these species are immobile. As no special-status plants occur within the Project site, removal of plants would be limited to common species (for an evaluation of impacts to Joshua trees, which maintain no sensitivity designation but are protected by statute, please refer to Section 5.5 of this General Biological Resources Assessment Report). For the wildlife that inhabit the site, ground disturbance would lead to injury and mortality of individuals. The extent to which species would be impacted would be dependent on several factors, including the species' mobility and the extent to which the species relies on the site for life history requirements. Species of low mobility, or those that use the site during particularly vulnerable portions of the life history, such as nesting periods, would be expected to sustain greater impacts than highly mobile species or those whose use of the site is transitory. Because the project would disturb less than 80 acres on the floor of the Lucerne Valley, a relatively homogeneous desert habitat area, regionally abundant plants and wildlife species would not be substantially affected by the Project. Impacts to common plants and wildlife would therefore be ***less than significant.***

Because the potential exists for special-status species that were not detected during biological surveys to occur on the site, it is recommended that pre-construction surveys as described in mitigation measure BIO-3 be implemented to further reduce the potential for impacts to these species.

5.3.1 Impacts to the Burrowing Owl (*Athene cunicularia*)

Burrowing owls are a California Species of Special Concern, and were detected at two locations within the Agincourt site during biological field investigations. The individuals were detected during the nesting season; however, because the region contains both resident and migratory burrowing owls, it is currently unclear whether this species' use of the site is year-round or seasonal. Within the Project site, a total of approximately 63.88 acres of existing natural habitat would be disturbed during construction. Given the homogeneous nature of the Project region, this loss of habitat is not substantial. However, since burrowing owls nest and roost underground, it is possible that adult and juvenile/nestling owls may be killed or injured, or eggs may be destroyed, by being crushed during construction-related ground disturbances. If construction occurs when nestlings are present, adult owls might have the ability to escape, but nestlings likely would not. In addition, disturbances from construction could potentially cause burrowing owls to abandon their nest burrows, leaving nestlings unattended and exposed to injury and mortality. Injury or mortality of burrowing owls during Project construction would be ***significant, absent mitigation.*** Pre-construction survey requirements, such as those described in mitigation measure BIO-3, could feasibly reduce this impact to a less than significant level. Biological monitoring and worker training (mitigation measures BIO-4 and BIO-5) would further reduce this impact.

5.3.2 Impacts to the Mojave Desert Tortoise (*Gopherus agassizii*)

Protocol surveys detected no live tortoise, burrows, scat, etc. One aged skeleton was detected. The potential for project-related impacts to Mojave desert tortoises would be limited to individuals that either occupied the site but went undetected during protocol surveys or that were not present on-site during the surveys but colonized the area subsequently. Although unlikely, these impacts would be potentially ***significant, absent mitigation***, due to the very high level of statutory protection afforded this species. To reduce the likelihood of project-related impacts to Mojave desert tortoise individuals during construction, it is recommended that pre-construction surveys for this species be conducted as described in mitigation measure BIO-3. Biological monitoring and worker training (mitigation measures BIO-4 and BIO-5) would further reduce this impact. With implementation of mitigation measures BIO-3, BIO-4, and BIO -5, impacts to Mojave desert tortoise individuals would be less than significant. For additional information, please refer to the Focused Desert Tortoise Survey Report for the project (URS 2012a).

5.4 IMPACTS TO WILDLIFE MOVEMENT

Criterion: Impacts would be significant if the Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

As described in Section 4.5 of this General Biological Resources Assessment Report, the Agincourt Project site is not within an identified wildlife movement corridor, and the site's location on the floor of the Lucerne Valley makes the site suboptimal as a regional travel route. Use of the site for wildlife movement is mainly limited to short-distance, routine travel. Because of the site's limited size, and because the adjacent lands are equally permeable to travelling wildlife, development of the Project site would not result in obstruction or elimination of important wildlife movement routes. Impacts to wildlife movement would be ***less than significant.***

5.5 CONSISTENCY WITH RESOURCE POLICIES AND ORDINANCES

Criterion: Impacts would be significant if the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The proposed Agincourt Solar Project has been designed with consideration for the policies and ordinances of San Bernardino County, and the proposed Project is consistent with these policies and ordinances. However, in some instances, these ordinances may impose additional requirements on the Project. Section 88.01.050 of the San Bernardino County Development Code requires that where removal of Joshua trees is proposed, all trees to be removed shall be transplanted or stockpiled for future transplanting wherever possible. Development of the proposed Project would require the removal of 645 Joshua trees, as detailed in Table 13.

TABLE 13
JOSHUA TREES PROPOSED FOR REMOVAL

Tree Type	Trees Present On-site	Trees to be Removed	Percent to be Removed
Non-specimen Joshua Trees	435	357	82.07
Specimen-size Joshua Trees	357	288	80.67
Total	792	645	81.44

As an additional protective measure, Section 88.01.050(f)(3)(C) of the San Bernardino County Development Code requires that the removal of "specimen" size Joshua trees (see Section 4.4 above) cannot be allowed unless there is no reasonable alternative means to develop the land. Development of the proposed Agincourt Solar Project would require the removal of 288 "specimen-size" Joshua trees from the site. However, as illustrated by Figure 5, the spatial configuration of these trees is such that developing the site while leaving the trees in place is not feasible. Specimen trees are present on-site at a density of approximately 4.5 trees per acre, and are approximately evenly distributed across the site. Because avoidance of these trees would render the site undevelopable, the proposed development meets the test set forth by the Development Code.

Absent any sort of strategy for salvaging or preserving Joshua trees during site development, the Project would potentially conflict with Sections 88.01.050 and 88.01.060 of the San Bernardino County Development Code. This conflict would represent a ***significant impact, absent mitigation.*** However, development of a Joshua Tree Translocation Plan, per mitigation measure BIO-1, would feasibly ensure consistency with the Development Code and reduce this impact to a less than significant level.

The California Desert Native Plants Act is intended to prohibit the unlawful harvest of certain native desert plant species, and provides a permit process by which the harvest of these species can be authorized. Section 88.01.060(d) of the San Bernardino County Development Code requires compliance with all provisions of the California Desert Native Plants Act prior to the County's issuance of a development permit or approval of a land use application. Protected species identified on-site include five cacti (silver cholla, pencil cholla, cottontop cactus, Englemann's hedgehog cactus, and beavertail cactus), and one member of the agave family (Mojave yucca). Harvest of these species must be authorized by the County Sheriff or Agricultural Commissioner through issuance of a permit. Development of the proposed Project would require the removal of approximately 80 percent of the on-site individuals protected by the California Desert Native Plants Act. Thus, the project would require the removal of approximately 108 silver cholla individuals, 21 pencil cholla individuals, 57 cottontop cactus individuals, 66 Engelmann's hedgehog cactus individuals, 273 beavertail cactus individuals, and 349 Mojave yucca individuals. (Impacts to Joshua trees are presented in Table 13 above).

Because the proposed activities would result in removal of plants protected by the California Desert Native Plants Act and San Bernardino County Development Code, the applicant must obtain authorization from the County Sheriff or Agricultural Commissioner to remove these species.

5.6 CONSISTENCY WITH HABITAT CONSERVATION PLANS

Criterion: Impacts would be significant if the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Agincourt site is not enrolled in any formal Habitat Conservation Plan or Natural Community Conservation Plan. However, several conservation plans have been adopted in the region, and the Project's consistency with these plans is described below.

5.6.1 Cushenbury Sand and Gravel Quarry Habitat Conservation Plan

In 1996, the USFWS granted an Incidental Take Permit to the Cushenbury Sand and Gravel Quarry, a facility located approximately two miles south of the Agincourt site along Camp Rock Road, and the Quarry's permit application included a Habitat Conservation Plan

(HCP). The desert tortoise was the only species covered by the HCP and Incidental Take Permit. Because the provisions of the Cushenbury Sand and Gravel Quarry HCP are applicable only to the quarry site, activities on the Agincourt site are not subject to these provisions. The project would not conflict with the Cushenbury Sand and Gravel Quarry HCP.

5.6.2 West Mojave Plan

In 2006, the BLM adopted the West Mojave Plan, a habitat conservation plan and federal land use plan amendment that presents a comprehensive strategy to conserve and protect sensitive biological resources within approximately 6.2 million acres in the western Mojave Desert while also providing a streamlined program for complying with state and federal endangered species laws. Two state agencies and 15 local jurisdictions, including the County of San Bernardino, worked closely with the BLM during preparation of the West Mojave Plan. The two species of primary importance covered in the West Mojave Plan are the desert tortoise and Mohave ground squirrel. Because these species have not been detected within the Agincourt site, the Project would not pose significant conflicts with this plan. It should be noted that the BLM's approval of the West Mojave Plan has been the subject of recent litigation, and that the legal process may necessitate some deviation from the version approved in 2006. Thus, some uncertainty exists regarding the exact terms of this plan.

