Transcript Exhibit(s)

Docket #(s): L-00000KK-09-0299-00147

Exhibit # : SEP1-SEP19

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To: Docket Control

Date: August 18, 2009

Re: SEP-II / Mesquite Solar Gen-Tie
L-00000KK-09-0299-00147
Line Siting Committee Case No. 147
08-13-2009

STATUS OF ORIGINAL EXHIBITS

FILED WITH DOCKET CONTROL

SEP-II (SEP Exhibits)

1-14	Admitted
15-16	Not admitted, by design or oversight
17-18	Admitted
19	Not admitted, by design or oversight

Copy to:

John Foreman, Chairman
Ernest Johnson, Executive Director
Mr. Steven Hirsch, SEP-II

Application of SEP-II, LLC for Certificate of Environmental Compatibility for Mesquite Solar Gen-Tie Transmission Line Originating at Proposed Mesquite Solar Photo Voltaic Generating Station
L-00000KK-09-0299-00147
Before the Arizona Power Plant and Transmission Line Siting Committee
August 13, 2009

Exhibit Number	Description
SEP-1	Figure 1, Mesquite Solar Project Site and Vicinity
SEP-2	Figure 2, Preferred and Alternate Routes
SEP-3	Google Earth General Site Area View
SEP-4	Figure 3, Typical Double-Circuit 230kV Generation-tie Power Line
SEP-5	Figure 4, Diagram of the Mesquite Solar Generation-tie Power Line and Interconnection
SEP-6	Affidavit of Publication
SEP-7	Photographs of Approved Sign language
SEP-8	Transmission Line Routing Criteria
SEP-9	July 28, 2009 letter from William C. Holmes to Ms. Terri Hogan, Maricopa County
SEP-10	Virtual Tour
SEP-11	July 16, 2009 letter from David Jacobs to John Foreman
SEP-12	Witness Summary of Joseph H. Rowley
SEP-13	Witness Summary of George High
SEP-14	Witness Summary of Cory Breternitz
SEP-15	Certificate of Environmental Compatibility (redlined)
SEP-16	Certificate of Environmental Compatibility (proposed)

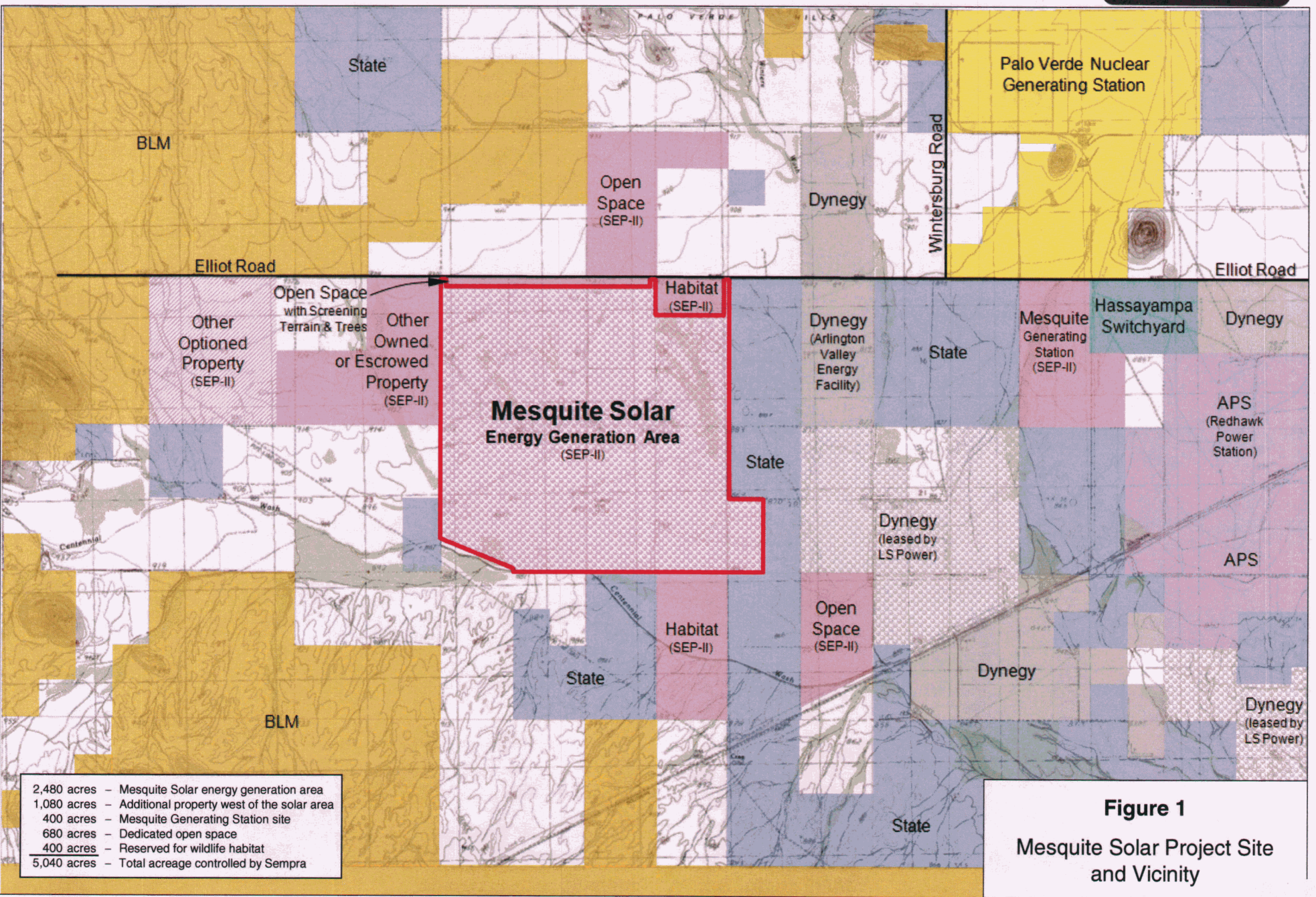


Figure 1

Mesquite Solar Project Site and Vicinity

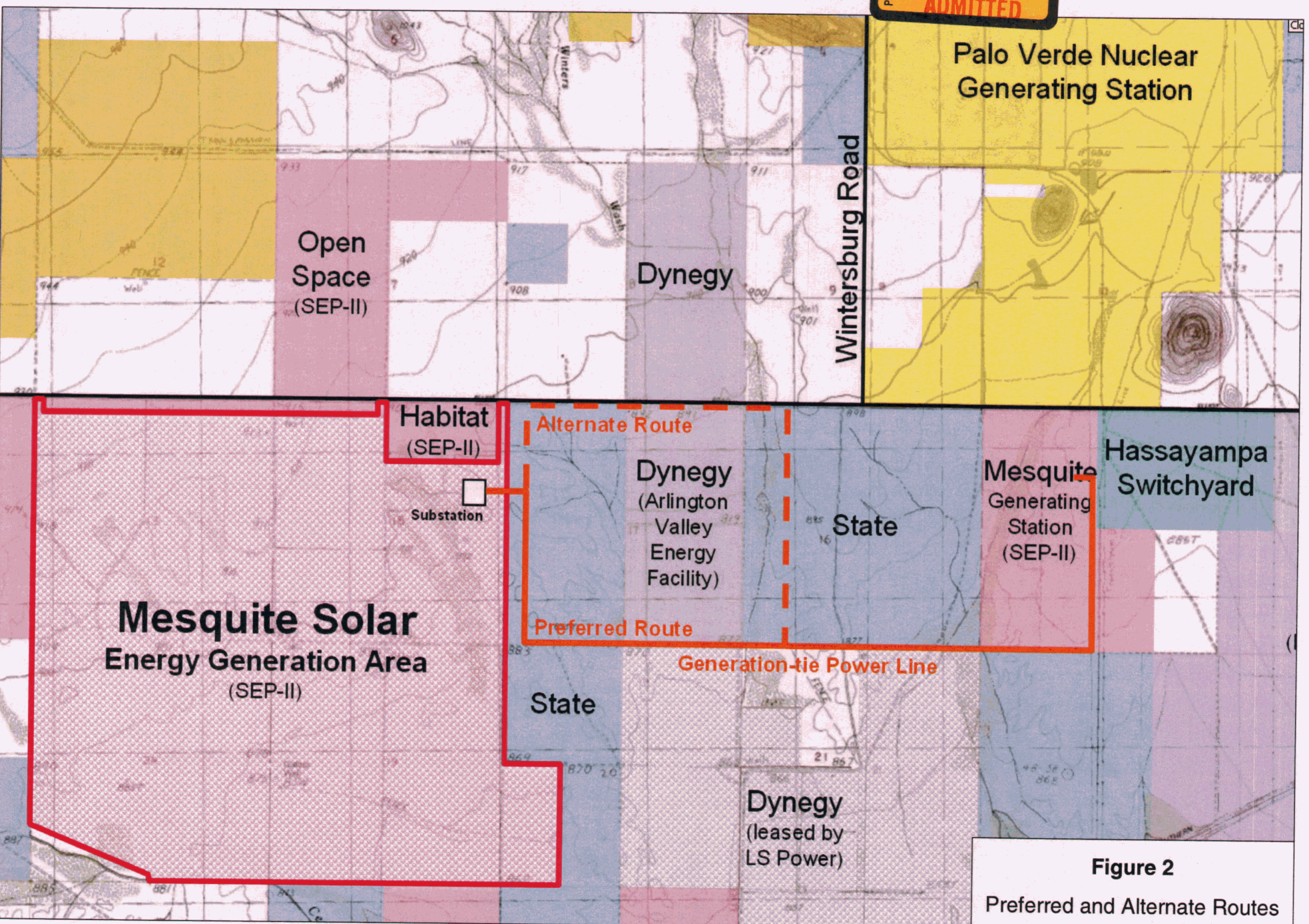
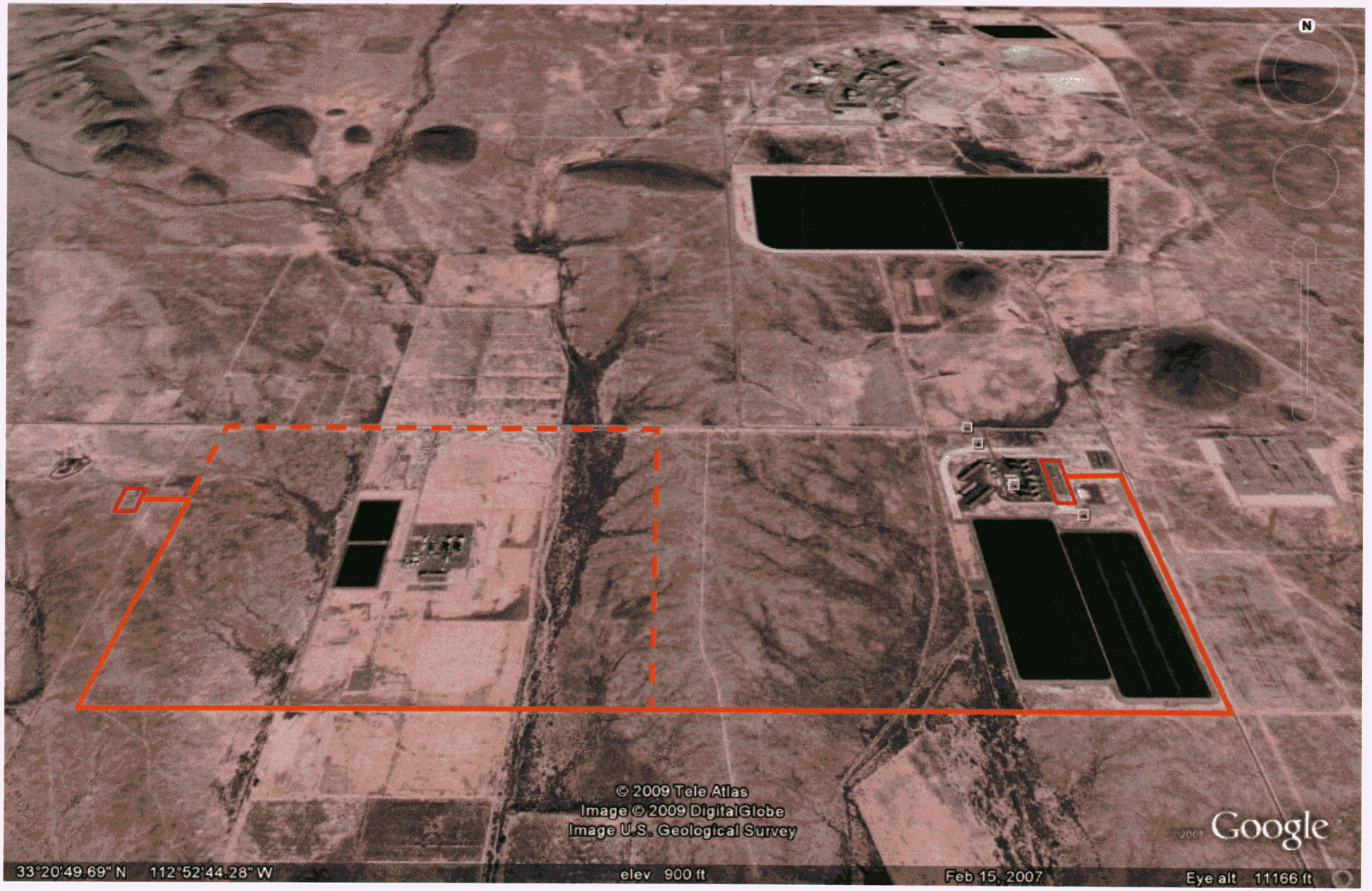


Figure 2

Preferred and Alternate Routes



EXHIBIT
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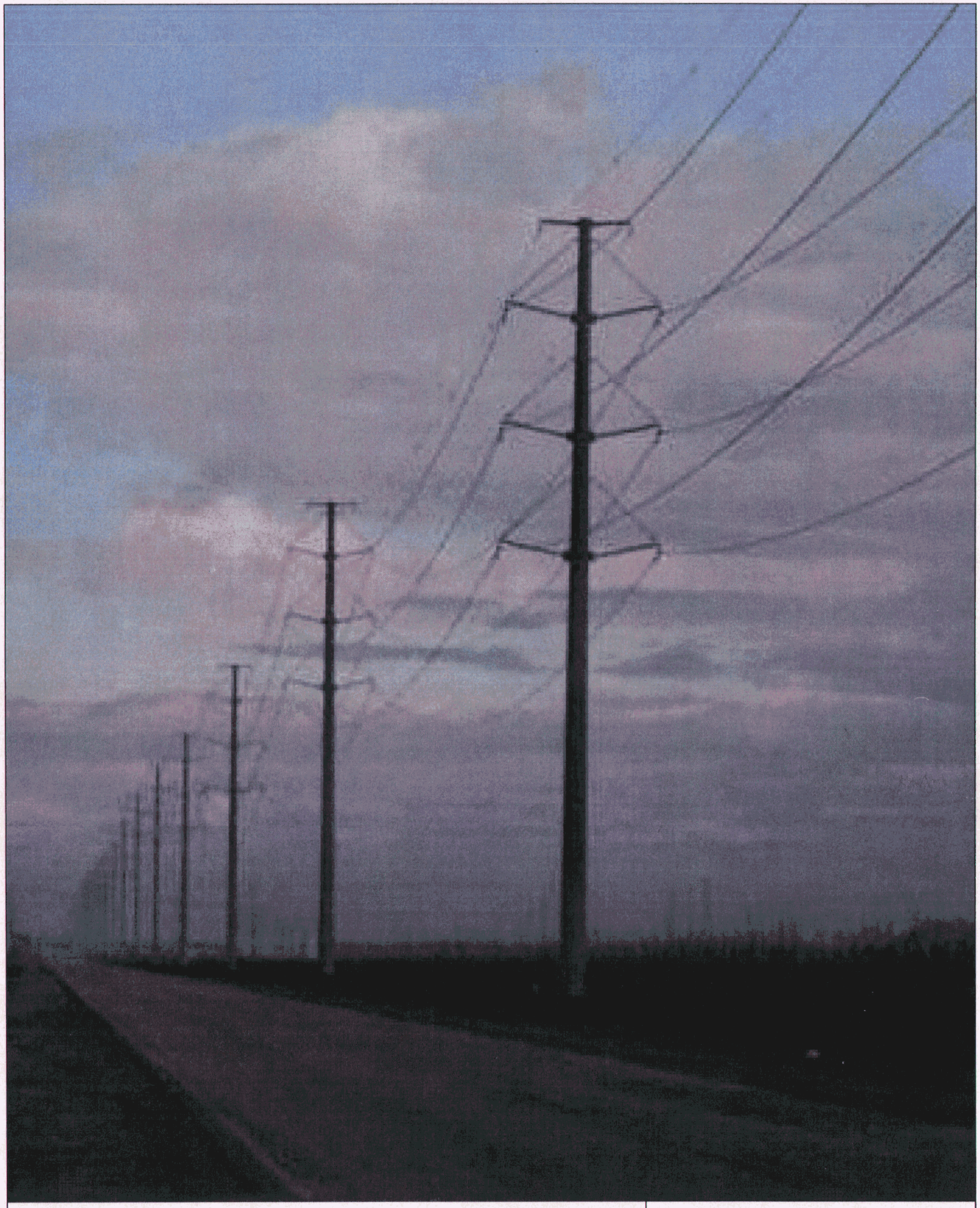

Figure 3

Typical Double-Circuit 230 kV Generation-tie Power Line

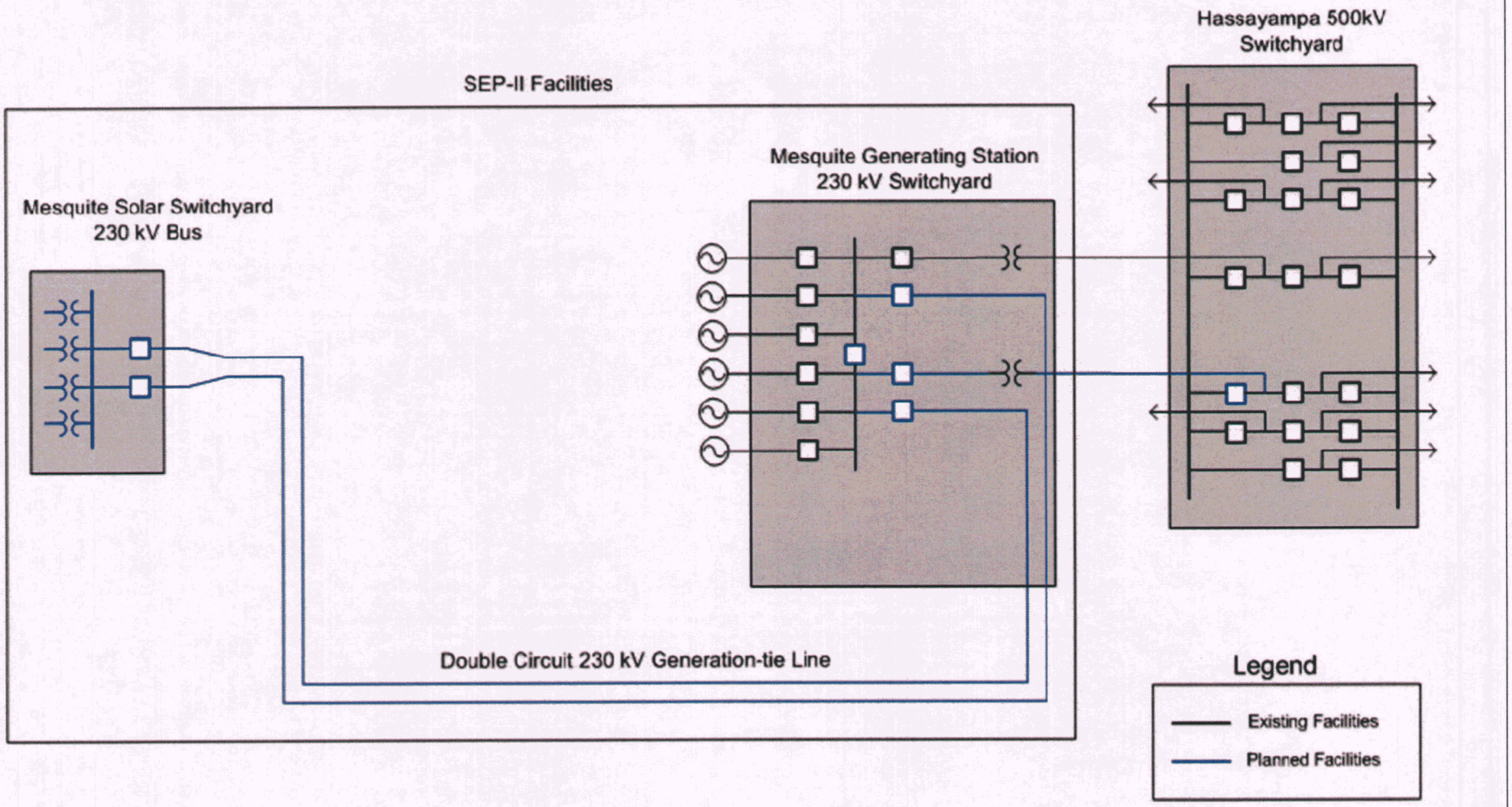

Figure 4

Diagram of the Mesquite Solar Generation-tie Power LIne and Interconnection

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AFFIDAVIT OF PUBLICATION

Reference #:

Notice Type: MN - MISCELLANEOUS NOTICE

Ad Description: DOCKET NO. L-00000KK-09-0299-00147 CASE NO. 147 SEP-II, LLC HEARING

I, Marcia Nohava, am authorized by the publisher as agent to make this affidavit. Under oath, I state that the following is true and correct.

THE RECORD REPORTER is a newspaper of general circulation published Monday, Wednesday and Friday except legal holidays, in the County of Maricopa (also publishing for Pima County), State of Arizona. The copy hereto attached is a true copy of the advertisement as published on the following dates:

06/15/2009, 06/22/2009

State Of Arizona)
)ss.
County Of Maricopa)

Subscribed and sworn to before me on the 22nd day of June, 2009

DIANE M. HEUEL
Notary Public—Arizona
Maricopa County
Expires 10/31/2010

NOTICE OF HEARING
DOCKET NO. L-00000KK-09-0299-00147
Case No. 147
BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

IN THE MATTER OF THE APPLICATION OF SEP-II, LLC, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MESQUITE SOLAR GEN-TIE 230KV TRANSMISSION LINE, ORIGINATING AT THE PROPOSED MESQUITE SOLAR PHOTO VOLTAIC GENERATING FACILITY IN SEC. 18, T.1S., R.6W. G&SRB&M, MARICOPA COUNTY, AND TERMINATING AT THE EXISTING MESQUITE GENERATING STATION 230KV SWITCHYARD IN SEC. 15, T.1S., R.6W. G&SRB&M, IN MARICOPA COUNTY, ARIZONA.

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the Application of SEP-II, LLC ("Applicant") for a Certificate of Environmental Compatibility authorizing the Mesquite Solar Gen-Tie 230 kV Transmission Line Project ("Project") in Maricopa County, Arizona. The hearing will be held at the Hampton Inn & Suites, 2000 North Litchfield Road, Goodyear, Arizona, 85395, (623) 536-1313, beginning on August 13, 2009, at 9:30 a.m. and continuing, if necessary, on August 14, 2009, at 9:30 a.m. The hearing will adjourn at approximately 5:00 p.m. Additional hearing days, if necessary, will be noticed on the Arizona Corporation Commission ("ACC") website. The ACC website is www.azcc.gov/AZ_Power_Plant/LineSiting-Calendar.asp. Public comment will be taken at the beginning of each hearing day.

The Committee may conduct a tour of the Project area and the Proposed Route on a future date. If a tour is conducted, a map and itinerary for the tour will be available at the hearings. Members of the public may follow the Committee in their own private vehicles. During any tour, the Committee may hear brief testimony at stops on the tour from one or more witnesses concerning where the stops are located, what is visible at the stops and the relevance of the location and view to the Proposed Route of the transmission line in the Application. No other discussion or deliberation concerning the Application will occur.

The Project consists of approximately five miles of 230kV transmission line to be constructed. A general location map of the Project study area and Applicant's Preferred and Alternate Routes containing references to the routes described herein is set forth below.

The Proposed Route originates at the proposed Mesquite Solar 230kV Switchyard, located south of the existing Mesquite Generating Station wildlife oasis located in the north half of the northeast quarter of Section 18, Township 1 South, Range 6 West, G&SRB&M. The Proposed Route terminates at the existing Mesquite Generating Station 230kV Switchyard, located in the northeast quarter of the northwest quarter of Section 15, Township 1 South, Range 6 West, G&SRB&M. The Applicant requests a 240-foot corridor, 120 feet on either side of the shown centerline. Both preferred and alternative alignments for the approximate five mile Project have been submitted by the Applicant. More complete maps, along with more detailed textual descriptions of the proposed alignment are available in the Application itself. The Application, including detailed maps of the proposed Project, is on file with the Docket Control Office of the Arizona Corporation Commission, 1200 West Washington Street, Suite 108, Phoenix, Arizona 85007. Copies of the Application also are available for inspection at the following location:

n Town of Buckeye Public Library, 310 N. 6th Street, Buckeye, Arizona 85326

Depending on the issues raised and the number of intervenors appearing during the hearing, the Committee may deem it appropriate at some point to recess the hearing to a time and place to be announced during the hearing, or to be determined after the recess. These dates and places will be posted on the ACC website. At the discretion of the Committee, such resumed hearing may be held at a date, time and place designated by the Committee or its Chairman.

NOTE: NOTICE OF SUCH RESUMED HEARING WILL BE GIVEN. PUBLISHED NOTICE OF SUCH RESUMED HEARING IS NOT REQUIRED.

Each county and municipal government and state agency interested in the proposed Project and desiring to become a party to the proceeding, shall, not less than 10 days before the date set for hearing, provide the Committee Chairman by filing with the Arizona Corporation Commission, 1200 West Washington, Phoenix, Arizona 85007, a notice of its intent to be a party.

Any domestic, non-profit corporation or association, formed in whole or in part to promote conservation of natural beauty, to protect the environment, personal health or other biological values, to preserve historical sites, to promote consumer interests, to represent commercial and industrial groups or to promote the orderly development of the area in which the Project is to be located and desiring to become a party to the certification proceeding, shall, not less than 10 days before the date set for hearing, provide the Committee Chairman by filing with the Arizona Corporation Commission, 1200 West Washington, Phoenix, Arizona 85007, a notice of its intent to be a party.

The Committee or its Chairman, at any time deemed appropriate, may

* R 0 0 0 0 0 0 1 2 0 7 8 1 0 *

EXHIBIT
SEP-6
ADMITTED

make other persons parties to the proceedings.

Any person may make a limited appearance at the hearing by providing a statement in writing with the Committee Chairman by filing with the Arizona Corporation Commission, 1200 West Washington, Phoenix, Arizona 85007, not less than five days before the date set for hearing. A person making a limited appearance shall not be a party or have the right to present testimony or cross-examine witnesses.

This proceeding is governed by Arizona Revised Statutes Sections 40-360 to 40-360.13 and Arizona Administrative Code Rules R14-3-201 to R14-3-219. The written decision of the Committee shall be submitted to the Arizona Corporation Commission pursuant to Arizona Revised Statutes Section 40-360.07. Any person intending to be a party before the Arizona Corporation Commission must be a party to the certification proceedings before the Committee.

ORDERED this 10th day of June, 2009.

/s/John Foreman
John Foreman, Chairman
Arizona Power Plant And
Transmission Line Siting Committee
Assistant Attorney General
SEE MAP

6/15, 6/22/09

RR-1620417#

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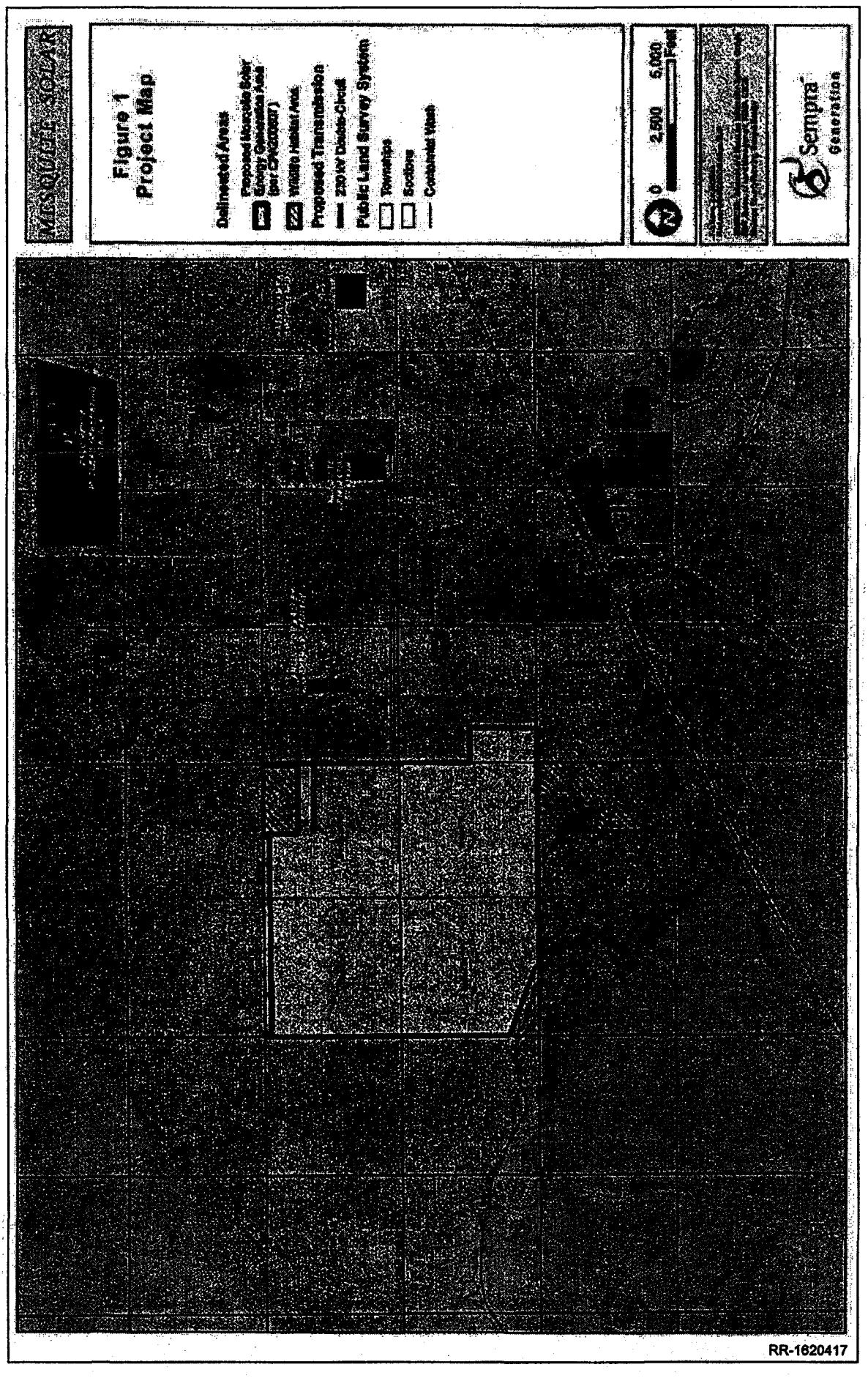
ORDERED this 10th day of June, 2009.

/s/John Foreman
John Foreman, Chairman
Arizona Power Plant And
Transmission Line Siting Committee
Assistant Attorney General
SEE MAP

6/15, 6/22/09

RR-1620417#



NOTICE OF PUBLIC HEARING

SEP-II, LLC HAS APPLIED TO THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE FOR PERMISSION TO BUILD A 230kV TRANSMISSION LINE FROM A PROPOSED PHOTOVOLTAIC GENERATING FACILITY TO BE BUILT SOUTH AND WEST OF 395TH AVE. AND ELLIOT RD. IN MARICOPA COUNTY TO THE EXISTING MESQUITE GENERATING STATION SOUTH OF ELLIOT RD. APPROXIMATELY 2.5 MILES TO THE EAST.

The preferred Route is approximately 4.5 miles in length commencing at the proposed Solar Generating Facility, then proceeding east on State Land for approximately 0.1 mile, then south on State Land for approximately 0.7 mile, and then east on State Land approximately 0.4 mile along the Section Line between Sections 17 and 20, and then continuing east along the same alignment for 0.5 mile on private property. After existing private property, continuing east on State Land for approximately 1.0 mile along the Section Line between Sections 16 and 21, and then continuing east on State Land for approximately 0.5 mile along the Section Line between Sections 15 and 22. At the midpoint of Section 15, the Preferred Route turns north onto the Mesquite Generating State site for approximately 0.8 mile before turning west at the existing Mesquite Generating Station switchyard.

The Alternate Route is approximately 5.1 miles in length commencing at the proposed Solar Generating Facility then proceeding east on State Land approximately 0.1 mile and then north on State Land for approximately 0.3 mile to Elliot Rd. Then proceeding east along Elliot Rd. for approximately 1.1 mile, then south on State Land for approximately 1.0 mile to the Section Line between Sections 16 and 21. From this point, the Alternate Route is the same as the Preferred Route.

THE PROJECT IS CALLED THE 230 kV MESQUITE SOLAR GEN-TIE PROJECT

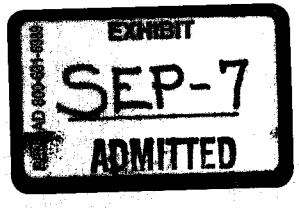
Arizona Corporation Commission Docket No. L-00000KK-09-0299-00147

The public is invited to participate at a public hearing before the Arizona Power Plant and Transmission Line Siting Committee commencing on:

AUGUST 13, 2009 at 9:30 A.M., AND, IF NECESSARY, AUGUST 14, 2009 at 9:30 A.M.

HAMPTON INN & SUITES GOODYEAR, 2000 N. LITCHFIELD ROAD, GOODYEAR, AZ 85395

INFORMATION: Project Hot Line (888) 214-3026
http://www.sempragenerationcom/mesquite_solar.htm

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NOTICE OF PUBLIC HEARING
07/13/2009 09:47:52


NOTICE OF PUBLIC HEARING
07/13/2009 10:27:30

Transmission Line Routing Criteria

- **Routing Constraints**
  - Avoid Proximity to habitable structures
  - Avoid sensitive ecological resources
  - Avoid parks and recreation sites
  - Avoid drainages and floodprone areas
  - Avoid crossing other existing transmission lines
  - Avoid high quality habitat
  - Avoid conflicts with existing facilities

- **Routing Opportunities**
  - Parallel existing linear features (section lines, property lines, roads, trails)
  - Maximize opportunities to route long, straight segments (minimize PI locations)
  - Minimize line length
  - Maximize use of previously disturbed lands

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GAME AND FISH DEPARTMENT
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PHOENIX, AZ 85086-5000
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REGION IV, 9140 E. 28TH ST., YUMA, AZ 85365

July 28, 2009

Ms. Terri Hogan
Senior Planner
Department of Planning and Development
Maricopa County
501 N. 44th Street Suite 100
Phoenix, Arizona 85008

Re: Comprehensive Plan Amendment No. CPA2008007 and Modification of Stipulation No. Z2008066 for Mesquite Solar Energy Production Facility, Maricopa County

Dear Ms. Hogan:

The Arizona Game and Fish Department (Department) met with the Maricopa County Department of Planning and Development Technical Advisory Committee and representatives for the Mesquite Solar Energy Production Facility to discuss the above referenced comprehensive plan amendment and stipulation modification. The Department submitted a letter, dated July 18 2008, addressing our concerns. The Department also reviewed project information provided by SEP II (a subsidiary of Sempra Generation), through their environmental consultants, and provided our analysis in letters dated February 18, 2009 and May 11, 2009. Department staff met with representatives of SEP II on July 1, 2009 to further discuss our concerns. We would like to take this opportunity to apprise you of the status of our mutual efforts to minimize the impacts to wildlife from the proposed solar project.

As a result of our discussions, the Department understands that SEP II has agreed to the following design revisions for the Mesquite Solar Energy Facility:

- to address wildlife connectivity concerns, the site entrance at the 395th Avenue alignment entrance has been eliminated, providing wildlife a movement corridor to Centennial Wash.
- the area adjacent to Centennial wash will remain undisturbed, except for the proposed retention basin and drainage channels. Re-vegetation efforts will continue in this portion of the project site per the Mesquite Generating Station Special Use Permit (Z2000071).

In addition to the project design revisions, the Department and SEP II agreed on which species of concern should be surveyed and the survey protocols. In addition, there was an agreement to

continue to discuss habitat enhancement opportunities along Centennial Wash, independent of the Mesquite Solar project.

Thank you again for the opportunity to review and comment on this project. We look forward to continuing to being involved in this project. If you have any questions, please contact me at 928-341-4047.

Sincerely,

William C. Knowles
Habitat Specialist
Region IV, Yuma

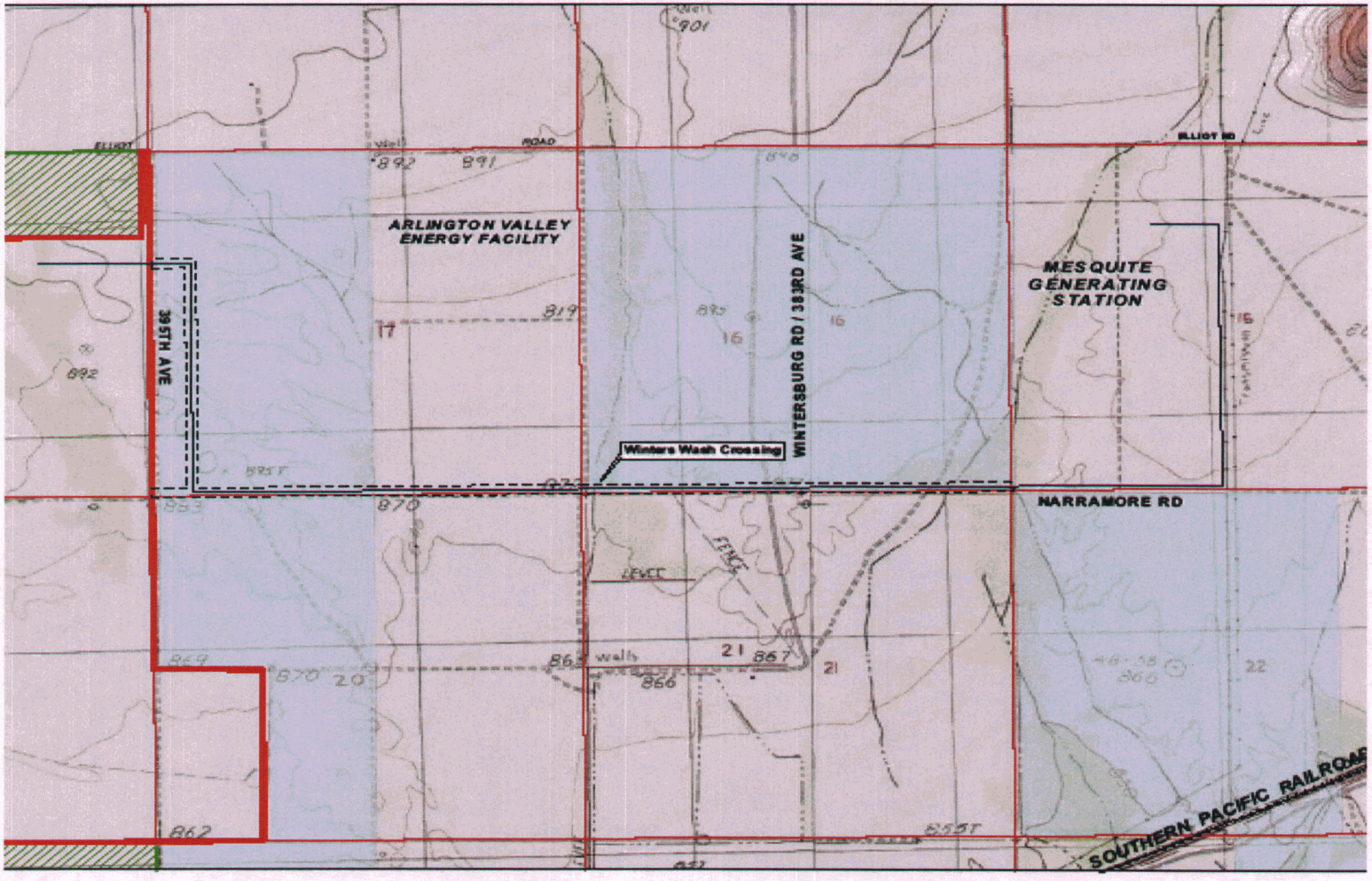
cc: Troy Smith, Habitat Program Manager, Region IV
Laura Canaca, Proj. Eval. Prog. Supervisor, Habitat Branch
Marilyn Teague, P.E. Sempra Global
Ginger Ritter, Project Evaluation, Habitat Branch

AGFD # M09-07160400

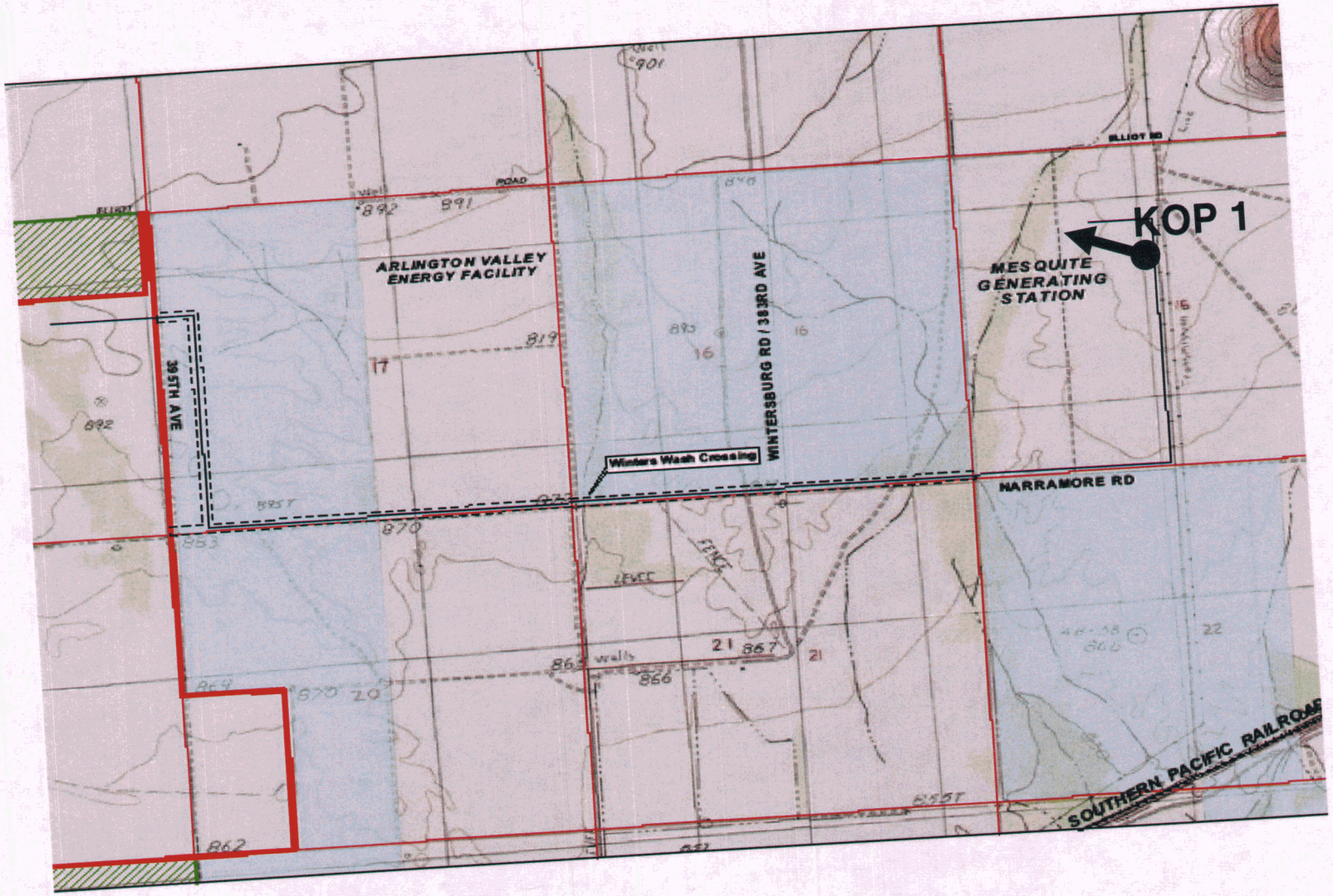
Sempra Mesquite Solar Gen-tie Project
Maricopa County, Arizona

Virtual Tour

Preferred Route

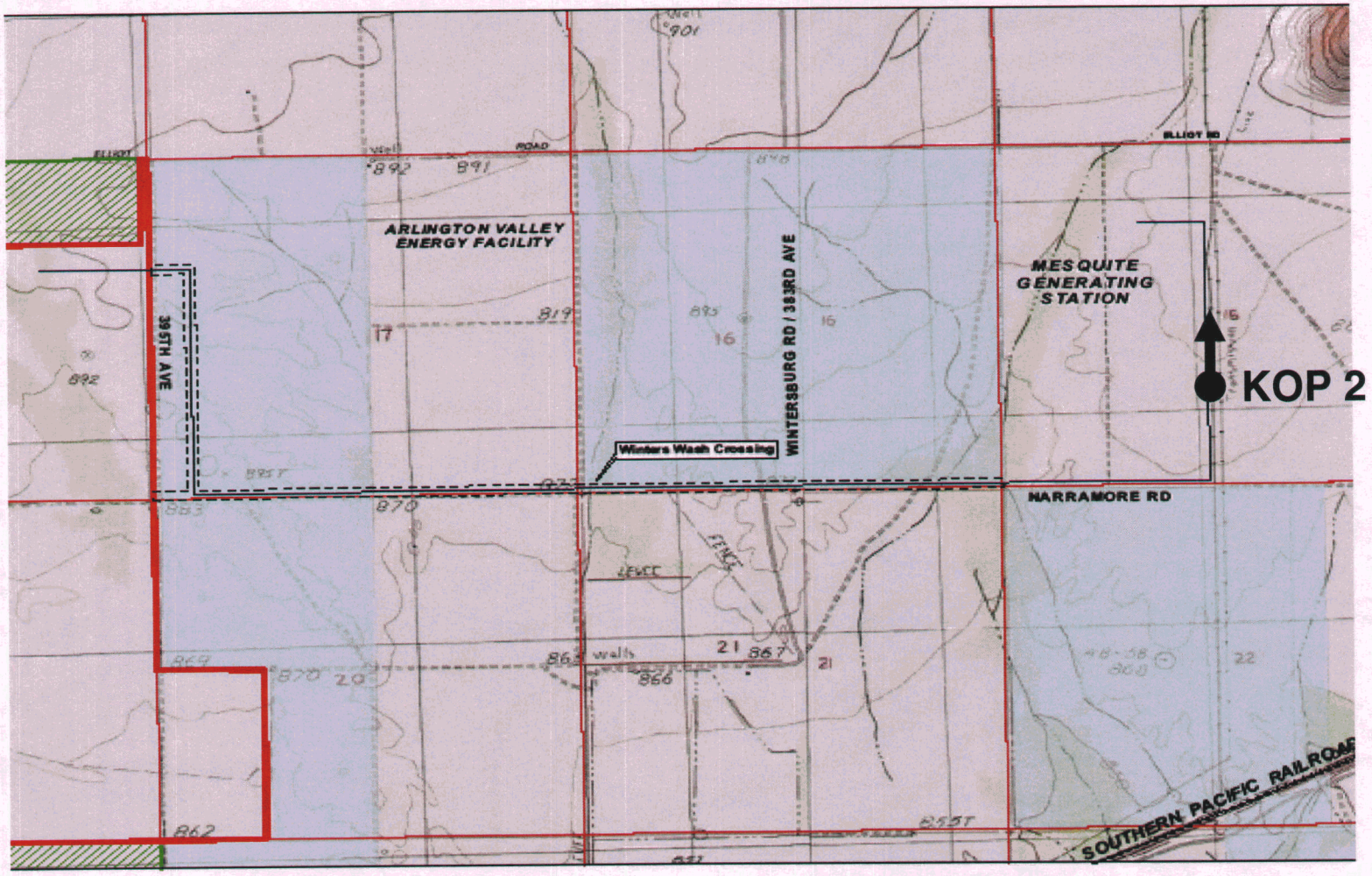


Preferred Route – KOP 1



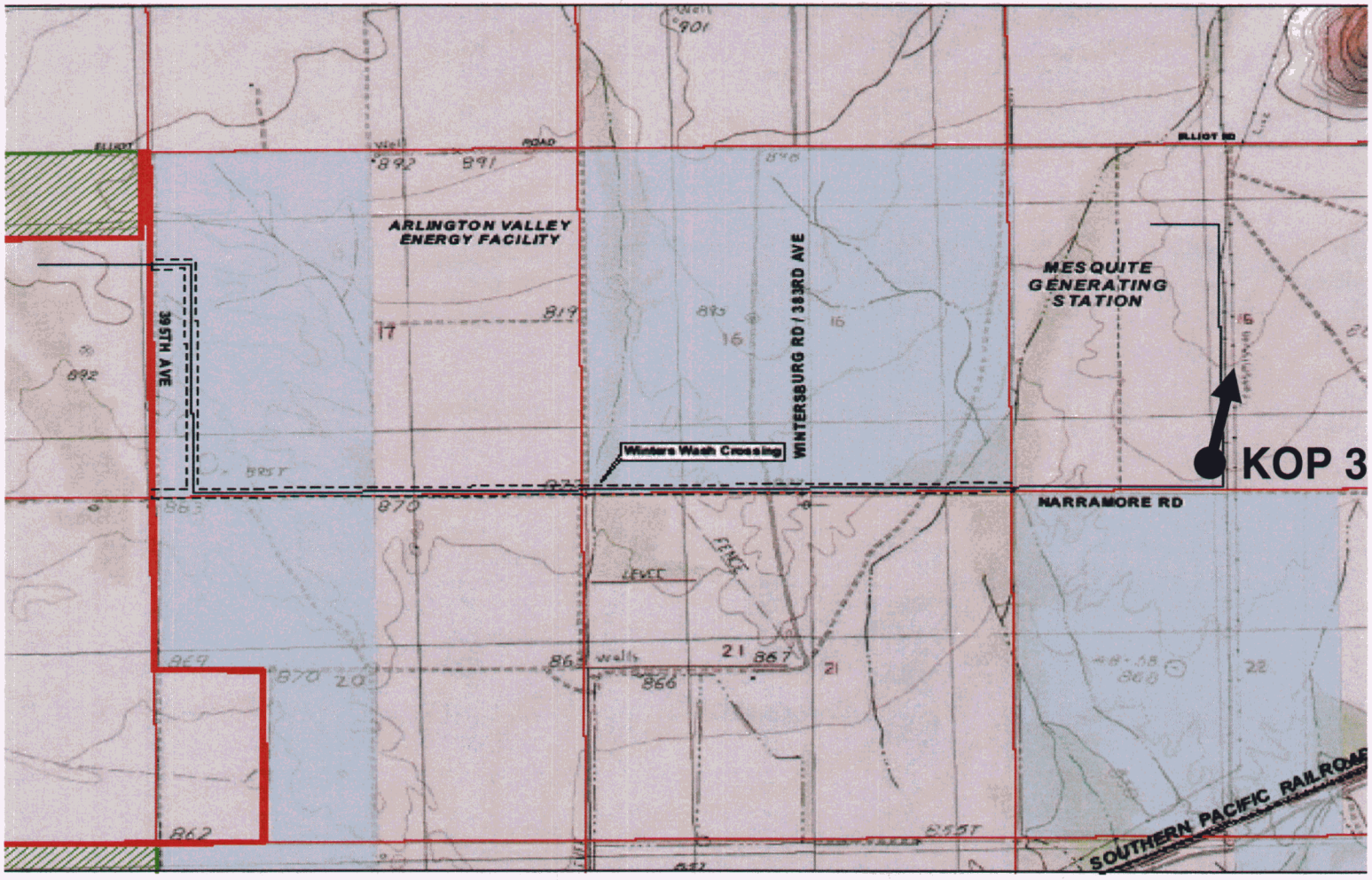
KOP 1:
230-kV Switchyard at Mesquite Substation

Preferred Route – KOP 2



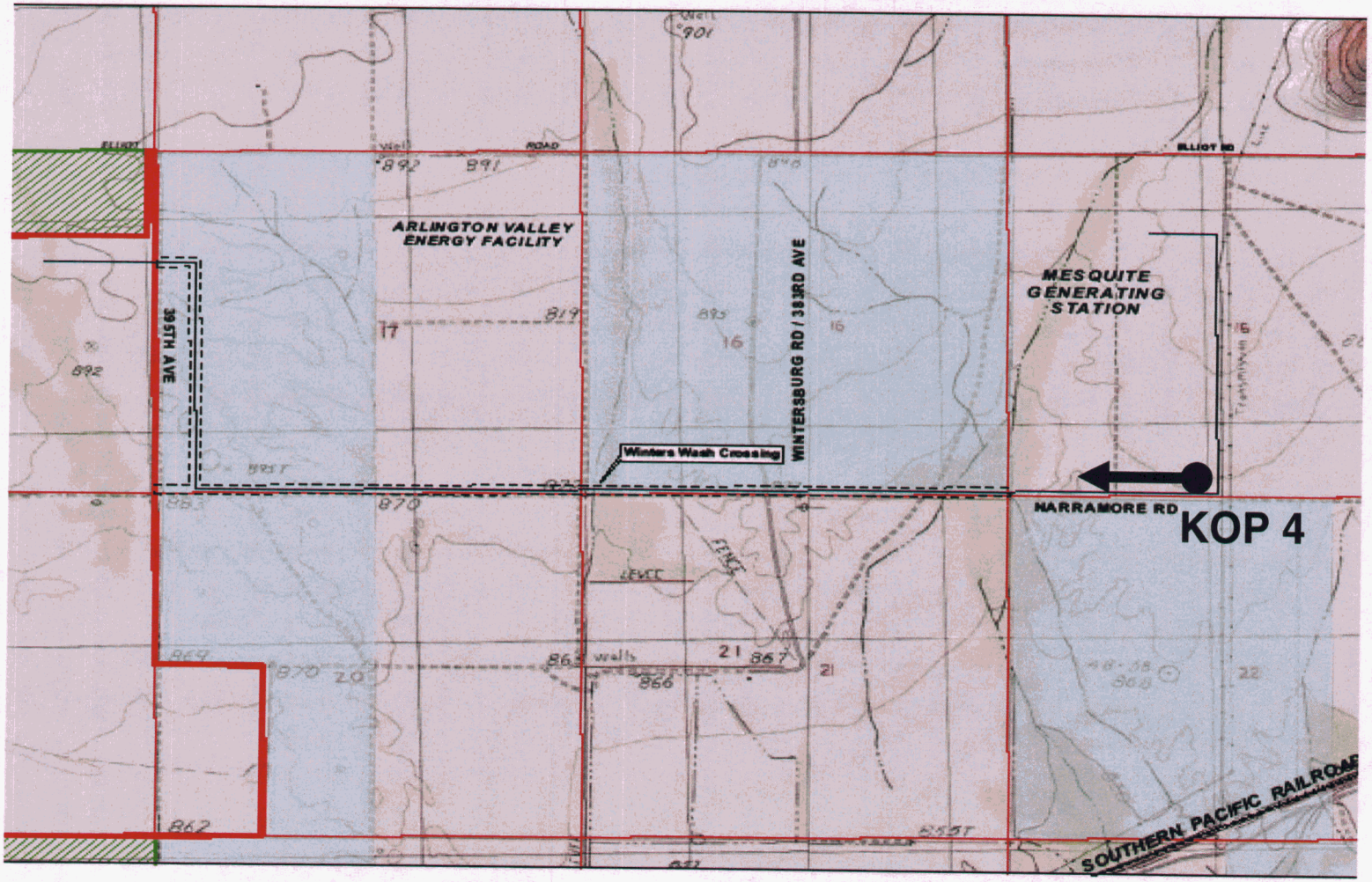
KOP 2:
Eastern Leg of Preferred Route (looking north)

Preferred Route – KOP 3



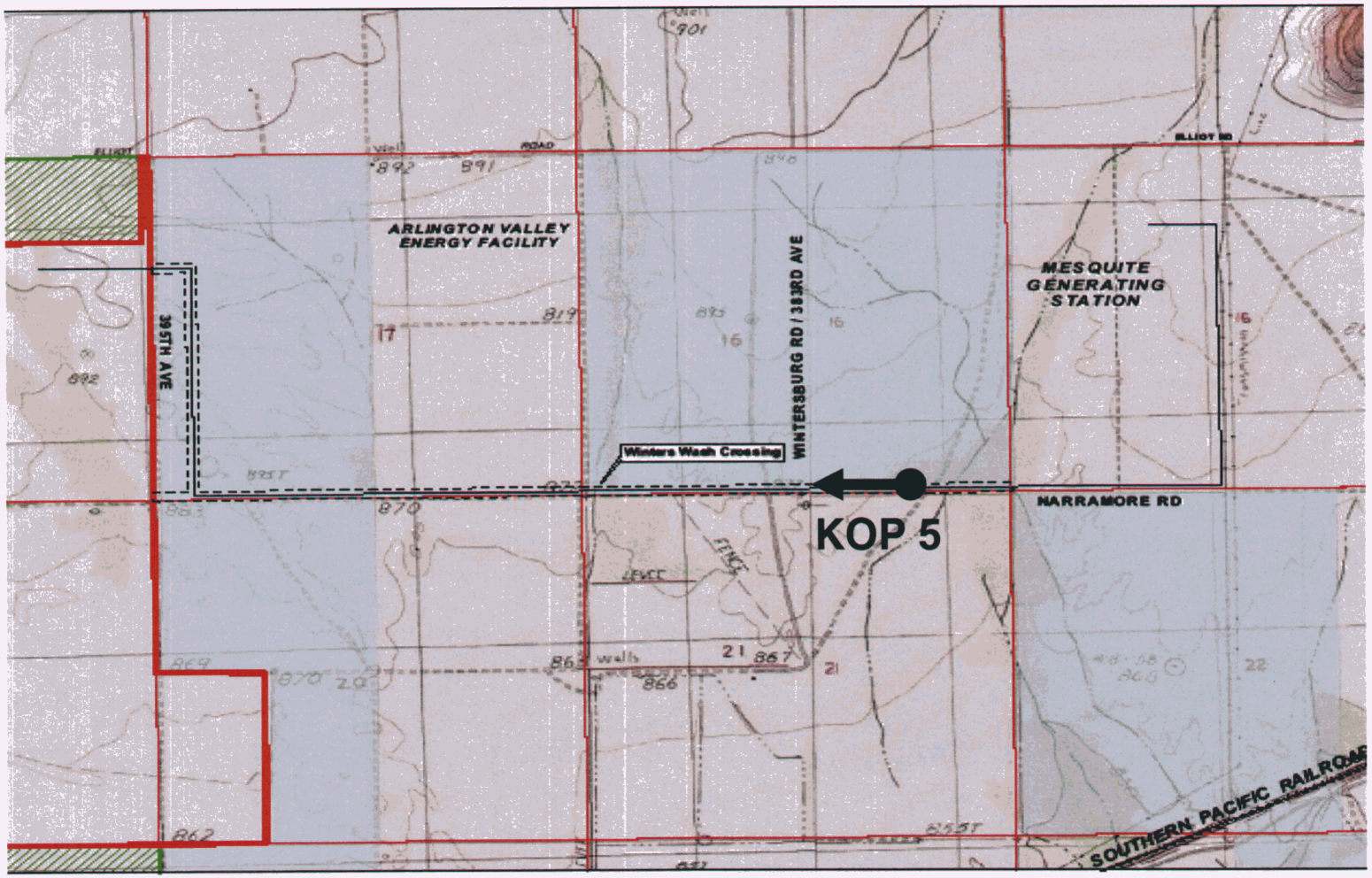
KOP 3:
Southeastern corner of Preferred Route
(view to the northeast)

Preferred Route – KOP 4



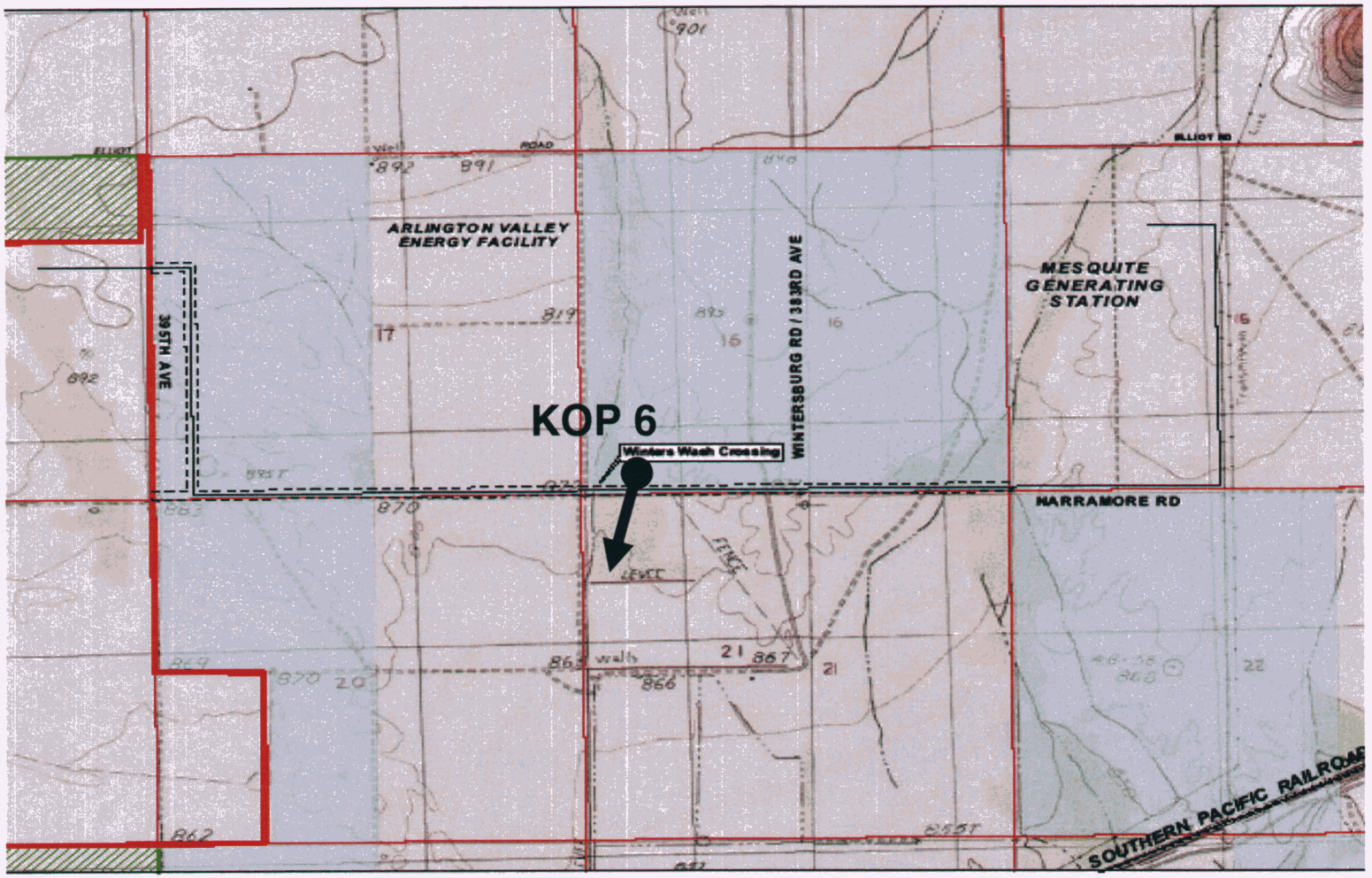
KOP 4:
Southeastern corner of Preferred Route
(view to the west)

Preferred Route – KOP 5



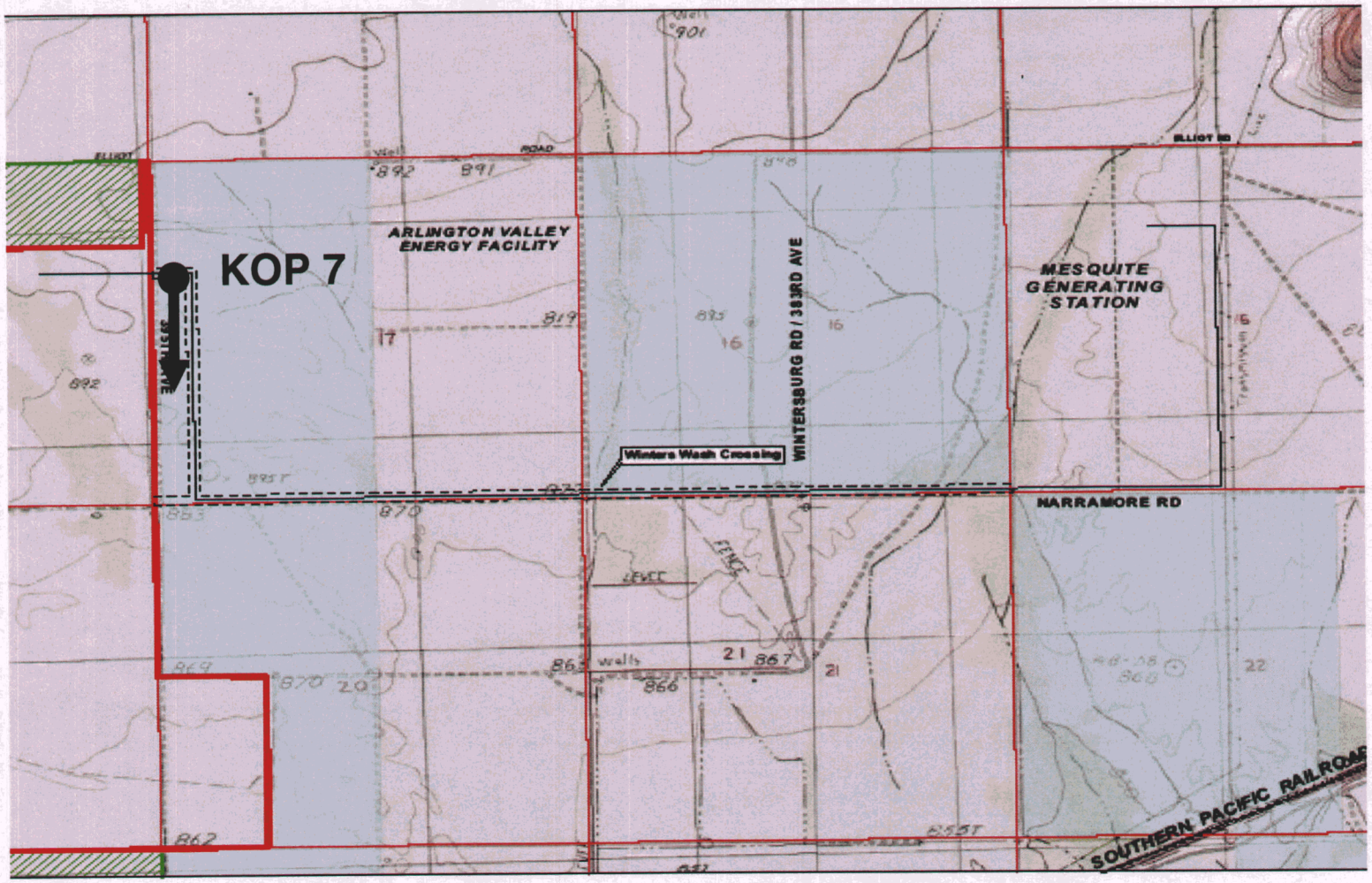
KOP 5:
Southern leg of Preferred Route
(view to the west)

Preferred Route – KOP 6



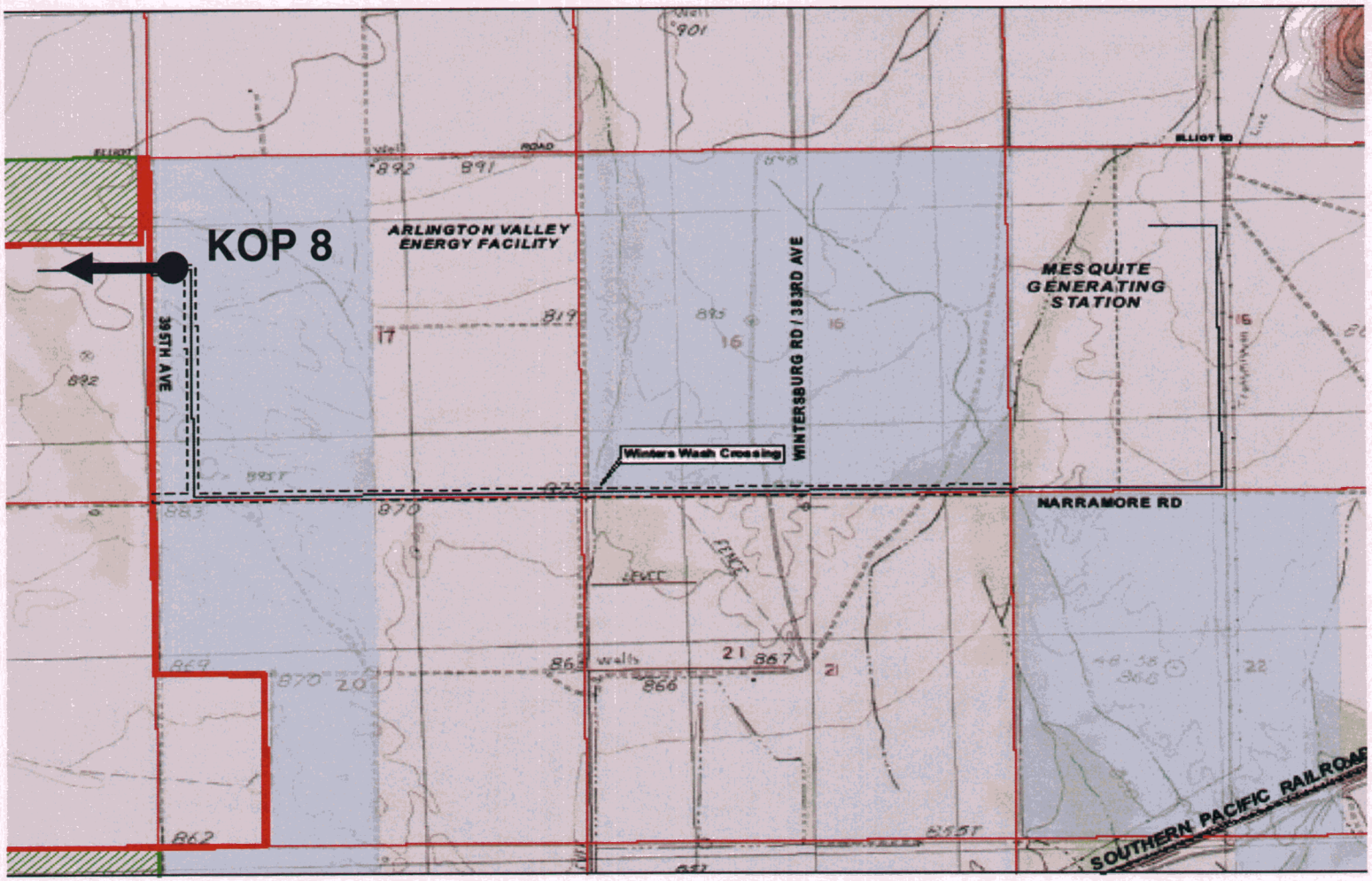
KOP 6:
South-central portion of Preferred Route
(east of Winters Wash, view to the southwest)

Preferred Route – KOP 7



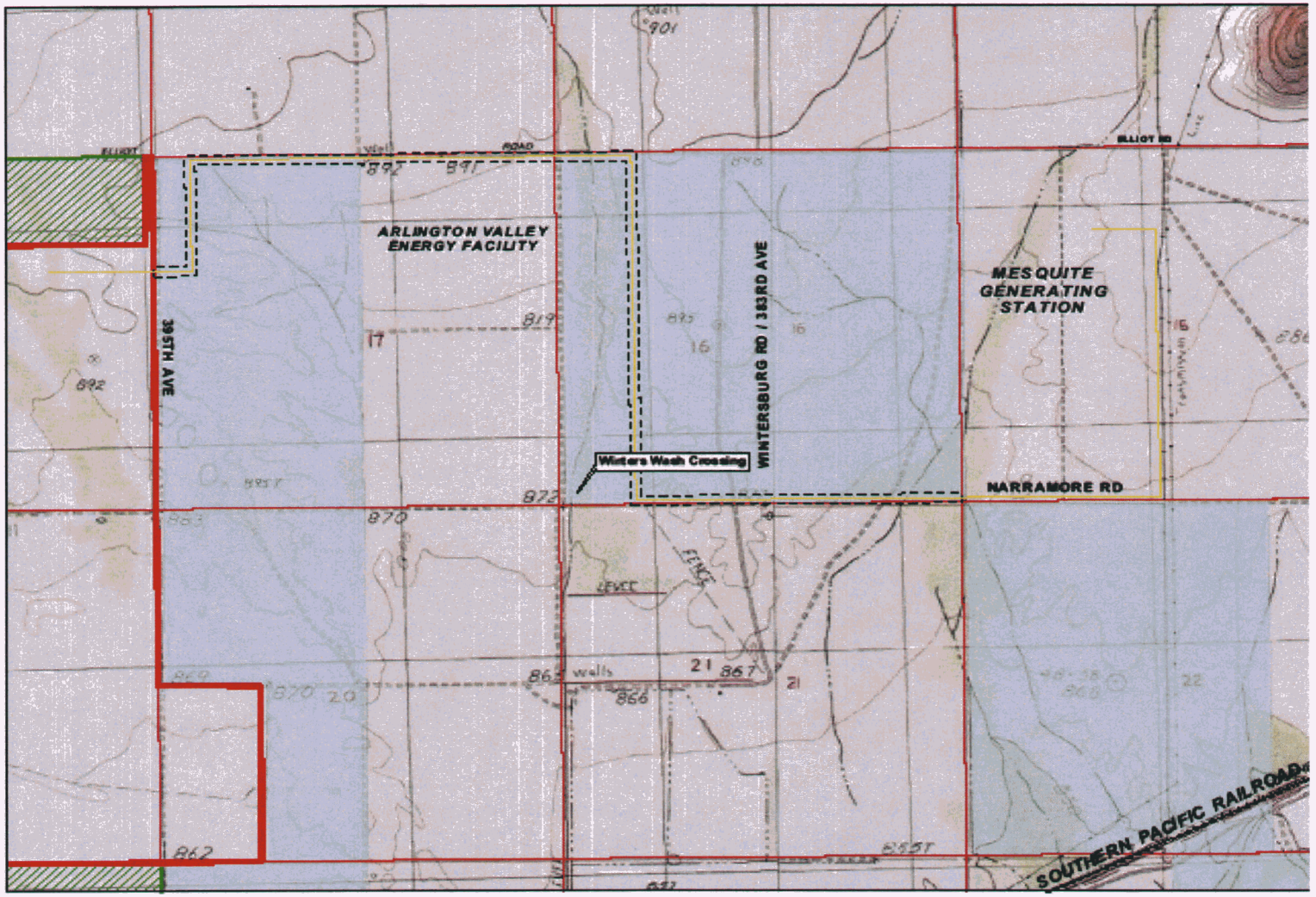
KOP 7:
Western leg of Preferred Route
(view along state land to south)

Preferred Route – KOP 8

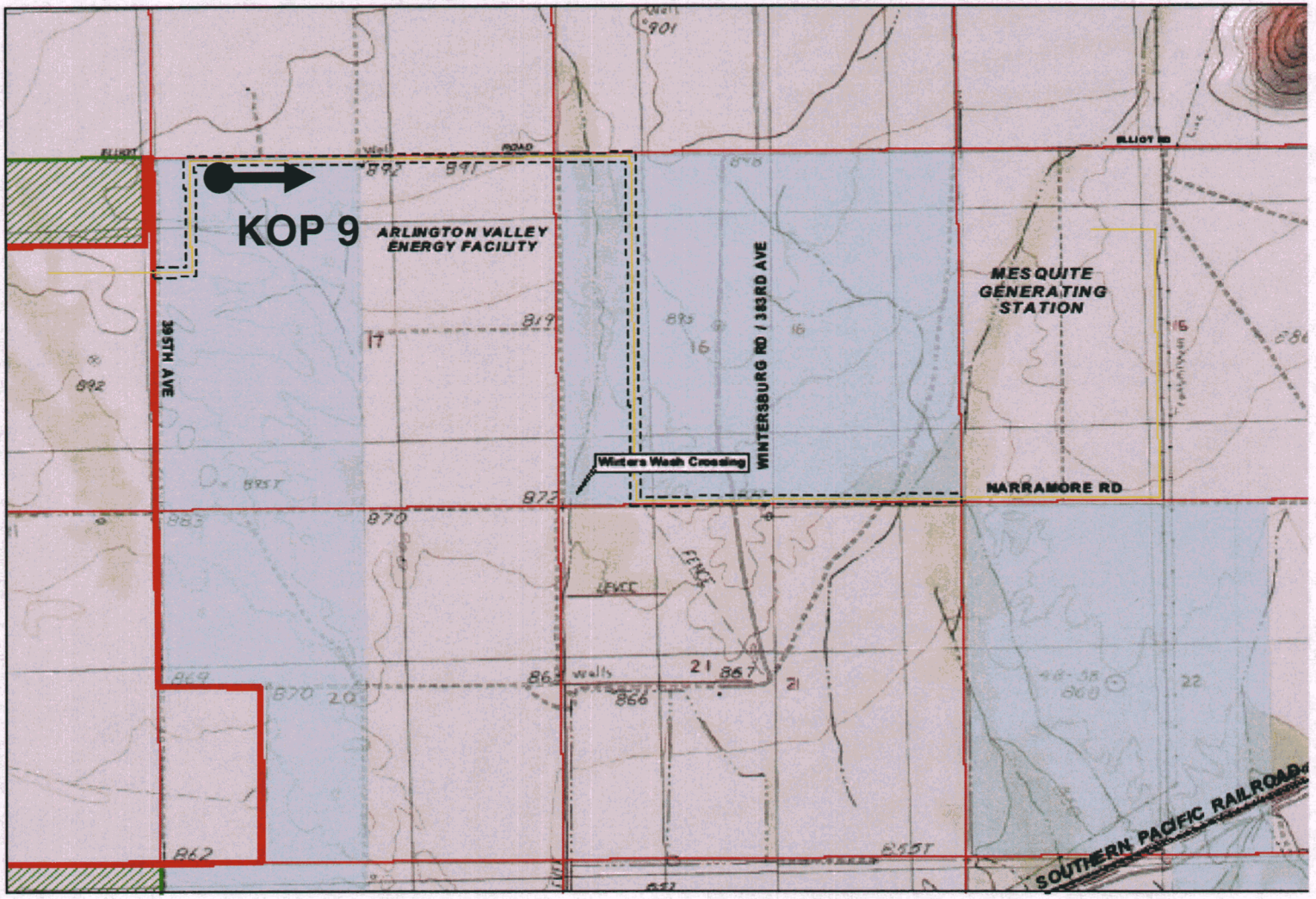


KOP 8:
Western portion of Preferred and Alternate Routes (view toward solar energy substation site to west)