5.6.3 Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan is a multi-agency effort to organize and plan solar and wind development projects in California's deserts to minimize impacts on natural, cultural, recreational, and aesthetic values. The plan is in preparation by the U.S. Bureau of Land Management, the USFWS, the CDFG, and the California Energy Commission, and is currently in draft form. The planning boundary for this plan has been published, and the Agincourt site is within, but very near the boundary of, the planning area. Because this plan has not yet been adopted, its terms are not yet known, and uncertainty exists regarding which development projects or activities would be consistent or inconsistent with the plan. Absent an approved plan, and considering the small size of the Project, it is unlikely that the Agincourt Project would conflict with the Desert Renewable Energy Conservation Plan.

SECTION 6.0
MITIGATION MEASURES

Below are recommended mitigation measures to offset potentially significant impacts on biological resources. The measures are provided to inform the County's environmental analysis of the Project under CEQA.

BIO-1 **Joshua Tree Translocation Plan.** As required by the San Bernardino County Development Code, Joshua trees proposed for removal shall be transplanted or stockpiled for future transplanting wherever possible. A Joshua Tree Translocation Plan shall be developed, and shall identify methods, locations, and criteria for transplanting those trees that would be removed during Project construction. An estimate of survivorship shall be included.

BIO-2 **Compensatory Mitigation for Losses of Ephemeral Drainages.** Unavoidable impacts to jurisdictional waters and streambeds shall be offset through the on-site or off-site creation, restoration, or enhancement of aquatic resources. If possible, the resources to be created or restored shall be similar in type to the ephemeral washes lost. Compensatory mitigation opportunities shall be identified in coordination with the CDFG. Although the County will presumably assume the role of the CEQA lead agency for the Project, the CDFG is likely to rely on the County's analysis as a responsible agency when a Streambed Alteration Agreement is requested. If possible, the CEQA mitigation shall be sufficient to ensure no net loss of aquatic resource functions or jurisdictional acreage, and to allow CDFG to authorize the streambed modifications required by the Project. Otherwise, additional mitigation may be required to obtain a Streambed Alteration Agreement.

BIO-3 **Pre-construction Surveys.** Pre-construction surveys for burrowing owls, desert tortoise, and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code shall be conducted prior to the commencement of Project-related ground disturbance. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as the desert tortoise, are encountered, authorization from the USFWS and CDFG must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance, as well as all other areas controlled by the applicant, including all drainages that would be preserved within the fenced facility.

BIO-4 **Worker Training.** The biological monitor shall conduct an initial training for all construction workers on the biological resources that require protection during construction activities as well as the measures that must be implemented to protect those resources. The biological monitor shall maintain a list of personnel that have received the training and any new personnel shall receive the training prior to commencing construction activities.

BIO-5 **Biological Monitoring.** A biological monitor shall be present during all ground disturbing construction activities to move wildlife out of harm's way when feasible. If any special-status species are observed, the biological monitor shall have the authority to halt construction activities to avoid damaging sensitive resources or violating applicable laws.

SECTION 7.0
REFERENCES CITED

American Ornithologists' Union (AOU) website. 2011. Accessed online at http://www.aou.org/. Visited through August 2011.

Calflora. 2011. Species Information Database. Accessed online at http://www.calflora.org. Visited through April 2011.

California Burrowing Owl Consortium (CBOC). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines.

California Department of Fish and Game (CDFG). 2011. California Natural Diversity Database. California Department of Fish and Game Wildlife & Habitat Data Analysis Branch. Rare Find version 3.1.1. Visited through December 2011.

2010. List of California Terrestrial Natural Communities. Accessed online at http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf. Visited through December 2011. Prepared September 2010.

2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Accessed online at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf. Visited January 2011. Prepared 1983, Revised November 24, 2009.

2008. California Bird Special Species of Concern List. Prepared April 10, 2008. Accessed online at http://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html. Visited through December 2011.

1995. Staff Report on Burrowing Owl Mitigation.

California Herps. 2011. California Herps, A Guide to the Amphibians and Reptiles of California. Accessed online at http://www.californiaherps.com/index.html. Visited through December 2011.

California Interagency Watershed Mapping Committee (CalWater). 2011. California Interagency Watershed Map Metadata. Accessed online at http://mercury.ornl.gov/metadata/nbii/html/ceic/gis.ca.gov_catalog_ceic_export_online_WatershedsCALWATER221(30288).html#metainfo. Visited through January 2011.

California Invasive Plant Council (Cal-IPC). 2011. The California Invasive Plant Inventory Database, Mojave Desert Region. Accessed online at http://www.cal-ipc.org/ip/inventory/weedlist.php. Visited through August 2011.

California Native Plant Society (CNPS). 2011. Inventory of Rare and Endangered Plants of California. Accessed online at http://www.rareplants.cnps.org/. Visited through December 2011.

2001. Inventory of Rare and Endangered Plants of California. Special Publication 1, Sixth edition. California Native Plant Society, Sacramento, CA.

Cornell Lab of Ornithology (Cornell). 2011. All About Birds online database. Available online at http://www.birds.cornell.edu. Visited through December 2011.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. U.S. Army Corps of Engineers, Waterways Experiment Station. Vicksburg, MS. Prepared January1987.

Federal Emergency Management Agency (FEMA). 2011. Flood map search. Accessed online at http://msc.fema.gov/.

Federal Geographic Data Committee. 2008. *National Vegetation Classification Standard, Version 2.* Vegetation Subcommittee, Federal Geographic Data Committee.

Garrett, Kimball L., and Jon L Dunn. 1981. Birds of southern California: status and distribution. Santa Monica, CA: Los Angeles Audubon Society.

Gervais, Jennifer A., Daniel K. Rosenberg, and Robert G. Anthony. 2003. Space use and pesticide exposure risk of male burrowing owls in an agricultural landscape. Journal of Wildlife Management 67 (1):155–164.

Godsoe, W.K.W., J.B. Yoder, C.I. Smith, and O. Pellmyr. 2008. Coevolution and divergence in the Joshua tree/yucca moth mutualism. Am Nat 171:816–823.

Gossard, G. 1992. The Joshua Tree, A Controversial, Contradictory Desert Centurion. Yellow Rose Publications.

Heindel, Matt. 2000. Birds of eastern Kern County. Draft manuscript. Available at http://fog.ccsf.org/~jmorlan/eastkern.pdf. Accessed June 1, 2009.

Hickman, J.C. 1993. The Jepson Manual, Higher Plants of California. University of California Press, Berkeley, Los Angeles, London. Species name updates from the Jepson Online Interchange using the Index to California Plant Names. Accessed online at http://ucjeps.berkeley.edu/interchange.html. Visited through August 2011.

Holland, R.F. 1986. *Preliminary Description of the Terrestrial Natural Communities of California*. Unpublished report. California Department of Fish and Game. Prepared in October 1986.

Los Padres Forestwatch (LPFW). 2011. Accessed online at http://lpfw.org/about/critters/southernmountainbuckwheat.htm. Visited through December 2011.

National Agricultural Imagery Program (NAIP). 2005. One-meter resolution natural color aerial photos. Accessed online at http://services.arcgisonline.com/v92.

Penrod, K., P. Cabanero, P. Beier, C. Luke, W. Spencer, and E. Rubin. 2005. South Coast Missing Linkages Project: A Linkage Design for the San Bernardino-Granite Connection. South Coast Wildlands, Idyllwild, Ca. www.scwildlands.org.

Rosenberg, Daniel K., and Katherine L. Haley. 2004. The ecology of burrowing owls in the agroecosystem of the Imperial Valley, California. Studies in Avian Ecology 27: 120–135.

Royo, A.R. (1997) DesertUSA magazine, Digital West Media Inc. Online at: http://www.desertusa.com/jtree/josh_month.html. Accessed November 30, 2011.

Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation, Second Edition*. California Native Plant Society. Sacramento, California.

Sharp, Jay. 2009. DesertUSA magazine, Digital West Media Inc. Online at: http://www.desertusa.com/animals/yucca-moth.html. Accessed November 30, 2011.

South Coast Wildlands. 2008. South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion. Produced in cooperation with partners in the South Coast Missing Linkages Initiative. Accessed online at http://www.scwildlands.org.

Spatial Climate Analysis Service, Oregon State University. 1998. United States Average Annual Precipitation, 1961–1990. GIS data layer available online at http://nationalatlas.gov/atlasftp.html?openChapters=chpclim#chpclim. Accessed December 2011.

State Water Resources Control Board (SWRCB). 2004. Guidance for Regulation of Discharges to "Isolated" Waters. Guidance from Celeste Cantu, Executive Director, to Regional Board Executive Officers dated June 25, 2004.