Alternate Route

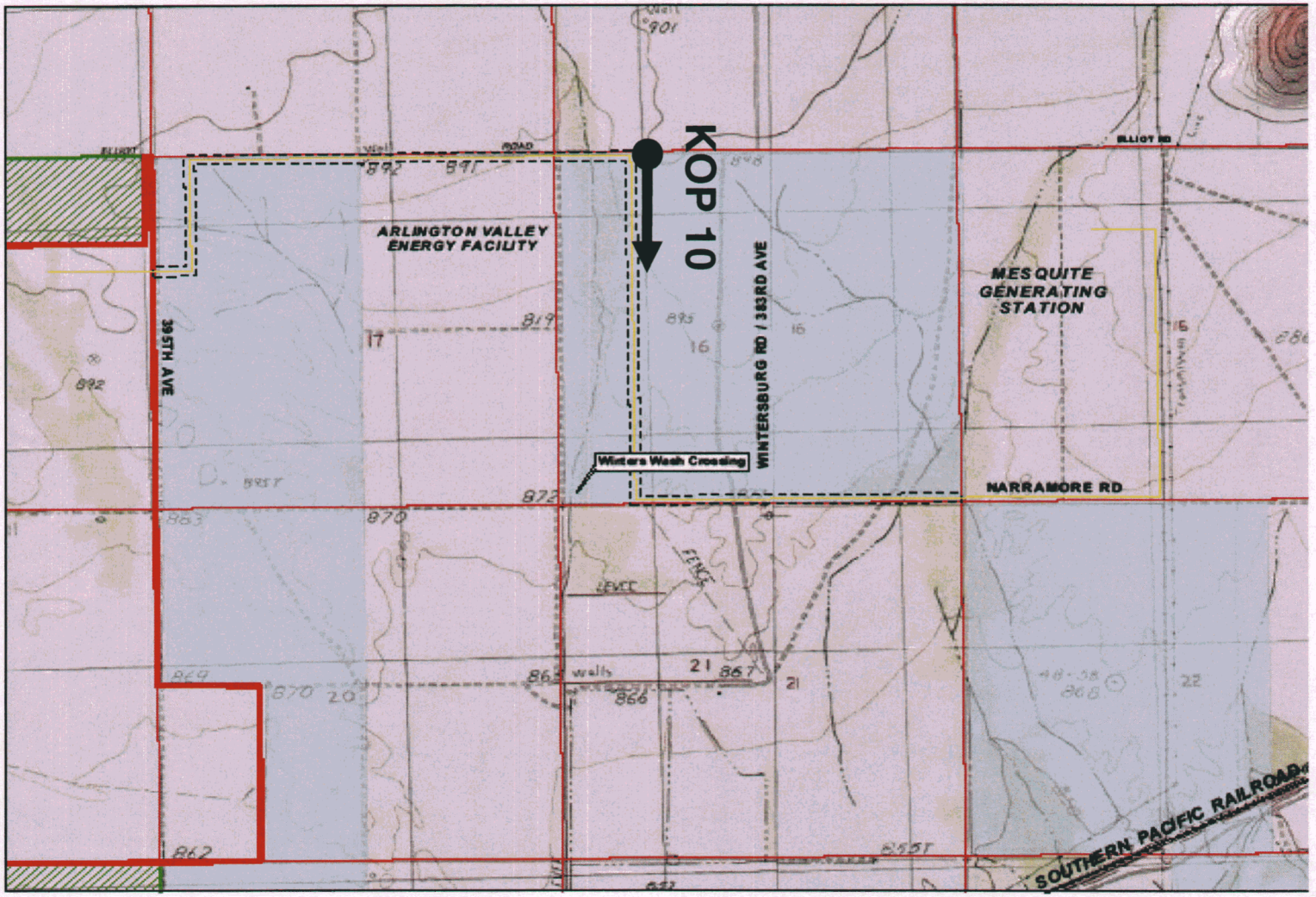


Alternate Route – KOP 9



KOP 9:
Alternate Route
(view east along Elliot Road)

Alternate Route – KOP 10



KOP 10:
Alternate Route
(view south under existing transmission line east of Winters Wash)

Arizona State Parks

July 16, 2009

John Foreman, Chairman
Arizona Power Plant and Transmission Line Siting Committee
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

RE: Mesquite Solar Generation Project; 230 kV Transmission Line
Docket No. L-00000KK-09-0299-00147
State Act Consultation
SHPO-2008-1002 (40476)

Mr. Foreman:

Thank you for consulting with the State Historic Preservation Office (SHPO) pursuant to A.R.S. § 41-864 for the Arizona Corporation Commission regarding an application by SEP-II, LLC, for a Certificate of Environmental Compatibility regarding the Mesquite Solar Gen-Tie 230 kV Transmission Line Project in Maricopa County, Arizona. Additional materials were recently submitted to our office for the above project, and we have reviewed them and offer the following comments.

The submitted materials included two cultural resource assessments, one for the terminus of the generation tie-line [*A Cultural Resource Survey of 440 Acres of Private Land near the Palo Verde Nuclear Generating Station, Maricopa County, Arizona*] and another for generation tie-line corridors [*A Class III Cultural Resources Survey of Transmission Line Corridors on State Land for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona*]. Both adequately address the potential impacts of the proposed project, and our office concurs with the findings of the reports.

We appreciate your cooperation with this office in considering the potential impacts of development on cultural resources situated in Arizona. If you have any questions or comments, please contact me at (602) 542-7140 or electronically at djacobs@azstateparks.gov.

Sincerely,

David Jacobs
Compliance Specialist/Archaeologist
State Historic Preservation Office

CC: Steve Ross, ASLD
Marilyn Teague, Sempra Global

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

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Director's Office Fax: 602.542.4188

Mesquite Solar Generation-Tie Project
Transmission Line Siting Committee
Case No. 147
Witness Summary: Joseph H. Rowley

Mr. Rowley will provide testimony regarding the proposed generation-tie power line associated with the Mesquite Solar project. He will explain the need for and purpose of the power line, its preferred and alternate routes, the timing of construction, and its design and visual appearance.

Qualifications

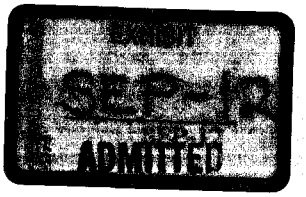
Mr. Rowley is Vice President of Sempra Generation, of which the applicant SEP II is a wholly-owned subsidiary. He has 29 years of experience in the siting, design, permitting, construction, and operation of power generation and electric transmission facilities. Mr. Rowley has been with Sempra Generation since 1998, during which time he was responsible for the siting, design, and permitting of the 570 MW Elk Hills combined cycle project and its associated generation-tie power line, the 1,250 MW Mesquite combined cycle project and its associated transmission interconnection facilities (approved by this Committee and the Arizona Corporation Commission), and the 550 MW Palomar combined cycle project and its associated transmission lines. He has also been responsible for the operation of all of Sempra Generation's power plant and power line facilities. Between 1990 and 1998, Mr. Rowley was with the Imperial Irrigation District (IID) Power Department, where he was responsible for the siting, design, permitting, and construction of several transmission line and power plant projects, as well as the operation of all of IID's power plants and transmission grid. Between 1980 and 1990, Mr. Rowley was with San Diego Gas & Electric, where he was responsible for engineering and permitting of several power plant and facility improvement projects.

Need for and Purpose of the Power Line

The proposed generation-tie power line is needed to interconnect the planned Mesquite Solar project with the transmission grid. The Mesquite Solar project will be a solar energy generation facility employing photovoltaic technology that produces power directly without use of heat transfer fluid or cooling water. The facility will be located in Maricopa County, 2 miles west of the Palo Verde Nuclear Generating Station on a site that will ultimately comprise over 3,500 acres and accommodate over 500 MW of photovoltaic solar panels. The Mesquite Solar project site and vicinity are shown in Figure 1.

Preferred and Alternate Routes

The Preferred and Alternate Routes are shown in Figure 2. In either case, the power line will originate at a new 230 kV substation on the Mesquite Solar project site and extend for a total length of about 4 miles to the existing 230 kV switchyard of the Mesquite Generating Station which, in turn is connected to the 500 kV Hassayampa switchyard. Consistent with direction from the Committee Chairman, notices of the project and the pending hearing have been placed along both routes.



The Preferred Route takes the most direct alignment available and avoids proximity to public roads. The Preferred Route crosses a half-section of public land owned by the State of Arizona, a half-section of private land owned by Dynegy (another power generation company), and then a section of public land owned by the State of Arizona before entering the existing Mesquite Generating Station site. The Alternate Route is very similar, but avoids crossing the private land owned by Dynegy by utilizing the County right-of-way along Elliot Road. The Alternate Route would be used only if right-of-way negotiations with Dynegy are unsuccessful. Both the Preferred and Alternate Routes cross Winters Wash, but in both cases the wash is relatively narrow at the crossing point and the power line would span over the wash completely with no significant impact. Because of the limited length of the transmission line and comparatively small difference between the Preferred and Alternative Routes, the fact that only one private party (Dynegy) is implicated in the routing, and the fact that SEP II has already actively been discussing the transmission line land rights acquisition, design and construction details with Maricopa County, the Arizona State Land Department and Dynegy, approval is sought for both routes at this time.

Design and Visual Appearance

The power line will be a double-circuit 230 kV design supported on a single set of steel poles or lattice towers. If the Alternate Route is used, the segment of the power line along Elliot Road will be supported on steel poles. Either circuit alone will be capable of conveying the entire output of the Mesquite Solar project to the grid, so one of the two circuits may be out of service for maintenance or repair without affecting the reliability of the generation facility. A photo of typical double-circuit 230 kV generation-tie power line is provided as Figure 3.

As shown in Figure 4, the existing 230 kV switchyard of the Mesquite Generating Station is connected to the 500 kV Hassayampa switchyard via a bank of 230/500 kV autotransformers located on the Mesquite Generating Station site. Figure 4 also shows a second connection between the Mesquite Generating Station switchyard and the Hassayampa switchyard that is currently being implemented, including a second bank of 230/500 kV autotransformers. This work also includes installation of a tie breaker that will segregate the 230 kV bus of the Mesquite Generating Station switchyard into a north section and a south section. Each of the north and south sections will have terminations for three of the six Mesquite combined cycle generators, one of the two 230/500 kV autotransformers, and one of the two circuits from the Mesquite Solar project. This configuration will enhance the reliability of the interconnection for the existing Mesquite combined cycle and provide effective redundancy for the Mesquite Solar project.

Mesquite Solar Generation-Tie Project
Transmission Line Siting Committee
Case No. 147
Witness Summary: George High

Mr. High will testify regarding environmental compatibility of the preferred transmission line and alternatives for the Mesquite Solar Generation-Tie Project ("Project"), and will provide further details concerning the studies performed under the supervision of AECOM as set forth in the Application. The transmission line routes originate at the planned Mesquite Solar Energy Project, a photovoltaic (PV) solar energy facility located southwest of Wintersburg, Arizona, and terminate at the existing Mesquite Generating Station 230 kV switchyard. Both the Preferred Route and Alternate Route would be located within undeveloped rural lands that are zoned for industrial development and range from 4.52 to 5.15 miles in length.

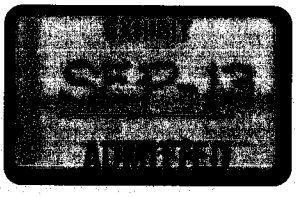
Specifically, Mr. High will address:

- the approach undertaken to the transmission line routing process in this instance (including the identification of alternative routes);
- project transmission line alternatives identified and evaluated;
- species of concern that have been identified by the Arizona Game and Fish Department that may be affected by the project, including their likelihood of occurrence;
- potential short-term and long-term impacts to species of concern;
- compatibility with existing land uses, zoning, ordinances, and master plans; and
- potential short-term and long-term socioeconomic and visual impacts.

BACKGROUND

Mr. High has over 30 years experience in environmental consulting and has served as project manager for more than 25 transmission line routing and permitting projects. He is a senior program manager for AECOM and has a B.S. degree in Biology.

Relevant projects for which Mr. High has been responsible include the Reliant – Eldorado 500 kV Transmission Line Environmental Assessment, Nevada (EA); Ivanpah Energy Center and Transmission Line Environmental Impact Statement, Nevada (EIS); the Reliant Bighorn Generating Facility and Transmission Line, Nevada EA; Basin Electric Belfield – Rhame 230 kV Transmission Line Project, North Dakota EA; Williston – Tioga 230 kV Transmission Line Project, North Dakota EA; Big Stone Coal-fired Generating Facility and Transmission Line, South Dakota and Minnesota EIS; and more than 25 transmission line routing and permitting projects in Texas ranging in size from 69 kV to 348 kV. Previous projects in Arizona include support for the 500 kV Navajo Transmission Line Environmental Impact Statement.



His state permitting experience includes support for Certificates of Convenience and Necessity (CCN) for several transmission line projects in Texas and two Utility Environmental Protection Act (UEPA) documents in Nevada. His North Dakota projects were permitted through the North Dakota Public Service Commission. He provided Expert Testimony before the Texas Public Utility Commission on a controversial 138 kV transmission line in the Texas hill country.

Mr. High is currently responsible for preparing siting and routing documents in support of the Lewis Creek Power Station and the Horse Hollow Generation Tie-line in Texas and is AECOM's project manager for the development of an Environmental Impact Statement for a new international airport south of Las Vegas, Nevada.

TESTIMONY

- Mr. High will first describe the approach used in transmission line routing and the selection of a preferred alternative in this case. He will discuss the application of project constraints and opportunities, screening of alternatives, and the selection of alternatives to be evaluated.
- He will describe the biological resources and existing habitats that occur within the proposed Mesquite Solar Generation-Tie Project area, as well as potential impacts to those resources that may occur as a result of project construction and/or operation.
- Species of concern to be addressed include:
    - Kit fox
    - LeConte's Thrasher
    - Western Burrowing Owl
    - Sonoran Desert Tortoise
- Mr. High will explain short-term minor impacts to wildlife that may result during construction due to vegetation clearing, increased noise and activity, and associated disturbances. Potential mitigation measures also will be addressed.
- He will address potential long-term impacts to wildlife that could result from Project operations, such as habitat fragmentation, avian collision and electrocution issues. Potential mitigation measures also will be addressed.
- Mr. High will specifically address the types of surveys planned prior to construction to determine the presence of LeConte's Thrasher and Western Burrowing Owl. The surveys will follow the most recent burrowing owl guidelines published by Arizona Game and Fish Department, as requested by the agency. The survey results will be used to develop mitigation measures during construction and maintenance of the transmission line.
- Based on a review of public records, it was determined that the proposed Project would not conflict with existing land uses, zoning, ordinances or master plans. Mr. High will address Project compatibility issues related to the Mesquite Power Wildlife Oasis, an educational resource developed and maintained by Mesquite Power and Sempra Energy Company. He also will address potential impacts to a

recreational area managed by Maricopa County and the Buckeye Hills Recreation Area which are in the vicinity of the proposed Project.

- Short-term socioeconomic impacts related to project construction are expected to be minimal and limited to construction worker employment and materials, although Arizona workers and materials will be employed in the Project where feasible. The proposed Project, whether the Preferred or Alternate Route is constructed, would result in minimal long-term visual impacts to sensitive receptors, due to existing transmission lines and power plants in the area, intervening vegetation, and distance. Mr. High will describe short-term socioeconomic impacts and long-term visual resources analyses associated with transmission line routing in this instance.

Mesquite Solar Generation-Tie Project

Transmission Line Siting Committee

Case No. 147

Witness Summary: Cory Breternitz

Mr. Breternitz will testify about the results of cultural resources inventory surveys concerning the proposed transmission line corridors for the proposed Mesquite Solar Generation Project. Specifically Mr. Breternitz will discuss:

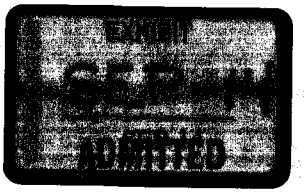
- Background research conducted at the Arizona State Museum AZSite data base on previously identified archaeological sites and previous survey projects within a one-mile radius of the transmission line corridors;
- Protocols followed for the on-site pedestrian survey;
- Results and recommendations to the Arizona State Land Department (ASLD) and Arizona State Museum (ASM) that the proposed undertaking be determined to have no effect on historic properties.
- Determination of previously recorded archaeological site AZ T:9:63 (ASM) as not eligible to the National Register of Historic Places.

BACKGROUND

Mr. Breternitz received a B.A. degree in Anthropology with Honors from the University of Arizona and a M.A. degree in Anthropology from Washington State University. Mr. Breternitz has 39 years experience in archaeology of the southwestern United States and 25 years experience in central Arizona. He is a Registered Professional Archaeologist (RPA) and serves on the Board of Directors for the Society for American Archaeology (SAA). He was a founding member of the American Cultural Resources Association (ACRA) and served five years on the ACRA Board of Directors and one year as its President. He is a member of the Arizona Archaeological Council (AAC). Between 1984 and 2009 Mr. Breternitz was President and Owner of Soil Systems, Inc. (SSI), a Phoenix based archaeological consulting firm. In January 2009 SSI merged with PaleoWest Archaeology and Mr. Breternitz currently serves as a Principal and Senior Archaeologist for PaleoWest Archaeology based in downtown Phoenix with offices in Prescott and Wyoming.

TESTIMONY

Mr. Breternitz will first discuss the results of a Class I cultural resources overview for the proposed Mesquite Solar Generation Project and associated transmission line corridors. A review of the AZSite data base maintained by the ASM and the General Land Office (GLO) records housed at the Bureau of Land Management was conducted for the project area and a one mile radius surrounding the project area. Twenty-one previous archaeological surveys have been conducted across or near the project area since 1955. Thirteen archaeological sites are recorded in this one mile radius study area, but only a single archaeological site, AZ T:9:63 (ASM) passes



through the project area. This site is a historic linear feature, a road indicated on the 1915 and 1916 GLO plat maps.

Mr. Breternitz will discuss the protocols followed for the on-site, pedestrian survey of the proposed transmission line corridors that cross State Trust lands. Fieldwork was conducted under a Fieldwork Authorization issued by the Arizona State Museum per the requirements of PaleoWest's annual non-disturbing, non-collection permit to conduct archaeological surveys on State Trust land. Pedestrian survey transects were walked across the project area by Mr. Breternitz and Doug Mitchell, PaleoWest Senior Archaeologist, on March 24, 2009. The pedestrian survey was conducted by walking transects along the proposed transmission line corridors with two individuals spaced no more than 20 m (60 ft) apart within the 150 ft wide transmission line corridor for the portion of the proposed project area that crossed State Trust land. All methods followed procedures outlined in the ASM's *Standards for Conducting and Reporting Cultural Resource Surveys on State Lands.*

A single, previously recorded archaeological site, AZ T:9:63 (ASM) was relocated during the survey. This historic road segment is oriented west by southwest to east by northeast and passes through Sections 14 and 15 and continues east and west outside of the proposed project area. GLO plat maps indicate that the road did not exist in 1883, but was in place by 1916 and is not shown on the 1984 USGS Gillespie and Arlington, Arizona, topographic maps. AZ T:9:63 (ASM) was reported in a previous archaeological survey for the Palo Verde Switchyard in 2000. The site has been determined to be ineligible to the National Register of Historic Places by the ASLD and the State Historic Preservation Office (SHPO) in 2000.

Seventeen trail segments were identified in the project area during the PaleoWest pedestrian survey. No artifacts were found along any of the trail segments. The trails are visible as straight to slightly curving linear features in the desert pavement and vary between 20 to 30 cm in with and 20 to over 100 m in length. Their orientations varied, but are predominately oriented east to west. It is impossible to assign a date to these features and hundreds of similar linear trail features across areas of desert pavement are documented for west central Arizona. These trail segments may be hundreds or thousands of years old, or they may be more recent historic features created by cattle or off road recreational travel. Aerial photography of the project area shows that permanent linear features can be created across areas of desert pavement by a single vehicle traversing the area.

Five isolated occurrences of prehistoric and historic artifacts were identified during the survey. These consisted of a single or multiple historic rusted cans, a possible prehistoric roasting pit, and a single prehistoric quartzite cobble grinding tool. None of the isolated occurrences meet the ASM criteria for archaeological sites. Isolated occurrences are described and GPS coordinates are provided in the PaleoWest survey report. No further documentation is required for the isolated occurrences.

The single archaeological site documented in the proposed project area on State Trust land crossed by the proposed transmission line corridors, AZ T:9:63 (ASM) has already been determined by the ASLD and SHPO to be ineligible to the National Register of Historic Places. No additional archaeological sites were documented during the survey of the proposed transmission line corridors across State Trust land. PaleoWest recommends that the proposed undertaking be determined to have no effect on historic properties (PaleoWest Technical Report 09-06, April 10, 2009).

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

IN THE MATTER OF THE APPLICATION OF ~~SOUTHWEST TRANSMISSION COOPERATIVE, INC., OR ITS ASSIGNEES~~SEP-II, LLC, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY ~~FOR THE SAN MANUEL INTERCONNECT PROJECT LOCATED IN THE VICINITY OF SAN MANUEL IN PINAL COUNTY, ARIZONA~~ AUTHORIZING THE MESQUITE SOLAR GENERATION-TIE 230KV TRANSMISSION LINE, ORIGINATING AT THE PROPOSED MESQUITE SOLAR PHOTO VOLTAIC GENERATING FACILITY IN SEC. 18, T.1S., R.6W, G&SRB&M, MARICOPA COUNTY, AND TERMINATING AT THE EXISTING MESQUITE GENERATING STATION 230KV SWITCHYARD IN SEC. 15, T.1S., R.6W, G&SRB&M, IN MARICOPA COUNTY, ARIZONA.	Docket No. L-00000~~CC~~KK-09-~~0158-~~00142~~0299~~-00147 Case No. ~~142~~147

CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

Pursuant to notice given as provided by law, the Arizona Power Plant and Transmission Line Siting Committee (the ~~"~~"Committee~~"~~") held a public hearing on ~~May 12.~~August 13 and 14, 2009, in conformance with the requirements of A.R.S. § 40-360, *et seq.*, and A.A.C. R14-3-201, *et seq.*, for the purpose of receiving evidence and deliberating on the Application of ~~Southwest Transmission Cooperative, Inc.~~SEP-II, LLC (the ~~"~~"Applicant~~"~~") for a Certificate of Environmental Compatibility for the ~~San Manuel Interconnect Project (the "Project"~~Mesquite Solar 230kV Generation-Tie Transmission Line (the "Project") as described in its Application.

The following members and designees of members of the Committee were present for the hearing:

John Foreman, Esq. — Chairman, Designee for Arizona

	Attorney General, Terry Goddard
Paul Rasmussen	Designee for Director, Arizona Department of Environmental Quality
~~Jessica~~Gregg ~~Youle~~Houtz	Designee for ~~Director, Energy Department,~~ Arizona Department of ~~Commerce~~Water Resources
Jack Haenichen	Designee for the Director of the Energy Office of the Arizona Department of Commerce
David Eberhart	Designee for Chairman, Arizona Corporation Commission
Barry Wong, Esq.	Appointed Member
Mike Palmer	Appointed Member
William Mundell	Appointed Member
The Honorable Mike Whalen	Appointed Member
The Honorable Patricia Noland	Appointed Member
Jeff McGuire	Appointed Member

Applicant was represented by counsel, ~~Michael M. Grant of Gallagher & Kennedy, P.A. Intervenor Pinal County was represented by Lawrence V. Robertson, Jr.~~ Steven A. Hirsch and Andrew D. Gleason of Bryan Cave LLP. No parties requested intervention.

At the conclusion of the hearing, after consideration of the Application, the evidence and exhibits presented, the legal requirements of A.R.S. §§ 40-360 to 40-360.13, and in accordance with A.A.C. R14-3-213, upon motion duly made and seconded, the Committee voted ~~9-0~~ ___ to ___ to grant Applicant, its successors and assigns the following Certificate of Environmental Compatibility (Case No. ~~142~~147):

Applicant is granted a Certificate of Environmental Compatibility for the construction of facilities as described in its Application as the Preferred and Alternate Routes, consisting of approximately 4.5 to 5.1 miles of double-~~circuit 230-kV line which initially will be energized at 115 kV connecting the existing Apache to Hayden transmission line to the existing APS San Manuel Substation. Beginning at the Apache to Hayden 115-~~

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~~kV transmission line, the new line will extend about one mile in a southwesterly direction to River Road. The line then will run approximately one mile to BHP property and then 2.5 miles to the San Manuel Substation, which is north of the town of San Manuel. A map of the Project area and the proposed route is attached as~~ circuit 230 kV transmission line and ancillary facilities along the routes described below. A general location map of the Project, described herein, is set forth on Exhibit A.

The Project will begin at the Applicant's proposed Mesquite Solar 230 kV Switchyard, to be located in the south half of the northeast quarter of Section 18, Township 1 South, Range 6 West, G&SRB&M, south of the existing Mesquite Generating Station wildlife oasis. The Project will end at the existing Mesquite Generating Station 230 kV Switchyard, located in the east half of the northwest quarter of Section 15, Township 1 South, Range 6 West, G&SRB&M. The Project may be routed along either the Preferred Route or the Alternate Route.

The Preferred Route is as follows:

A 240-foot-wide corridor approximately 4.5 miles in length commencing at the proposed Mesquite Solar 230 kV Switchyard, then proceeding east on State Land for approximately 0.1 mile, then south on State Land for approximately 0.7 mile, then east on State Land for approximately 0.4 mile along the Section Line between Sections 17 and 20, and then continuing east along the same alignment for 0.5 mile on private property. After exiting private property, continuing east on State Land for approximately 1.0 mile along the Section Line between Sections 16 and 21, and then continuing east on the Mesquite Generating Station site for approximately 0.5 mile along the Section Line between Sections 15 and 22. At approximately the midpoint of Section 15, the Preferred Route turns north and continues on the Mesquite Generating Station site for approximately 0.8 mile before turning west at the existing Mesquite Generating Station switchyard.

The Alternate Route is as follows:

A 240-foot-wide corridor approximately 5.1 miles in length commencing at the proposed Mesquite Solar 230 kV Switchyard, then proceeding east on State Land approximately 0.1 mile, and then north on State Land for approximately 0.3 mile to Elliot

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Road. Then proceeding east on State Land along Elliot Road for approximately 0.4 mile, then, after exiting State Land, continuing east in Maricopa County right-of-way for Elliot Road for approximately 0.5 mile, and, after exiting Maricopa County right-of-way, continuing east on State Land along Elliot Road for approximately 0.2 mile. Then proceeding south on State Land for approximately 1.0 mile to the Section Line between Sections 16 and 21. Then east on State Land for approximately 0.8 mile along the Section Line between Sections 16 and 21, and then continuing east on the Mesquite Generating Station site for approximately 0.5 mile along the Section Line between Sections 15 and 22. At approximately the midpoint of Section 15, the Alternate Route turns north and continues on the Mesquite Generating Station site for approximately 0.8 mile before turning west at the existing Mesquite Generating Station switchyard.

This Certificate is granted upon the following conditions:

1. The Applicant shall (a) obtain all approvals and permits required by the United States, the State of Arizona, the County of ~~Pinal~~Maricopa and any other governmental entities having jurisdiction necessary to construct the Project, and (b) file application(s) for such rights-of-way across Arizona State Land Department lands as may be necessary to construct the Project.
2. The Applicant shall comply with all existing applicable statutes, ordinances, master plans and regulations of the United States, the State of Arizona, the County of ~~Pinal~~Maricopa and any other governmental entities having jurisdiction during the construction and operation of the transmission line.
3. Pursuant to A.R.S. § 41-844, if any archaeological, paleontological or historical site or object that is at least 50 years old is discovered on state, county or municipal land during the construction or operation of the transmission line, the Applicant or its representative in charge shall promptly report the discovery to the Director of the Arizona State Museum, and in consultation with the Director, shall immediately take all reasonable steps to secure and maintain the preservation of the discovery.
4. If human remains and/or funerary objects are encountered on private land

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during the course of any ground-disturbing activities relating to the construction or operation of the transmission line, the Applicant shall cease work on the affected area of the Project and notify the Director of the Arizona State Museum pursuant to A.R.S. § 41-865.

5. The Applicant shall comply with the notice and salvage requirements of the Arizona Native Plant Law (A.R.S. §§ 3-901, *et seq.*) and shall, to the extent feasible, minimize the destruction of native plants during the construction and operation of the transmission line. ~~In no event shall the Applicant destroy more than 100 saguaro cacti during the construction of the transmission line and access road.~~

~~6. The Applicant shall not assign this Certificate or its interest in the Project authorized by this Certificate without prior approval of the Commission. Any assignment of this Certificate shall require the assignee to assume all responsibilities of the Applicant listed in this Certificate.~~

6. ~~7.~~ This authorization to construct this Project shall expire five years from the date the Certificate is approved by the Commission unless the transmission line is capable of operation within such time frame. However, prior to expiration, the Applicant or its assignees may request that the Commission extend this time limitation.

7. ~~8.~~ In the event that the Project requires an extension of the term of this Certificate prior to completion of construction, Applicant shall use reasonable means to notify (a) all landowners and residents within one mile of the Project, (b) all persons who made public comment at this proceeding and (c) all parties to this proceeding of the Applicant's request for such extension and the time and place of the hearing in which the Commission will consider the request for extension.

8. ~~9.~~ The Applicant shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the transmission lines and related facilities

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addressed in this Certificate. The Applicant shall maintain written records for a period of five years of all complaints of radio or television interference attributable to operation, together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution shall be noted and explained in the retained records.

9. ~~10.~~ Within 120 days of the Commission decision granting this Certificate, Applicant will post signs in public rights-of-way giving notice of the Project corridor to the extent authorized by law. The Applicant shall place signs in prominent locations at reasonable intervals such that the public is notified along the full length of the transmission line until the transmission line structures are constructed. To the extent practicable, within 45 days of securing ~~easement~~easements or ~~right~~rights-of-way for the Project, the Applicant shall erect and maintain signs providing public notice that the property is the site of a future transmission line. Such signage shall be no smaller than a normal roadway sign. The signs shall advise:

(a) That the site has been approved for the construction of Project facilities;

(b) The expected date of completion of the Project facilities;

(c) A phone number for public information regarding the Project;

(d) The name of the Project;

(e) The name of the Applicant; and

(f) The website of the Project.

10. ~~11.~~ Applicant, or its assignee(s), shall design the transmission lines to incorporate reasonable measures to minimize impacts to raptors.

11. ~~12.~~ Applicant, or its assignee(s), shall use non-specular conductor and dulled surfaces for transmission line structures.

12. ~~13.~~ Before construction on this Project may commence, the Applicant shall

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file a construction mitigation and restoration plan (~~"~~"Plan~~"~~") with ACC Docket Control. Where practicable, the Plan shall specify the Applicant~~'~~'s plans for construction access and methods to minimize impacts to wildlife and to minimize vegetation disturbance outside of the Project right-of-way~~,~~ particularly in drainage channels and along stream banks, and shall re-vegetate outside of the Project right-of-way (excepting any roads necessary to maintain access to the right-of-way), unless waived by the landowner, native areas of construction disturbance to its preconstruction state ~~outside of the power line right-of-way~~ after construction has been completed. The Plan shall specify the Applicant~~'~~'s plans for providing a biological monitor to ensure compliance with Condition No. 5 and the Arizona Native Plant ~~Law~~Laws and plans for coordination with the Arizona Game and Fish Department and the State Historic Preservation Office. The Applicant shall use existing roads for construction and access where practicable and the Plan shall specify the manner in which the Applicant makes use of existing roads.

13. ~~14.~~ With respect to the Project, Applicant shall participate in good faith in state and regional transmission study forums to coordinate transmission expansion plans related to the Project and to resolve transmission constraints in a timely manner.

14. ~~15.~~ The Applicant shall provide copies of this Certificate to ~~Pinal~~Maricopa County~~,~~ the Arizona State Land Department~~,~~ the Bureau of Land Management, the State Historic Preservation Office and the Arizona Game and Fish Department.

~~16. Prior to the date construction commences on this Project, the Applicant shall provide known homebuilders and developers within one mile of the route the identity, location and a pictorial depiction of the type of power line being constructed, accompanied by a written description, and encourage the developers and homebuilders to include this information in the developers' and homebuilders' homeowners' disclosure statements.~~

~~17. Before commencing construction of Project facilities located parallel to and within 100 feet of any existing natural gas or hazardous liquid pipeline, the Applicant shall:~~

~~(a) Perform the appropriate grounding and cathodic protection studies to show that the Project's location parallel to and within 100 feet of such pipeline~~

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(602) 382-6000

~~results in no material adverse impacts to the pipeline or to public safety when both the pipeline and the Project are in operation. If material adverse impacts are noted in the studies, Applicant shall take appropriate steps to ensure that such material adverse impacts are mitigated. Applicant shall provide to Commission Staff reports of studies performed; and~~

~~(b) Perform a technical study simulating an outage of the Project that may be caused by the collocation of the Project parallel to and within 100 feet of the existing natural gas or hazardous liquid pipeline. This study should either: i) show that such outage does not result in customer outages; or ii) include operating plans to minimize any resulting customer outages. Applicant shall provide a copy of this study to Commission Staff.~~

15. ~~18.~~ Applicant will follow the latest Western Electricity Coordinating Council/North American Electric Reliability Corporation Planning standards as approved by the Federal Energy Regulatory Commission, and National Electrical Safety Code construction standards.

16. ~~19.~~ The Applicant shall submit a self-certification letter annually, identifying progress made with respect to each condition contained in the Certificate, including which conditions have been met. Each letter shall be submitted to Docket Control of the Arizona Corporation Commission on ~~March~~May 1 beginning in 2010. Attached to each certification letter shall be documentation explaining how compliance with each condition was achieved. Copies of each letter along with the corresponding documentation shall be submitted to the Arizona Attorney General and Department of Commerce Energy Office. The requirement for the self-certification shall expire on the date the Project is placed into operation.

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(602) 364-7000

~~20. Within sixty (60) days of the Commission decision granting this Certificate, the Applicant shall make good faith efforts to commence discussions with private landowners, on whose property the Project corridor is located, to identify the specific location for the Project's right-of-way and placement of poles.~~

17. ~~21.~~ The Applicant shall expeditiously pursue reasonable efforts to work with private landowners on whose property the Project right-of-way will be located, if any, to mitigate the impacts of the location, construction and operation of the Project on private land.

~~22. The Applicant shall install and maintain marker balls on the Project's static line at the spans in the approaches to the San Manuel airport between structures No. 3 and No. 8 and over the San Pedro River between structures No. 21 and No. 25 to alert any aircraft to the Project. The marker balls, their installation and maintenance will meet FAA Advisory Circular 70/7460-1K standards or any successor standards and requirements.~~

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This Certificate incorporates the following findings of fact and conclusions of law:

1. The Project is in the public interest because it aids the state in meeting the need for an adequate, economical and reliable supply of electric power.
2. In balancing the need for the Project with its effect on the environment and ecology of the state, the conditions placed on the CEC by the Committee effectively minimize its impact on the environment and ecology of the state.
3. The conditions placed on the CEC by the Committee resolve matters concerning the need for the Project and its impact on the environment and ecology of the state raised during the course of proceedings, and as such, serve as the findings on the matters raised.
4. In light of these conditions, the balancing in the broad public interest results in favor of granting the CEC.

GRANTED this __ day of _____, 2009.

ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE

~~BRYAN CAVE LLP~~
~~TWO NORTH CENTRAL AVENUE, SUITE 2200~~
~~PHOENIX, ARIZONA 85004-4406~~
~~(602) 364-7000~~

By _____
John Foreman, Chairman

BRYAN CAVE LLP
TWO NORTH CENTRAL AVENUE, SUITE 2200
PHOENIX, ARIZONA 85004-4406
(602) 364-7000

APPROVED BY ORDER OF THE ARIZONA CORPORATION COMMISSION

Chairman Commissioner Commissioner

Commissioner Commissioner

IN WITNESS WHEREOF, I ~~Michael Kearns, Acting Interim~~, Ernest G. Johnson, Executive Director of the Arizona Corporation Commission, set my hand and cause the official seal of the Commission to be affixed this ____ day of _____, 2009.

By _____
~~Michael Kearns~~
Ernest G. Johnson
~~Acting Interim~~ Executive Director

Dissent: _____

Bryan Cave LLP
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Phoenix, Arizona 85004-4406
(602) 364-7000

EXHIBIT A

Project Location Map and Proposed Route

Bryan Cave LLP
Two North Central Avenue, Suite 2200
Phoenix, Arizona 85004-4406
(602) 364-7000

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

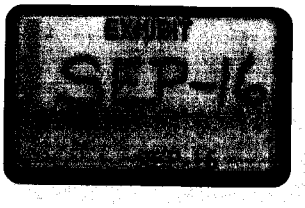
IN THE MATTER OF THE APPLICATION OF SEP-II, LLC, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MESQUITE SOLAR GENERATION-TIE 230KV TRANSMISSION LINE, ORIGINATING AT THE PROPOSED MESQUITE SOLAR PHOTO VOLTAIC GENERATING FACILITY IN SEC. 18, T.1S., R.6W. G&SRB&M, MARICOPA COUNTY, AND TERMINATING AT THE EXISTING MESQUITE GENERATING STATION 230KV SWITCHYARD IN SEC. 15, T.1S., R.6W. G&SRB&M, IN MARICOPA COUNTY, ARIZONA.	Docket No. L-00000KK-09-0299-00147 Case No. 147

CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

Pursuant to notice given as provided by law, the Arizona Power Plant and Transmission Line Siting Committee (the "Committee") held a public hearing on August 13 and 14, 2009, in conformance with the requirements of A.R.S. § 40-360, *et seq.*, and A.A.C. R14-3-201, *et seq.*, for the purpose of receiving evidence and deliberating on the Application of SEP-II, LLC (the "Applicant") for a Certificate of Environmental Compatibility for the Mesquite Solar 230kV Generation-Tie Transmission Line (the "Project") as described in its Application.

The following members and designees of members of the Committee were present for the hearing:

John Foreman, Esq.	Chairman, Designee for Arizona Attorney General, Terry Goddard
Paul Rasmussen	Designee for Director, Arizona Department of Environmental Quality
Gregg Houtz	Designee for Arizona Department of Water Resources



Jack Haenichen	Designee for the Director of the Energy Office of the Arizona Department of Commerce
David Eberhart	Designee for Chairman, Arizona Corporation Commission
Barry Wong, Esq.	Appointed Member
Mike Palmer	Appointed Member
William Mundell	Appointed Member
The Honorable Mike Whalen	Appointed Member
The Honorable Patricia Noland	Appointed Member
Jeff McGuire	Appointed Member

Applicant was represented by counsel, Steven A. Hirsch and Andrew D. Gleason of Bryan Cave LLP. No parties requested intervention.

At the conclusion of the hearing, after consideration of the Application, the evidence and exhibits presented, the legal requirements of A.R.S. §§ 40-360 to 40-360.13, and in accordance with A.A.C. R14-3-213, upon motion duly made and seconded, the Committee voted ___ to ____ to grant Applicant, its successors and assigns the following Certificate of Environmental Compatibility (Case No. 147):

Applicant is granted a Certificate of Environmental Compatibility for the construction of facilities as described in its Application as the Preferred and Alternate Routes, consisting of approximately 4.5 to 5.1 miles of double circuit 230 kV transmission line and ancillary facilities along the routes described below. A general location map of the Project, described herein, is set forth on Exhibit A.

The Project will begin at the Applicant's proposed Mesquite Solar 230 kV Switchyard, to be located in the south half of the northeast quarter of Section 18, Township 1 South, Range 6 West, G&SRB&M, south of the existing Mesquite Generating Station wildlife oasis. The Project will end at the existing Mesquite Generating Station 230 kV Switchyard, located in the east half of the northwest quarter of Section 15, Township 1 South, Range 6 West, G&SRB&M. The Project may be routed along either the Preferred Route or the Alternate Route.

The Preferred Route is as follows:

A 240-foot-wide corridor approximately 4.5 miles in length commencing at the proposed Mesquite Solar 230 kV Switchyard, then proceeding east on State Land for approximately 0.1 mile, then south on State Land for approximately 0.7 mile, then east on State Land for approximately 0.4 mile along the Section Line between Sections 17 and 20, and then continuing east along the same alignment for 0.5 mile on private property. After exiting private property, continuing east on State Land for approximately 1.0 mile along the Section Line between Sections 16 and 21, and then continuing east on the Mesquite Generating Station site for approximately 0.5 mile along the Section Line between Sections 15 and 22. At approximately the midpoint of Section 15, the Preferred Route turns north and continues on the Mesquite Generating Station site for approximately 0.8 mile before turning west at the existing Mesquite Generating Station switchyard.

The Alternate Route is as follows:

A 240-foot-wide corridor approximately 5.1 miles in length commencing at the proposed Mesquite Solar 230 kV Switchyard, then proceeding east on State Land approximately 0.1 mile, and then north on State Land for approximately 0.3 mile to Elliot Road. Then proceeding east on State Land along Elliot Road for approximately 0.4 mile, then, after exiting State Land, continuing east in Maricopa County right-of-way for Elliot Road for approximately 0.5 mile, and, after exiting Maricopa County right-of-way, continuing east on State Land along Elliot Road for approximately 0.2 mile. Then proceeding south on State Land for approximately 1.0 mile to the Section Line between Sections 16 and 21. Then east on State Land for approximately 0.8 mile along the Section Line between Sections 16 and 21, and then continuing east on the Mesquite Generating Station site for approximately 0.5 mile along the Section Line between Sections 15 and 22. At approximately the midpoint of Section 15, the Alternate Route turns north and continues on the Mesquite Generating Station site for approximately 0.8 mile before turning west at the existing Mesquite Generating Station switchyard.

This Certificate is granted upon the following conditions:

1. The Applicant shall (a) obtain all approvals and permits required by the United States, the State of Arizona, the County of Maricopa and any other governmental entities having jurisdiction necessary to construct the Project, and (b) file application(s) for such rights-of-way across Arizona State Land Department lands as may be necessary to construct the Project.
2. The Applicant shall comply with all existing applicable statutes, ordinances, master plans and regulations of the United States, the State of Arizona, the County of Maricopa and any other governmental entities having jurisdiction during the construction and operation of the transmission line.
3. Pursuant to A.R.S. § 41-844, if any archaeological, paleontological or historical site or object that is at least 50 years old is discovered on state, county or municipal land during the construction or operation of the transmission line, the Applicant or its representative in charge shall promptly report the discovery to the Director of the Arizona State Museum, and in consultation with the Director, shall immediately take all reasonable steps to secure and maintain the preservation of the discovery.
4. If human remains and/or funerary objects are encountered on private land during the course of any ground-disturbing activities relating to the construction or operation of the transmission line, the Applicant shall cease work on the affected area of the Project and notify the Director of the Arizona State Museum pursuant to A.R.S. § 41-865.
5. The Applicant shall comply with the notice and salvage requirements of the Arizona Native Plant Law (A.R.S. §§ 3-901, *et seq.*) and shall, to the extent feasible, minimize the destruction of native plants during the construction and operation of the transmission line.
6. This authorization to construct this Project shall expire five years from the date the Certificate is approved by the Commission unless the transmission line is capable of operation within such time frame. However, prior to expiration, the Applicant or its assignees may request that the Commission

extend this time limitation.

7. In the event that the Project requires an extension of the term of this Certificate prior to completion of construction, Applicant shall use reasonable means to notify (a) all landowners and residents within one mile of the Project, (b) all persons who made public comment at this proceeding and (c) all parties to this proceeding of the Applicant's request for such extension and the time and place of the hearing in which the Commission will consider the request for extension.

8. The Applicant shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the transmission lines and related facilities addressed in this Certificate. The Applicant shall maintain written records for a period of five years of all complaints of radio or television interference attributable to operation, together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution shall be noted and explained in the retained records.

9. Within 120 days of the Commission decision granting this Certificate, Applicant will post signs in public rights-of-way giving notice of the Project corridor to the extent authorized by law. The Applicant shall place signs in prominent locations at reasonable intervals such that the public is notified along the full length of the transmission line until the transmission line structures are constructed. To the extent practicable, within 45 days of securing easements or rights-of-way for the Project, the Applicant shall erect and maintain signs providing public notice that the property is the site of a future transmission line. Such signage shall be no smaller than a normal roadway sign. The signs shall advise:

   (a) That the site has been approved for the construction of Project facilities;

(b) The expected date of completion of the Project facilities;

(c) A phone number for public information regarding the Project;

(d) The name of the Project;

(e) The name of the Applicant; and

(f) The website of the Project.

10. Applicant, or its assignee(s), shall design the transmission lines to incorporate reasonable measures to minimize impacts to raptors.

11. Applicant, or its assignee(s), shall use non-specular conductor and dulled surfaces for transmission line structures.

12. Before construction on this Project may commence, the Applicant shall file a construction mitigation and restoration plan ("Plan") with ACC Docket Control. Where practicable, the Plan shall specify the Applicant's plans for construction access and methods to minimize impacts to wildlife and to minimize vegetation disturbance outside of the Project right-of-way, particularly in drainage channels and along stream banks, and shall re-vegetate outside of the Project right-of-way (excepting any roads necessary to maintain access to the right-of-way), unless waived by the landowner, native areas of construction disturbance to its preconstruction state after construction has been completed. The Plan shall specify the Applicant's plans for providing a biological monitor to ensure compliance with Condition No. 5 and the Arizona Native Plant Laws and plans for coordination with the Arizona Game and Fish Department and the State Historic Preservation Office. The Applicant shall use existing roads for construction and access where practicable and the Plan shall specify the manner in which the Applicant makes use of existing roads.

13. With respect to the Project, Applicant shall participate in good faith in state and regional transmission study forums to coordinate transmission expansion plans related to the Project and to resolve transmission constraints in a timely manner.

14. The Applicant shall provide copies of this Certificate to Maricopa County, the Arizona State Land Department, the Bureau of Land Management, the State Historic Preservation Office and the Arizona Game and Fish Department.

15. Applicant will follow the latest Western Electricity Coordinating Council/North American Electric Reliability Corporation Planning standards as approved

by the Federal Energy Regulatory Commission, and National Electrical Safety Code construction standards.

16. The Applicant shall submit a self-certification letter annually, identifying progress made with respect to each condition contained in the Certificate, including which conditions have been met. Each letter shall be submitted to Docket Control of the Arizona Corporation Commission on May 1 beginning in 2010. Attached to each certification letter shall be documentation explaining how compliance with each condition was achieved. Copies of each letter along with the corresponding documentation shall be submitted to the Arizona Attorney General and Department of Commerce Energy Office. The requirement for the self-certification shall expire on the date the Project is placed into operation.

17. The Applicant shall expeditiously pursue reasonable efforts to work with private landowners on whose property the Project right-of-way will be located, if any, to mitigate the impacts of the location, construction and operation of the Project on private land.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This Certificate incorporates the following findings of fact and conclusions of law:

1. The Project is in the public interest because it aids the state in meeting the need for an adequate, economical and reliable supply of electric power.
2. In balancing the need for the Project with its effect on the environment and ecology of the state, the conditions placed on the CEC by the Committee effectively minimize its impact on the environment and ecology of the state.
3. The conditions placed on the CEC by the Committee resolve matters concerning the need for the Project and its impact on the environment and ecology of the state raised during the course of proceedings, and as such, serve as the findings on the matters raised.

4. In light of these conditions, the balancing in the broad public interest results in favor of granting the CEC.

GRANTED this __ day of _____, 2009.

ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE

By _____
John Foreman, Chairman

APPROVED BY ORDER OF THE ARIZONA CORPORATION COMMISSION

Chairman Commissioner Commissioner

Commissioner Commissioner

IN WITNESS WHEREOF, I, Ernest G. Johnson, Executive Director of the Arizona Corporation Commission, set my hand and cause the official seal of the Commission to be affixed this ____ day of _____, 2009.

By _____
Ernest G. Johnson
Executive Director

Dissent: _____

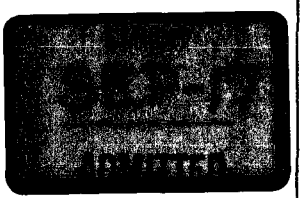
646735.02

EXHIBIT A

Project Location Map and Proposed Route

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES § 40-360, *et seq.*, FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE PALO VERDE HUB TO NORTH GILA 500kV TRANSMISSION LINE PROJECT, WHICH INCLUDES A 500kV TRANSMISSION LINE AND ASSOCIATED FACILITIES AND INTER-CONNECTIONS ORIGINATING FROM EITHER THE ARLINGTON VALLEY ENERGY FACILITY, SECTION 17, TOWNSHIP 1 SOUTH, RANGE 6 WEST, G&SRB&M, THE HASSAYAMPA SWITCHYARD, SECTION 15, TOWNSHIP 1 SOUTH, RANGE 6 WEST, G&SRB&M, OR THE REDHAWK POWER PLANT, SECTION 23, TOWNSHIP 1 SOUTH, RANGE 6 WEST, G&SRB&M, EACH LOCATED SOUTH OF INTERSTATE 10 NEAR WINTERSBURG ROAD IN AN UNINCORPORATED AREA OF MARICOPA COUNTY, ARIZONA, TO THE NORTH GILA SUBSTATION, FIVE MILES NORTHEAST OF THE CITY OF YUMA, YUMA COUNTY, ARIZONA, AT SECTION 11, TOWNSHIP 8 SOUTH, RANGE 22 WEST, G&SRB&M	Docket No. L-00000D-07-0566-0135 Case No. 135



CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

Pursuant to notice given as provided by law, the Arizona Power Plant and Transmission Line Siting Committee (the "Committee") held public hearings on November 19 and 20, 2007, all in conformance with the requirements of Arizona Revised Statutes ("A.R.S.") § 40-360, *et seq.*, for the purpose of receiving evidence and

deliberating on the Application of Arizona Public Service Company ("Applicant") for a Certificate of Environmental Compatibility ("Certificate") in the above-captioned case (the "Project").

The following members and designees of members of the Committee were present at one or more of the hearings for the evidentiary presentations and/or for the deliberations:

Laurie Woodall	Chairman, Designee for Arizona Attorney General, Terry Goddard
David L. Eberhart, P.E.	Designee for Chairman, Arizona Corporation Commission
Jack Haenichen	Designee for Director, Energy Department, Arizona Department of Commerce
Paul Rasmussen	Designee for Director, Arizona Department of Environmental Quality
Jeff McGuire	Appointed Member
Michael Palmer	Appointed Member
Joy Rich	Appointed Member
Michael Whalen	Appointed Member
Barry Wong	Appointed Member

The Applicant was represented by Thomas H. Campbell and Albert H. Acken of Lewis and Roca LLP. The following parties were granted intervention pursuant to A.R.S. § 40-360.05: Arizona Corporation Commission ("Commission") Staff, represented by Charles Hains.

At the conclusion of the hearings, the Committee, having received the Application, the appearances of the parties, the evidence, testimony and exhibits presented at the hearings, and being advised of the legal requirements of A.R.S. §§ 40-360 to 40-360.13,

upon motion duly made and seconded, voted unanimously to grant the Applicant this Certificate of Environmental Compatibility (Case No. 135) for the Project.

The Project consists of approximately 110 miles of 500kV transmission line and required switchyard facilities and modifications. The Project Route (depicted on **Exhibit A** attached hereto) originates at one of the following: the Arlington Valley Energy Facility (Line Siting Case No. 98) located in Section 17, Township 1 South, Range 6 West, the Hassayampa Switchyard (Line Siting Case No. 110) located in Section 15, Township 1 South, Range 6 West, or the Redhawk Power Plant (Line Siting Case No. 95) located in Section 23, Township 1 South, Range 6 West.

If the Project originates at the Arlington Valley Energy Facility, the Project will have a 2,000-foot corridor (shown as Link 40 on **Exhibit A**) 1,000 feet on either side of a centerline, which proceeds east from the Arlington Valley Energy Facility along the southern edge of the north half of the northeast quarter of Section 17, and turns south along the eastern edge of Sections 17, 20, and 29, Township 1 South, Range 6 West G&SRB&M until reaching a common point for all route options, located at the eastern edge of Section 29, Township 1 South, Range 6 West G&SRB&M, 130 feet north of the Southwest Power Link ("SWPL") 500kV transmission line (Line Siting Case No. 52).

If the Project originates at the Hassayampa Switchyard, the Project will have a 2,000-foot corridor (Links 10 and 30) 1,000 feet on either side of the SWPL 500kV transmission line, centerline through Sections 15, 22, 27, and 28, Township 1 South, Range 6 West G&SRB&M, proceeding south to the common point described above.

If the Project originates at the Redhawk Power Plant, the Project will have a 2,000-foot corridor (Link 20) 1,000 feet on either side of the centerline, which proceeds west from the Redhawk Power Plant along the northern section line of Sections 23 and 22, Township 1 South, Range 6 West G&SRB&M, to the beginning of Link 30, located at the

midsection line of Section 22, Township 1 South, Range 6 West G&SRB&M, proceeding south to the common point described above.

All three interconnection options proceed to the beginning of Link 50, described as the common point above. For Link 50, the Project has a 2,000-foot corridor, which begins at the centerline of the existing SWPL 500kV transmission line and extends 2,000 feet north. From this location, the route proceeds generally southwest parallel to the SWPL 500kV transmission line. Link 50 terminates at the existing North Gila Substation located five miles northeast of the City of Yuma, in Section 11, Township 8 South, Range 22 West G&SRB&M. Conceptual models of tower types are depicted in Exhibits G-1 through G-8 of the application, attached hereto as **Exhibit B.**

This Certificate is granted upon the following conditions:

1. The Applicant shall obtain all required approvals and permits necessary to construct the Project.
2. The Applicant shall comply with all existing applicable ordinances, master plans and regulations of the State of Arizona, the County of Maricopa, the County of Yuma, the United States, and any other governmental entities having jurisdiction.
3. This authorization to commence construction of the Project shall expire seven years from the date the Certificate is approved by the Commission; provided, however, that prior to such expiration the Applicant or its assignees may request that the Commission extend this time limitation.
4. The Applicant shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the transmission line and related facilities addressed in this Certificate. The Applicant shall maintain written records for a period of five years of all complaints of radio or television interference

attributable to operation, together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution shall be noted and explained.

5. The Project shall comply with the following recommendations of the Arizona Game and Fish Department ("AGFD"):
   (a) Wildlife data collected by the biological monitor will be given to the AGFD's Heritage Data Management System.
   (b) Where possible, leave large vegetation intact to reduce habitat impact and promote regeneration.
   (c) Coordinate plant salvage efforts with the Arizona Department of Agriculture, in accordance with the Arizona Native Plant Law. In addition, the applicable land management agencies should be consulted regarding guidelines for revegetation efforts.
6. Pursuant to A.R.S. § 41-844, if any archaeological, paleontological or historical site or object that is at least fifty years old is discovered on state, county or municipal land during plan-related activities, the person in charge shall promptly report the discovery to the Director of the Arizona State Museum, and in consultation with the Director, shall immediately take all reasonable steps to secure and maintain the preservation of the discovery. If human remains and/or funerary objects are encountered on private land during the course of any ground-disturbing activities relating to the development of the subject property, Applicant shall cease work on the affected area of the Project and notify the Director of the Arizona State Museum pursuant to A.R.S. § 41-865.

7. The Applicant shall design the transmission lines so as to mitigate impacts to raptors.

8. The Applicant shall use non-specular conductor and dulled surfaces for transmission line structures.

9. Within 120 days of the Commission decision granting this Certificate, Applicant will post signs in public rights-of-way giving notice of the Project corridor to the extent authorized by law. Within 45 days of securing easement or right-of-way for the Project, the Applicant shall erect and maintain signs providing public notice that the property is the site of a future transmission line. Such signage shall be no smaller than a normal roadway sign. The Applicant shall place signs in prominent locations at reasonable intervals such that the public is notified along the full length of the transmission line until the transmission structures are constructed. The signs shall advise:

   (a) That the site has been approved for the construction of Project facilities;

   (b) The expected date of completion of the Project facilities;

   (c) A phone number for public information regarding the Project;

   (d) The name of the Project;

   (e) The name of the Applicant; and

   (f) The Applicant's website.

   Sign placement will be reported annually in accordance with Condition 16.

10. In the event that the Project requires an extension of the term of this Certificate prior to completion of construction, Applicant shall use reasonable means to directly notify all landowners and residents within a one-half mile of the Project corridor for which the extension is sought. Such

landowners and residents shall be notified of the time and place of the proceeding in which the Commission shall consider such request for extension.

11. Before construction on this Project may commence, the Applicant must file a Plan of Development approved by the Bureau of Land Management ("BLM") with Docket Control with copies to the affected areas of jurisdiction. Applicant will comply with the BLM's Standard Construction and Operating Procedures and Mitigation Measures and Other Mitigation Measures as outlined in the Finding of No Significant Impact, attached hereto as **Exhibit C**.

12. Applicant shall retain a qualified biologist to monitor all ground clearing/disturbing construction activities that may affect sensitive species or habitat. The biological monitor will be responsible for ensuring proper actions are taken if a special status species is encountered. If Sonoran desert tortoises are encountered during construction, the Applicant shall follow the AGFD's Guidelines for Handling Sonoran Desert Tortoises.

13. With respect to the Project, Applicant shall participate in good faith in state and regional transmission study forums to coordinate transmission expansion plans related to the Project and to resolve transmission constraints in a timely manner.

14. The Applicant shall provide copies of this Certificate to the Yuma County Planning and Zoning Commission, the Maricopa County Planning and Development Department, the Arizona State Land Department, the State Historic Preservation Office, and AGFD.

15. Prior to the date this transmission line is put into commercial service, the Applicant shall provide homebuilders and developers within one mile of the

center line of the Certificate route the identity, location, and a pictorial depiction of the type of power line being constructed, accompanied by a written description, and encourage the developers and homebuilders to include this information in the developers' and homebuilders' homeowners' disclosure statements.

16. The Applicant shall submit a self-certification letter annually, identifying progress made with respect to each condition contained in the Certificate, including which conditions have been met. Each letter shall be submitted to the Utilities Division Director on December 1 beginning in 2008. Attached to each certification letter shall be documentation explaining how compliance with each condition was achieved. Copies of each letter along with the corresponding documentation shall be submitted to the Arizona Attorney General and Department of Commerce Energy Office. The requirement for the self-certification shall expire on the date the Project is placed into operation.

17. Applicant shall work in good faith with the Yuma Proving Ground commanding officer regarding the final right-of-way on that portion of the route within the Yuma Proving Ground.

18. Within the Project area, construction activities will avoid to the extent practicable designated wildlife water sources to allow free access by Bighorn Sheep.

19. Applicant shall conform to Western Electricity Coordinating Council/North American Electric Reliability Corporation N-1 and N-1-1 contingency planning criteria. N-1 contingency shall not result in any load dropping or generation tripping.

20. Except when entering switchyards and substations, the minimum spacing between the center lines of the two 500 kV systems should be the greater of: 1) 130 feet; or 2) the height of the tallest tower involved in that particular span.

21. Before commencing construction of Project facilities located within 100 feet of any existing natural gas or hazardous liquid pipeline, the Applicant shall:

    (a) Perform the appropriate grounding and cathodic protection studies to show that the Project's location within 100 feet of such pipeline results in no material adverse impacts to the natural gas or hazardous liquid pipeline or to public safety when both are in operation. As a compliance matter, a report of studies shall be provided to the Commission Staff. If material adverse impacts are noted in the studies, Applicant shall take appropriate steps to ensure that such material adverse impacts are eliminated. Applicant shall provide to the Commission Staff written documentation of the actions that will be taken and documentation showing no material adverse impact will occur; and,

    (b) Perform a technical study simulating an outage of the facility that may be caused by the collocation of the Project within 100 feet of the existing natural gas or hazardous liquid pipeline. This study should either: i) show that such outage does not result in customer outages; or ii) include operating plans to minimize any resulting customer outages. Applicant shall provide a copy of this study to Commission Staff.

22. Applicant shall pursue good faith efforts to reach a commercially reasonable agreement for interconnection at a new Arlington Valley 500kV switchyard.

Applicant shall file with the Commission Utilities Division no later than December 31, 2010, a report summarizing its efforts, the option(s) ultimately selected, and the reasons other option(s) were not selected.

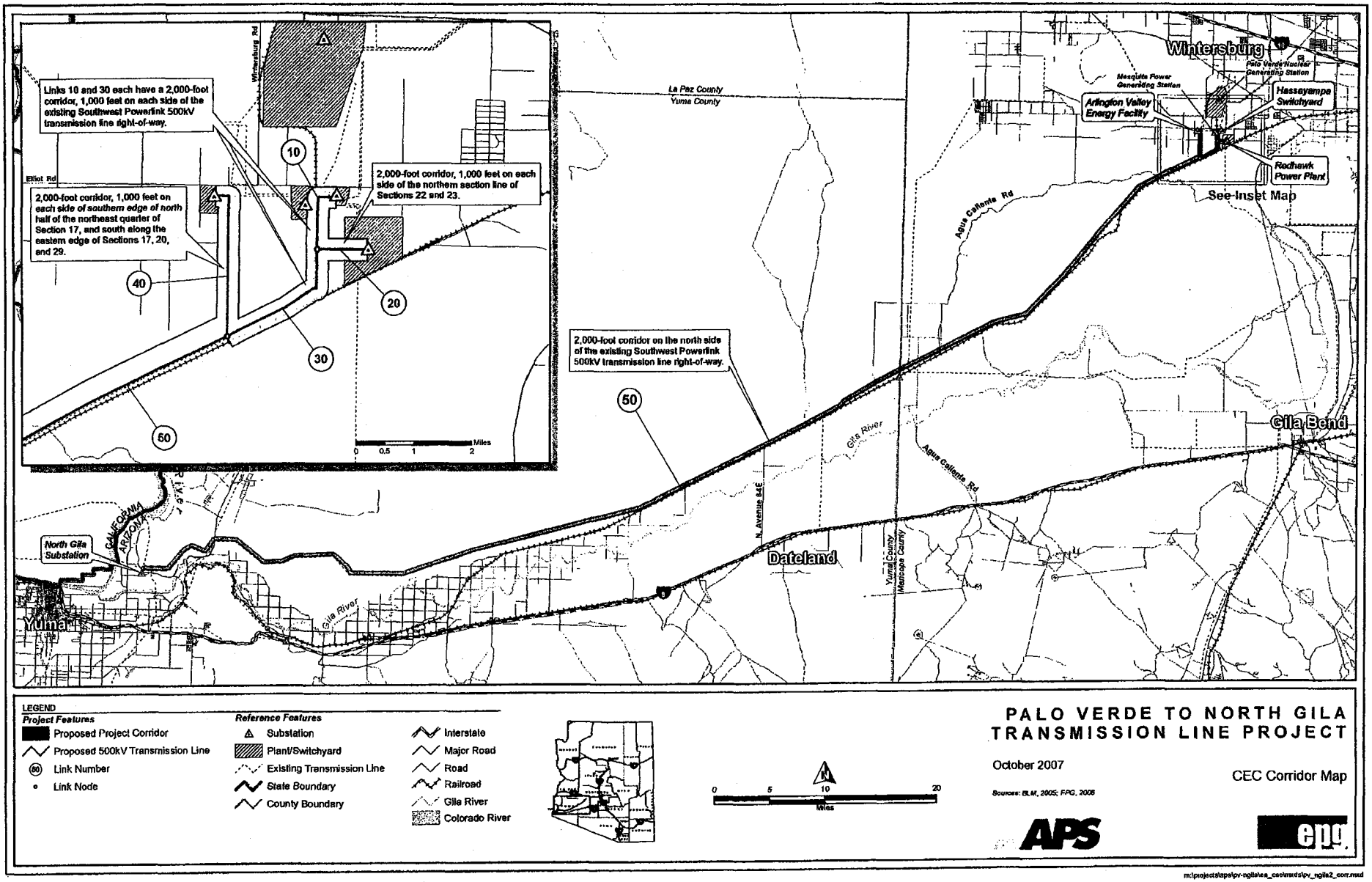
DATED this 3 day of December, 2007.

THE ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE

Laurie A. Woodall

Laurie A. Woodall, Chairman

EXHIBIT 'A'



LEGEND

Project Features

- Proposed Project Corridor
- Proposed 500kV Transmission Line
- (60) Link Number
- Link Node

Reference Features

- Substation
- Plant/Switchyard
- Existing Transmission Line
- State Boundary
- County Boundary
- Interstate
- Major Road
- Road
- Railroad
- Gila River
- Colorado River

PALO VERDE TO NORTH GILA TRANSMISSION LINE PROJECT

October 2007

CEC Corridor Map

Sources: BLM, 2005; FPG, 2008

APS

epg

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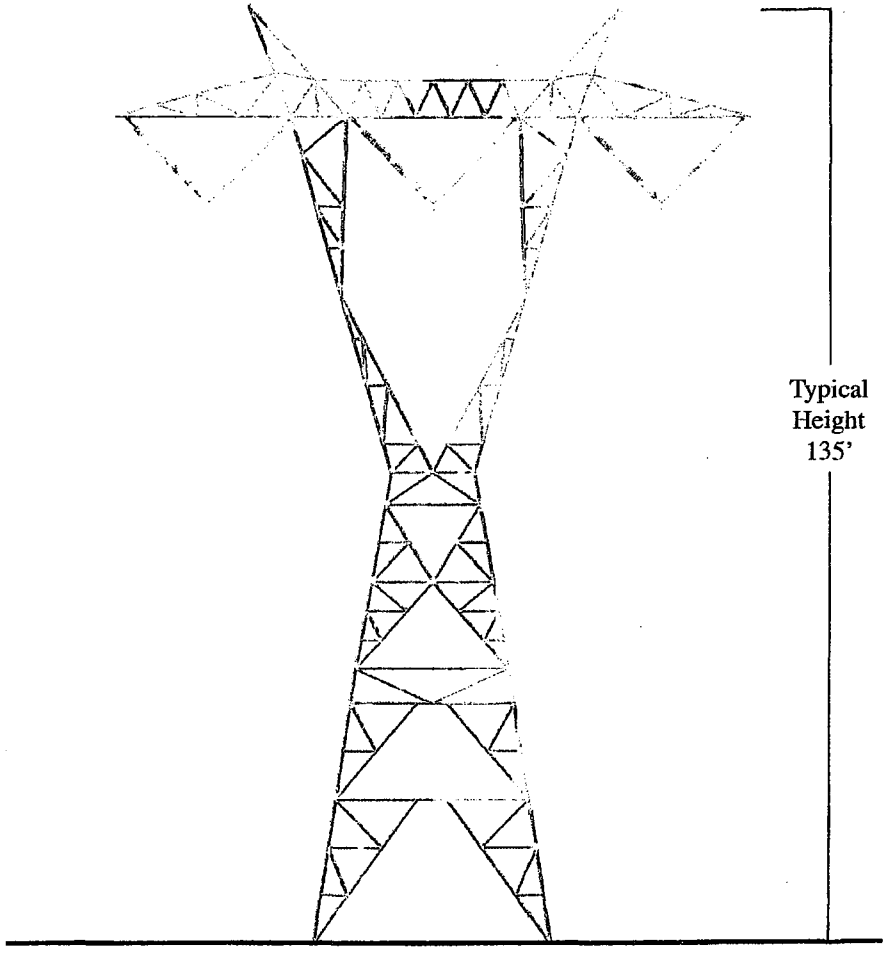
EXHIBIT 'B'

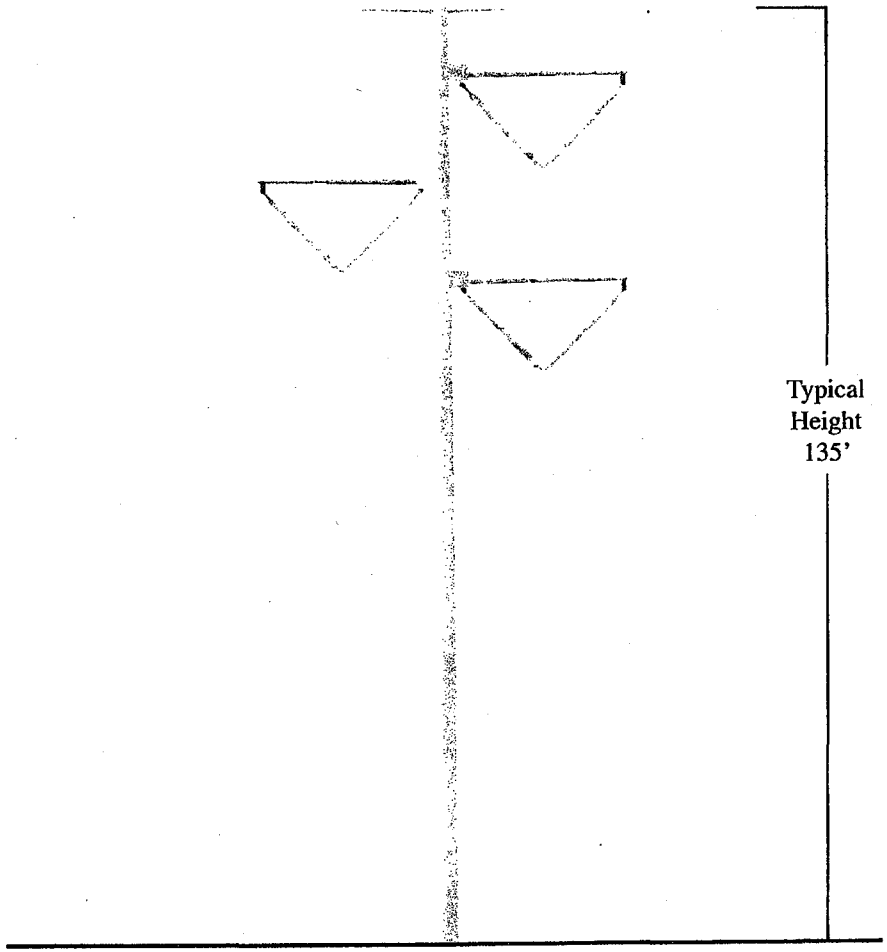
Typical 500kV Single-Circuit Steel Lattice Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-1

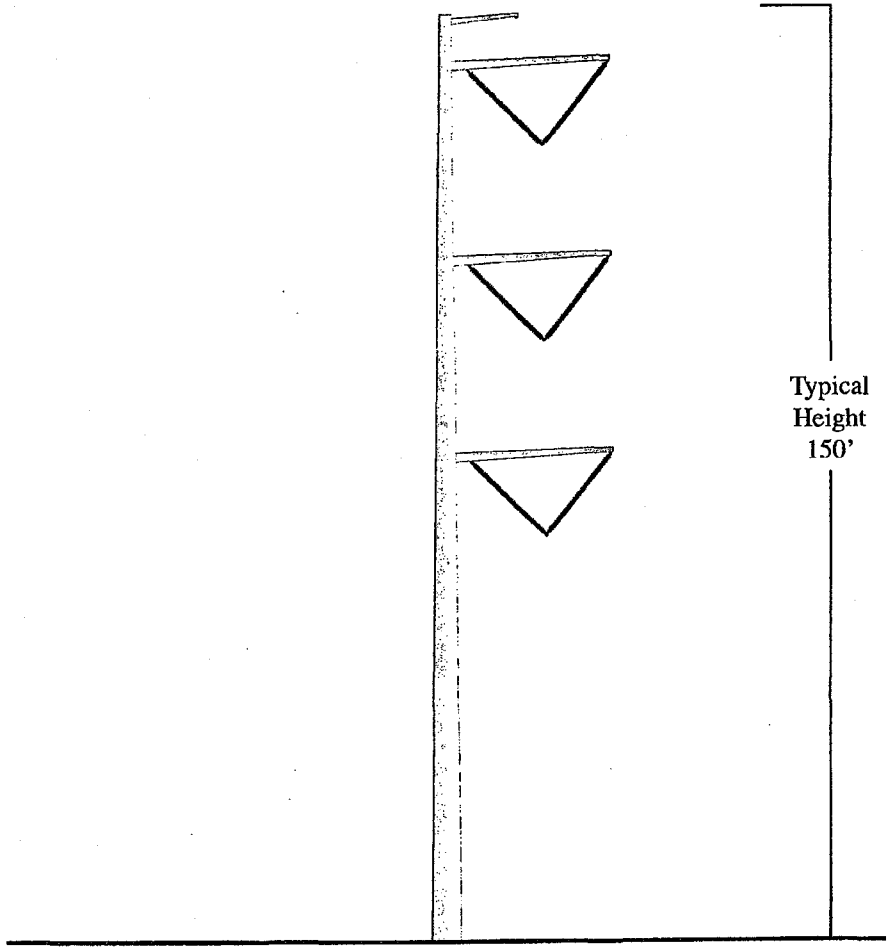
Typical 500kV Single-Circuit Tubular Steel Pole Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-2

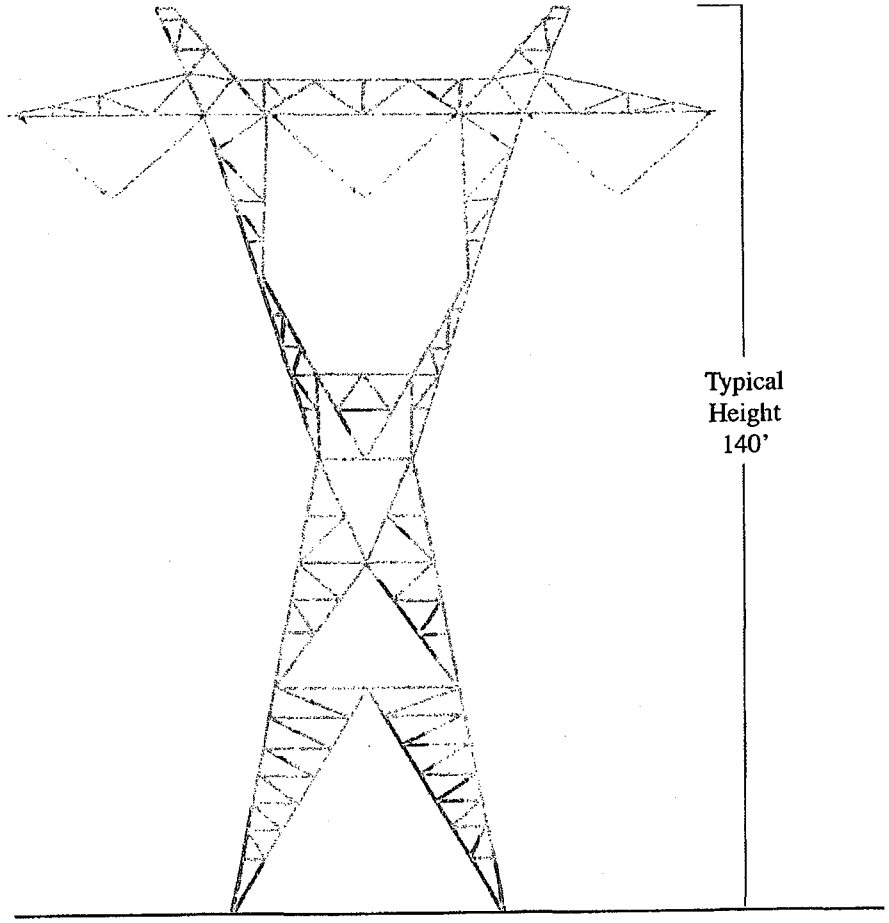
Typical 500kV Tangent Vertical Configuration