Stebbins, Robert C. 2003. A Field Guide to Western Reptiles and Amphibians. 3rd Edition. Houghton Mifflin Company.

University of California, at Santa Barbara (UCSB). 2011. Mojave Desert Climate and Vegetation information. Accessed online at http://www.geog.ucsb.edu/~joel/g148_f09/lecture_notes/mojave/mojave2.html. Visited through August 2011.

United States Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* ed. J.S.

Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Army Corps of Engineers and United States Environmental Protection Agency (USACE/USEPA). 2011. Draft Guidance on Identifying Waters Protected by the Clean Water Act. April, 2011.

United States Department of Agriculture, National Resources Conservation Service (USDA-NRCS). 2011. Official Soil Series Descriptions. Accessed online at https:// soilseries.sc.egov.usda.gov/osdname.asp. Visited through November 2011.

2008. Soil Survey Geographic (SSURGO) Database. San Bernardino, California, Mojave River Area. September 26, 2008. Visited through November 2011.

1986. *Soil Survey of the San Bernardino County, California, Mojave River Area*. Prepared February 1986.

United States Department of Agriculture, National Agriculture Imagery Program (USDA-NAIP). 2009. I-cubed Nationwide Prime – Aerials Express. 2009-04-15 image date, 0.3m resolution.

United States Fish and Wildlife Service (USFWS). 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.

2010. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*), 2010 Field Season.

2008. Bear Valley Sandwort (*Arenaria ursina*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office. Carlsbad, California. March 2008.

1996. Guidelines for conducting and reporting botanical inventories for federally listed, proposed, and candidate plants. Sacramento, California, 2 pp.

United States Forest Service (USFS). 2012. Plant Species Life Form database. Accessed online at http://www.fs.fed.us/database/feis/plants/shrub/yucsch/all.html. Visited through March 2012.

United States Geological Survey (USGS). 2000. National Hydrography Dataset (NHD). NHD flowline map.

1994. 7.5 minute quadrangle map. Quadrangle Cougar Buttes, CA. Prepared 1971, Minor Revision 1994.

URS Corporation (URS). 2012. Focused Desert Tortoise Survey Report, Agincourt Solar Project.

2012A. Focused Burrowing Owl Survey Report, Agincourt Solar Project. Prepared June 2012.

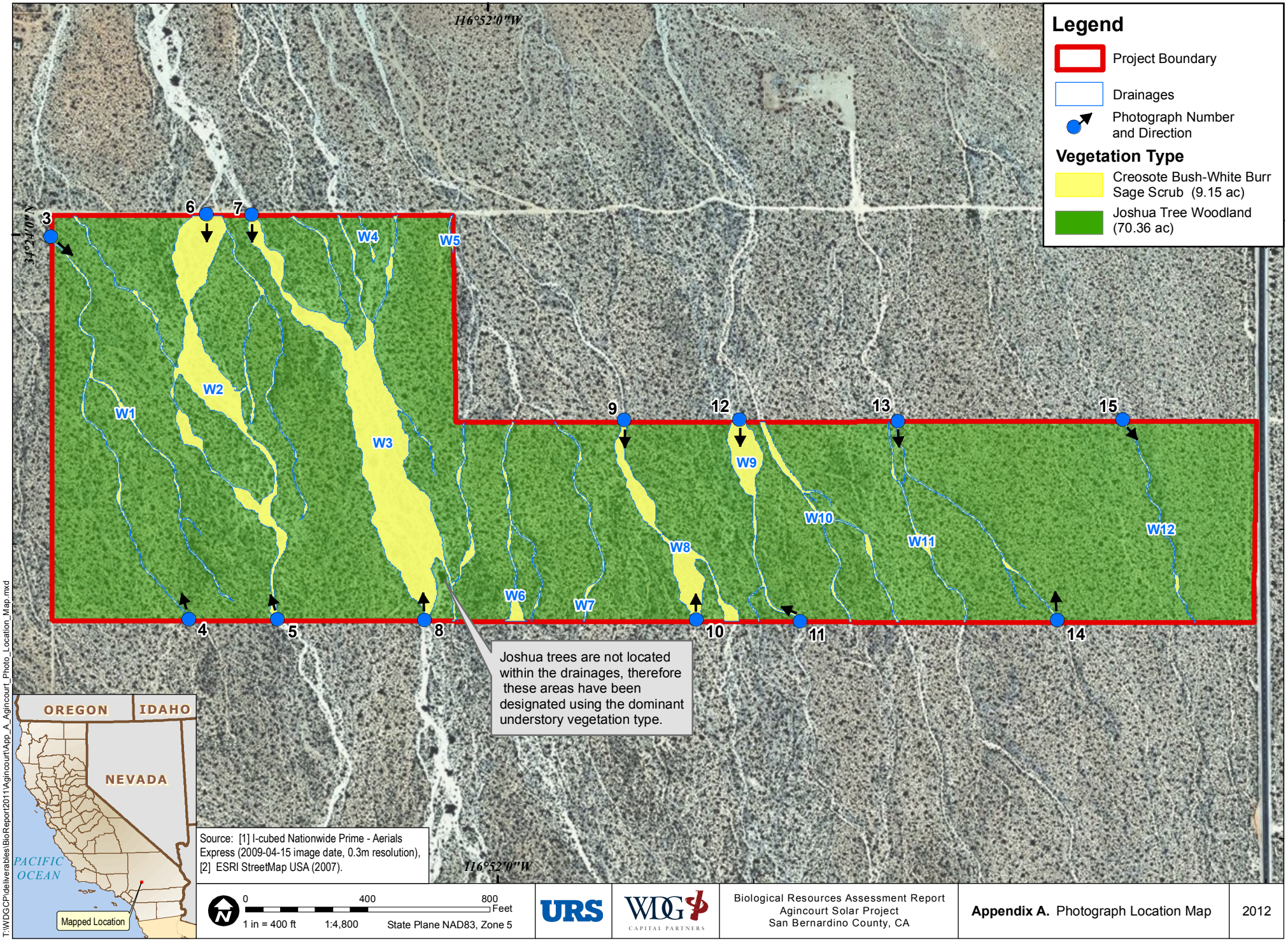
2012B. Agincourt Solar Site Hydrologic Analysis. Prepared June 2012.

2011. Draft Wetland Delineation and Jurisdictional Determination Report for the Agincourt Solar Site. Prepared December 2011.

Weather Underground. 2012. Accessed online at http://www.wunderground.com/history/airport/KVCV/2011/10/20/DailyHistory.html?req_city=NA&req_state=NA&req_statename=NA. Visited through March 2012.

Wilson, Don E. and DeeAnn M. Reeder (editors). 2005. Mammal Species of the World, A Taxonomic and Geographic Reference (3rd ed). Johns Hopkins University Press. 2,142 pp.

APPENDIX A
PHOTOGRAPH LOCATION MAP AND SITE PHOTOGRAPHS


116°52'0"W
34°2'43"N
Legend
Project Boundary
Drainages
Photograph Number and Direction
Vegetation Type
Creosote Bush-White Burr Sage Scrub (9.15 ac)
Joshua Tree Woodland (70.36 ac)
3
6
7
W4
W5
W1
W2
W3
9
12
13
15
W9
W10
W11
W12
W8
W6
W7
4
5
8
10
11
14
Joshua trees are not located within the drainages, therefore these areas have been designated using the dominant understory vegetation type.
OREGON
IDAHO
NEVADA
PACIFIC OCEAN
Mapped Location
Source: [1] I-cubed Nationwide Prime - Aerials Express (2009-04-15 image date, 0.3m resolution), [2] ESRI StreetMap USA (2007).
0
400
800
Feet
1 in = 400 ft
1:4,800
State Plane NAD83, Zone 5
URS
WDG
CAPITAL PARTNERS
Biological Resources Assessment Report
Agincourt Solar Project
San Bernardino County, CA
Appendix A. Photograph Location Map
2012
T:\WDGCP\deliverables\BioReport2011\Agincourt\App_A_Agincourt_Photo_Location_Map.mxd

Photograph 1. February 2010.
Overview of the project site.

Photograph 2. February 2010.
Overview of the project site.

Photograph 3. September 12, 2011.
View to the south, taken from northern project boundary.
Drainage W1, facing upstream. APN 0449-641-04.

Photograph 4. September 12, 2011.
View to the north, taken from southern project boundary.
Drainage W1, facing downstream. APN 0449-641-04.

Photograph 5. September 12, 2011.
View to the north, taken from southern project boundary.
Drainage W2, facing downstream. APN 0449-641-04.

Photograph 6. September 12, 2011.
View to the south, taken from northern project boundary.
Drainage W2, facing upstream. APN 0449-641-04.