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-3

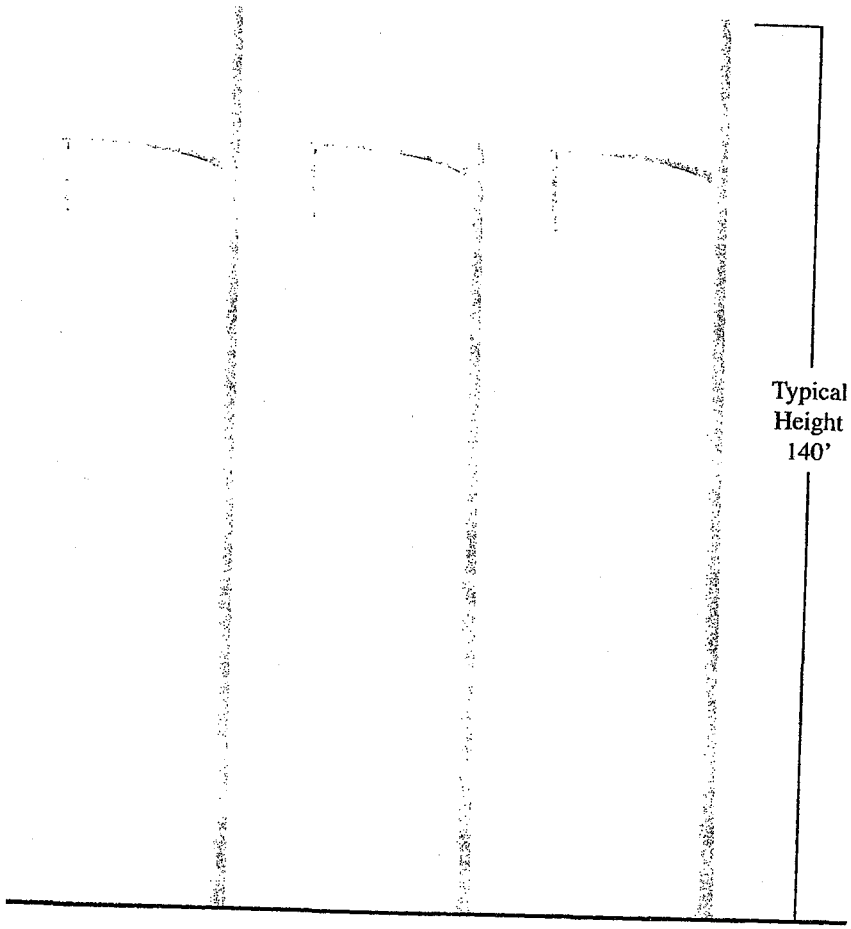
Typical 500kV Single-Circuit Dead-End Steel Lattice Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-4

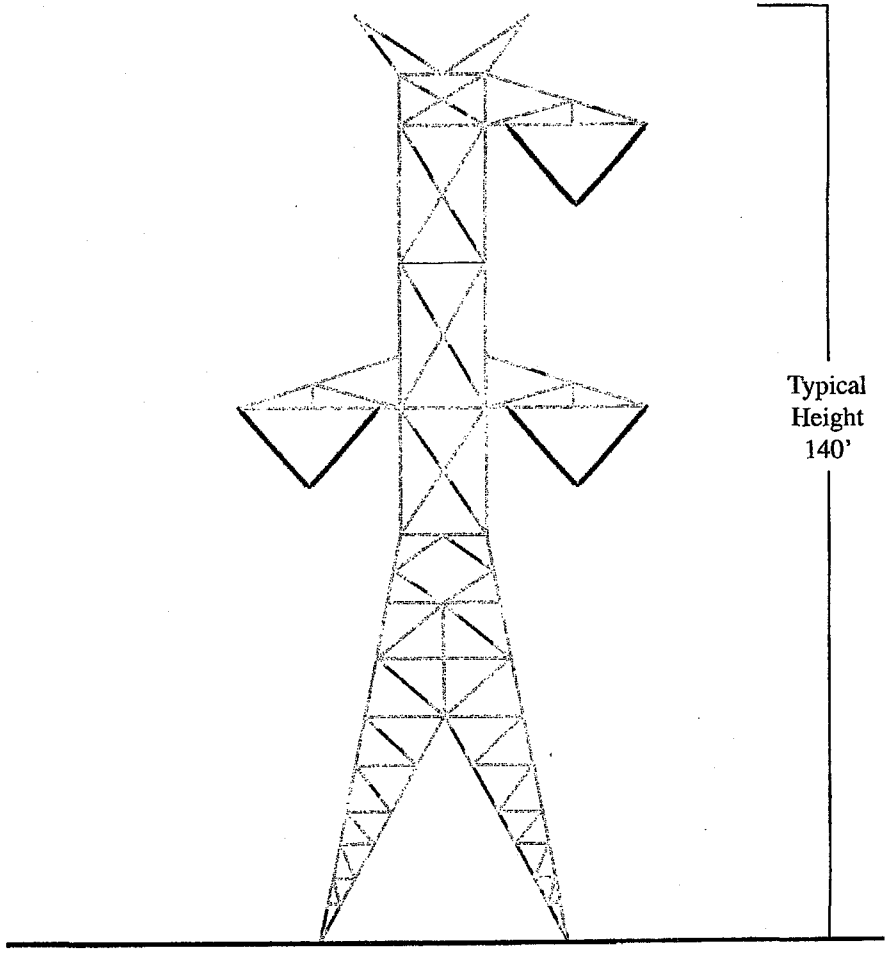
Typical 500kV Single-Circuit Dead-End Steel Three-Pole Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-5

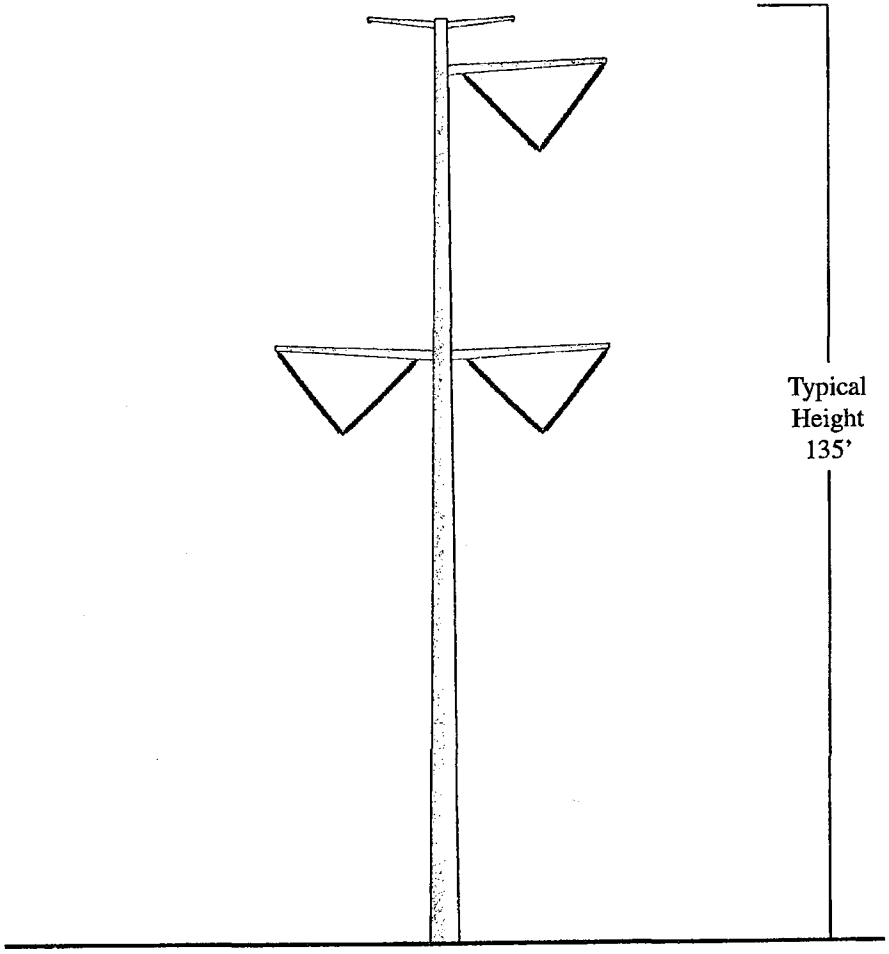
Typical 500kV Lattice Tower Transposition Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-6

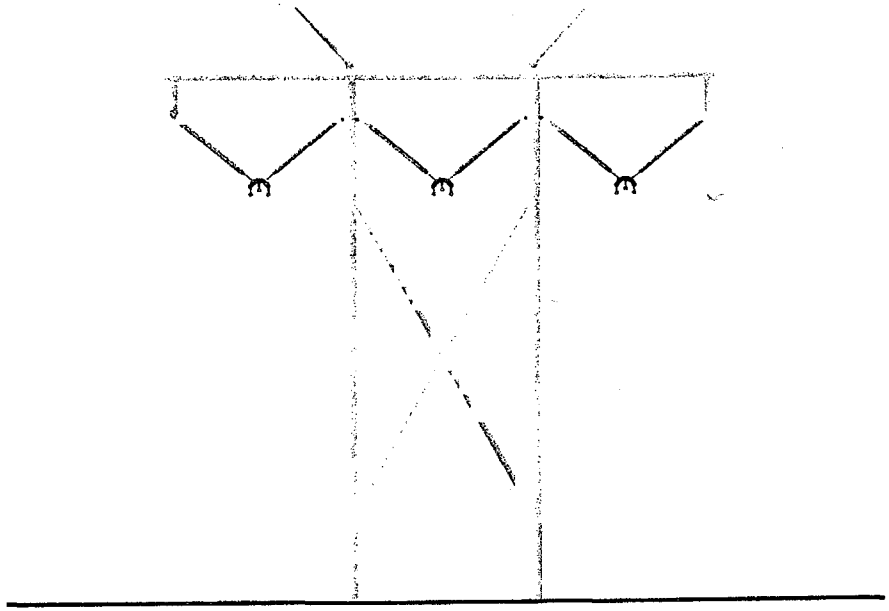
Typical 500kV Steel-Pole Transposition Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-7

Modified 500kV Single-Circuit Steel H-Frame Structure



Palo Verde Hub to North Gila
Transmission Line Project

Exhibit G-8

EXHIBIT 'C'

FINDING OF NO SIGNIFICANT IMPACT

Name of Environmental Assessment: Palo Verde Hub to North Gila Substation
Environmental Assessment No.: AZ-220-2006-008
Case File No: AZA-33305
Bureau of Land Management Office: Phoenix District, Lower Sonoran Field Office

Finding of No Significant Impact: Upon review of the Environmental Assessment (EA) prepared for the above-named project and incorporated herein by reference, no significant long-term impacts on the human (socioeconomic) or natural environment would result. Short-term, temporary impacts on soils, water resources, biological resources, cultural resources, air quality, noise, and land use associated with construction activities of the proposed transmission line were identified which could be reduced by mitigation, and therefore are not considered significant. Long-term impacts on scenic quality were considered low to moderate, while the potential for long-term residual collision hazard for birds was considered low.

Recommendation: Grant a right-of-way to Arizona Public Service Company (APS) for construction, operation, and maintenance of a 500 kilovolt (kV) transmission line. The transmission line would originate from the Palo Verde Hub (PV Hub) at either an open transmission interconnection position in the Arlington Energy Facility, the Hassayampa Switchyard, or the Redhawk Power Plant. The transmission line would be constructed primarily with lattice tower structures paralleling the existing Southwest Power Link 500 kV Transmission line (SWPL) and connect into the North Gila Substation in Yuma, Arizona. The proposed right-of-way would be 200 feet wide, approximately 110 to 130 miles in length, of which approximately 55 miles would be located on Bureau of Land Management (BLM) administered lands. APS would implement the recommended Standard Operating Procedures and Mitigation Measures listed in Attachment A. The transmission line would be owned by APS and operated by APS and other project proponents.

Stipulations: APS is to implement the recommended Standard Operating Procedures and Mitigation Measures listed in Attachment A. Compliance with stipulations and mitigation measures will be monitored during project implementation. BLM issuance of the right-of-way grant is conditional upon APS obtaining all other federal, state, and local permits required to construct and operate the transmission line. APS is required to obtain the required Certificate of Environmental Compatibility from the Arizona Corporation Commission. The BLM has fulfilled requirements in accordance with the Section 106 process regarding cultural resource issues and requirements regarding biological resource issues.

Rationale: The EA for the Proposed Action has been prepared in accordance with National Environmental Policy Act (NEPA) requirements, including the public involvement procedures prescribed by 40 CFR §1506.6. The project design and mitigation measures proposed in the EA are integral to the Proposed Action and would reduce short-term and long-term environmental impacts to a level of insignificance. Issuance of right-of-way grant AZA-33305 to APS for the construction, operation, and maintenance of an electric transmission line is consistent with the Lower Gila South Resource Management Plan (BLM, 1988) which defines land uses along the San Diego Gas and Electric utility corridor and the Yuma District Resource Management Plan (BLM, 1986 and 1987) which defines uses along the interconnection utility corridor.

Recommendation of Finding: _____ Project Manager — 11/6/07 Date

I concur:

Approval of Finding: _____ Field Manager — 11/06/07 Date

DECISION RECORD

Serial No.: AZA-33305
EA No.: AZ-220-2006-008

Decision:

It is decided that Arizona Public Service Company (APS) be granted a right-of-way by the Bureau of Land Management (BLM) 200 feet wide, approximately 110 to 130 miles in length, approximately 1600 acres (across lands managed by the BLM, Bureau of Reclamation and the Yuma Proving Ground), including the rights to design, construct, operate, maintain and own a 500 kilovolt (kV) electric transmission line.

The transmission line would originate from the Palo Verde Hub (PV Hub) at either an open transmission interconnection position in the Arlington Energy Facility, the Hassayampa Switchyard or the Redhawk Power Plant. The transmission line would be constructed primarily with lattice tower structures paralleling the existing Southwest Power Link 500 kV Transmission line (SWPL) and connect into the North Gila Substation in Yuma, Arizona.

Rationale for Decision:

The Proposed Action is consistent with the current Lower Gila South Resource Management Plan (BLM, 1988) which defines land uses along the San Diego Gas and Electric utility corridor and the Yuma District Resource Management Plan (BLM, 1986 and 1987) which defines uses along the interconnection utility corridor.

The Proposed Action will provide needed electrical power to the continuing development and growth occurring and anticipated in the Yuma region. The project would strengthen the entire Yuma area transmission system by providing an additional extra-high voltage (EHV) electrical transmission source to the region.

Upon implementation of the attached standard operating procedures and mitigation measures, short-term and long-term environmental and human (socioeconomic) impacts identified in the Environmental Assessment would not be significant. Compliance monitoring would be conducted to ensure that these mitigation measures are properly implemented and that sensitive resources are protected.

Standard Operating Procedures and Mitigation Measures:

See Attachment A.

Field Manager

11/06/07
Date

APPENDIX A
STANDARD CONSTRUCTION AND OPERATING PROCEDURES AND MITIGATION MEASURES

1.	All construction vehicle movement outside of the right-of-way will be restricted to predesignated access, contractor acquired access, or public roads.
2.	The limits of construction activities will typically be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate survey or construction activity limits. The right-of-way boundary will be flagged in environmentally sensitive areas described in the specific plan of development to alert construction personnel that those areas should be avoided.
3.	In construction areas where recontouring is not required, vegetation will be left in place wherever possible to avoid excessive root damage and allow for resprouting.
4.	In construction areas (e.g., marshalling yards, structure sites, spur roads from existing access roads) where ground disturbance is significant or where recontouring is required, surface restoration will occur as required by the landowner or land-management agency. The method of restoration will typically consist of returning disturbed areas to their natural contour (to the extent practical), reseeding or revegetating with native plants (if required), installing cross drains for erosion control, placing water bars in the road, and filling ditches. Seed must be tested and certified to contain no noxious weeds in the mix by the State of Arizona Agricultural Department. Seed viability must also be tested at a certified laboratory approved by the authorized officer.
5.	Watering facilities (e.g., tanks, developed springs, water lines, wells, etc.) will be repaired or replaced to their predisturbed conditions as required by the landowner or land-management agency if they are damaged or destroyed by construction activities.
6.	Prior to construction, all construction personnel will be instructed on the protection of cultural, paleontological, and ecological resources. To assist in this effort, the construction contract will address (a) federal and state laws regarding antiquities, fossils, and plants and wildlife, including collection and removal; and (b) the importance of these resources and the purpose and necessity of protecting them.
7.	Impact avoidance and mitigation measures for cultural resources developed in consultation with the SHPO, BLM, BOR, YPG, ASLD, and the tribes will be implemented.
8.	The project sponsors will respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures. The transmission line will be patrolled on a regular basis so that damaged insulators or other line materials that could cause interference are repaired or replaced.
9.	The project sponsors will apply necessary mitigation to minimize problems of induced currents and voltages onto conductive objects sharing a right-of-way, to the mutual satisfaction of the parties involved.
10.	All construction and maintenance activities shall be conducted in a manner that will minimize disturbance to vegetation, drainage channels, and intermittent and perennial streambanks. In addition, all existing roads will be left in a condition equal to or better than their condition prior to the construction of the transmission line.
11.	All requirements of those entities having jurisdiction over air quality matters will be adhered to and any necessary permits for construction activities will be obtained. Open burning of construction debris (cleared trees, etc.) will not be allowed on BLM administered lands.
12.	Fences and gates, if damaged or destroyed by construction activities, will be repaired or replaced to their original predisturbed condition as required by the landowner or the land-management agency. Temporary gates will be installed only with the permission of the landowner or the land-management agency, and will be restored to their original predisturbed condition following construction.
13.	The proposed hardware and conductor will limit the audible noise, radio interference (RI), and television interference (TVI) due to corona. Tension will be maintained on all insulator assemblies to assure positive contact between insulators, thereby avoiding sparking. Caution will be exercised during construction to avoid scratching or nicking the conductor

	surface, which may provide points for corona to occur.
14.	During operation of the transmission line, the right-of-way will be maintained free of construction related non-biodegradable debris.
15.	Totally enclosed containment will be provided for all debris. All construction waste including debris, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials. A Spill Contingency Plan and Spill Prevention Control and Countermeasure (SPCC) Plan will be prepared. The SPCC Plan will address prevention and remediation of oil, hydraulic fluid, and petroleum fuel spills including spills that could enter navigable waters of the United States. Oils or chemicals will be hauled to an approved site for disposal. If a spill occurs on BLM land the respective BLM field office will be notified, and a copy of the manifest for disposal of the affected materials will be provided to the BLM.
16.	Structures will be constructed to conform to "Suggested Practices for Avian Protection on Power Lines" (Avian Power Line Interaction Committee 2006).
17.	Species protected by the Arizona Native Plant Law will be made available for salvage. A salvage plan approved by the BLM will be included in the specific plan of development.
18.	The alignment of any new access roads or overland routes will follow the designated area's landform contours where possible, providing that such alignment does not additionally impact resource values. This would minimize ground disturbance and reduce scarring.
19.	All new access roads not required for maintenance will be permanently closed using the most effective and least environmentally damaging methods appropriate to that area with concurrence of the landowner or land manager (e.g., stock piling and replacing topsoil, or rock replacement). This would limit access into the area. Fencing, signing, and other closure methods will be determined by the BLM and paid for by the contractor or APS.
20.	In designated areas, structures will be placed or rerouted so as to avoid sensitive features such as, but not limited to, riparian areas, watercourses, and cultural sites, or to allow conductors to clearly span the features, within limits of standard tower design.
21.	Transmission line structures will comply with Federal Aviation Administration Guidelines to minimize aircraft hazards (Federal Aviation 77).
22.	Special status species or other species of particular concern will continue to be considered during the construction phase of the Project, in accordance with management policies set forth by the BLM and other appropriate land management agencies. This will entail monitoring for plant and wildlife species of concern along the proposed transmission line and associated facilities (i.e., access roads and staging areas). In cases where such species are identified, appropriate action will be taken to avoid adverse impacts on the species and its habitat.
23.	The contractor or APS will submit to BLM a proposed road development plan for inclusion in the POD for the area in and around the Muggins Mountains. The goal of the plan is to limit new road construction to a minimum, restrict unauthorized use of maintenance roads, and discourage a travel route in the Muggins Mountains.
24.	As-built drawings, including locations of access roads, will be provided to the BLM as required by the right-of-way grant. The drawings will be provided in a format specified by the BLM.
25.	Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or federal land shall be immediately reported to the BLM authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values.

Other Mitigating Measures

1. All applicable regulations in accordance with 43 CFR 2800.

2. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the Plan of Development (POD) and made part of the grant. Any relocation, additional construction, or use that is not in accord with the approved POD, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations and approved POD, shall be made available on the right-of-way area during construction, operation, and termination to the authorized officer. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

3. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder or any person working on the holders behalf, on public or federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made the authorized officer to determine the appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of the evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

4. Construction holes left open over night shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

5. Within 30 days of completion, the holder will submit to the authorized officer, as-built drawings and a certification of construction verifying that the facility has been constructed (and tested) in accordance with the design, plans, specifications, and applicable laws and regulations.

6. During construction, the holder shall apply water for the purpose of dust control.

7. The holder shall trim trees in preference to cutting trees and shall cut trees in preference to bulldozing them as directed by the authorized officer.

8. Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil will be conserved during excavation and reused as cover on disturbed areas to facilitate re-growth of vegetation.

9. The holder shall maintain the right-of-way in a safe usable condition, as directed by the authorized officer.

10. The holder will be responsible for the total reclamation of the right-of way shall it ever be relinquished or terminated. This reclamation will include the scarification of the road surface and the reseeding of the entire disturbed area with a native seed mixture that will be approved by the Authorized Officer prior to the reclamation work.

11. The holder of this right-of-way grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.

12. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

13. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

14. The holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

15. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

16. Prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a pre-termination conference. This conference will be held to review the termination provisions of the grant.

17. Archeological sites that are eligible for National Register shall be spanned and avoided during construction and maintenance activities. If an eligible site cannot be spanned, impact avoidance and mitigation measures developed in consultation with the State Historic Preservation Office and other interested parties shall be implemented during post-Environmental Assessment phases of project implementation.

18. Prior to construction, a training program shall be instituted that would stress the importance of avoiding unintentional and intentional damage to cultural, paleontological, and ecological resources.

Desert Tortoise Mitigation Measures

19. A desert tortoise protection education program shall be presented to all employees, inspectors, supervisors, contractors, and subcontractors who carry out proposed activities at the project site. The education program shall include discussions of the following:
    - legal and sensitive status of the tortoise
    - brief discussion of tortoise life history and ecology
    - mitigation measures designed to reduce adverse effects to tortoises
    - protocols to follow if a tortoise is encountered, including appropriate contact points

20. A desert tortoise monitor (qualified desert tortoise biologist) will be required when constructing within Category 1 tortoise habitat. The biologist shall watch for tortoises wandering into construction areas, check under vehicles, check at least three times per day any excavations that might trap tortoises, and conduct other activities necessary to ensure that death and injury of tortoises are minimized.

21. Protocols for dealing with any tortoises found in project areas shall be in accordance with Arizona Game and Fish Department's Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects, revised August 7, 1996.

22. Vehicle use shall be limited to existing or designated routes to the extent possible. Areas of new construction shall be flagged or marked on the ground prior to construction. All construction workers shall strictly limit their activities and vehicles to areas that have been marked. Construction personnel shall be trained to recognize markers and understand the equipment movement restrictions involved.

23. Construction sites shall be maintained in a sanitary condition at all times. The project proponent shall be responsible for controlling and limiting litter, trash, and garbage by placing refuse in predator-proof, sealable receptacles. Trash and debris shall be removed when construction is complete

24. All features that can entrap tortoise (i.e., trenches, pits, and other features) in the project area shall be checked twice daily (morning and afternoon) for trapped desert tortoise.

25. During and after completion of the project, trenches, pits, and other features in which tortoises could be entrapped or entangled, shall be filled in, covered, or otherwise modified so they are no longer a hazard to desert tortoise.

26. All dogs in the project area shall be on a leash.

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department
Revised January 17, 1997

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

Desert tortoises of the Sonoran population are those occurring south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position at all times and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 105 degrees Fahrenheit unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to two miles, but no further than necessary from its original location. If a release site, or alternate burrow, is unavailable within this distance, and ambient air temperature exceeds 105 degrees Fahrenheit, the Department should be contacted to place the tortoise into a Department-regulated desert tortoise adoption program. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, will also be placed in desert tortoise adoption programs. Mangers of projects likely to affect desert tortoises should obtain a scientific collecting permit from the Department to facilitate temporary possession of tortoises. Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- These guidelines do not apply to the Mohave population of desert tortoises (north and west of the Colorado River). Mohave desert tortoises are specifically protected under the Endangered Species Act, as administered by the U.S. Fish and Wildlife Service.
- These guidelines are subject to revision at the discretion of the Department. We recommend that the Department be contacted during the planning stages of any project that may affect desert tortoises.
- Take, possession, or harassment of wild desert tortoises is prohibited by state law. Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

RAC:NLO:rc

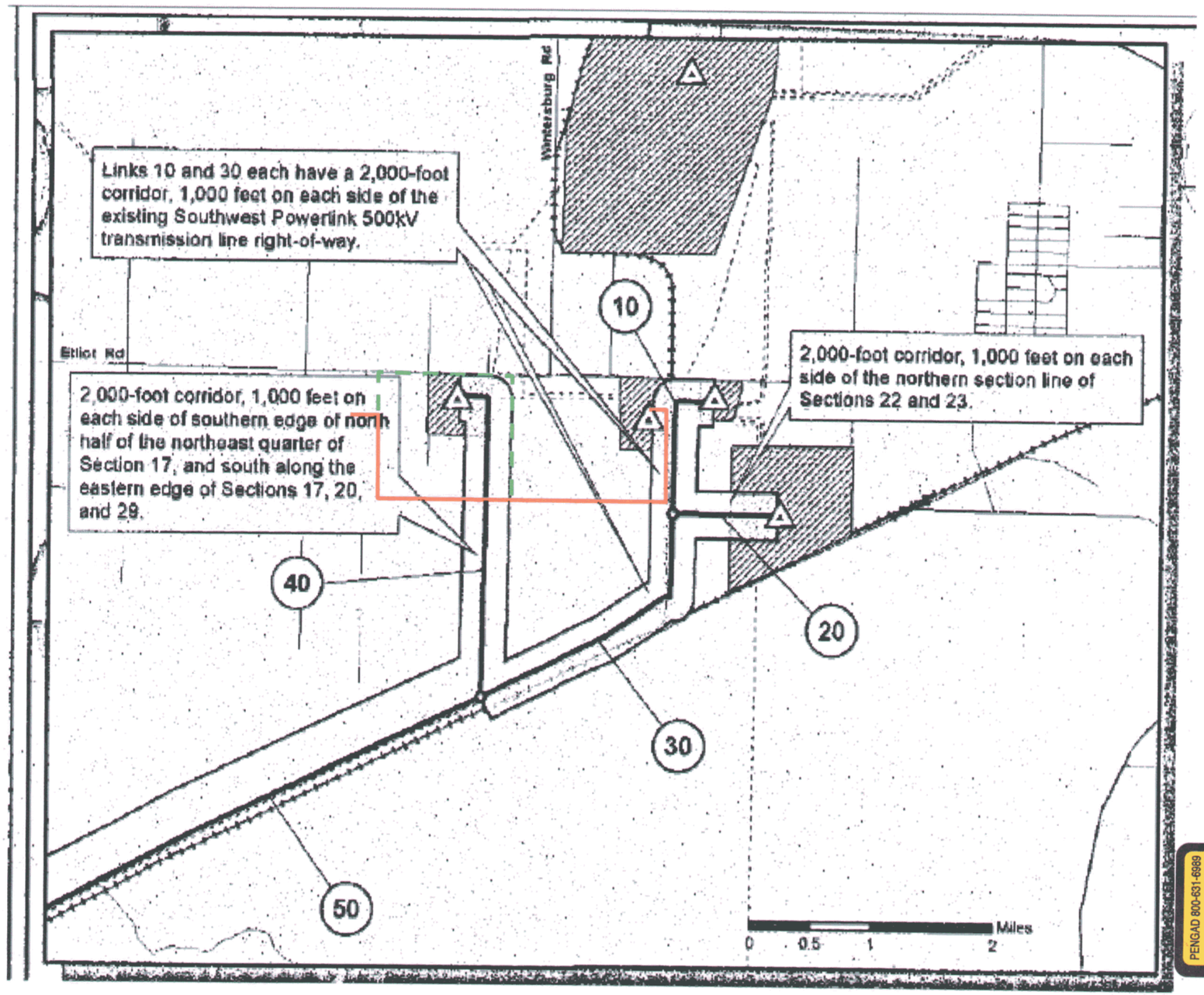


EXHIBIT
SEP-18
ADMITTED
PENGAD 800-631-6989

Mesquite Solar Gen-Tie Project

Application to the Power Plant and Line Siting Committee of the Arizona Corporation Commission for Certificate of Environmental Compatibility

Saddle Mountains, Arizona

Applicant: SEP-II, LLC, a wholly owned subsidiary of Sempra Generation

Sempra™ Generation

Prepared by:

AECOM

June 3, 2009

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Introduction

Overview

This application by SEP-II, LLC (SEP-II), a wholly owned subsidiary of Sempra Generation, is for a proposed generation–tie power line (Mesquite Solar Gen-Tie) originating at the planned photovoltaic (PV) solar energy facility located southwest of Wintersburg, Arizona (Mesquite Solar project) and terminating at the existing Mesquite Generating Station. The Mesquite Solar Gen-Tie would operate at 230 kilovolts (kV) and would electrically connect the planned Mesquite Solar project 230 kV substation to the existing Mesquite Generating Station 230 kV switchyard (see Figure 1). The Mesquite Solar Gen-Tie would be approximately four miles long and would consist of two circuits supported on a single set of tubular steel poles.

The Mesquite Generating Station switchyard would be modified to provide two new termination positions for the proposed Mesquite Solar Gen-Tie, including bus modifications and installation of new switching devices and termination structures. The Mesquite Generating Station switchyard has a single connection to the adjacent 500 kV Hassayampa switchyard, and a second connection will be placed in service prior to completion of the proposed Mesquite Solar Gen-Tie.

Purpose and Need

This request for a Certificate of Environmental Compatibility (CEC) is for the proposed 230 kV Mesquite Solar Gen-Tie needed to interconnect the Mesquite Solar project being developed by SEP-II. The Mesquite Solar project will operate year-round, producing electric power whenever the sun is shining. When fully developed, the Mesquite Solar project will produce up to 500 MW of clean solar power.

The Mesquite Solar Gen-Tie would support the Mesquite Solar project in providing benefits to the local community, Maricopa County, and the state of Arizona that include:

- Creating 100 to 300 construction jobs
- Creating approximately four permanent jobs
- Yielding roughly $1 billion of direct, in-state private investment

Preferred and Alternative Routes

SEP-II is proposing a Preferred Route and an Alternative Route for the proposed Mesquite Solar Gen-Tie. The Preferred Route and the Alternative Route are shown on Exhibit A3. The Mesquite Solar Gen-Tie will originate at the Mesquite Solar project substation to be located within Section 18, Township 1 South, Range 6 West. The Mesquite Solar Gen-Tie will terminate at the Mesquite Generating Station switchyard located in Section 15, Township 1 South, Range 6 West.

Preferred Route

From the Mesquite Solar project site, the Preferred Route extends east on state land for approximately 0.1 mile, then south on state land for approximately 0.7 mile, and then east on state land for approximately 0.4 mile along the section line between Sections 17 and 20. The Preferred Route continues east along the same alignment for approximately 0.5 mile on private property owned by Dynegy. After exiting that private property, the Preferred Route continues east on state land for approximately 1.0 mile along the section line between Sections 16 and 21, and then continues east on state land for approximately 0.5 mile along the section line between Sections 15 and 22. At the midpoint of Section 15, the Preferred Route then turns north onto the Mesquite Generating Station site and continues along an existing rail spur for approximately 0.8 mile before turning west and terminating at the existing Mesquite Generating Station switchyard.

Alternative Route

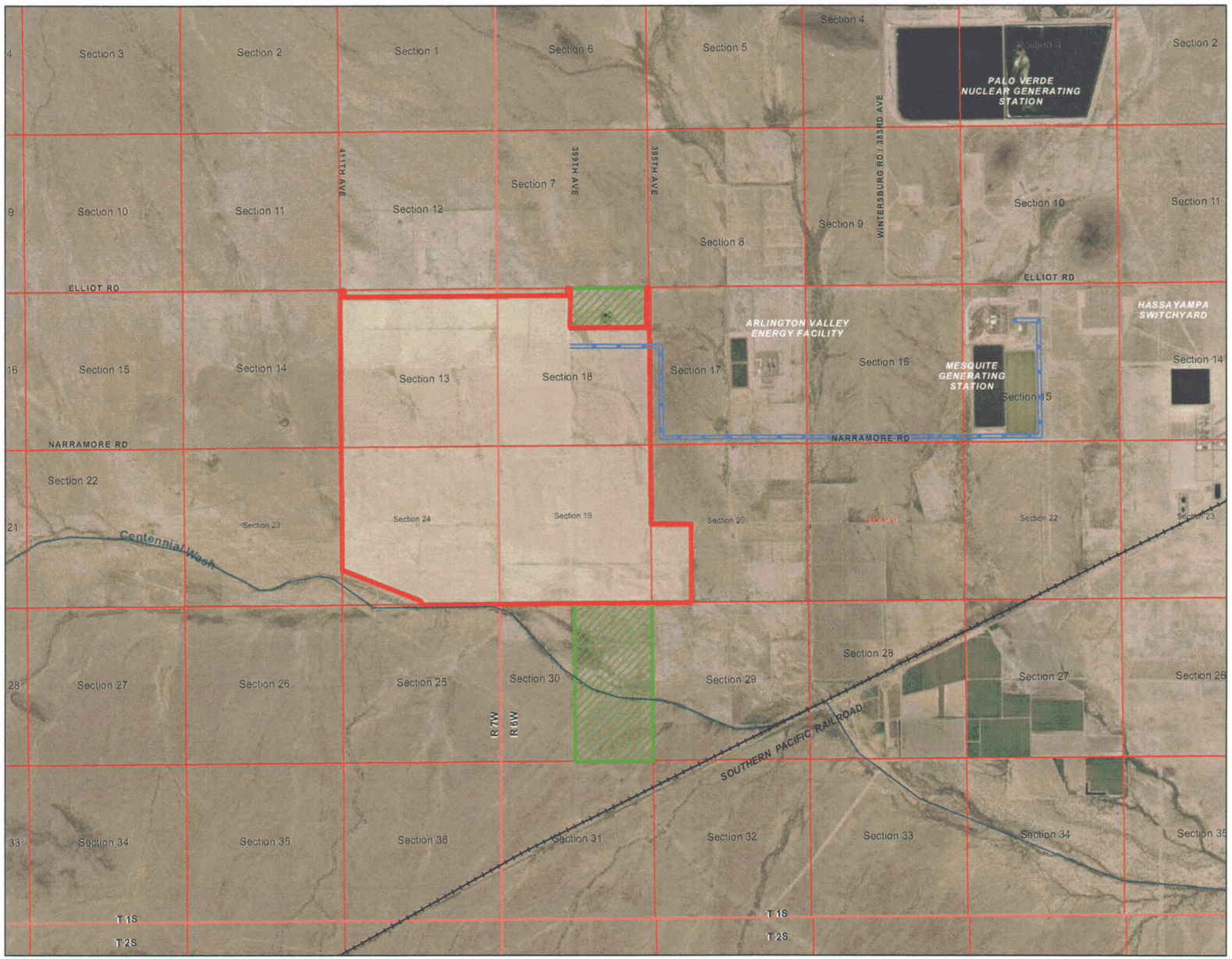
From the Mesquite Solar project site, the Alternate Route extends east on state land for approximately 0.1 mile and then north on state land for approximately 0.3 mile to Elliot Road. The Alternative Route then turns east and extends on state land along Elliot Road for approximately 0.4 mile, exits state land and continues east in Maricopa County right-of-way for Elliot Road for approximately 0.5 mile, and then exits the Maricopa County right-of-way and continues east on state land along Elliot Road for approximately 0.2 mile. The Alternative Route then turns south and continues on state land for approximately 1.0 mile to the section line between Sections 16 and 21. From this point onward, the Alternate Route is the same as the Preferred Route.

Requested Corridor

SEP-II requests approval of both the Preferred Route and the Alternate Route with a corridor that is 240 feet wide and centered on the route descriptions provided above. The final route and alignment that will be submitted to Maricopa County will be determined by the applicant and will depend upon right-of-way acquisition constraints. SEP-II plans to acquire a 120-foot-wide right-of-way except in the case of the 0.5-mile segment of the Alternate Route that lies within Maricopa County 60-foot-wide right-of-way for Elliot Road. The right-of-way for the Preferred Route is shown on Exhibit A3.1 and the right-of-way for the Alternative Route is shown on Exhibit A3.2.

Summary of Environmental Compatibility

This application includes evaluation of relevant environmental issues associated with the proposed Mesquite Solar Gen-Tie for the Mesquite Solar project, including route alternatives and the factors to be considered in granting CEC approval, as set forth in ARS § 40 360.06. This application demonstrates the environmental compatibility of the proposed Mesquite Solar Gen-Tie and was prepared in accordance with Arizona Administrative Code R14-3-219. The following summarizes how the Mesquite Solar project satisfies the requirements of Arizona law regarding environmental compatibility:



MESQUITE SOLAR

Figure 1
Project Map

Delineated Areas

- Proposed Mesquite Solar Energy Generation Area (per CPA200807)
- Wildlife Habitat Area

Proposed Transmission

- 230 kV Double-Circuit

Public Land Survey System

- Townships
- Sections
- Centennial Wash

N

0 2,500 5,000 Feet

FileName: projectArea
FileLoc: 09180026/GIS/Maps/SUP

SOURCES: Arizona Land Resource Information System, Google ESRI, Bureau of Land Management, FEMA, USGS, Maricopa County Planning, Sempra Energy

Sempra Generation

- Power lines and substations are an allowable use within each of the land use designations crossed by the proposed route alternatives. The proposed route alternatives meet local zoning ordinances or general plans of all affected areas of jurisdiction. The proposed Mesquite Solar Gen-Tie would be located near or adjacent to existing transmission lines and/or roads to the extent feasible. There would be no significant or detrimental effects to existing plans of the state, local government, or private entities for other developments at or in the vicinity of the proposed route alternatives.
- The proposed route alternatives would create no significant or detrimental effects to fish, wildlife, or plant life or associated forms of life upon which they are dependent.
- The proposed route alternatives would create no significant or detrimental effects associated with noise emission levels or interference with communication signals.
- No jurisdictional agency within the area has plans for future development of recreational facilities on or near the proposed route alternatives. The construction and operation and maintenance of the proposed Mesquite Solar Gen-Tie would be consistent with all applicable safety considerations and regulations.
- There would be no significant or detrimental effect to scenic areas in the vicinity of the route alternatives. With incorporation of mitigation, no significant or detrimental impacts to historic sites or structures or archaeological sites in the vicinity of the proposed route alternatives would occur.
- There are no areas of critical habitat, as designated by the U.S. Fish and Wildlife Service, crossed by either of the proposed route alternatives. There would be no significant or detrimental effects to areas unique because of biological diversity or to habitats for rare or endangered species.

SEP-II, therefore, respectfully requests approval of this application.