Photograph 7. September 12, 2011.
View to the south, taken from northern project boundary.
Drainage W3, facing upstream. APN 0449-641-04.

Photograph 8. September 12, 2011.
View to the north, taken from southern project boundary.
Drainage W3, facing downstream. APN 0449-641-04.

Photograph 9. September 12, 2011.
View to the south, taken from northern project boundary.
Drainage W8, facing upstream. APN 0449-641-27.

Photograph 10. September 12, 2011.
View to the north, taken from southern project boundary.
Drainage W8, facing downstream. APN 0449-641-27.

Photograph 11. September 13, 2011.
View to the north, taken from southern project boundary.
Drainage W9, facing downstream. APN 0449-641-27.

Photograph 12. September 13, 2011.
View to the south, taken from northern project boundary.
Drainage W9, facing upstream. APN 0449-641-27.

Photograph 13. September 13, 2011.
View to the south, taken from northern project boundary.
Drainage W11, facing upstream. APN 0449-641-27.

Photograph 14. September 13, 2011.
View to the north, taken from southern project boundary.
Drainage W11, facing downstream. APN 0449-641-27.

Photograph 15. September 13, 2011.
View to the south, taken from northern project boundary.
Drainage W12, facing upstream. APN 0449-641-27.

APPENDIX B
JOSHUA TREE INVENTORY

TABLE B-1
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	67	1					N		N
10/20/2011	Jo	68	1					N		N
10/20/2011	Jo	69		1			8	Y	3	Y
10/20/2011	Jo	83	1					N		N
10/20/2011	Jo	84	1					N		N
10/20/2011	Jo	85	1					N		N
10/20/2011	Jo	86			1		10	Y	4.5	Y
10/20/2011	Jo	87	1					N		N
10/20/2011	Jo	88		1			14	N		N
10/20/2011	Jo	89		1			19	Y	4	Y
10/20/2011	Jo	90		1			11	Y	1	Y
10/20/2011	Jo	91	1					N		N
10/20/2011	Jo	92	1					N		N
10/20/2011	Jo	92		1			9	N		N
10/20/2011	Jo	92		1			11	N		N
10/20/2011	Jo	93	1					N		N
10/20/2011	Jo	98		1			7	Y	1	Y
10/20/2011	Jo	99	1					N		N
10/20/2011	Jo	99	1					N		N
10/20/2011	Jo	100	1					N		N
10/20/2011	Jo	101	1					N		N
10/20/2011	Jo	102	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	102	1					N		N
10/20/2011	Jo	102		1			9	Y	2	Y
10/20/2011	Jo	103		1			7	Y	1	Y
10/20/2011	Jo	104		1			9	Y	1	Y
10/20/2011	Jo	105		1			10	Y	3	Y
10/20/2011	Jo	106		1			6	Y	6	Y
10/20/2011	Jo	107	1					N		N
10/20/2011	Jo	108	1					N		N
10/20/2011	Jo	109		1			9	Y	3.5	Y
10/20/2011	Jo	110	1					N		N
10/20/2011	Jo	111	1					N		N
10/20/2011	Jo	112	1					N		N
10/20/2011	Jo	113	1					N		N
10/20/2011	Jo	115		1			11	N		N
10/20/2011	Jo	116	1					N		N
10/20/2011	Jo	117	1					N		N
10/20/2011	Jo	118	1					Y	2	Y
10/20/2011	Jo	119	1					N		N
10/20/2011	Jo	120		1			7	Y	2	Y
10/20/2011	Jo	121		1			9	Y	4.5	Y
10/20/2011	Jo	122	1					N		N
10/20/2011	Jo	123	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	123	1					N		N
10/20/2011	Jo	123	1					N		N
10/20/2011	Jo	124	1					N		N
10/20/2011	Jo	125		1			8	Y	5	Y
10/20/2011	Jo	125		1			10	N		N
10/20/2011	Jo	126	1					N		N
10/20/2011	Jo	127	1					N		N
10/20/2011	Jo	127	1					N		N
10/20/2011	Jo	127			1		8	Y	4	Y
10/20/2011	Jo	128	1					N		N
10/20/2011	Jo	128	1					N		N
10/20/2011	Jo	128	1					N		N
10/20/2011	Jo	129		1			9	Y	2	Y
10/20/2011	Jo	130	1					N		N
10/20/2011	Jo	131		1			8	Y	1	Y
10/20/2011	Jo	132	1					N		N
10/20/2011	Jo	132	1					N		N
10/20/2011	Jo	132	1					N		N
10/20/2011	Jo	132		1			8	Y	3	Y
10/20/2011	Jo	132		1			6	Y	2.5	Y
10/20/2011	Jo	132		1			8	Y	1	Y
10/20/2011	Jo	133			1		10	Y	8	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	134	1					N		N
10/20/2011	Jo	135	1					N		N
10/20/2011	Jo	135	1					N		N
10/20/2011	Jo	135	1					N		N
10/20/2011	Jo	136	1					N		N
10/20/2011	Jo	136	1					N		N
10/20/2011	Jo	137		1			9	Y	1	Y
10/20/2011	Jo	138		1			11	Y	3	Y
10/20/2011	Jo	139	1					N		N
10/20/2011	Jo	139		1			9	Y	2	Y
10/20/2011	Jo	140		1			9	Y	1	Y
10/20/2011	Jo	141	1					N		N
10/20/2011	Jo	142		1			9	Y	2	Y
10/20/2011	Jo	143		1			11	Y	6	Y
10/20/2011	Jo	144	1					N		N
10/20/2011	Jo	144		1			10	Y	2	Y
10/20/2011	Jo	145	1					N		N
10/20/2011	Jo	145	1					N		N
10/20/2011	Jo	146	1					N		N
10/20/2011	Jo	147	1					N		N
10/20/2011	Jo	147	1					N		N
10/20/2011	Jo	147		1			9	N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	148	1					N		N
10/20/2011	Jo	149			1		9	Y	3.5	Y
10/20/2011	Jo	155	1					N		N
10/20/2011	Jo	156	1					N		N
10/20/2011	Jo	156		1			7	Y	3	Y
10/20/2011	Jo	157	1					N		N
10/20/2011	Jo	158	1					N		N
10/20/2011	Jo	158		1			8	Y	1	Y
10/20/2011	Jo	159		1			8	Y	1.5	Y
10/20/2011	Jo	160		1			9	Y	2	Y
10/20/2011	Jo	161		1			8	Y	1.5	Y
10/20/2011	Jo	162	1					N		N
10/20/2011	Jo	163	1					N		N
10/20/2011	Jo	163	1					N		N
10/20/2011	Jo	163	1					N		N
10/20/2011	Jo	163		1			8	Y	2	Y
10/20/2011	Jo	164	1					N		N
10/20/2011	Jo	165	1					N		N
10/20/2011	Jo	166	1					N		N
10/20/2011	Jo	167	1					N		N
10/20/2011	Jo	168	1					N		N
10/20/2011	Jo	169	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	169		1			9	Y	1	Y
10/20/2011	Jo	170		1			8	Y	2	Y
10/20/2011	Jo	171	1					N		N
10/20/2011	Jo	171	1					N		N
10/20/2011	Jo	172	1					N		N
10/20/2011	Jo	172	1					N		N
10/20/2011	Jo	173	1					N		N
10/20/2011	Jo	174	1					N		N
10/20/2011	Jo	175	1					N		N
10/20/2011	Jo	176			1		10	Y	10	Y
10/20/2011	Jo	177		1			11	Y	1	Y
10/20/2011	Jo	178	1					N		N
10/20/2011	Jo	178	1					N		N
10/20/2011	Jo	178		1			8	Y	2	Y
10/20/2011	Jo	179	1					N		N
10/20/2011	Jo	180	1					N		N
10/20/2011	Jo	180		1			11	Y	1.5	Y
10/20/2011	Jo	181	1					N		N
10/20/2011	Jo	181		1			10	Y	1	Y
10/20/2011	Jo	182	1					N		N
10/20/2011	Jo	182		1			11	Y	3	Y
10/20/2011	Jo	183		1			10	Y	8	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	184		1			9	Y	2	Y
10/20/2011	Jo	185	1					N		N
10/20/2011	Jo	186	1					N		N
10/20/2011	Jo	186		1			10	Y	6	Y
10/20/2011	Jo	187		1			8	Y	6	Y
10/20/2011	Jo	188	1					N		N
10/20/2011	Jo	189		1			7	Y	2.5	Y
10/20/2011	Jo	190		1			8	Y	1	Y
10/20/2011	Jo	191	1					N		N
10/20/2011	Jo	192		1			11	Y	2	Y
10/20/2011	Jo	193	1					N		N
10/20/2011	Jo	197		1			8	Y	1	Y
10/20/2011	Jo	198	1					N		N
10/20/2011	Jo	199		1			8	Y	4	Y
10/20/2011	Jo	200	1					N		N
10/20/2011	Jo	201		1			8	Y	2	Y
10/20/2011	Jo	202	1					N		N
10/20/2011	Jo	203		1			8	Y	1	Y
10/20/2011	Jo	204		1			10	Y	1	Y
10/20/2011	Jo	205	1					N		N
10/20/2011	Jo	206		1			11	N		N
10/20/2011	Jo	207		1			7	Y	2	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	208		1			9	Y	6	Y
10/20/2011	Jo	209		1			8	Y	1	Y
10/20/2011	Jo	210		1			12	Y	6	Y
10/20/2011	Jo	211	1					N		N
10/20/2011	Jo	212	1					N		N
10/20/2011	Jo	213	1					N		N
10/20/2011	Jo	214				1	13	Y	10	Y
10/20/2011	Jo	215		1			9	Y	1	Y
10/20/2011	Jo	216	1					N		N
10/20/2011	Jo	217		1			7	Y	2	Y
10/20/2011	Jo	217	1					N		N