Application

1. **Name and Address of the Applicant**

   SEP-II
   Attention: Timothy Allen
   101 Ash Street, HQ 14A
   San Diego, CA 92101

2. **Name, address, and telephone number of a representative of the applicant who has access to technical knowledge and background information concerning this application, and who will be available to answer questions or furnish additional information.**

   Timothy Allen
   101 Ash Street, HQ 14A
   San Diego, CA 92101
   Phone: 619-696-2980

Fax: 619-696-2791
Email: tallen@semprageneration.com

3. Date on which the applicant filed a Ten Year Plan in compliance with A.R.S. § 40-360.02, in which the facilities for which this application is made were described.

In accordance with A.R.S. Section 40-360.02, SEP-II filed a Ten Year Plan with the Arizona Corporation Commission (ACC) on January 30, 2009.

4. Description of the proposed facility including:

a. With respect to an electric generating plant:

This application does not cover the associated Mesquite Solar project. The Mesquite Solar project is not regulated by the ACC pursuant to applicable Arizona law. SEP-II has submitted an application with Maricopa County for a Special Use Permit for the Mesquite Solar project and will obtain all necessary approvals and permits from Maricopa County.

b. With respect to a proposed transmission line:

i. Nominal voltage for which the line is designed; description of the proposed structures and switchyards or substations associated therewith; and purpose for constructing said transmission line.

The nominal voltage for the proposed Mesquite Solar Gen-Tie is 230 kV. The Mesquite Solar Gen-Tie will consist of two circuits on common structures and will connect the Mesquite Solar project to the existing Mesquite Generating Station switchyard. The structures will be tubular steel poles on drilled shaft foundations.

The Mesquite Solar Gen-Tie will originate at a new 230 kV switchyard to be located on the Mesquite Solar project site and will extend to and terminate at the existing 230 kV bus of the Mesquite Generating Station.

The Mesquite Solar project's new switchyard will consist of a single 230 kV bus and associated switching devices. The Mesquite Solar project 230 kV switchyard will be located within the Mesquite Solar project substation and be enclosed by a chain link fence.

The existing Mesquite Generating Station switchyard consists of a single 230 kV bus that connects the Mesquite Generating Station to the Hassayampa Substation as shown in Figure 1. The Mesquite Generating Station 230 kV bus will be modified to add two additional 230 kV circuit breakers and associated switches to accommodate the Mesquite Solar Gen-Tie.

ii. Description of geographical points between which the transmission line will run, the straight-line distance between such points and the length of the transmission line for each alternative route for which the application is made.

The Mesquite Solar Gen-Tie will originate at a new 230 kV switchyard to be located on the Mesquite Solar project site and will extend to and terminate at the existing 230 kV bus of the Mesquite Generating Station. Distances and lengths of the proposed Mesquite Solar Gen-Tie routes are provided in Table 1.

Table 1:
Mesquite Solar Gen-Tie Alternatives

Route	Straight-Line Distance (approximate miles)	Length of Gen-Tie (approximate miles)
Preferred Route	2.5	4.52
Alternative Route	2.5	5.15

iii. Nominal width of right-of-way required, nominal length of spans, maximum height of supporting structures and minimum height of conductor above ground.

SEP-II is requesting a nominal 120-foot right-of-way within a 240-foot-wide corridor to accommodate the construction, operation, and maintenance of the proposed double circuit 230 kV Mesquite Solar Gen-Tie. The 240-foot-wide corridor is being requested to minimize potential effects at any site-specific locations (e.g., cultural sites, sensitive habitats, physical features, etc.) where construction of Mesquite Solar Gen-Tie facilities might be constrained.

The nominal length of spans would vary from 500 to 1,000 feet.

The maximum height of supporting structures would be 150 feet.

The minimum height of the conductor above existing grade would be 25 feet.

iv. To the extent available, the estimated costs of proposed transmission line and route, stated separately. (If application contains alternative routes, furnish an estimate for each route and a brief description of the reasons for any variations in such estimates.)

The following estimated costs include a construction cost range assuming 120 feet of right-of-way and excludes costs for land acquisition and switchyard modification.

Preferred Route (4.52 miles)

The estimated cost for the Preferred Route is $5.85M.

Alternative Route (5.15 miles)

The estimated cost for the Alternative Route is $6.92M. The increase in cost for the Alternative Route results from a longer route with additional turns and angle structures as compared to the Preferred Route.

v. Description of proposed route and switchyard locations. (If application contains alternative routes, list routes in order of applicant's preference with a summary of reasons for such order of preference and any changes such alternative routes would require in the plans reflected in (i) through (iv) hereof.)

Descriptions of the Preferred Route and the Alternative Route are provided below.

Preferred Route

The Preferred Route consists of Parcels 1, 2, 3, 4, and 5 as described below. The Preferred Route is the shortest route and requires fewer turning structures resulting in the minimum impacts and minimum cost to construct.

Alternative Route

The Alternative Route consists of Parcels 1, 5, 6, 7, 8, 9, and 10 as described below. The Alternative Route is longer and requires additional turning structures and one transmission line crossing. Nevertheless, this Alternative Route has been identified as an alternative that does not require acquisition of easements from private parties, which may be necessary.

Parcel 1

The southerly 120 feet of the northerly 1,780 feet of Section 17, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the easterly 4,840 feet of said Section 17.

Parcel 2

The easterly 120 feet of the westerly 560 feet of Section 17, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the northerly 1,660 feet and the southerly 120 feet of said Section 17.

Parcel 3

The southerly 120 feet of Section 17, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the easterly one-half of said Section 17.

Parcel 4

The southerly 120 feet of Section 16, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona.

Parcel 5

The northerly 120 feet of Section 22, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the easterly one-half of said Section 22.

Parcel 6

The easterly 120 feet of the westerly 560 feet of Section 17, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the northerly 165 feet and the southerly 3,500 feet of said Section 17.

Parcel 7

The southerly 120 feet of the northerly 165 feet of Section 17, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the westerly 440 feet and the easterly one-half of said Section 17.

Parcel 8

The southerly 120 feet of the northerly 165 feet of Section 16, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the easterly 4,340 feet of said Section 16.

Parcel 9

The easterly 120 feet of the westerly 1,060 feet of Section 16, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the northerly 45 feet and the southerly 120 feet of said Section 16.

Parcel 10

The southerly 120 feet of Section 16, Township 1 South, Range 6 West, Gila and Salt River Base and Meridian, Maricopa County, Arizona, excepting the westerly 940 feet of said Section 16.

Mesquite Solar Project 230 kV Switchyard

The Mesquite Solar project's switchyard would be on approximately 10 acres just south of the wildlife oasis consisting of the north half of the northeast quarter of Section 18, Township 1 South, Range 6 West as shown in Figure 1 and in Exhibit A.

Mesquite Generating Station 230 kV Switchyard

The Mesquite Generating Station 230 kV Switchyard is located in the northeastern quarter of the northwestern quarter of Section 15, Township 1 South, Range 6 West.

vi. For each alternative route for which application is made, list the ownership percentages of land traversed by the entire route (federal, state, Indian, private, etc.)

Table 2 provides a summary of land ownership percentages for the Preferred and Alternate Routes.

Table 2:
Mesquite Solar Gen-Tie Alternatives—Land Ownership Percentages

Route	State	Maricopa County	Sempra and SEP-II	Dynegy	Other Private
Preferred Route	53%	0%	35%	12%	0%
Alternative Route	57%	11%	32%	0%	0%

5. List the areas of jurisdiction [as defined in A.R.S. § 40-360(1)] affected by each alternative site or route and designate those proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of any of such areas of jurisdiction:

The Mesquite Solar Gen-Tie would be constructed entirely within Maricopa County. Exhibit A3 shows area land ownership and use. In December 2008, the Maricopa County Board of Supervisors approved SEP-II's request for a Major Comprehensive Plan Amendment to change the land use designation of the Mesquite Solar project site from Dedicated Open Space and Rural Residential to Industrial. The change to the comprehensive plan resulted in an Industrial land use designation for the total 2,480 acres of the associated Mesquite Solar project.

The proposed Mesquite Solar Gen-Tie is located in an area zoned for industrial use, dedicated open space, and for "rural densities." The Palo Verde Nuclear Generating Station, Arlington Valley Energy Facility, and Mesquite Generating Station (and transmission lines for these facilities) are located within two miles of the proposed

Mesquite Solar Gen-Tie project area. The proposed Mesquite Solar Gen-Tie would be consistent with these existing land uses. None of the proposed routes are contrary to the applicable ordinances or master plans.

6. **Describe any environmental studies applicant has performed or caused to be performed in connection with this application or intends to perform or cause to be performed in such connection, including the contemplated date of completion.**

SEP-II has performed the following environmental studies in connection with the proposed Mesquite Solar Gen-Tie:

- Biological Site Assessment for the Proposed Mesquite Solar Generation Facility, March 2009 (see Exhibit B)
- Class 1 Cultural Resources Study for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona—February 17, 2009 (see Exhibit B)
- Class III Cultural Resources Survey of Transmission Line Corridors on State Land for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona—April 10, 2009 (see Exhibit B)

In addition, other ACC applications for projects in the general vicinity have included environmental studies. These projects are listed below.

- Solana Gen-Tie (August 2008)—located approximately 30 miles southeast of the proposed Mesquite Solar Gen-Tie Project
- Arlington Valley Energy Project (December 1999)—located in the immediate vicinity of the proposed Mesquite Solar Gen-Tie Project
- Palo Verde Hub to North Gila 500kV Transmission line Project (January 2008)—located in the immediate vicinity of the proposed Mesquite Solar Gen-Tie Project

Exhibits

Exhibit A:
Project Maps

Exhibit A Requirements

1. *Where commercially available,** a topographic map, 1:250,000 scale, showing the proposed plant site and the adjacent area within 20 miles thereof. If application is made for alternative plant sites, all sites may be shown on the same map, if practicable, designated by applicant's order of preference.*

2. *Where commercially available,** a topographic map, 1:62,500 scale, or each proposed plant site, showing the area within two miles thereof. The general land use plan within this area shall be shown on the map, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of an overlay.*

3. *Where commercially available,** a topographic map, 1:250,000 scale, showing any proposed transmission line route of more than 50 miles in length and the adjacent area. For routes of less than 50 miles in length, use a scale of 1:62,500. If application is made for alternative transmission line routes, all routes may be shown on the same map, if practicable, designated by applicant's order of preference.*

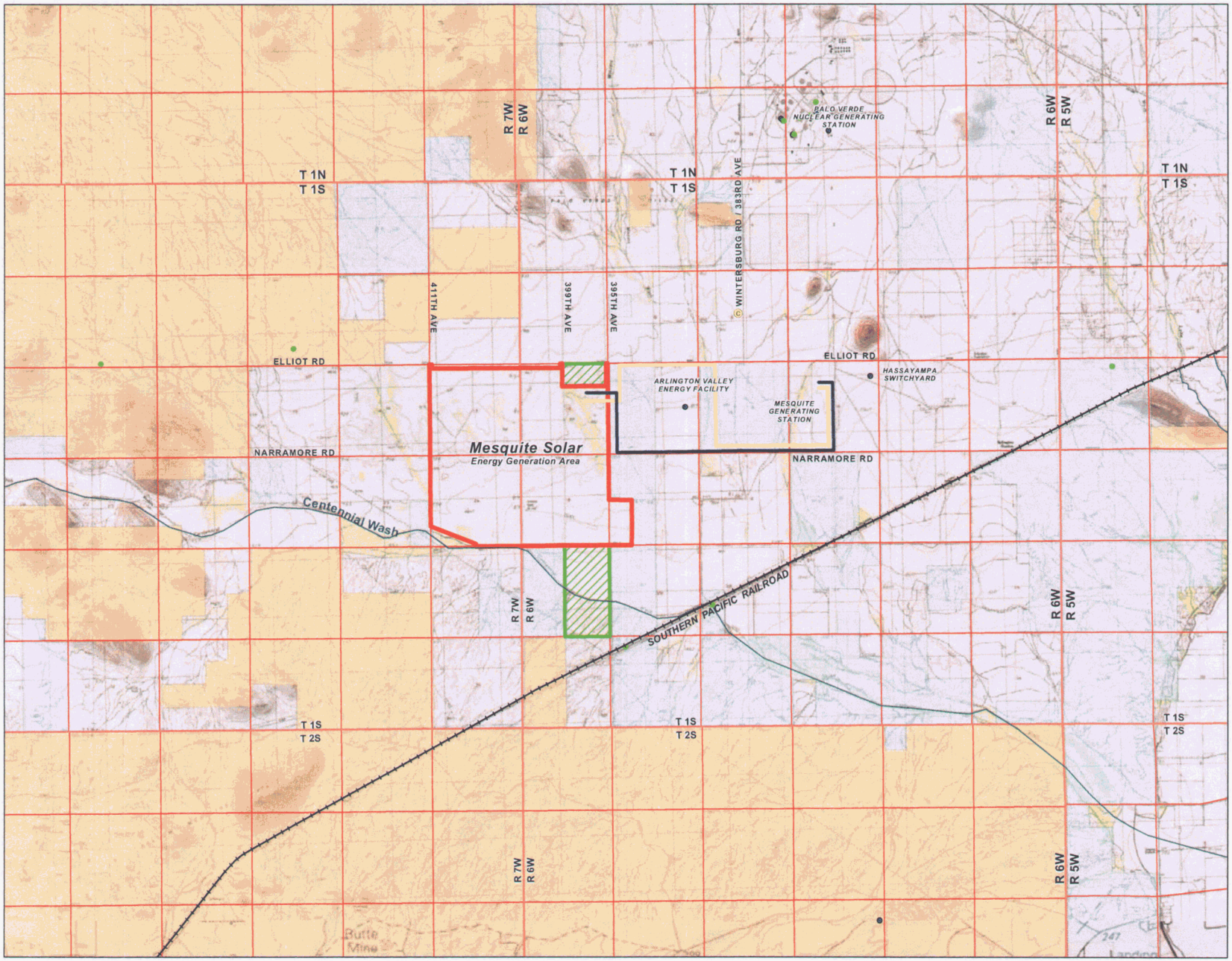
4. *Where commercially available,** a topographic map, 1:62,500 scale, of each proposed transmission line route of more than 50 miles in length showing that portion of the route within two miles of any subdivided area. The general land use plan within the area shall be shown on a 1:62,500 map required for Exhibit A-3, and for the map required by this Exhibit A-4, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of on an overlay.*

---

* *Duplication of information shall be avoided in the application and exhibits through the use of cross-references.*

** *If a topographic map is not commercially available, a map of similar scale, which reflects prominent or important physical features of the area in the vicinity of the proposed site or route shall be substituted.*

Applicant requirements 1, 2, and 4 (as provided above) are not applicable to the proposed Mesquite Solar project. Exhibit A3 illustrates the Preferred and Alternative Route on a 1:62,500 scale topographic map. Exhibits A3-1 and A3-2 provide more detailed maps of the Preferred Route and Alternative Route.



MESQUITE SOLAR

Exhibit A3 Preferred and Alternative Route Overview

Delineated Areas

- Proposed Mesquite Solar Energy Generation Area
- Wildlife Habitat Area

Proposed Gen-tie Route

- Preferred Route
- Alternative Route

Communication Towers

- Land Mobile Transmitter
- Microwave
- Cellular
- Antenna Structure Registration

Ownership

- Bureau of Land Management
- Arizona State Trust

Public Land Survey System

- Townships
- Sections
- Centennial Wash

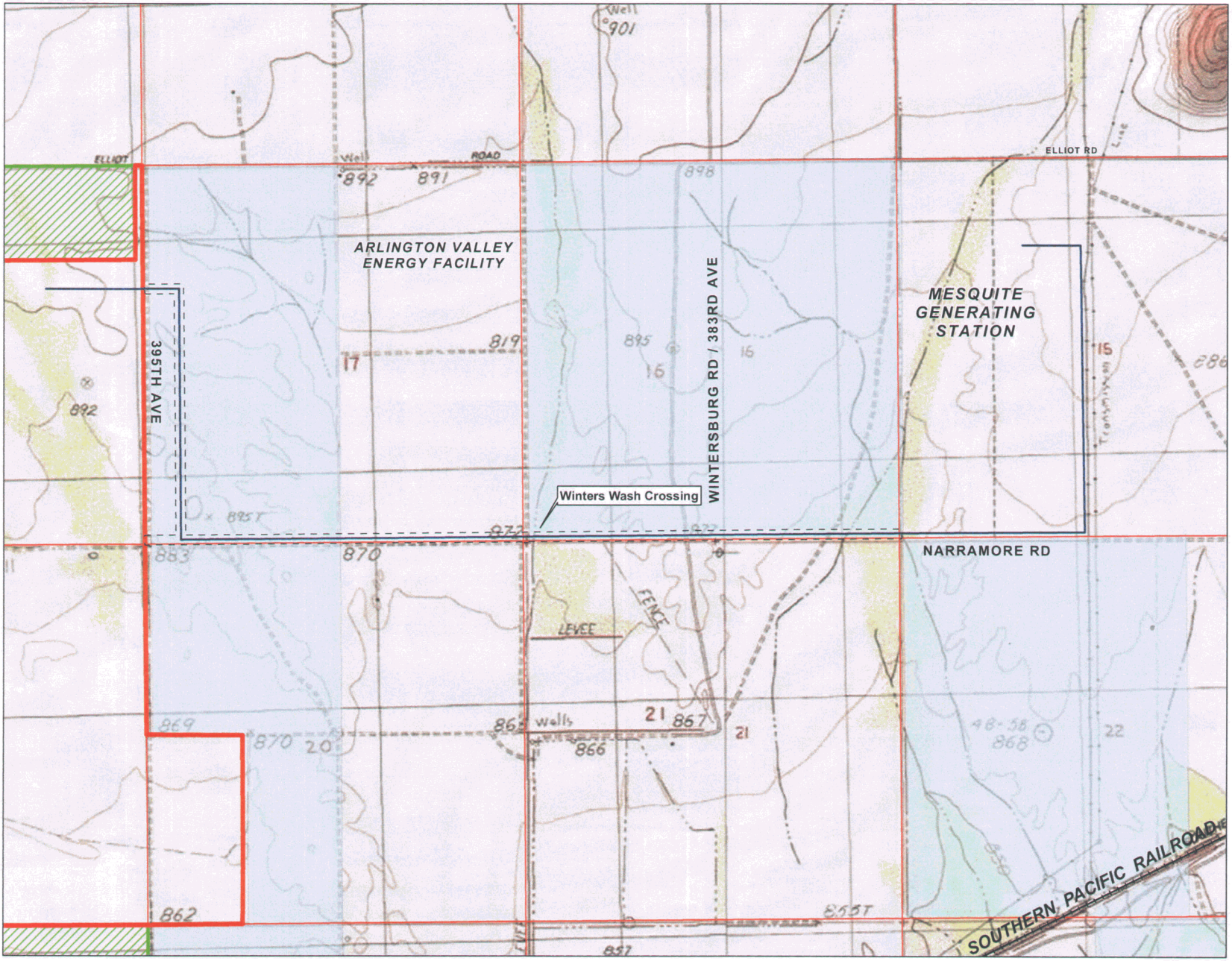
5,000 2,500 0 5,000 Feet

1:62,500 at 11"x17" Plot

FileName: RouteOverview
FileLoc: 09180026/GIS/Maps/CECA

SOURCES: Arizona Land Resource Information System, Google ESRI, Bureau of Land Management, FEMA, USGS, Maricopa County Planning, Sempra Energy

Sempra Generation



MESQUITE SOLAR

Exhibit A3.1 Preferred Gen-tie Route

Delineated Areas

- Proposed Mesquite Solar Energy Generation Area
- Wildlife Habitat Area

Proposed Gen-tie Route

- Preferred Route
- Preferred Route ROW

Ownership

- Arizona State Trust

Public Land Survey System

- Townships
- Sections
- Centennial Wash

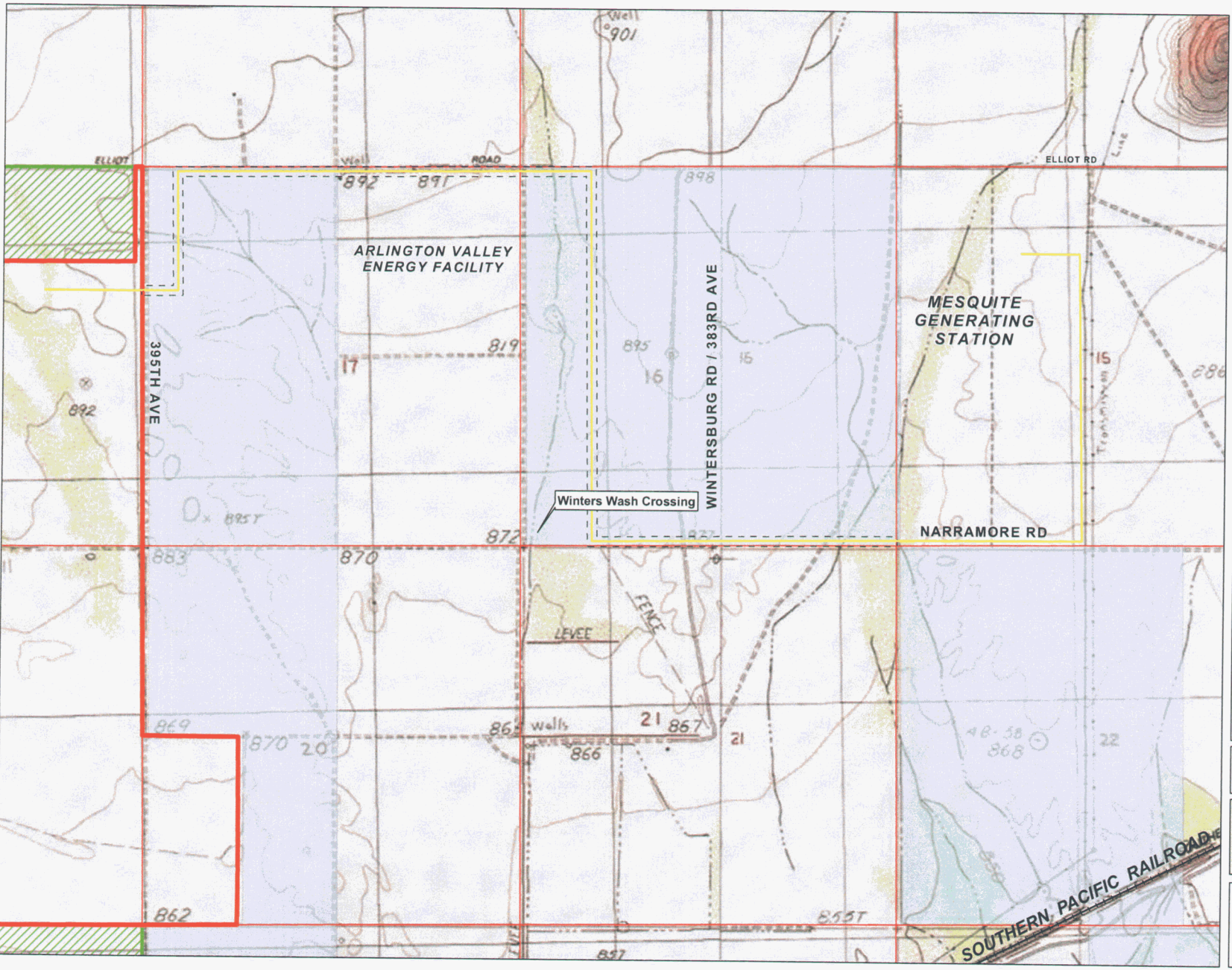
1,000 500 0 1,000 Feet

1:15,000 at 11"x17" Plot

FileName: PreferredRoute
FileLoc: 09180026/GIS/Maps/CECA

SOURCES: Arizona Land Resource Information System, Google ESRI, Bureau of Land Management, FEMA, USGS, Maricopa County Planning, Sempra Energy

Sempra™ Generation



MESQUITE SOLAR

Exhibit A3.2 Alternative Gen-Tie Route

Delineated Areas

- Proposed Mesquite Solar Energy Generation Area
- Wildlife Habitat Area

Proposed Gen-tie Route

- Alternative Route
- Alternative ROW

Ownership

- Arizona State Trust

Public Land Survey System

- Townships
- Sections
- Centennial Wash

1,000 500 0 1,000 Feet

1:15,000 at 11"x17" Plot

FileName: Alternative 3
FileLoc: 09180026/GIS/Maps/CECA

SOURCES: Arizona Land Resource Information System, Google ESRI, Bureau of Land Management, FEMA, USGS, Maricopa County Planning, Sempra Energy

Sempra Generation

Exhibit B:
Environmental Studies

Exhibit B Requirements

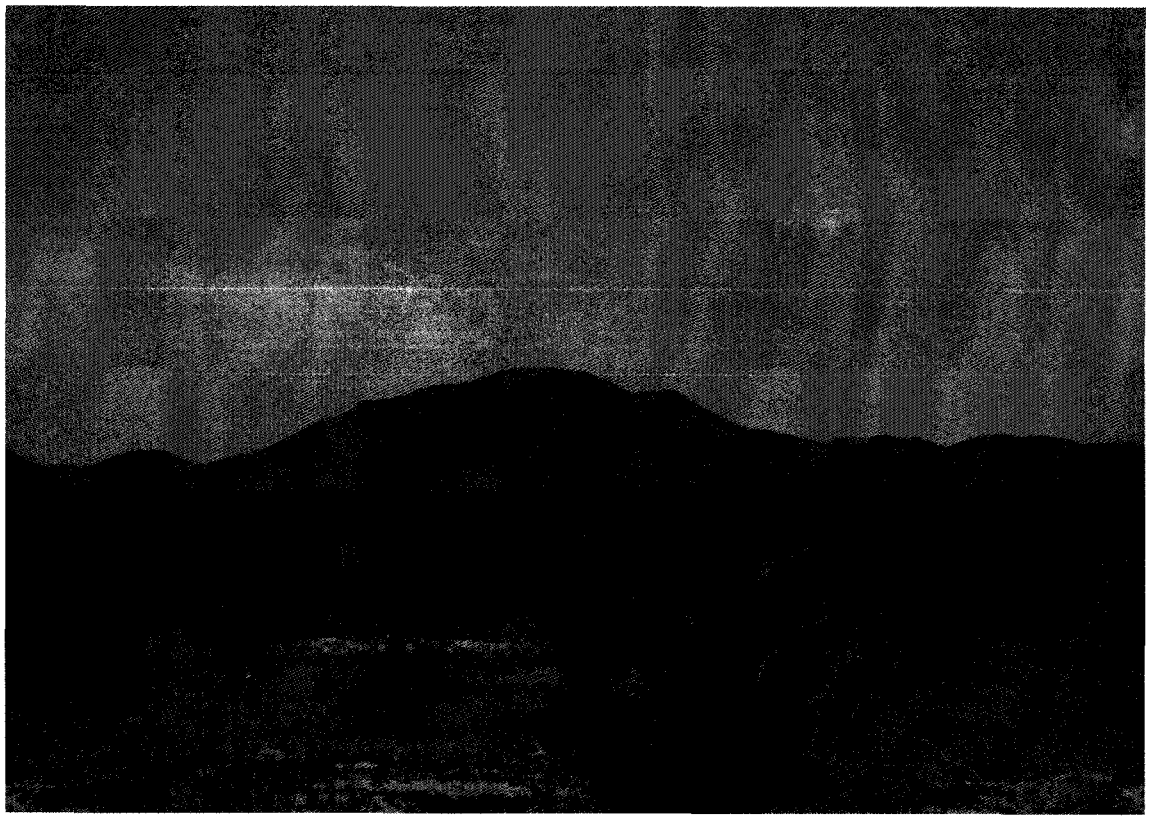
Attach any environmental studies which the applicant has made or obtained in connection with the proposed site(s) or route(s). If an environmental report has been prepared for any federal agency or if a federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as part of this exhibit.

The following reports are attached

- Biological Site Assessment for the Proposed Mesquite Solar Generation Facility, March 2009
- Class 1 Cultural Resources Study for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona—February 17, 2009
- Class III Cultural Resources Survey of Transmission Line Corridors on State Land for the

Sempra[SM] Generation

Biological Site Assessment for the Proposed Mesquite Solar Generation Facility



Prepared By: AECOM Environment

Prepared for:
Sempra Generation

Biological Site Assessment for the Proposed Mesquite Solar Generation Facility

AECOM, Inc.
March 2009
Document No.: 06205-127-0002

AECOM

Contents

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1.0 Introduction

To support the Special Use Permit (SUP) application for the proposed Mesquite Solar Generation Facility (project), AECOM Environment (AECOM) has undertaken a recent Biological Site Assessment (assessment) of the project area, near Wintersburg, Arizona. The intent of this assessment is to characterize the environmental conditions within the project area and to identify and analyze special status species that would require surveys, mitigation, or additional permits under federal and Arizona state law. The project includes the construction and operation of a new photovoltaic solar energy generation facility. The project site comprises approximately 2,480 acres of land in Sections 18, 19, and 20 of Township 1 South, Range 6 West, and Sections 13 and 24 of Township 1 South, Range 7 West, Gila and Salt River base and meridian, Maricopa County, Arizona. The project area is depicted in **Appendix A**.

2.0 Assessment Methods

Based on our understanding of SUP requirements, this assessment was conducted as a desktop review only. This assessment is based on the review of literature, agency correspondence, and federal and state databases. Ginger Ritter, Project Evaluation Project Specialist for the Arizona Game and Fish Department (AZGFD) provided comments relative to the project on February 18, 2009 (AZGFD 2009). Mike Martinez, Federal Projects Coordinator with the United States Fish Wildlife Service (USFWS) provided comments relative to the project on March 2, 2009 (USFWS 2009).

In addition to agency correspondence, Arizona's Comprehensive Wildlife Conservation Strategy (AZGFD 2006), the Arizona Natural Heritage Program website (AZGFD 2008), the USFWS Arizona Ecological Services website (USFWS 2008), the Arizona Department of Agriculture's website (AZDA 2009a; AZDA 2009b), and various other state agency and supporting websites were utilized to collect information for this report. No field surveys have been performed. A visual site reconnaissance was performed in April 2008 in conjunction with the preparation of the Comprehensive Plan Amendment for this project site.

3.0 Assessment Findings

3.1 Description of Vegetation

The project is located within the Lower Colorado Desert subdivision of the Sonoran Desert Ecoregion. The Sonoran Desert Ecoregion covers most of southern Arizona, southeastern California and south into Sonora and Baja, Mexico. This eco-region has the highest diversity of North American deserts, and is dominated by desert scrub communities. It is distinguished from the rest of the North American deserts by its striking cactus dominated vegetation communities and the presence of legume trees, such as honey mesquite.

The Sonoran Desert Ecoregion is composed of several subdivisions, with the Lower Colorado desert subdivision occupying the southwestern portion of Arizona. The Lower Colorado desert subdivision is extremely arid, with average precipitation ranging from three to ten inches a year. The vegetation is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*).

The elevation of the project ranges from 900 to 1,500 feet. The major land uses historically have been agriculture and industry. Vegetation types and community characterizations were compiled based on aerial photograph interpretation and Southwest Regional Gap Analysis Project (SWReGAP) Land Cover descriptions (USGS 2004). Plant species names are consistent with the USDA Plants Database (USDA NRCS 2009). Based on the SWReGAP, the project area contains two dominant vegetation communities, agriculture and desert scrub.

The desert scrub is composed primarily of three vegetation types. The majority of the desert scrub vegetation community in the project site is Sonoran-Mojave Creosote Bush-White Bursage Desert Scrub. Very small areas of the desert scrub portions of the project site are identified as Sonoran-Mojave Mixed Salt Desert Scrub and North American Warm Desert Riparian Mesquite Bosque. These vegetation types are described below.

In Maricopa County, the agricultural vegetation community consists predominantly of grain crops such as cotton, wheat, barley, and alfalfa (AZDA 2009a), as well as livestock grazing of cattle and sheep. However, because the project area has not been farmed for several years, the cropland is fallow.

The Sonoran-Mojave Creosote Bush-White Bursage Desert Scrub has a sparse to moderately dense layer of xeromorphic microphyllous and broad-leaved shrubs, with a sparse herbaceous layer. The dominant shrub species are usually creosote bush and white bursage. Other common species include fourwing saltbush (*Atriplex canescens*), desertholly (*Atriplex hymenelytra*), brittlebush (*Encelia farinosa*), rough jointfir (*Ephedra nevadensis*), ocotillo (*Fouquieria splendens*), water jacket (*Lycium andersonii*), and beavertail pricklypear (*Opuntia basilaris*). The herbaceous layer may be composed of species such as sandmat species (*Chamaesyce* spp.), desert trumpet (*Eriogonum inflatum*), low woollygrass (*Dasyochloa pulchella*), threeawn (*Aristida* spp.), cryptantha species (*Cryptantha* spp.), fiddleleaf (*Nama* spp.), and phacelia species (*Phacelia* spp.).

The Sonoran-Mojave Mixed Salt Desert Scrub is found in saline basins and around playas on fine-textured, saline soils. Vegetation communities consist of open-canopied shrublands usually composed of one or more saltbush species (e.g., *Atriplex canescens, Atriplex polycarpa,* etc.). Codominant species include halophytic (salt-tolerant) species such as allenrolfea species (*Allenrolfea* spp.), pickleweed species (*Salicornia* spp.), or seepweed (*Suaeda* spp.). Grass species may be present at varying densities.

The North American Warm Desert Riparian Mesquite Bosque is found along low-elevation intermittent streams. Vegetation in these riparian corridors consist of tree and shrub species such as honey mesquite (*Prosopis glandulosa*), velvet mesquite (*Prosopis velutina*), mule-fat (*Baccharis salicifolia*), arrowweed

(*Pluchea sericea*), and narrowleaf willow (*Salix exigua*) that are dependent on the annual rise in the groundwater table for growth and reproduction.

3.2 Common Wildlife Species

Representative wildlife species with potential to occur within the project area are included in **Table 3-1**. A comprehensive list of species with potential to occur within project habitat types is available in Arizona's Comprehensive Wildlife Conservation Strategy (AZGFD 2006).

Table 3-1 Common Wildlife Species in Habitats within the Proposed Mesquite Solar Generation Facility Project Area

Habitat Type	Common Species
Birds	Cooper's Hawk, Sharp-shinned Hawk, Cassin's Sparrow, Rufous-crowned Sparrow, Western Scrub-Jay, Western Burrowing Owl, Verdin, Red-tailed Hawk, Lark Bunting, Chestnut-collared Longspur, Gambel's Quail, Cactus Wren, Turkey Vulture, Hermit Thrush, Swainson's Thrush, Common Ground-Dove, Olive-sided Flycatcher, American Crow, Common Raven, Chihuahuan Raven, Steller's Jay, Horned Lark, Prairie Falcon, Greater Roadrunner, Cactus Ferruginous Pygmy-Owl, Dark-eyed Junco, Loggerhead Shrike, Western Screech-Owl, Northern Mockingbird, Brown-headed Cowbird, Phainopepla, Common Poorwill, Great-tailed Grackle, Brewer's Sparrow, Chipping Sparrow, Northern Roughwinged Swallow, Western Meadowlark, House Wren, Warbling Vireo, Mourning Dove and White-crowned Sparrow.
Mammals	Pallid Bat, Coyote, Bailey's Pocket Mouse, Sonoran Desert Pocket Mouse, Pale Townsend's Big-eared Bat, Desert Kangaroo Rat, Lesser Longnosed Bat, Black-tailed Jackrabbit, Striped Skunk, California Myotis, Desert Woodrat, Desert Mule Deer, Desert Bighorn Sheep, Arizona Pocket Mouse, Little Pocket Mouse, Western Harvest Mouse, Plains Harvest Mouse, Arizona Cotton Rat, Colorado River Cotton Rat, Round-tailed Ground Squirrel, Rock Squirrel, Western Spotted Skunk, Desert Cottontail, American Badger, Botta's Pocket Gopher, and Kit Fox.
Amphibians/Reptiles	Arizona Glossy Snake, Tiger Whiptail, Zebra-tailed Lizard, Variable Sandsnake, Tucson Shovelnosed Snake, Tucson Banded Gecko, Desert Banded Gecko, Chihuahuan Greater Earless Lizard, Western Diamond-backed Rattlesnake, Mojave Desert Sidewinder, Sonoran Sidewinder, Northern Mohave Rattlesnake, Great Basin Collared Lizard, Eastern Collared Lizard, Sonoran Collared Lizard, Northern Desert Iguana, Sonoran Desert Tortoise, Banded Gila Monster, California Kingsnake, Desert Threadsnake, Sonoran Whipsnake, Red Arizona (Sonoran) Coralsnake, Desert Horned Lizard, Sonoran Gophersnake, Western Longnosed Snake, Desert Patchnosed Snake, Common Chuckwalla, Mojave Fringetoed Lizard, Long-tailed Brush Lizard, Ornate Tree Lizard, and Common Sideblotched Lizard.

3.3 Special Status Species

The USFWS, Arizona Natural Heritage Program, and Arizona Department of Agriculture species lists for Maricopa County were reviewed (USFWS 2008; AZDGF 2008; AZDA 2009c). Twenty-eight species with potential to occur within the project area were identified by AECOM during initial review and are listed in **Table 3-2**.

Table 3-2 Special Status Species with Potential to Occur within the Proposed Mesquite Solar Generation Facility Project Area

Birds		
Common Name	**Scientific Name**	**Status[1]**
Cactus Ferruginous Pygmy-Owl	*Glaucidium brasilianum cactorum*	USFWS SC; AZ WSC
Western Burrowing Owl	*Athene cunicularia hypugaea*	USFWS SC
Common Black Hawk	*Buteogallus anthracinus*	AZ WSC
Mammals		
Common Name	**Scientific Name**	**Status**
Cave Myotis	*Myotis velifer*	USFWS SC
Lesser Longnosed Bat	*Leptonycteris curasoae yerbabuenae*	USFWS E; AZ WSC
Pale Townsend's Big-eared Bat	*Choeronycteris mexicana*	USFWS SC
Greater Western Bonneted Bat	*Eumops perotis californicus*	USFWS SC
Yuma Myotis	*Myotis Yumanenis*	USFWS SC
California Leaf-nosed Bat	*Macrotus californicus*	AZ WSC
Western Red Bat	*Lasiurus blossevillii*	AZ WSC
Amphibians/Reptiles		
Common Name	**Scientific Name**	**Status**
Sonoran Desert Tortoise	*Gopherus agassizii* (Sonoran Population)	USFWS SC; AZ WSC
Mexican Garter Snake	*Thamnophis eques megalops*	USFWS SC; AZ WSC
Arizona Toad	*Bufo microscaphus*	USFWS SC
Redback Whiptail	*Aspidoscelis xanthonota*	USFWS SC
Mexican Rosy Boa	*Charina trivirgata trivirgata*	USFWS SC
Desert Rosy Boa	*Charina trivirgata gracia*	USFWS SC
Arizona Chuckwalla	*Sauromalus ater* (Arizona population)	USFWS SC
Common Chuckwalla	*Sauromalus ater* (Western population)	USFWS SC
Great Plains Narrow-mouthed Toad	*Chionactis palarostris organica*	AZ WSC
Lowland Leopard Frog	*Lithobates yavapaiensis*	AZ WSC
Lowland Burrowing Treefrog	*Ptenohyla fodiens*	AZ WSC
Plants		
Common Name	**Scientific Name**	**Status**
Toumey Agave	*Agave toumeyana* var. *bella*	AZ SR
California Barrel Cactus	*Ferocactus cylindraceus* var. *cylindraceus*	AZ SR
Golden Barrel Cactus	*Ferocactus cylindraceus* var. *eastwoodiae*	AZ SR
Emory's Barrel-cactus	*Ferocactus emoryi*	AZ SR
Straw-top Cholla	*Opuntia echinocarpa*	AZ SR
Tumamoc Globeberry	*Tumamoca macdougalii*	AS SR

[1] USFWS E – U.S. Fish and Wildlife Service Endangered.
USFWS SC – U.S. Fish and Wildlife Service Species of Concern.
AZ WSC – State of Arizona Wildlife Species of Concern.
AZ SR – State of Arizona Salvage Restricted Protected Native Plants.