10/20/2011	Jo	218	1					N		N
10/20/2011	Jo	219	1					N		N
10/20/2011	Jo	219		1			7	Y	2	Y
10/20/2011	Jo	221	1					N		N
10/20/2011	Jo	222	1					N		N
10/20/2011	Jo	223	1					N		N
10/20/2011	Jo	224		1			9	Y	3	Y
10/20/2011	Jo	225	1					N		N
10/20/2011	Jo	226		1			9	Y	2	Y
10/20/2011	Jo	227	1					N		N
10/20/2011	Jo	228		1			9	Y	1.5	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	229	1					N		N
10/20/2011	Jo	230	1					N		N
10/20/2011	Jo	230	1					N		N
10/20/2011	Jo	232		1			0	Y	6	Y
10/20/2011	Jo	233	1					N		N
10/20/2011	Jo	233	1					N		N
10/20/2011	Jo	233		1			9	N		N
10/20/2011	Jo	234		1			8	Y	2	Y
10/20/2011	Jo	235		1			8	Y	1.5	Y
10/20/2011	Jo	236		1			9	Y	6	Y
10/20/2011	Jo	237	1					N		N
10/20/2011	Jo	238	1					N		N
10/20/2011	Jo	239		1			10	Y	2	Y
10/20/2011	Jo	240	1					N		N
10/20/2011	Jo	241	1					N		N
10/20/2011	Jo	242	1					N		N
10/20/2011	Jo	247		1			8	Y	1	Y
10/20/2011	Jo	248	1					N		N
10/20/2011	Jo	249	1					N		N
10/20/2011	Jo	250		1			8	Y	1	Y
10/20/2011	Jo	251		1			9	Y	2	Y
10/20/2011	Jo	252	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	253	1					N		N
10/20/2011	Jo	254		1			6	Y	2	Y
10/20/2011	Jo	255	1					N		N
10/20/2011	Jo	256		1			8	Y	2	Y
10/20/2011	Jo	256	1					N		N
10/20/2011	Jo	257		1			7	Y	1	Y
10/20/2011	Jo	258	1					N		N
10/20/2011	Jo	258	1					N		N
10/20/2011	Jo	258		1			7	Y	2	Y
10/20/2011	Jo	259	1					N		N
10/20/2011	Jo	260		1			10	Y	1	Y
10/20/2011	Jo	261	1					N		N
10/20/2011	Jo	262	1					N		N
10/20/2011	Jo	263	1					N		N
10/20/2011	Jo	264	1					N		N
10/20/2011	Jo	265	1					N		N
10/20/2011	Jo	265	1					N		N
10/20/2011	Jo	265	1					N		N
10/20/2011	Jo	266		1			10	N		N
10/20/2011	Jo	267		1			8	Y	2	Y
10/20/2011	Jo	268		1			7	Y	2	Y
10/20/2011	Jo	272		1			8	Y	1	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	273	1					N		N
10/20/2011	Jo	273	1					N		N
10/20/2011	Jo	273	1					N		N
10/20/2011	Jo	274			1		8	Y	1	Y
10/20/2011	Jo	275		1			9	Y	1	Y
10/20/2011	Jo	276	1					N		N
10/20/2011	Jo	277	1					N		N
10/20/2011	Jo	277		1			9	N		N
10/20/2011	Jo	278			1		9	Y	9	Y
10/20/2011	Jo	279			1		11	Y	3	Y
10/20/2011	Jo	280	1					N		N
10/20/2011	Jo	280		1			8	Y	1	Y
10/20/2011	Jo	281	1					N		N
10/20/2011	Jo	281	1					N		N
10/20/2011	Jo	282		1			11	Y	1	Y
10/20/2011	Jo	283	1					N		N
10/20/2011	Jo	284		1			10	Y	6	Y
10/20/2011	Jo	285		1			11	Y	1	Y
10/20/2011	Jo	286		1			9	Y	2	Y
10/20/2011	Jo	287		1			11	Y	1	Y
10/20/2011	Jo	288			1		12	Y	8	Y
10/20/2011	Jo	289		1			10	N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	289	1					N		N
10/20/2011	Jo	290	1					N		N
10/20/2011	Jo	290	1					N		N
10/20/2011	Jo	290		1			10	Y	1	Y
10/20/2011	Jo	291		1			9	Y	1	Y
10/20/2011	Jo	292	1					N		N
10/20/2011	Jo	293		1			9	Y	2	Y
10/20/2011	Jo	294		1			8	Y	2	Y
10/20/2011	Jo	295		1			11	Y	1.5	Y
10/20/2011	Jo	295	1					N		N
10/20/2011	Jo	296	1					N		N
10/20/2011	Jo	297		1			7	Y	2	Y
10/20/2011	Jo	298			1		9	Y	7	Y
10/20/2011	Jo	299		1			7	Y	1	Y
10/20/2011	Jo	300	1					N		N
10/20/2011	Jo	302		1			11	Y	1	Y
10/20/2011	Jo	305	1					N		N
10/20/2011	Jo	305		1			9	Y	1.5	Y
10/20/2011	Jo	306	1					N		N
10/20/2011	Jo	307	1					N		N
10/20/2011	Jo	307			1		9	Y	2	Y
10/20/2011	Jo	308	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Jo	308	1					N		N
10/20/2011	Jo	309	1					N		N
10/20/2011	Jo	310	1					N		N
10/20/2011	Jo	311	1					Y	1	Y
10/20/2011	Jo	311	1					Y	1	Y
10/20/2011	Jo	311		1			8	N		N
10/20/2011	Jo	311		1			8	Y	1	Y
10/20/2011	Jo	312		1			9	Y	1.5	Y
10/20/2011	Jo	313	1					N		N
10/20/2011	Jo	313		1			7	Y	1	Y
10/20/2011	Jo	314	1					N		N
10/20/2011	Jo	315	1					N		N
10/20/2011	Quatro	66	1					N		N
10/20/2011	Quatro	67		1			9	Y	2	Y
10/20/2011	Quatro	68	1					N		N
10/20/2011	Quatro	70			1		12	Y	2	Y
10/20/2011	Quatro	83		1			7	Y		Y
10/20/2011	Quatro	84		1			9	Y	1	Y
10/20/2011	Quatro	85			1		8	Y	3	Y
10/20/2011	Quatro	85	1					N		N
10/20/2011	Quatro	87		1			6	N		N
10/20/2011	Quatro	88		1			9	Y	1	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	89			1		9	Y	2	Y
10/20/2011	Quatro	90		1				N		N
10/20/2011	Quatro	90	1					Y	2	Y
10/20/2011	Quatro	91		1			9	Y	1	Y
10/20/2011	Quatro	91	1					N		N
10/20/2011	Quatro	91	1					N		N
10/20/2011	Quatro	92		1			8	Y	2	Y
10/20/2011	Quatro	93			1		10	Y	2.5	Y
10/20/2011	Quatro	94			1		11	Y	2	Y
10/20/2011	Quatro	95	1					N		N
10/20/2011	Quatro	96		1			7	Y	2	Y
10/20/2011	Quatro	97		1				N		N
10/20/2011	Quatro	98	1					N		N
10/20/2011	Quatro	99		1			9	Y	2	Y
10/20/2011	Quatro	99	1					N		N
10/20/2011	Quatro	99	1					N		N
10/20/2011	Quatro	100		1			8	Y	2	Y
10/20/2011	Quatro	100	1					N		N
10/20/2011	Quatro	100	1					N		N
10/20/2011	Quatro	101	1					N		N
10/20/2011	Quatro	102		1			8	N		N
10/20/2011	Quatro	103		1			10	Y	2	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	103	1					N		N
10/20/2011	Quatro	103	1					N		N
10/20/2011	Quatro	104			1		10	Y	4	Y
10/20/2011	Quatro	105		1				Y	1	Y
10/20/2011	Quatro	105	1					N		N
10/20/2011	Quatro	106		1				Y	1	Y
10/20/2011	Quatro	107	1					N		N
10/20/2011	Quatro	108		1				Y	1	Y
10/20/2011	Quatro	109	1					N		N
10/20/2011	Quatro	110	1					N		N
10/20/2011	Quatro	111		1			9	Y	6	Y
10/20/2011	Quatro	112		1				N		N
10/20/2011	Quatro	112	1					N		N
10/20/2011	Quatro	113		1			9	Y	1	Y
10/20/2011	Quatro	114		1				Y	1	Y
10/20/2011	Quatro	115		1			8	Y	2	Y
10/20/2011	Quatro	116	1					N		N
10/20/2011	Quatro	116	1					N		N
10/20/2011	Quatro	117		1			8	N		N
10/20/2011	Quatro	117	1					N		N
10/20/2011	Quatro	119		1			10	Y	2	Y
10/20/2011	Quatro	120		1			10	Y	2.5	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	121		1			9	N		N
10/20/2011	Quatro	123		1			8	Y	2	Y
10/20/2011	Quatro	124		1			8	Y	1	Y
10/20/2011	Quatro	125		1			7	N		N
10/20/2011	Quatro	125		1			8	N		N
10/20/2011	Quatro	126		1			9	Y	1	Y
10/20/2011	Quatro	127		1			9	Y	1	Y
10/20/2011	Quatro	128	1					N		N
10/20/2011	Quatro	129	1					N		N
10/20/2011	Quatro	130			1		14	Y		Y
10/20/2011	Quatro	131	1					N		N
10/20/2011	Quatro	132	1					N		N
10/20/2011	Quatro	133	1					N		N
10/20/2011	Quatro	133		1			10	N		N
10/20/2011	Quatro	134	1					N		N
10/20/2011	Quatro	135	1					N		N
10/20/2011	Quatro	136	1					N		N
10/20/2011	Quatro	137	1					N		N
10/20/2011	Quatro	138			1		9	Y	3	Y
10/20/2011	Quatro	139		1				Y	1	Y
10/20/2011	Quatro	140		1				Y	1	Y
10/20/2011	Quatro	140	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	141	1					N		N
10/20/2011	Quatro	142	1					N		N
10/20/2011	Quatro	143	1					N		N
10/20/2011	Quatro	144	1					N		N
10/20/2011	Quatro	145	1					N		N
10/20/2011	Quatro	146		1			9	Y	5	Y
10/20/2011	Quatro	147	1					N		N
10/20/2011	Quatro	148		1			9	Y	5	Y
10/20/2011	Quatro	148	1					N		N
10/20/2011	Quatro	148	1					N		N
10/20/2011	Quatro	148	1					N		N
10/20/2011	Quatro	148	1					N		N
10/20/2011	Quatro	148	1					N		N
10/20/2011	Quatro	149		1			10	Y	1	Y
10/20/2011	Quatro	150		1			7	Y	1	Y
10/20/2011	Quatro	151	1					N		N
10/20/2011	Quatro	151	1					N		N
10/20/2011	Quatro	152	1					N		N
10/20/2011	Quatro	153		1			9	Y	3	Y
10/20/2011	Quatro	157		1			8	Y	1	Y
10/20/2011	Quatro	157	1					N		N
10/20/2011	Quatro	158		1			11	N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	158	1					N		N
10/20/2011	Quatro	158	1					N		N
10/20/2011	Quatro	159		1			9	Y	1	Y
10/20/2011	Quatro	160		1			8	N		N
10/20/2011	Quatro	161		1			11	N		N
10/20/2011	Quatro	161	1					N		N
10/20/2011	Quatro	162		1			10	Y	2	Y
10/20/2011	Quatro	162	1					N		N
10/20/2011	Quatro	163			1		13	Y	3	Y
10/20/2011	Quatro	164	1					N		N
10/20/2011	Quatro	165	1					N		N
10/20/2011	Quatro	166		1				Y	1	Y
10/20/2011	Quatro	167		1			7	Y	3	Y
10/20/2011	Quatro	167	1					N		N
10/20/2011	Quatro	168	1					N		N
10/20/2011	Quatro	169		1			9	Y	2	Y
10/20/2011	Quatro	169	1					N		N
10/20/2011	Quatro	170	1					N		N
10/20/2011	Quatro	171		1			9	Y	4	Y
10/20/2011	Quatro	172		1			8	Y	2	Y
10/20/2011	Quatro	173	1					N		N
10/20/2011	Quatro	174	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	175		1				N		N
10/20/2011	Quatro	176		1			9	Y	1	Y
10/20/2011	Quatro	177		1			9	Y	2	Y
10/20/2011	Quatro	178		1			10	Y	5	Y
10/20/2011	Quatro	178		1			9	Y	1	Y
10/20/2011	Quatro	179		1				N		N
10/20/2011	Quatro	180			1		12	Y	2	Y
10/20/2011	Quatro	181	1					N		N
10/20/2011	Quatro	182	1					N		N
10/20/2011	Quatro	183		1			8	Y	2	Y
10/20/2011	Quatro	184		1			7	Y	2	Y
10/20/2011	Quatro	185		1			12	Y	1	Y
10/20/2011	Quatro	186		1			11	Y	1	Y
10/20/2011	Quatro	187			1		9	Y	2	Y
10/20/2011	Quatro	187	1					N		N
10/20/2011	Quatro	188			1		11	Y	4	Y
10/20/2011	Quatro	188	1					N		N
10/20/2011	Quatro	189		1			9	Y	2	Y
10/20/2011	Quatro	190		1				Y	1	Y
10/20/2011	Quatro	191	1					N		N
10/20/2011	Quatro	192		1			8	Y	2	Y
10/20/2011	Quatro	193	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	195		1			10	Y	1	Y
10/20/2011	Quatro	196	1					N		N
10/20/2011	Quatro	197	1					N		N
10/20/2011	Quatro	198		1			8	Y	2	Y
10/20/2011	Quatro	198	1					N		N
10/20/2011	Quatro	199			1		9	Y	4	Y
10/20/2011	Quatro	200		1			11	Y	1	Y
10/20/2011	Quatro	201		1			8	Y	1	Y
10/20/2011	Quatro	202		1			11	Y	4	Y
10/20/2011	Quatro	203		1				N		N
10/20/2011	Quatro	204		1			8	Y	2.5	Y
10/20/2011	Quatro	205		1			8	Y	1	Y
10/20/2011	Quatro	206		1				Y	0.5	Y
10/20/2011	Quatro	207			1		9	Y	5	Y
10/20/2011	Quatro	208		1			8	Y	3	Y
10/20/2011	Quatro	208	1					N		N
10/20/2011	Quatro	209		1			8	Y	1	Y
10/20/2011	Quatro	210	1					N		N
10/20/2011	Quatro	211	1					N		N
10/20/2011	Quatro	212	1					N		N
10/20/2011	Quatro	213		1				N		N
10/20/2011	Quatro	214		1			9	Y	2	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	215	1					N		N
10/20/2011	Quatro	216			1		11	Y	1	Y
10/20/2011	Quatro	218		1			9	Y	2	Y
10/20/2011	Quatro	219		1				N		N
10/20/2011	Quatro	220		1			10	Y	2	Y
10/20/2011	Quatro	220	1					N		N
10/20/2011	Quatro	221	1					N		N
10/20/2011	Quatro	222		1			11	Y	1	Y
10/20/2011	Quatro	223	1				9	N		N
10/20/2011	Quatro	224			1		11	Y	4	Y
10/20/2011	Quatro	225		1			10	Y	1	Y
10/20/2011	Quatro	226		1			12	Y	1	Y
10/20/2011	Quatro	227		1				N		N
10/20/2011	Quatro	228	1					N		N
10/20/2011	Quatro	229	1					N		N
10/20/2011	Quatro	230		1			11	N		N
10/20/2011	Quatro	230	1					N		N
10/20/2011	Quatro	230	1					N		N
10/20/2011	Quatro	231		1			9	Y	1	Y
10/20/2011	Quatro	232		1			11	Y	1	Y
10/20/2011	Quatro	236	1					N		N
10/20/2011	Quatro	237	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Quatro	238			1		12	Y	2	Y
10/20/2011	Quatro	239	1					N		N
10/20/2011	Quatro	240		1			12	Y	1	Y
10/20/2011	Quatro	241		1				N		N
10/20/2011	Quatro	242		1			8	Y	1	Y
10/20/2011	Quatro	242	1					N		N
10/20/2011	Quatro	243		1			6	Y		Y
10/20/2011	Quatro	244	1					N		N
10/20/2011	Tango	66	1					N		N
10/20/2011	Tango	66	1					N		N
10/20/2011	Tango	66	1					N		N
10/20/2011	Tango	67		1			8	Y	2	Y
10/20/2011	Tango	68		1			9	Y	0.5	Y
10/20/2011	Tango	69	1					N		N
10/20/2011	Tango	69	1					N		N
10/20/2011	Tango	70		1			8	Y	0.5	Y
10/20/2011	Tango	70		1			6	Y	2	Y
10/20/2011	Tango	83		1			8	Y	5	Y
10/20/2011	Tango	84		1			16	Y	1	Y
10/20/2011	Tango	90		1			11	Y	0.5	Y
10/20/2011	Tango	91			1		11	Y	3	Y
10/20/2011	Tango	92	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	92	1					N		N
10/20/2011	Tango	93		1			7	Y	1	Y
10/20/2011	Tango	93		1			6	Y	1	Y
10/20/2011	Tango	94		1			7	Y	1	Y
10/20/2011	Tango	95	1					N		N
10/20/2011	Tango	95	1					N		N
10/20/2011	Tango	96	1					N		N
10/20/2011	Tango	97		1			10	Y	1	Y
10/20/2011	Tango	98	1					N		N
10/20/2011	Tango	98		1			9	Y	1	Y
10/20/2011	Tango	99	1					N		N
10/20/2011	Tango	100			1		9	Y	2.5	Y
10/20/2011	Tango	101		1			7	Y	2	Y
10/20/2011	Tango	102	1					N		N
10/20/2011	Tango	103	1					N		N
10/20/2011	Tango	103	1					N		N
10/20/2011	Tango	103	1					N		N
10/20/2011	Tango	103	1					N		N
10/20/2011	Tango	103		1				Y	0.5	Y
10/20/2011	Tango	103		1			7	Y	2.5	Y
10/20/2011	Tango	104		1				N		N
10/20/2011	Tango	105	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	106	1					N		N
10/20/2011	Tango	107	1					Y	0.5	Y
10/20/2011	Tango	108		1			7	Y	3.5	Y
10/20/2011	Tango	109	1					N		N
10/20/2011	Tango	110		1			9	Y	0.5	Y
10/20/2011	Tango	111	1					N		N
10/20/2011	Tango	111	1					N		N
10/20/2011	Tango	112	1					N		N
10/20/2011	Tango	113			1		8	Y	8	Y
10/20/2011	Tango	114	1					N		N
10/20/2011	Tango	114	1					N		N
10/20/2011	Tango	115	1					Y	0.5	Y
10/20/2011	Tango	116		1			9	Y	2	Y
10/20/2011	Tango	117		1			6	Y	2	Y
10/20/2011	Tango	118	1					N		N
10/20/2011	Tango	118		1				Y	1	Y
10/20/2011	Tango	119	1					N		N
10/20/2011	Tango	120		1				Y	0.5	Y
10/20/2011	Tango	124		1			9	N		N
10/20/2011	Tango	124	1					N		N
10/20/2011	Tango	125			1		8	Y	4	Y
10/20/2011	Tango	125	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	125	1					N		N
10/20/2011	Tango	126	1					N		N
10/20/2011	Tango	127		1			6	Y	3	Y
10/20/2011	Tango	128	1					N		N
10/20/2011	Tango	129		1			7	Y	1	Y
10/20/2011	Tango	130			1		9	Y	1	Y
10/20/2011	Tango	131	1					N		N
10/20/2011	Tango	131	1					N		N
10/20/2011	Tango	132			1		7	Y	3	Y
10/20/2011	Tango	133	1					N		N
10/20/2011	Tango	134	1					N		N
10/20/2011	Tango	134		1			8	Y	2	Y
10/20/2011	Tango	135		1			7	Y	1	Y
10/20/2011	Tango	136		1			7	Y	6	Y
10/20/2011	Tango	137	1					N		N
10/20/2011	Tango	138		1			10	Y	1	Y
10/20/2011	Tango	139	1					N		N
10/20/2011	Tango	140	1					N		N
10/20/2011	Tango	140		1			8	Y	1	Y
10/20/2011	Tango	141	1					Y	0.5	Y
10/20/2011	Tango	141			1		8	Y	2	Y
10/20/2011	Tango	142								