Of the species listed in **Table 3-**2, only 2 species of concern were identified during agency consultation, the straw-top cholla and western burrowing owl. Element occurrence data were evaluated for a 5-mile radius centered on the project area. Only one species, the straw-top cholla, was identified in the search. Straw-top cholla and western burrowing owl are discussed in detail in Sections 3.3.1 and 3.3.2.

The USFWS indicated that although unlikely, there is potential for desert tortoise within the project area; however, any desert tortoise in this area would be part of the Sonoran population which is not listed, and currently has no regulatory status (USFWS 2009). Desert tortoise is considered a species of concern by the State of Arizona but does not have regulatory status under Arizona law (AZGFD, 2008).

3.3.1 Special Status Vegetation

Straw-top cholla

Straw-top cholla, shown in **Figure 3-1**, is found in arid environments in Southern California, Nevada, Utah, western Arizona and Sonoran and Baja California, Mexico (efloras 2008; Quinn 2001). It is most commonly found in the Mojave and Sonoran deserts in creosote bush scrub, desert grasslands, juniper, and oak-juniper woodlands vegetative communities (NatureServe 2009; elforas 2008). It is typically located on bajadas, canyons, benches, slopes, mesas, flats, and washes usually at elevations ranging from 1000 to 5000 feet (NatureServe 2009; efloras 2008, Quinn 2001). Substrates usually consist of sandy loam, alluvium, and gravelly soils (NatureServe 2009; efloras 2008).

Plants are shrubby and can grow from one to 6 feet tall. They are covered in dense spines that can be white or yellow and determine the color of the plant (Quinn 2001). It blooms from March to June (efloras 2008)

Figure 3-1 Straw-Top Cholla

The Maricopa, Mohave, and Cocopa Indians rolled the fruits on the ground to remove the spines and ate the fruit raw; as well as eating the buds as greens in the spring (Native American Ethnobotany 2003, Quinn 2001). The straw-top cholla is classified as imperiled in Arizona by NatureServe (2009). Its primary threat is collecting of the species by horticulturists (NatureServe 2009).

Construction in its range could increase access to the species through the building of new roads and facilities. In addition, construction would result in the trampling and removal of aboveground vegetation which could result in the harming or destruction of any potential straw-top cholla in the project site. Permanent impacts from the construction of facilities associated with the site could result in the long-term loss of potentially suitable habitat.

3.3.2 Special Status Wildlife

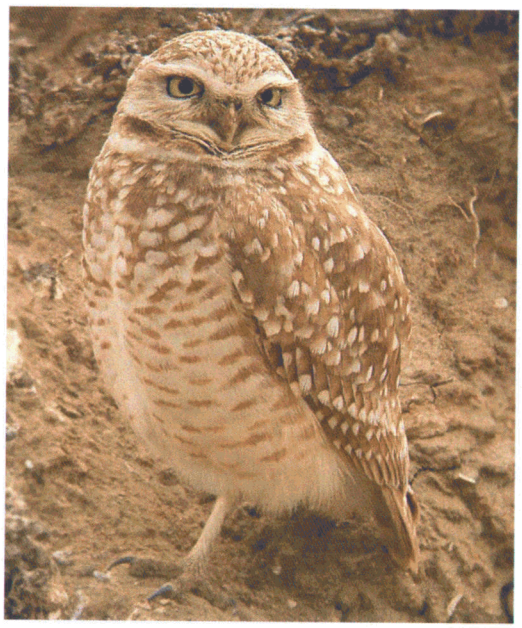
Western Burrowing Owl

Western burrowing owl, shown in **Figure 3-2**, inhabits open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, often associated with burrowing mammals. They sometimes occur in open areas such as vacant lots near human habitation, golf courses or airports (AZGFD 2001).

Burrowing owls sleep and roost in the mouth of nest burrows, satellite burrows, or depressions in the ground. Although they are most active during the period from late afternoon until full dark, they can be observed at

almost any time of the day. They commonly perch on fence posts or on top of mounds outside their burrows. High ambient temperatures seem to limit their daytime activities (AZGFD 2001).

Burrowing owl use of burrows makes them susceptible to impacts from ground disturbing activities. Despite the fact that burrowing owls are active during the day and are adaptable to human presence, the burrowing owl can go unnoticed in an area due to their secretive nature. Over the past 50 years, most burrowing owl populations have experienced declines throughout their range in North America. Because of this decline, these owls are protected by various federal, state, and local laws. While this species is not considered an Arizona Wildlife Species of Concern, all owls in Arizona are protected by the Migratory Bird Treaty Act (MBTA) and Arizona state law (ARS Title 17). Violation of these laws, intentional or benign, may result in prosecution (AZDGF 2009b).



The project area contains moderate habitat for this species. Direct impacts could occur to this species if construction were to begin during the breeding season for this species, from March 1 through July 15 (AZGFD 2009b). AECOM field survey experience has documented this species establishing a breeding territory within a project area during the construction of a project, especially if vegetation is cleared for a period of time prior to the construction of the project.

Figure 3-2 Adult Burrowing Owl

The ADGFD indicated they had concerns regarding impacts to this species and requested that a survey be conducted prior to construction of this project (AZGFD 2009a). Surveys should follow guidelines compiled by the ADGFD for burrowing owl (AZGFD 2009b).

3.4 Waters of the United States

Based on the 2008 visual site reconnaissance results, there are no wetlands or waters of the United States within the boundaries of the proposed project area.

4.0 Additional Comments

The AZGFD included a number of comments relative to general wildlife for the project in its consultation letter. The USFWS included brief comments relative to federally protected species for the project in its consultation letter. The letters containing these comments are included in **Appendix B**.

The AZGFD indicated the need for project compliance with the MBTA. A variety of migratory bird species regulated under the MBTA, including both songbirds and raptors, may use the vegetation communities within the project area. Direct impacts to these species and the possibility of a violation of MBTA can be avoided if construction were to occur outside of the breeding season, generally May 1 through August 31 in Arizona (AZGFD 2009b).

The AZGFD recommended consulting with the Arizona State Department of Agriculture, in accordance with the Native Plant Law. On May 3, 2008, the Arizona Department of Agriculture implemented the new rules for native plants (AZDA 2008). These laws pertain to the use and harvest of native plants for commercial purposes. Under these new rules, the movement of a native plant species from its habitat is regulated based on four categories of protection. These categories are Highly Safeguarded Protected Native Plants; Salvage Restricted Protected Native Plants; Salvage Assessed Protected Native Plants; Harvest Restricted Protected Native Plants. The straw-top cholla is a Salvage Restricted species, which requires a salvage permit be issued by the Department of Agriculture before the plant may be removed from its native habitat for commercial purposes.

In addition, the Native Plant Law requires that a notice of intent must be filed with the Department of Agriculture before clearing of native plants on private lands (AZDA 2009b). The notice of intent must be filed 60 days before the clearing of native vegetation on private lands can start. The filing of the notice of intent allows the Department of Agriculture to determine if there are any native plants on the site. If native plants are present, salvage operators can be notified, with the landowner's permission, and can examine the potential for salvage (AZDA 2009b).

5.0 Conclusions

Agency consultation identified western burrowing owl and straw-top cholla as of concern for this project. The AZGFD recommended surveys for burrowing owl. The AZDA indicated a notice of intent must be filed as straw-top cholla is designated as a salvage restricted species. See **Appendix B** for additional general project comments.

6.0 References

Arizona Department of Agriculture (AZDA). 2009a. Ag in your County - Maricopa County. Web site: http://www.azda.gov/Main/maricopa.htm. Accessed February 26, 2009.

_____. 2009b. Private Landowners Clearing Protected Native Plants. Web site: http://www.azda.gov/ESD/ESD571a.pdf. Accessed February 26, 2009.

_____. 2009c. Arizona Protected Native Plants by Categories. Web site: http://www.azda.gov/esd/protplantlst.htm. Accessed February 26, 2009.

_____ 2008. Notice of Final Rulemaking Title 3. Chapter 3. (R3-3) Article 3. Arizona Native Plants compiled by the Environmental Services Division. Web site: http://www.azda.gov/Main/NOFR_(Native_Plants)_second_attempt_(GRRC_revisions)%5b1%5d.pdf. Accessed February 26, 2009.

Arizona Game and Fish Department (AZGFD). 2009a. Letter response dated February 18, 2009 from G. Ritter (Project Evaluation Project Specialist) to J. Rubado (AECOM Environment). 2 pp + attachments.

_____. 2009b. Burrowing Owl Project Clearance Guidance for Landowners compiled and edited by the Arizona Burrowing Owl Working Group, Arizona Game and Fish Department, Phoenix, Arizona. 9 pp.

_____. 2008. Heritage Data Management System Element Status Designations by County, Taxon, Scientific Name. Updated December 1, 2008. 90 pp. Web site: http://www.azgfd.gov/w_c/edits/documents/allspecies_bycounty.pdf. Accessed February 25, 2009.

_____. 2006. DRAFT. Arizona's Comprehensive Wildlife. Conservation Strategy: 2005-2015. Arizona Game and Fish Department, Phoenix, Arizona.

_____. 2001. Burrowing Owl Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 6 pp.

eFloras. 2008. Flora of North America. Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA. Web site: http://www.efloras.org. Accessed February 26, 2009.

Native American Ethnobotany. 2003. A Database of Foods, Drugs, Dyes and Fibers of Native American Peoples, Derived from Plants. University of Michigan, Deerborne. Web site: http://herb.umd.umich.edu/herb/search.pl?searchstring=Opuntia+echinocarpa. Accessed February 26, 2009

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Web site: http://www.natureserve.org/explorer. Accessed February 26, 2009.

USDA, NRCS. 2009. The PLANTS Database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA. Web site: http://plants.usda.gov. Accessed February 26, 2009

United States Fish and Wildlife Service (USFWS). 2009. Personal communication between M. Martinez, Federal Projects Coordinator and J. Rubado, AECOM Environment. February 25, 2009.

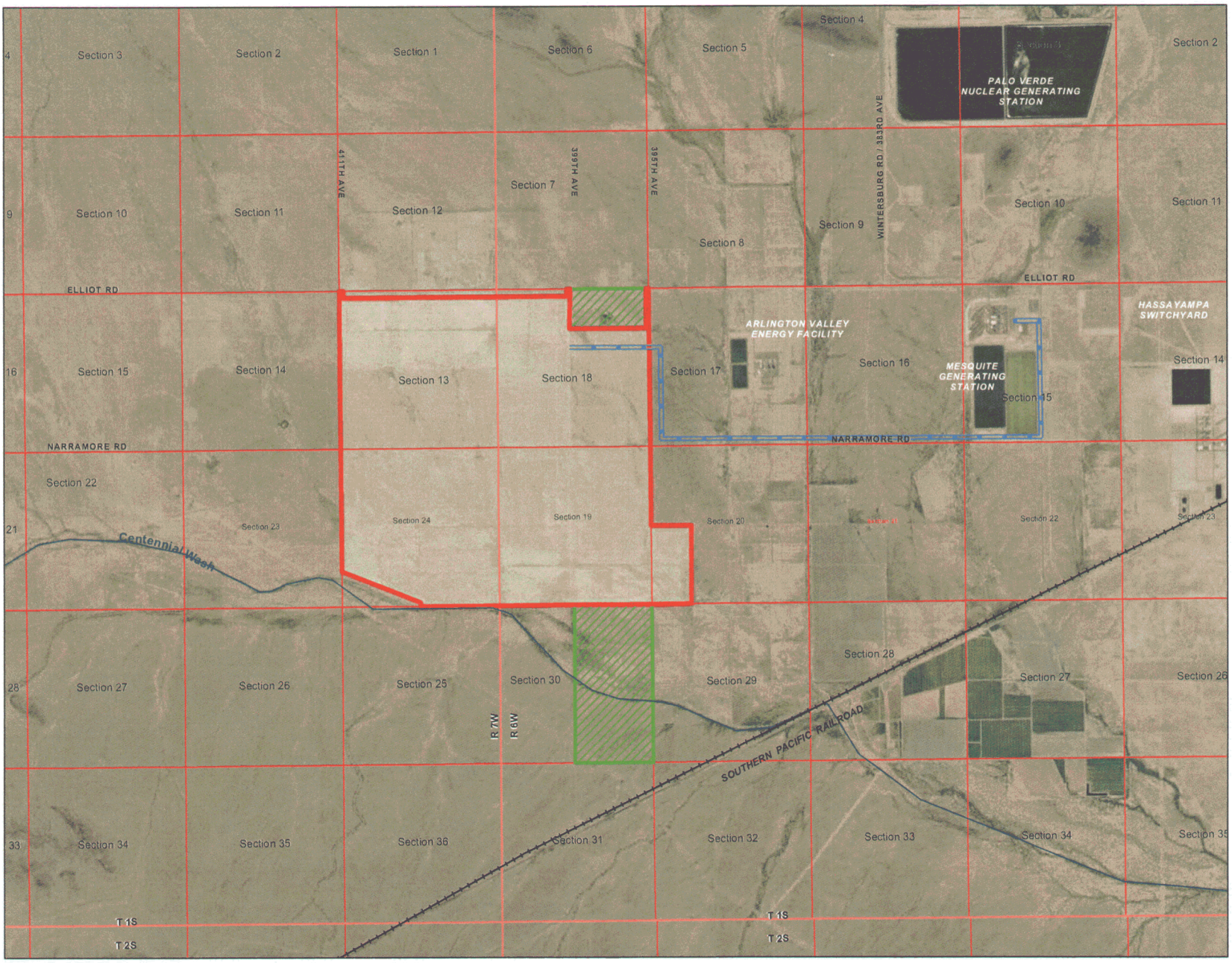
_____. 2008. Maricopa County, Arizona Species List. Revised April, 2008. Web site: http://www.fws.gov/southwest/es/Arizona/Documents/CountyLists/Maricopa.pdf . Accessed February 25, 2009.

U.S. Geological Survey (USGS). 2004. Southwest Regional GAP (SWReGAP) Digital Landcover Dataset for the Southwestern United States. Web site: http://earth.gis.usu.edu/swgap/swgap_legend_desc.pdf. Accessed February 26, 2009.

Quinn, Meg. 2001. Cacti of the Desert Southwest. Rio Nuevo Publishers, Tucson, Arizona. 88 pp.

Appendix A

Proposed Project Area Map



MESQUITE SOLAR

Project Map

Delineated Areas

- Proposed Mesquite Solar Energy Generation Area (per CPA200807)
- Wildlife Habitat Area

Proposed Transmission

- 230 kV Double-Circuit

Public Land Survey System

- Townships
- Sections
- Centennial Wash

0 2,500 5,000 Feet

FileName: projectArea
FileLoc: 09180026/GIS/Maps/SUP

SOURCES: Arizona Land Resource Information System, Google ESRI, Bureau of Land Management, FEMA, USGS, Maricopa County Planning, Sempra Energy

Sempra™ Generation

Appendix B

Request for Special Status Species for Mesquite Power Solar Project

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

February 18, 2009

Ms. Jessica Rubado
AECOM Environment
1601 Prospect Pkwy
Fort Collins, CO 80525

Re: Request for Special Status Species for Mesquite Power Solar Project

Dear Ms. Rubado:

The Arizona Game and Fish Department (Department) has received your letter dated January 19, 2009, requesting information regarding special status species within or near the Mesquite Power Solar Project near Winterburg, Arizona. The generating station will be located on approximately 2,480 acres of farmland within sections 18, 19, and 20 of Township 1 South, Range 6 West and sections 13 and 24 of Township 1 South, Range 7 West. The Department has the following comments for your consideration in preparation of an application for a Certificate of Environmental Compatibility for the State of Arizona and other environmental analyses.

The Department has concerns that the Mesquite project could negatively impact wildlife due to a reduction of water availability when irrigation ditches are removed to accommodate the project. In addition, converting the current land use from agriculture to solar energy production may impact wildlife and their habitat. The conversion of these agricultural fields into a solar generating station would substantially alter or eliminate approximately 2,480 acres of habitat currently available and utilized by various wildlife species, including lands restored by Sempra Generation. Agricultural fields, particularly grasses, grains, and alfalfa crops, are often utilized by a variety of wildlife species for food, water, cover, and nesting habitat. Therefore, the Department requests to meet with Sempra Generation to discuss ways to mitigate our concerns.

If the project is modified to use solar thermal technology, the Department is also concerned about the potential use of settling ponds in the evaporative cooling component of the proposed project. If used, these ponds may draw waterfowl and other wildlife which could then be inadvertently poisoned due to concentrated salt and other minerals.

Department Recommendations

To minimize the potential impacts to wildlife habitat and populations resulting from the development and operation of the Mesquite project, the Department recommends Sempra Generation and AECOM Environment implement the following:

1. Surveys should be conducted for Western burrowing owl, survey protocols and guidelines can be obtained at http://www.azgfd.gov/w_c/BurrowingOwlResources.shtml.

2. If wildlife is encountered during construction of the facility, it should be moved outside the project area within 1 mile of its original location. A scientific collecting permit is required for this activity. A permit can be obtained by emailing Scpermit@azgfd.gov for more information. If wildlife will need to be removed from the facility once it is operational, annual renewal of the permit will be required.
3. Project analysis should include evaluating the potential impacts to wildlife resulting from the conversion of 2,480 acres of farmland to a solar generating plant. If negative impacts are anticipated, the Department recommends implementing activities that could mitigate these impacts. Such activities may include, but are not limited to, planting and maintaining moist soils, grasses, grains, and alfalfa crops in nearby fields that are currently fallow to benefit migratory birds and other wildlife.
4. Project analysis should include a thorough evaluation of the anticipated impacts to water resources.
5. If implementing the proposed action involves any work within desert washes, rivers, or wetlands, we recommend contacting the U.S. Army Corps of Engineers, at the address provided below, regarding Clean Water Act issues, best management practices, and guidelines for minimizing and mitigating impacts to riparian areas:

   Ron Fowler
   U.S. Army Corps of Engineers, Regulatory Branch
   3636 N. Central Avenue, Suite 760
   Phoenix, AZ 85012-1936
   Phone: 602-640-5385
6. For any powerlines built:
   a. Proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws.
   b. Limit project activities during the breeding season for birds, generally May through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season.
   c. Coordinate plant salvage and revegetation efforts with the Arizona Department of Agriculture, in accordance with the Arizona Native Plant Law. A reclamation plan is recommended for disturbed sites, where appropriate, including planting native, weed-free seed and vegetation.

Thank you for the opportunity to provide comments on this proposed project. We look forward to continued communications with Sempra generation and AECOM Environment regarding the project development and implementation. Please contact me at 623-236-7606 if you have any questions, or would like to further discuss our concerns and recommendations.

Sincerely,

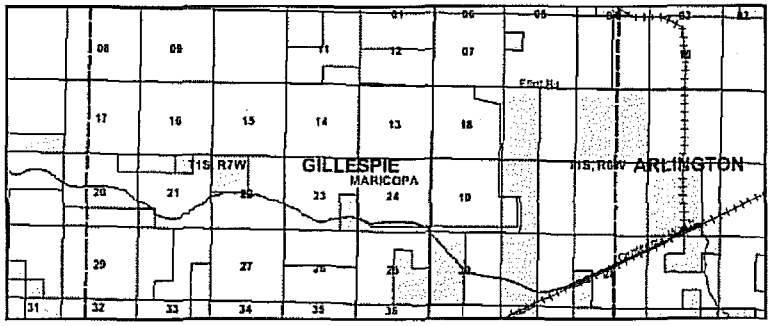
Ginger Ritter

Ginger Ritter
Project Evaluation Project Specialist, Habitat Branch

AGFD #M09-02180338

Arizona's On-line Environmental Review Tool
Search ID: 20090203008004
Project Name: Mesquite Power
Date: 2/3/2009 9:44:33 AM

Project Location



Project Name: Mesquite Power
Submitted By: PEP Project Evaluation Program
On behalf of: CONSULTING
Project Search ID: 20090203008004
Date: 2/3/2009 9:44:25 AM
Project Category: Energy Storage/Production/Transfer,Energy Production (generation),solar power facility (new)
Project Coordinates (UTM Zone 12-NAD 83): 321391.653, 3689954.303 meter
Project Area: 2408.995 acres
Project Perimeter: 12980.396 meter
County: MARICOPA
USGS 7.5 Minute Quadrangle ID: 1331
Quadrangle Name: GILLESPIE
Project locality is currently being scoped

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 5 miles of Project Vicinity:

Name	Common Name	ESA	USFS	BLM	State
Opuntia echinocarpa	Straw-top Cholla				SR

 APPLICATION INITIALS: _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ARIZONA ECOLOGICAL SERVICES FIELD OFFICE
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 FAX: (602) 242-2513

FACSIMILE TRANSMISSION

DATE: 3 / 2 / 2009 TIME: 10:46

TO Jessica Rubado

OFFICE/ROOM:

AGENCY:

FAX NUMBER: 970-493-0213

FROM: Cathy Gordon (office assistant) for Mike Martinez

SUBJECT:

COMMENTS: Please note this letter will be mailed today.

NUMBER OF PAGES: 3
(including this page)

If there are problems with copy quality, please call person who sent the document.

United States Department of the Interior
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer to:
AESO/SE
22410-2009-SL-0190

March 2, 2009

Ms. Jessica Rubado
AECOM Environment
1601 Prospect Parkway
Fort Collins, Colorado 80525

RE: Construction and Operation of Sempra Generation Photovoltaic Solar Energy Generation Facility Near the Mesquite Generating Station in Maricopa County, Arizona

Dear Ms. Rubado:

Thank you for your recent request for information on threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may occur in your project area. The Arizona Ecological Service Field Office has posted lists of the endangered, threatened, proposed, and candidate species occurring in each of Arizona's 15 counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: **http://www.fws.gov/southwest/es/arizona**

If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find County Species Lists on the main page. Then click on the county of interest. The arrows on the left will guide you through information on species that are listed, proposed, candidates, or have conservation agreements. Here you will find information on the species' status, a physical description, all counties where the species occurs, habitat, elevation, and some general comments. Additional information can be obtained by going back to the main page. On the left side of the screen, click on Document Library, then click on Documents by Species, then click on the name of the species of interest to obtain General Species Information, or other documents that may be available. Click on the "Cactus" icon to view the desired document.

Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Under the General Species Information, citations for the Federal Register (FR) are included for each listed and proposed species. The FR is available at most Federal depository libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency will need to request formal consultation with us. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency will need to enter into a section 7 conference. The county list may also contain candidate or conservation agreement species. Candidate species are those for which there is sufficient information to support a proposal for listing; conservation agreement species are those for which we have entered into an agreement to protect the species and its habitat. Although candidate and conservation agreement species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, we recommend the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona and some of the Native American Tribes protect some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species, or contact the appropriate Native American Tribe to determine if sensitive species are protected by Tribal governments in your project area. We further recommend that you invite the Arizona Game and Fish Department and any Native American Tribes in or near your project area to participate in your informal or formal Section 7 Consultation process.

For additional communications regarding this project, please refer to consultation number 22410-2009-SL-0190. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Brenda Smith (928) 226-0614 (x101) for projects in Northern Arizona, Debra Bills (602) 242-0210 (x239) for projects in central Arizona and along the Lower Colorado River, and Sherry Barrett (520) 670-6150 (x223) for projects in southern Arizona.

Sincerely,

Debra T. Bills

for Steven L. Spangle
Field Supervisor

cc: Josh Avey, Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

cgg

February 17, 2009

PALEOWEST
Solutions in Archaeology

Class 1 Cultural Resources Study for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona

Submitted to:

AECOM

Technical Report 09-03

PaleoWest Solutions in Archaeology
649 N. 3rd Ave.
Phoenix, Arizona 85003

CLASS I CULTURAL RESOURCES STUDY FOR THE PROPOSED MESQUITE SOLAR GENERATION PROJECT, MARICOPA COUNTY, ARIZONA

Prepared by:

Douglas R. Mitchell
Cory Dale Breternitz

Prepared for:

AECOM Environment
1601 Prospect Parkway
Fort Collins, CO 80525
(970) 493-8878

PaleoWest Project Number 09-06

Technical Report 09-03

PaleoWest Solutions in Archaeology
649 N. Third Avenue
Phoenix, AZ 85003
602.261.7253

February 2009

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ARIZONA SHPO ABSTRACT

Report Title: Class I Cultural Resources Study for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona

Report Date: February 17, 2009

Client: AECOM

Land Status: Private and Arizona State Land Department.

Project Description: Class I Cultural Resources Study for a proposed photovoltaic solar energy generation facility and associated transmission line interconnection in Maricopa County, Arizona.

Location: Sections 13, 24, T1S, R7W, Sections 13-18, 19-24, T1S, R6W, Gila and Salt River Baseline and Meridian, in Maricopa County, Arizona.

Map Reference: USGS Gillespie, AZ, Arlington, AZ 7.5'

Acreage: Approximately 2700 acres

Number of Archaeological Sites: None in project area.

Register-Eligible Properties: None.

Register-Ineligible Properties: None.

Recommendation: The Class I cultural resource study indentified several previous archaeological surveys adjacent to the proposed facility site and some that overlap with the proposed transmission line corridor. However, no sites have been recorded within the actual project area. Because few archaeological surveys have been conducted in the project area, and sites have been recorded in the vicinity, a Class III archaeological survey of the project area is recommended prior to development.

INTRODUCTION

This report presents the results of a Class I site file search in support of a Special Use Permit application for a 2,480-acre solar photovoltaic (PV) facility and a 4-mile-long 230 kV transmission line interconnection, all located in Maricopa County, Arizona. The project area occurs in Sections 13, 24, T1S, R7W, Sections 13-18, 19-24, T1S, R6W, Gila and Salt River Baseline and Meridian, in Mohave County, Arizona; USGS Gillespie and Arlington, AZ 7.5' topographic quadrangles (see Figure 1). The project area is a broad valley at the south end of the Harquahala Plain, drained by Centennial Wash. Project area elevation is approximately 900 feet above mean sea level.

The Class I cultural resource study indentified several previous archaeological surveys adjacent to the proposed facility site and some that overlap with the proposed transmission line corridor. However, no sites have been recorded within the actual project area. Because few archaeological surveys have been conducted in the project area, and sites have been recorded in the vicinity, a Class III archaeological survey of the project area is recommended prior to development.

CULTURE HISTORY

The project area lies near the western limit of the Hohokam area near its border with the area typically associated with the prehistoric Yuman (Patayan). Reid and Whittlesey indicate that "[f]rom Gila Bend and Ajo westward to California and from Yuma northeast to the Grand Canyon lies a vast region that was the home of the Patayan people" (1997:111). In the following discussion pertinent features of the prehistoric Hohokam and Patayan cultures are examined, followed by a review of significant historic developments.

Archaic Period

The earliest evidence of human occupation known for this area dates to the Middle Archaic period, approximately 5,000 years ago (Cordell 1997). Middle Archaic use of the area appears to have been on a temporary basis by residentially mobile hunter-gatherers. Habitation structures are generally absent or, if present, they are ephemeral in construction (Cordell 1997). By 2,000 years ago, pit houses, ceramics, and intensively used ground stone assemblages signify the beginnings of sedentism in the Santa Cruz Valley (Huckell 1995). Evidence of agriculture is lacking at this time, which may support a model of short-term sedentism prior to the adoption of maize. However, cultigens are well-documented elsewhere in central and southern Arizona centuries before the Late Archaic period pit house sites known from the nearby Santa Cruz Valley, including sites along the Upper Santa Cruz River (Huckell 1995:139). This strongly suggests that groups living in this area had adopted maize and other cultigens by at least 2,000 years ago. Between 2,000 and 1,600 years ago, there is evidence that Late Archaic period groups across southern Arizona developed into the Hohokam culture.

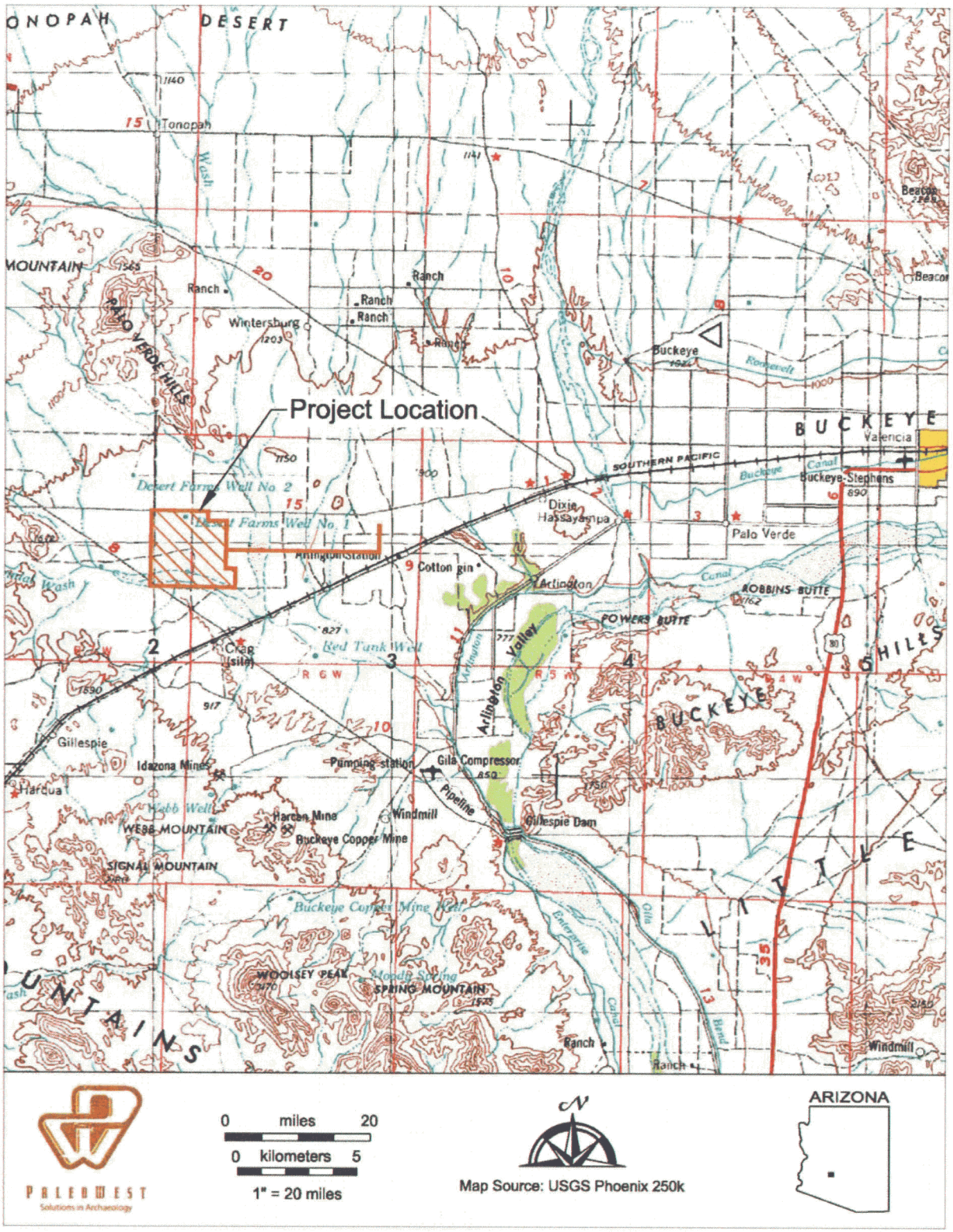

Figure 1. General Location of the Project Area.

Hohokam

The earliest Hohokam manifestation, the Pioneer period (A.D. 100–750) Red Mountain phase (A.D. 1–500) (Dean 1991), is a time when people subsisted on wild resources and agricultural products. House forms included small circular and "bean-shaped" pit houses (Mabry 2000). Around A.D. 400, canal irrigation appears along the Salt River (Ackerly and Henderson 1989). By the Vahki phase, A.D. 500–650, irrigation expands and becomes well established (Ackerly and Henderson 1989; Haury 1976). Subsistence was based on a mixture of wild resources and agricultural produce. Domestic architecture was characterized by square and rectangular pit houses of various sizes (Ciolek-Torrello et al. 2000). The late Pioneer period, A.D. 650–750, saw the appearance of Hohokam decorated pottery (Estrella, Sweetwater, and Snaketown Red-on-buff), which is characterized by red-painted designs on a light-colored buff or brown background (Abbott 2001; Haury 1976; Wallace 2001). House types (moderate-sized pit structures with square or rectangular floor plans and formal, plastered hearths) associated with the late Pioneer period varied greatly.

The Gila Butte and Santa Cruz phases of the Colonial period (A.D. 750–950) were times of cultural expansion and elaboration among the Hohokam (e.g., Haury 1976). It is during this time that the Hohokam achieved their highest level of sophistication in the production of arts and crafts (particularly ceramics and shell). They also expanded their territory and economic interaction with their neighbors. In part, Colonial period Hohokam social organization appears tied to the exchange of ritual and subsistence goods (Doyel 1985).

Ballcourts, which were first built in the early A.D. 800s, became the dominant form of public architecture in southern Arizona (Wallace 2001). They are thought to mark the onset of a regional system bound by religious, economic, and political links that crosscut the geophysical boundaries of the region (Abbott 2001; Wilcox and Shenk 1977). Subsistence was based on a mix of wild resources and agriculture (Bohrer 1987). The construction, expansion, and maintenance of irrigation systems of the Salt and Gila River valleys had a significant impact on Hohokam social and political organization (e.g., Abbott 2000).

The Sedentary period (Sacaton phase—A.D. 950–1150) saw a general decline in the quality of Hohokam material culture. Early, ballcourts were the dominant form of public architecture. However, by the end of the period, few ballcourts were being built and the construction of capped mounds or platform mounds became more common. Platform mounds were built near village centers around plazas surrounded by domestic features. Houses, which exhibited significant variability in form, were more closely packed and organized in courtyard groups or village segments (Wilcox, McGuire, and Sternberg 1981).

Agriculture still provided the majority of foodstuffs, although some wild plant species were intensively exploited. Cotton production (for weaving of textiles and its seeds as food) was also of major importance.

By the end of the Sedentary period, a major reorganization of Hohokam society occurred. Many village sites and areas were abandoned as populations began to concentrate in larger villages along the Salt River. These changes were also reflected in public architecture and in the nature of ceramic and shell production.

The Classic period is divided into the Soho (A.D. 1150–1300) and the Civano (A.D. 1300–1450) phases. Differences in ceramic decoration and architectural styles differentiate these two phases. Low frequencies of red-on-buff ceramics continued to be produced during the Soho phase as redwares become increasingly common. The introduction of long-necked jars also marks a break with earlier ceramic styles. Structures with post-reinforced adobe walls and surface structures are common during the Soho phase. These were replaced by solid, adobe-walled surface rooms in the Civano phase, although the use of some pit houses continued. Houses were more closely spaced or contiguous, and surrounded by compound walls that often also enclosed small plazas. There was a significant increase in the construction and use of platform mounds (Gregory et al. 1988), and the construction of ballcourts declined to its lowest point. The apex of Hohokam public architecture was achieved during the Civano phase with the building of "big houses." These structures, which often co-occur with platform mounds, likely served multiple functions. It is argued that they were clear symbols of elite status in Hohokam society (Wilcox and Shenk 1977).

The Classic period Hohokam subsisted increasingly upon domesticates, although agave and cholla continued to be commonly used (e.g., Miller 1994), and canal irrigation continued to be very important. Redwares and the disappearance of buffwares mark the Civano phase, although plainwares continue to dominate the total ceramic assemblage. Gila and Tonto Polychrome and local imitations are present after A.D. 1320 (Reid and Whittlesey 1992).

Civano phase Hohokam social organization was clearly different from what preceded it and from what was to follow. Population size and density at many of the large sites reached never-before-seen levels, and although the level of social and political organization actually achieved at this time is much debated, some increase in social complexity was undoubtedly necessary to manage the higher population densities.

By the late Civano phase, the success the Hohokam had enjoyed had vanished. High population densities, depletion of food resources, decline in agricultural productivity, disease and malnutrition, flooding, drought, and the collapse of many irrigation systems are cited as reasons for the collapse of the Hohokam (e.g., Bayman 2001; Van Gerven and Sheridan 1994).

The post-Classic period (Polvorón phase—A.D. 1450–1540) in the Phoenix Basin is somewhat of a hazy gap between the late Classic period Hohokam and the arrival of

the first Europeans (Bayman 2001; Chenault 2000; Henderson and Hackbarth 2000). The Polvorón phase is defined by jacal structures, polychrome ceramics, and an abundance of obsidian. However, many argue that these characteristics, as well as available chronometric dates (e.g., Dean 1991:87) are not sufficient to distinguish it from the late Civano phase. Others have suggested that the Hohokam may have persisted until the early 1500s and that Hohokam and Salado peoples may have been directly encountered by the Spanish (Bayman 2001; Reff 1992). The debate over the cause or causes for the decline and disappearance of the Hohokam is far from resolved.

Prehistoric Yuman (Patayan)

The Prehistoric Yuman (Patayan) people occupied the desert territory in the southwestern part of Arizona. From an archaeological perspective, the Patayan is one of the most poorly known prehistoric cultures of the Southwest (Reid and Whittlesey 1997:111). This sentiment is echoed by Cordell in her observation that "[d]espite considerable research, the Patayan area remains poorly documented compared with other Southwestern regions" (Cordell 1997:211).

Rogers (1939) originally proposed the term "Yuman" to describe the prehistoric ceramic assemblages in the Colorado Desert. He divided the ceramic period into three phases, termed Yuman I, II, and III. He further clarified this idea (1945), claiming that Patayan referred to a specific cultural manifestation, while Yuman referred to a loosely knit constellation of material culture that was contained in the ceramic assemblages of the Colorado Desert, and he asserted that because the material culture and settlement adaptations of prehistoric peoples here continued into the historic period, the term Yuman was more appropriate.