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143	1					N		Y
10/20/2011	Tango	143		1				Y	0.5	Y
10/20/2011	Tango	144		1			8	Y	1	Y
10/20/2011	Tango	145		1			10	Y	1	Y
10/20/2011	Tango	146	1					N		N
10/20/2011	Tango	149	1					N		N
10/20/2011	Tango	150		1				N		N
10/20/2011	Tango	151		1			7	Y	1	Y
10/20/2011	Tango	152		1			9	Y	2	Y
10/20/2011	Tango	153		1			9	Y	2	Y
10/20/2011	Tango	154	1					N		N
10/20/2011	Tango	155		1			9	Y	0.5	Y
10/20/2011	Tango	156			1		9	Y	2.5	Y
10/20/2011	Tango	157	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	157		1			6	Y	1.5	Y
10/20/2011	Tango	158		1			7	Y	2	Y
10/20/2011	Tango	159	1					N		N
10/20/2011	Tango	160		1			9	Y	0.5	Y
10/20/2011	Tango	161			1		8	Y	3.5	Y
10/20/2011	Tango	162	1					N		N
10/20/2011	Tango	163		1			9	Y	0.5	Y
10/20/2011	Tango	164	1					N		N
10/20/2011	Tango	168	1					Y	0.5	Y
10/20/2011	Tango	168	1					Y	0.5	Y
10/20/2011	Tango	169	1					N		N
10/20/2011	Tango	170		1				Y	0.5	Y
10/20/2011	Tango	170		1				Y	0.5	Y
10/20/2011	Tango	171			1		8	Y	1.5	Y
10/20/2011	Tango	172	1					N		N
10/20/2011	Tango	173	1					N		N
10/20/2011	Tango	174		1			8	Y	1	Y
10/20/2011	Tango	177		1			7	Y	2.5	Y
10/20/2011	Tango	178		1			9	Y	0.5	Y
10/20/2011	Tango	179	1					N		N
10/20/2011	Tango	180	1					Y	0.5	Y
10/20/2011	Tango	181			1		9	Y	2	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	182	1					N		N
10/20/2011	Tango	183	1					N		N
10/20/2011	Tango	184	1					N		N
10/20/2011	Tango	188	1					N		N
10/20/2011	Tango	189	1					N		N
10/20/2011	Tango	190		1			6	Y	2.5	Y
10/20/2011	Tango	191	1					N		N
10/20/2011	Tango	192		1			9	Y	1	Y
10/20/2011	Tango	193		1			8	Y	0.5	Y
10/20/2011	Tango	194			1		8	Y	6	Y
10/20/2011	Tango	196			1		9	Y	3	Y
10/20/2011	Tango	197	1					N		N
10/20/2011	Tango	197	1					N		N
10/20/2011	Tango	198		1				N		N
10/20/2011	Tango	199	1					N		N
10/20/2011	Tango	200	1					N		N
10/20/2011	Tango	201		1				N		N
10/20/2011	Tango	204		1			6	Y	1.5	Y
10/20/2011	Tango	205		1			9	Y	0.5	Y
10/20/2011	Tango	205	1					N		N
10/20/2011	Tango	206		1				N		N
10/20/2011	Tango	207		1			10	Y	1	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	208		1				N		N
10/20/2011	Tango	209		1			9	Y	0.5	Y
10/20/2011	Tango	209	1					N		N
10/20/2011	Tango	210		1			9	Y	2	Y
10/20/2011	Tango	210		1			9	Y	2	Y
10/20/2011	Tango	210			1		12	Y	7	Y
10/20/2011	Tango	210	1					N		N
10/20/2011	Tango	211	1					N		N
10/20/2011	Tango	212		1			9	Y	2	Y
10/20/2011	Tango	213		1				N		N
10/20/2011	Tango	214	1					N		N
10/20/2011	Tango	215	1					N		N
10/20/2011	Tango	216		1			8	Y	1	Y
10/20/2011	Tango	217		1			10	Y	0.5	Y
10/20/2011	Tango	218		1			8	Y	1	Y
10/20/2011	Tango	219		1			12	Y	1.5	Y
10/20/2011	Tango	221	1					N		N
10/20/2011	Tango	222	1					N		N
10/20/2011	Tango	223	1					N		N
10/20/2011	Tango	224	1					N		N
10/20/2011	Tango	225	1					N		N
10/20/2011	Tango	226	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Tango	227	1					N		N
10/20/2011	Criffy	66	1					N		N
10/20/2011	Criffy	67	1					N		N
10/20/2011	Criffy	68			1		10	Y	1	Y
10/20/2011	Criffy	69		1			7	N		N
10/20/2011	Criffy	70	1					N		N
10/20/2011	Criffy	84	1					N		N
10/20/2011	Criffy	85			1		10	Y	2	Y
10/20/2011	Criffy	86		1			8	N		N
10/20/2011	Criffy	87	1					N		N
10/20/2011	Criffy	88	1					N		N
10/20/2011	Criffy	88			1		6	Y	2	Y
10/20/2011	Criffy	89	1					N		N
10/20/2011	Criffy	90			1		7	Y	3	Y
10/20/2011	Criffy	91		1			8	N		N
10/20/2011	Criffy	92		1			7	N		N
10/20/2011	Criffy	93	1					N		N
10/20/2011	Criffy	94	1					N		N
10/20/2011	Criffy	99			1		10	Y	6	Y
10/20/2011	Criffy	100	1					N		N
10/20/2011	Criffy	101			1		8	Y	3	Y
10/20/2011	Criffy	102			1		8	Y	1	Y

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	103		1			6	Y	2	Y
10/20/2011	Criffy	104			1		7	Y	5	Y
10/20/2011	Criffy	105			1		8	Y	8	Y
10/20/2011	Criffy	106		1			10	N		N
10/20/2011	Criffy	107	1					N		N
10/20/2011	Criffy	108	1					Y		Y
10/20/2011	Criffy	109		1			8	Y	1.5	Y
10/20/2011	Criffy	110		1			10	Y	1	Y
10/20/2011	Criffy	111			1		9	Y	10	Y
10/20/2011	Criffy	112		1			7	Y	4	Y
10/20/2011	Criffy	113			1		10	Y	6	Y
10/20/2011	Criffy	114			1		11	Y	5	Y
10/20/2011	Criffy	115		1			10	Y	1	Y
10/20/2011	Criffy	116	1					N		N
10/20/2011	Criffy	117			1		9	Y	3	Y
10/20/2011	Criffy	118		1			9	Y	1.5	Y
10/20/2011	Criffy	119		1				N		N
10/20/2011	Criffy	120		1			7	N		N
10/20/2011	Criffy	121		1			8	N		N
10/20/2011	Criffy	122	1					N		N
10/20/2011	Criffy	123		1			10	Y	0.5	Y
10/20/2011	Criffy	124		1				N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	125		1				N		N
10/20/2011	Criffy	130			1		10	Y	6	Y
10/20/2011	Criffy	131			1		11	Y	2	Y
10/20/2011	Criffy	132		1			9	Y	1	Y
10/20/2011	Criffy	133		1			7	Y	1	Y
10/20/2011	Criffy	134	1					N		N
10/20/2011	Criffy	135	1					N		N
10/20/2011	Criffy	136			1		12	Y	8	Y
10/20/2011	Criffy	137	1					N		N
10/20/2011	Criffy	138	1					N		N
10/20/2011	Criffy	138			1		10	Y	8	Y
10/20/2011	Criffy	139	1					N		N
10/20/2011	Criffy	140	1					N		N
10/20/2011	Criffy	141		1			9	Y	3	Y
10/20/2011	Criffy	142		1			8	Y	2	Y
10/20/2011	Criffy	143	1					N		N
10/20/2011	Criffy	143		1			8	Y	2	Y
10/20/2011	Criffy	144			1		10	Y	1	Y
10/20/2011	Criffy	145	1					N		N
10/20/2011	Criffy	146		1				N		N
10/20/2011	Criffy	147	1					N		N
10/20/2011	Criffy	148	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	149		1				N		N
10/20/2011	Criffy	150		1			9	N		N
10/20/2011	Criffy	151		1			7	N		N
10/20/2011	Criffy	152		1				N		N
10/20/2011	Criffy	153	1					N		N
10/20/2011	Criffy	154		1			6	Y	6	Y
10/20/2011	Criffy	156			1		7	Y	4	Y
10/20/2011	Criffy	157		1			6	Y	1	Y
10/20/2011	Criffy	158		1			10	Y	1	Y
10/20/2011	Criffy	159	1					N		N
10/20/2011	Criffy	160	1					N		N
10/20/2011	Criffy	161	1					N		N
10/20/2011	Criffy	162		1			7	Y	1.5	Y
10/20/2011	Criffy	163	1					N		N
10/20/2011	Criffy	164			1		8	Y	1.5	Y
10/20/2011	Criffy	165	1					N		N
10/20/2011	Criffy	166	1					N		N
10/20/2011	Criffy	167	1					N		N
10/20/2011	Criffy	168		1			8	Y	5	Y
10/20/2011	Criffy	169	1					N		N
10/20/2011	Criffy	170	1					N		N
10/20/2011	Criffy	171	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	172	1					N		N
10/20/2011	Criffy	173		1			8	Y	0.5	Y
10/20/2011	Criffy	174		1			9	N		N
10/20/2011	Criffy	175		1				N		N
10/20/2011	Criffy	176		1			10	Y	1	Y
10/20/2011	Criffy	177		1			8	Y	1	Y
10/20/2011	Criffy	178		1			9	Y	2	Y
10/20/2011	Criffy	179	1					N		N
10/20/2011	Criffy	180	1					N		N
10/20/2011	Criffy	181	1					N		N
10/20/2011	Criffy	182			1		11	Y	3	Y
10/20/2011	Criffy	183			1		9	Y	2	Y
10/20/2011	Criffy	184	1					N		N
10/20/2011	Criffy	184	1					N		N
10/20/2011	Criffy	185	1					N		N
10/20/2011	Criffy	186		1			8	Y	0.5	Y
10/20/2011	Criffy	187		1			8	Y	0.5	Y
10/20/2011	Criffy	188		1			7	Y	1	Y
10/20/2011	Criffy	190			1		9	Y	6	Y
10/20/2011	Criffy	191	1					N		N
10/20/2011	Criffy	191			1		8	Y	6	Y
10/20/2011	Criffy	193	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	194		1				Y	0.5	Y
10/20/2011	Criffy	195	1					N		N
10/20/2011	Criffy	196	1					N		N
10/20/2011	Criffy	197		1			10	Y	1	Y
10/20/2011	Criffy	198		1			7	Y	1.5	Y
10/20/2011	Criffy	199	1					N		N
10/20/2011	Criffy	199	1					N		N
10/20/2011	Criffy	199		1			7	Y	2	Y
10/20/2011	Criffy	200	1					N		N
10/20/2011	Criffy	201		1			7	Y	1	Y
10/20/2011	Criffy	202			1		8	Y	2	Y
10/20/2011	Criffy	203		1			8	Y		Y
10/20/2011	Criffy	204	1					N		N
10/20/2011	Criffy	205	1					N		N
10/20/2011	Criffy	206	1					N		N
10/20/2011	Criffy	207	1					N		N
10/20/2011	Criffy	208		1			8	Y	1.5	Y
10/20/2011	Criffy	209	1					N		N
10/20/2011	Criffy	211			1		9	Y	3	Y
10/20/2011	Criffy	212		1			8	Y	1.5	Y
10/20/2011	Criffy	213		1			8	Y	1.5	Y
10/20/2011	Criffy	214	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	215		1				N		N
10/20/2011	Criffy	215			1			N		N
10/20/2011	Criffy	215			1		9	Y	4	Y
10/20/2011	Criffy	216	1					Y	0.5	Y
10/20/2011	Criffy	217	1					N		N
10/20/2011	Criffy	218		1			6	Y	1	Y
10/20/2011	Criffy	219	1					N		N
10/20/2011	Criffy	220		1			8	Y	0.5	Y
10/20/2011	Criffy	221		1			9	Y	0.5	Y
10/20/2011	Criffy	222		1			9	Y	0.5	Y
10/20/2011	Criffy	223			1		8	Y	2	Y
10/20/2011	Criffy	224	1					N		N
10/20/2011	Criffy	225			1		17	Y	1	Y
10/20/2011	Criffy	226			1		10	Y	3	Y
10/20/2011	Criffy	227		1			8	Y	1	Y
10/20/2011	Criffy	228			1		10	Y	2	Y
10/20/2011	Criffy	229			1		10	Y	1	Y
10/20/2011	Criffy	230		1			8	N		N
10/20/2011	Criffy	231	1					N		N
10/20/2011	Criffy	232	1					N		N
10/20/2011	Criffy	233	1					N		N
10/20/2011	Criffy	234	1					N		N

TABLE B-1 (CONTINUED)
JOSHUA TREE INVENTORY

Date	GPS Unit	Waypoint	# of Trees 0–5 ft	# of Trees 5–10 ft	# of Trees 10–15 ft	# of Trees ≥15 ft	DBH (in)	Woody Bark? (Y/N)	Length of woody bark (ft)	Specimen tree (Y/N)
10/20/2011	Criffy	235	1					N		N

DBH = Diameter at breast height (4.5 ft)
Y = Yes
N = No