According to Waters (1982), Patayan I (A.D. 700–1000) begins in the A.D. 700s with the expansion of Patayan peoples out of southern California. In southwestern Arizona, these early Patayan came into contact with the Hohokam, while to the north they were influenced by interaction with the Anasazi (Rogers 1945). Patayan I is defined by the presence of four major ceramic types: Black Mesa Buff, Colorado Beige, Colorado Red, Colorado Red-on-beige (Waters 1982).

Patayan I ceramics were made from the fine-textured, buff-colored clays deposited by the Colorado River. Decorative techniques include the direct "chimney neck" rim, notched rims, lug and loop handles, the so-called "Colorado shoulder," incising, burnishing, and a red clay slip. Sites with Patayan I ceramics extend from near El Centro, California, eastward to the vicinity of Gila Bend, Arizona, with Parker, Arizona, being the point of their most northern distribution and the Sierra Pinacate, Sonora the southern extent (McGuire 1982; Waters 1982). McGuire (1982:219) notes that the distribution of Patayan II and III ceramics does not differ significantly. Patayan I peoples were apparently highly mobile and actively engaged in trade. Excavations at the Willow Beach site resulted in the recovery of pottery, shell, steatite, asphaltum, and turtle shell rattles from California (Schroeder 1952; Stone 1986).

Dramatic changes in the Patayan ceramic assemblage signal the start of the Patayan II period (A.D. 1000–1500). Patayan II ceramics are found in the Mojave Desert, north along the Colorado River, and along the Gila River east to Aqua Caliente. This distribution is taken to indicate a widespread expansion of Patayan groups, perhaps in response to the immigration of other groups and/or internecine warfare along the Colorado River (Stone 1986).

Five Lower Colorado Buffware plainwares and their red-on-buff equivalents define or appear during the Patayan II period: Tumco Buff, Parker Buff, and Topoc Buff (along the Lower Colorado River); Palomas Buff (along the Gila River); and Salton Buff (along the 12-m shoreline of Lake Cahuilla) (Waters 1982:287). The painted varieties borrow design elements from the Hohokam. The new ceramic traits that appear in the Lower Colorado Buffwares include re-curved rims, a stucco finish, new vessel forms, and an increased use of fine-line geometric designs (Rogers 1945:188; Waters 1982:287). Little is known of Patayan II society and socioeconomic and political organization. Sites are common in the Lower Colorado River valley, in the Gila River valley, and along the shore of Lake Cahuilla. Faunal remains at sites along the shore of the lake indicate that Patayan II peoples exploited freshwater shellfish, fish, and birds (Stone 1986:67). There was increased interaction with the Hohokam in the western desert area of Arizona and it appears that a group of Patayan occupied a residential area within the large Hohokam site of Las Colinas in the Phoenix Basin (Reid and Whittlesey 1997:123).

The Patayan III period (A.D. 1500–1850) represents a significant shift in settlement, with movement away from the Salton Trough (although some occupation continued there). It is during this time that Lower Colorado Buffwares reach their maximum distribution; from the Pacific coast eastward to Phoenix, from southern Nevada southward to the Colorado River delta (Waters 1982:291–293). This expansion of Patayan populations is likely associated with the desiccation of Lake Cahuilla (Rogers 1945).

The co-occurrence of Patayan and Hohokam materials over a broad expanse of territory suggests a long history of trade and interaction, and even co-residence, as at the site of Las Colinas in Phoenix (Reid and Whittlesey 1997:122–126). The history of interaction between Hohokam and Patayan groups started as early as A.D. 900, when Patayan ceramics first appear at Hohokam sites in the Gila Bend area. This area is seen as an important locus for the interaction and intermixture of these two cultural groups; however, many of the Patayan sites in these areas were small, specialized procurement loci. After the demise of the Hohokam, prehistoric Patayan populations are believed to have spread east along the Gila River until they reached the distribution observed by Spanish explorers in the eighteenth century (McGuire 1982:219; Reid and Whittlesey 1997:124).

Historic Period

The Historic period began with the first Spanish explorations into Arizona in the late 1600s. Permanent Euroamerican settlements in the Salt River Valley and nearby

environs began in the late 1860s. In the immediate region around the project area, historic uses reflect its marginal setting relative to important historical locations such as Phoenix and Prescott. The Santa Fe, Prescott, and Phoenix Railroad was constructed through the area in 1895, linking Phoenix with the mining communities in Yavapai County and the main Santa Fe transcontinental railroad across northern Arizona. The Southern Pacific Railroad (SPRR) was established further to the south and that corridor, later known as the Gila Trail and which eventually became the Butterfield Stage Overland Route, has a long history. Much of the influx of people into the area can be traced to mining, and subsequent homesteading. Though homesteading, mining, and farming were all tried in the area through the early part of the 20th century, the economy and population of the region grew only a small amount until recent master planned residential developments began attracting residents.

RECORDS REVIEW

A review of the AZSITE database maintained by the Arizona State Museum and the General Land Office (GLO) records housed by the Bureau of Land Management was conducted of the project area and one mile around it. Twenty-nine surveys have been conducted across and near the project area. No archaeological sites are recorded in the project area, but fourteen sites are recorded in the vicinity. Also, the 1915 and 1916 GLO records indicate that roads passed through the project area and a windmill is recorded in the southern half of Section 24. The previous surveys and recorded sites are listed in Tables 1 and 2 and illustrated in the figures at the back of this report (Figures 2-4).

Table 1. Previously Recorded Surveys in the 1-mile Study Radius.

Survey No.	Description	In Project Area?	Reference
1955-3 (ASM)	Southern Pacific Pipeline	No	Komerska and Breternitz 1955
1981-129 (ASM)	Solar Vista Associates, SLD	No	Madsen 1981
1981-159 (ASM)	Southern California Edison Palo Verde-Devers 500Kv Transmission Line	No	Berry 1978
1981-162 (ASM)	Yuma 500 Kv Transmission Line	No	Effland et al. 1982
1985-226 (ASM)	All American Pipeline Right-of-Way	Partial	Batcho 1985
1994-270 (ASM)	PacifiCorp Turbine Pipeline Project–Wintersburg Alternatives	Partial	Rogge and Darrington 1994
1999-409 (ASM)	Palo Verde Switchyard Survey	No	Hart 2000
1999-435 (ASM)	Redhawk Power Plant	Partial	Rogge et al. 1999
1999-542 (ASM)	Harquahala Generating Project	No	Rogge et al. 2000
1999-587 (ASM)	PBNS Level 3 Fiber Optic Line	No	Doak 1999
2000-429 (ASM)	Redhawk Pipeline Project	Partial	Rogge and Bauer 2000
2000-118 (ASM)	Sempra Energy Power Station	No	No report
2000-393 (ASM)	Tonopah and Centennial Powerline	No	Punzman 2000
2000-428 (ASM)	Redhawk-Hassayampa Powerline Intertie	No	Rogge and Bauer 2000

Table 1. Previously Recorded Surveys in the 1-mile Study Radius.

Survey No.	Description	In Project Area?	Reference
2000-435 (ASM)	Kinder Morgan Pipeline Erosion Sections	No	Rogge and Davies 2000
2000-631 (ASM)	Palo Verde Steam Transportation Route	No	Garcia and Folb 2001
2001-410 (ASM)	Centennial Wash Erosion Control	No	Bauer and Rogge 2001
2001-714 (ASM)	AT&T NexGen/Core project – Addendum	Partial	Smith and Wheeler 2001
2001-767 (ASM)	Redhawk Power Plant Access Road	No	Wilcox 2001
2003-951 (ASM)	Hassayampa to Jojoba Transmission line	No	Chapin-Pyritz and Hill 2002
2004-237 (ASM)	Arlington Valley Project	Partial	Copeland and Breternitz 2000
2005-68 (ASM)	Temporary Work Areas for EPNG	No	North et al. 2004
7.984.SHPO	No information available	No	--
7.204.SHPO	No information available	No	--
BLM-020-10-84	No information available	No	--
BLM-020-10-98	No information available	No	--
BLM-020-11-42	No information available	No	--
BLM-020-10-101	No information available	Partial	--
BLM-020-10-108	No information available	Partial	--

Notes: ASM - Arizona State Museum; SHPO - State Historic Preservation Office; BLM - Bureau of Land Management.

Table 2. Previously Documented Sites in the 1-mile Study Radius.

Site No. and NRHP eligibility	Site Type	Reference
AZ T:9:21 (ASM) – E	Hohokam Artifacts Scatter with Possible Hearths	Rogge et al. 2000 Luhnow and Dickenson 2007
AZ T:9:24 (ASM) – U	Historic Homestead	Effland et al. 1982
AZ T:9:34 (ASM) – U	Prehistoric Lithic Scatter	Berry 1978
AZ T:9:55 (ASM) – NE	Historic Farm Labor Camp	Rogge et al. 2000
AZ T:9:56 (ASM) – NE	Historic Ramada	Rogge et al. 1999
AZ T:9:57 (ASM) – NE	Historic Farm Labor Camp	Rogge et al. 2000
AZ T:9:58 (ASM) – NE	Historic and Modern Trash Dump	Walsh 2000
AZ T:9:59 (ASM) – NE	Historic Trash Dump	Walsh 2000
AZ T:9:60 (ASM) – NE	Historic Trash Dump	Hart 2000
AZ T:9:61 (ASM) – NE	Historic Trash Dump	Hart 2000
AZ T:9:62 (ASM) – NE	Historic homestead	Hart 2000
AZ T:9:63 (ASM) – NE	Historic Road Segment	Hart 2000
AZ T:9:70 (ASM) – NE	Prehistoric Lithic Scatter with Two Rockpiles	Copeland and Breternitz 2000
AZ T:10:84 (ASM) – E	Southern Pacific Railroad Phoenix to Eloy Spur	Harmon et al. 1995 Ellis et al. 1999

Notes: ASM - Arizona State Museum.
National Register Eligibility; NE = not eligible; E = considered eligible by recorders, U = unknown, not evaluated

RECOMMENDATIONS

The Class I site file search was conducted for the project area and within a 1-mile radius using the AZSITE database maintained by the Arizona State Museum and the GLO records housed by the Bureau of Land Management. Twenty-nine surveys have been conducted across and near the project area. No archaeological sites are recorded in the project area, but fourteen sites are recorded in the vicinity. Also, the 1915 and 1916 GLO records indicate that roads passed through the project area and a windmill is recorded in the southern half of Section 24.

The Class I cultural resource study identified several previous archaeological surveys adjacent to the proposed facility site and some that overlap with the proposed transmission line corridor. However, no sites have been recorded within the actual project area. Because few archaeological surveys have been conducted in the project area, and sites have been recorded in the vicinity, a Class III archaeological survey of the project area is recommended prior to development.

REFERENCES CITED

Abbott, David R.
2000 *Ceramics and Community Organization among the Hohokam*. University of Arizona Press, Tucson.

2001 Conclusions for the GARP Ceramic Analysis. In *The Grewe Archaeological Research Project, Volume 2, Part 1. Ceramic Studies*, edited by David R. Abbott, pp. 263–272. Anthropological Research Papers No. 99-01. Northland Research, Tempe.

Ackerly, Neal W., and T. Kathleen Henderson (editors)
1989 *Prehistoric Agricultural Activities on the Lehi-Mesa Terrace: Perspectives on Hohokam Irrigation Cycles*. Northland Research, Inc., Flagstaff.

Batcho, David G.
1985 *A Preliminary Report of Archaeological Sites Found Along the All American Pipeline Right-of-Way Between Oracle, Arizona and a Point 145 Miles to the West*. Cultural Management Division of New Mexico State University Report 606-R. Las Cruses.

Bayman, James M.
2001 The Hohokam of Southwest North America. *Journal of World Prehistory*, 15:257–311.

Bauer, Sharon and A.E. (Gene) Rogge
2001 *Cultural Resources Survey for a Proposed Erosion Control Project along Centennial Wash, Maricopa County, Arizona.* URS Cultural Resources Report 2001-79(AZ). URS Corporation, Phoenix.

Berry, Claudia
1978 *Archaeological Investigations Southern California Edison Palo Verde-Devers 500 Kv Transmission Line Palo Verde Nuclear Generation Station to the Colorado River, Maricopa and Yuma Counties, Arizona*. Museum of Northern Arizona, Department of Anthropology, Flagstaff.

Bohrer, Vorsila L.
1987 The Plant Remains from La Ciudad, a Hohokam Site in Phoenix. In *La Ciudad: Specialized Studies in the Economy, Environment, and Culture of La Ciudad,* Part III, edited by JoAnn E. Kisselburg, Glen E. Rice, and Brenda L. Shears, pp. 67–202. Anthropological Field Studies No. 20, Arizona State University, Tempe.

Chapin-Pyritz, Regina L. and Matthew E. Hill, Jr.
2002 *A Cultural Resources Survey fo the Proposed Hassayampa to jojoba 500kV Transmission Line, Maricopa County, Arizona.* EPG Cultural Resource Services Technical Paper No. 10. Environmental Planning Group, Tucson.

Ciolek-Torello, Richard, Eric E. Klucas, and Stephanie M. Whittlesey
2000 Hohokam Households, Settlement Structure, and Economy in the Lower Verde Valley. In *The Hohokam Village Revisited*, edited by D. E. Doyel, S. K. Fish, and P. R. Fish, pp. 65–100. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Chenault, Mark C.
2000 In Defense of the Polvorón Phase. In *The Hohokam Village Revisited*, edited by David E. Doyel, Suzanne K. Fish, and Paul R. Fish, pp. 277–286. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Copeland, Steven R. and Cory Dale Breternitz
2000 *A Cultural Resources Survey of a Proposed Transmission Line Corridor and Access Road Across State Trust and Private Land Scheduled for Development as Part of the Arlington Valley Project in Maricopa County, Arizona.* Technical Report No. 00-51. Soil Systems, Inc. Phoenix.

Cordell, L.
1997 *Prehistory of the Southwest.* Academic Press, New York.

Dean, Jeffrey S.
1991 Thoughts on Hohokam Chronology. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest,* edited by G. J. Gumerman, pp. 61-149. Amerind Foundation New World Studies Series No. 1. Amerind Foundation, Dragoon, Arizona, and University of New Mexico Press, Albuquerque.

Doak, David P.
1999 *Archaeological Survey for a Proposed Fiber Optic Cable Line from Yuma to Phoenix, Arizona.* SWCA, Inc. Cultural Resource Report 99-185. Tucson.

Doyel, David E.
1985 Summary and Discussion. In *Hohokam Settlement and Economic Systems in the Central New River Drainage, Arizona,* Volume 1, edited by D. E. Doyel and M. D. Elson, pp. 727–734. Publications in Archaeology No. 4. Soil Systems, Inc., Phoenix.

Effland, Richard W., Jr., Margerie Green, and Eugenia Robinson
1982 *Document Four: Yuma 500 Kv Transmission Line, Technical Report on Findings.* Archaeological Consulting Services, Tempe.

Ellis, J. Grace, Steven R. Copeland, Jennifer L. Lavris, Jared A. Smith, Ian Geoff Thompson, and Roanna Weahkee
1999 *A Cultural Resources Survey of the Williams Communication Group Fiber Optic Cable Line Right-of-Way, Yuma, Arizona to the New Mexico Border: Yuma, Maricopa, Pinal, Pima, and Cochise Counties, Arizona.* Soil Systems Technical Report No. 99-17. Phoenix.

Garcia, Daniel and Lisa Folb
2001 *A Cultural Resources Survey of the Palo Verde Steam Transportation Route, from Cotton Center to Palo Verde, Maricopa County, Arizona.* Cultural Resource Report No. 00-380:6/7. EcoPlan Associates, Inc. Mesa.

Gregory, David A., William L. Deaver, Suzanne K. Fish, Ronald Gardiner, Robert W. Layhe, Fred L. Nials, and Lynn S. Teague
1988 *The 1982–1984 Excavations at Las Colinas: The Site and its Features.* Archaeological Series 162, Volume 2. Arizona State Museum, Tucson.

Harmon, Elizabeth, Lisa Beyer, Gregory Woodall, Jeremy Lite, and Jennifer Tweedy
1995 *Cultural Resources Survey of Approximately 40 Miles of Proposed State Route 85 Right-of-Way (and Associated Alternative Routes) Between Gila Bend and Buckeye, Southwestern Maricopa County, Arizona.* Archaeological Research Services, Inc. Project Report 94-45. Tempe.

Hart, David R.
2000 *Cultural Resources Survey of 240 Acres for the Palo Verde Switchyard, Maricopa County, Arizona.* Northland Research, Inc. Technical Report No. 00-01. Tempe.

Haury, Emil W.
1976 *The Hohokam: Desert Farmers and Craftsman; Snaketown.* 1964-1965. University of Arizona Press, Tucson.

Henderson, T. Kathleen, and Mark Hackbarth
2000 What is Going on at the Hohokam Village? In *The Hohokam Village Revisited,* edited by David E. Doyel, Suzanne K. Fish, and Paul R. Fish, pp. 287–316. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Huckell, Bruce B.
1995 *Of Marshes and Maize: Preceramic Agricultural Settlements in the Cienega Valley, Southeastern Arizona.* Anthropological Papers No. 59. University of Arizona Press, Tucson.

Komerska, Robert, and David A. Breternitz
1955 Archaeological Survey for Engineering Management, Inc., Yuma and Eastward for Southern Pacific Pipeline–Weekly Reports. Arizona State Museum Archives, Tucson.

Luhnow, Glennda Gene, and Joseph Harkins Dickinson
2007 *A Cultural Resources Survey for the Palo Verde Subalternative, Devers-Palo Verde No. 2 Transmission Project, Maricopa County, Arizona.* Environmental Planning Group Cultural Resource Services Technical Paper No. 2003-1389. Phoenix.

Mabry, Jonathan B.
2000 The Red Mountain Phase and the Origins of Hohokam Villages. In *The Hohokam Village Revisited*, edited by D. E. Doyel, S. K. Fish, and P. R. Fish, pp. 37–64. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Madsen, John H.
1981 Letter Report Regarding Solar Vista Associates, SLD. On file, Archaeology Section, Arizona State Museum. Tucson.

Miller, JoAnne
1994 Pueblo Grande Flotation, Macrobotanical, and Wood Charcoal Analyses. In *The Pueblo Grande Project, Volume 5: Environment and Subsistence*, edited by S. Kwiatkowski, pp. 127–204. Publications in Archaeology No 20. Soil Systems, Inc., Phoenix.

McGuire, R.
1982 Problems in Culture History. In *Hohokam and Patayan, Prehistory of Southwestern Arizona*, edited by R. McGuire and M. Schiffer, pp. 153–222. Academic Press, New York.

North, Chris D., Cara Schmidt, Ronald R. Ryden
2004 *Archaeological Survey of Temporary Work Areas between the Casa Grande and Wenden Compressor Stations, El Paso Natural Gas Lines 1100, 1103, and 1110, Pinal, Maricopa, and La Paz Counties, Arizona.* Cultural Resources Report No. 04-216. SWCA Environmental Consultants, Phoenix.

Punzmann, Walter R.
2000 *A Cultural Resources Survey for Arizona Public Service Company's Tonopah and Centennial Valley Powerline Right-of-Way Permit Renewal, Maricopa County, Arizona.* Archaeological Consulting Services, Ltd. Tempe.

Reff, D. T.
1992 Contact Shock in Northwestern New Spain, 1518–1764. In *Disease and Demography in the Americas*, edited by J. Verano and D. Ubelaker, pp. 256–276. Smithsonian Press, Washington D. C.

Reid, J. Jefferson, and Stephanie Whittlesey
1992 New Evidence for Dating Gila Polychrome. In *Proceedings of the Second Salado Conference, Globe, AZ, 1992*, edited by R. C. Lang and S. Germick, pp. 223–229. Occasional Paper, Arizona Archaeological Society, Phoenix.

1997 *The Archaeology of Ancient Arizona.* University of Arizona Press. Tucson, Arizona.

Rogge, A.E. (Gene) and Sharon Bauer
2000 *Cultural Resource Overview, Survey, and Evaluation Report for the Arlington Valley/Redhawk Pipeline Project, Maricopa County, Arizona.* URS Dames & Moore, Phoenix.

Rogge, A.E. (Gene) and Sharon Bauer
2000 *Cultural Resource Survey for the Redhawk to Hassayampa Powerline Intertie Project.* URS Dames & Moore, Phoenix.

Rogge, A. E., and Glenn P. Darrington
1994 *PacifiCorp Turbine Pipeline Project Wintersburg Alternatives: A Class III Cultural Resource Survey, Phoenix, Arizona.* Dames & Moore, Phoenix.

Rogge, A.E. (Gene), Douglas Avann, Cara Lonardo, and Matthew E. Hill, Jr.
1999*Cultural Resources Survey for the Proposed Redhawk Power Plant.* Dames & Moore, Phoenix.

Rogge, A. E. (Gene), Matthew E. Hill, and Rachel Davies
2000 *Cultural Resource Survey for the Proposed Harquahala Generating Project.* Dames & Moore Intermountain Cultural Resource Services Research Paper No. 58. Phoenix.

Rogge, A. E. (Gene) and Rachel Davies
2000 *Cultural Resource Survey of Eroded Sections of Two Kinder Morgan Piplines at Centennial Wash, Maricopa County, Arizona. URS D*ames & Moore. Phoenix.

Rogers, M.
1939 *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Areas.* Museum of Man Papers No. 3. San Diego.

1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:167–198.

Schroeder, A.
1952 A Brief Survey of the Lower Colorado River from Davis Dam to the International Border. Ms. on file, Lower Colorado Regional Office, U.S. Department of the Interior Bureau of Reclamation, Boulder City, Nevada.

Smith, Matthew B. and Charles W. Wheeler
2001 *An Archaeological Survey of the Proposed Wilson Family and Donald Kachman Reroute: Addendum 3 to an Archaeological Survey of the Arizona Portion of Link Two of the AT&T NexGen/Core Project.* Report No. WCRM(F)221. Western Cultural Resource Management, Inc., Farmington.

Stone, Connie
1986 *People of the Desert, Canyons and Pines: Prehistory of the Patayan Country in West Central Arizona.* Cultural Resource Series No. 5. U.S. Department of the Interior, Bureau of Land Management, Arizona State Office, Phoenix.

Van Gerven, Dennis P., and Susan Guise Sheridan
1994 A Biocultural Reconstruction of a Classic Period Hohokam Community. In *The Pueblo Grande Project: Volume 6: The Bioethnography of a Classic Period Hohokam Population*, edited by Dennis P. van Gerven and Susan Guise Sheridan, pp. 123–128. Publications in Archaeology, No. 20, Soil Systems, Inc., Phoenix.

Wallace, Henry D.
2001 Time Seriation and Typological Refinement of the Middle Gila Buffware Sequence: Snaketown through Soho Phase. In *The Grewe Archaeological Research Project,* Vol. 2, Part 1: *Ceramic Studies*, edited by D. R. Abbott, pp. 177–259. Anthropological Papers 99-1. Northland Research, Inc., Tempe.

Walsh, Mary-Ellen
2000 *A Cultural Resources Survey 440 Acres of Private Land Near the Palo Verde Nuclear Generating Station, Maricopa County, Arizona.* Entranco Project Report No. 1999-010. Phoenix.

Waters, M.
1982 The Lowland Patayan Ceramic Tradition. In *Hohokam and Patayan: Prehistory of Southwestern Arizona*, edited by Randall H. McGuire and Michael B. Schiffer, pp. 275–297. Academic Press, New York.

Wilcox, Scott
2001 *Cultural Resources Survey for the Proposed Redhawk Power Plant – Addendum.* Environmental Planning Group, Phoenix.

Wilcox, David R., and Lynette O. Shenk
1977 *The Architecture of the Casa Grande and its Interpretation.* Archaeological Series No. 115. Arizona State Museum, University of Arizona, Tucson.

Wilcox, David R., Thomas R. McGuire, and Charles Sternberg
1981 *Snaketown Revisited.* Archaeological Series No. 155. Arizona State Museum, University of Arizona, Tucson.

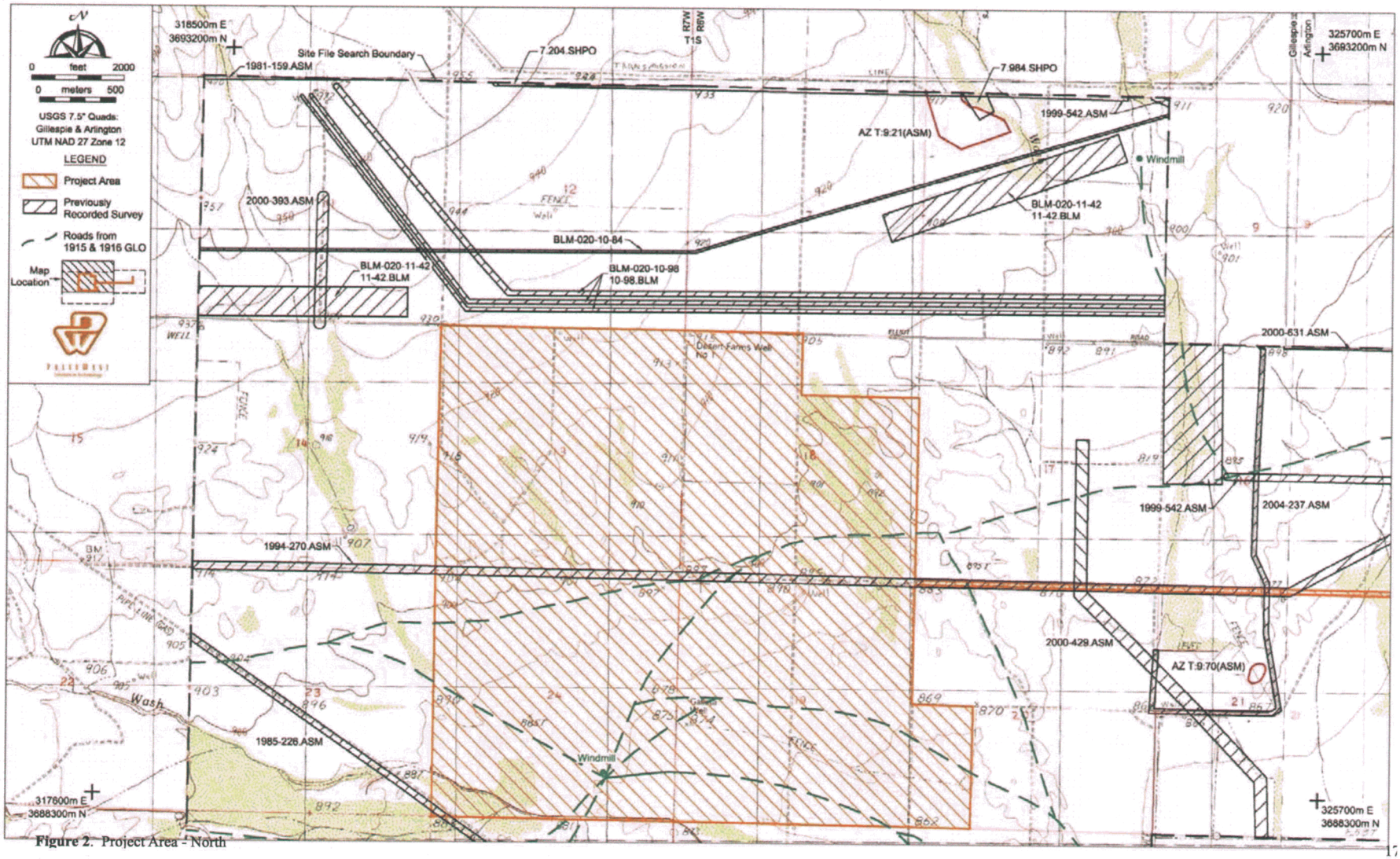

Figure 2. Project Area - North

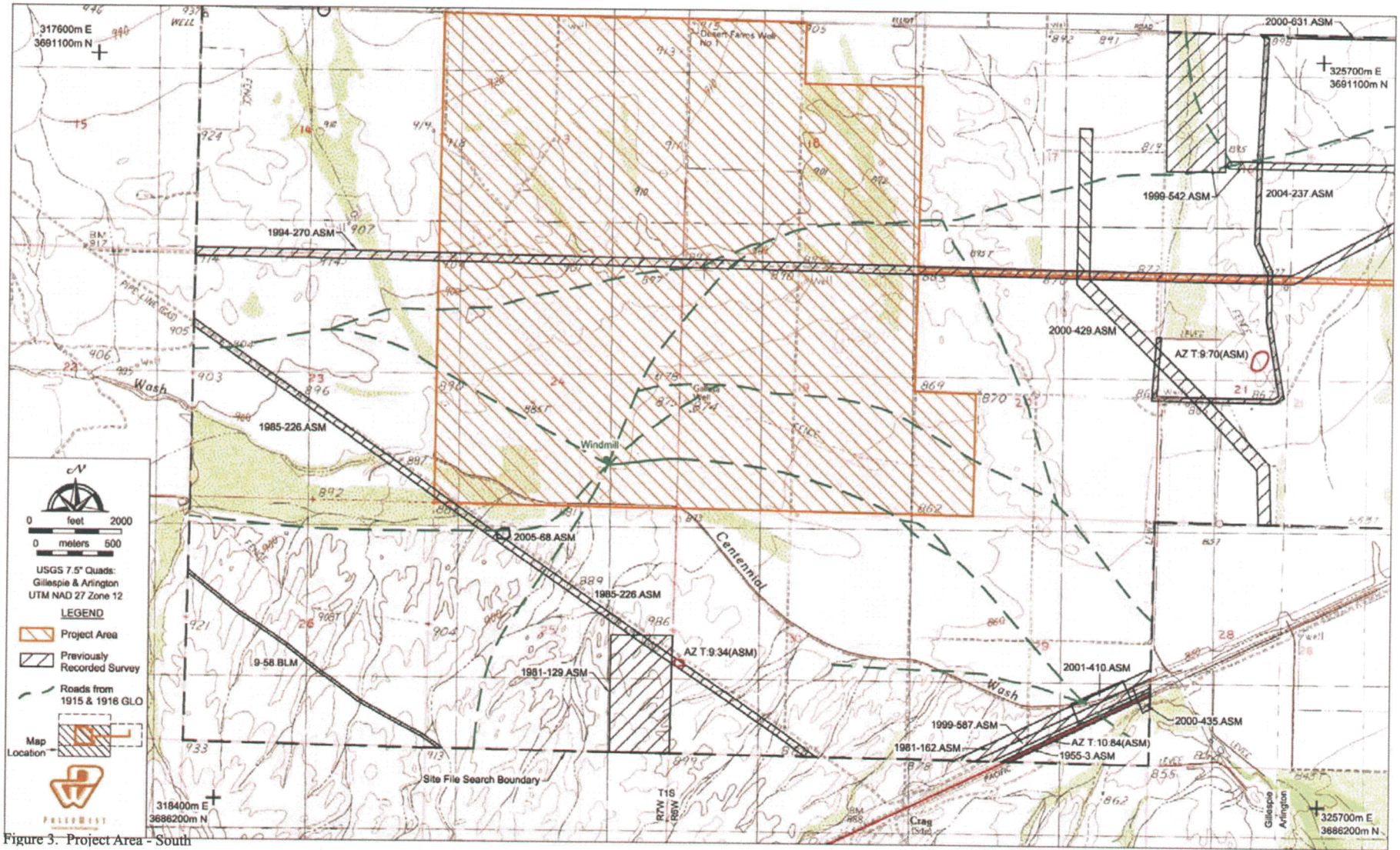

Figure 3. Project Area - South

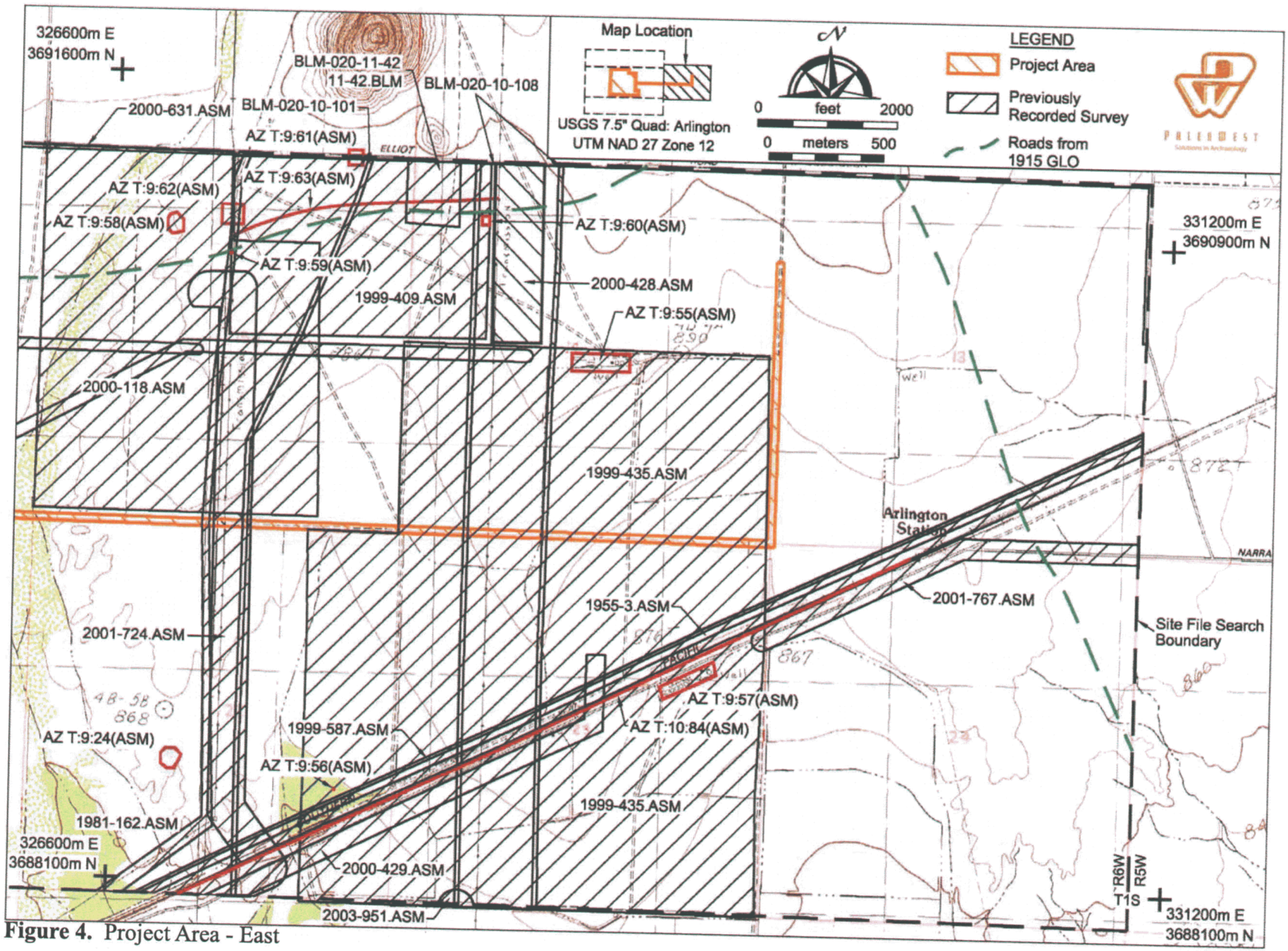

Figure 4. Project Area - East

April 10, 2009

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Solutions in Archaeology

A CLASS III CULTURAL RESOURCES SURVEY OF TRANSMISSION LINE CORRIDORS ON STATE LAND FOR THE PROPOSED MESQUITE SOLAR GENERATION PROJECT, MARICOPA COUNTY, ARIZONA

Submitted to:

AECOM Environment

Technical Report 09-06

PaleoWest Solutions in Archaeology
649 N. 3rd Ave.
Phoenix, Arizona 85003

A CLASS III CULTURAL RESOURCES SURVEY OF TRANSMISSION LINE CORRIDORS ON STATE LAND FOR THE PROPOSED MESQUITE SOLAR GENERATION PROJECT, MARICOPA COUNTY, ARIZONA

ASLD Application No. 14-113718

Prepared by:

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PaleoWest Project Number 09-11

Technical Report 09-06

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April 2009

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ARIZONA SHPO ABSTRACT

Report Title: A Class III Cultural Resources Survey of Transmission Line Corridors on State Land for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona.

Report Date: April 10, 2009.

Client: AECOM.

Land Status: Arizona State Land Department (ASLD Application No. 14-113718)

Project Description: A Class III Cultural Resources Survey of Transmission Line Corridors on State Land for a proposed photovoltaic solar generation facility and its associated transmission line interconnection in Maricopa County, Arizona.

Location: Sections 16, 17, 20, 22, T1S, R6W, Gila and Salt River Baseline and Meridian, in Maricopa County, Arizona.

Map Reference: USGS Gillespie, AZ, Arlington, AZ 7.5'.

Acreage: Approximately 92 acres.

Number of Archaeological Sites: One, AZ T:9:63(ASM).

Register-Eligible Properties: None.

Register-Ineligible Properties: One, AZ T:9:63(ASM).

Recommendation: The Class I cultural resource study identified several previous archaeological surveys adjacent to and overlapping the proposed transmission line corridors. One site had been recorded crossing the project area. The Class III survey identified the previously recorded site, AZ T:9:63(ASM), seventeen isolated trail segments, and five other isolated occurrences in the project area. The origin and age of the trail segments could not be determined. The previously recorded site, AZ T:9:63(ASM), is a road dating to the first half of the 20th century. It has been determined to be ineligible for inclusion on the National Register of Historic Places (NRHP) by the Arizona State Historic Preservation Office (SHPO). Due to the absence of significant cultural resources within the project area, PaleoWest recommends that the proposed undertaking be determined to have no effect on historic properties. However, if ground-disturbing activities expose previously undocumented archaeological remains, work in the area of the discovery should cease until the discovery can be evaluated by a professional archaeologist.

INTRODUCTION

This report presents the results of a Class III cultural resources survey of Arizona State Trust Land in support of a Special UseRight-of-Way Permit application (ASLD application No. 14-113718) for a 2,480-acre solar photovoltaic (PV) facility and a 4-mile-long 230 kV transmission line interconnection , all located in Maricopa County, Arizona. This project examined four routes associated with a 150 150-ft wide corridor for the transmission line connections. These corridors occur in Sections 16, 17, 20, 22, T1S, R6W, Gila and Salt River Baseline and Meridian, in Maricopa County, Arizona; USGS Gillespie and Arlington, AZ 7.5' topographic quadrangles (see Figure 1).

The Class I cultural resource study, prepared for the solar photovoltaic facility site and the transmission line corridor for the Maricopa County Special Use Permit application (Mitchell and Breternitz 2009), identified several previous archaeological surveys adjacent to and overlapping the proposed transmission line corridors. One site had been recorded crossing the project area. The Class III survey identified the previously recorded site, AZ T:9:63(ASM), seventeen isolated trail segments, and five other isolated occurrences in the project area. The origin and age of the trail segments could not be determined. The previously recorded site, AZ T:9:63(ASM), is a road dating to the first half of the 20th century. It has been determined to be ineligible for inclusion on the National Register of Historic Places (NRHP) by the Arizona State Historic Preservation Office (SHPO). Due to the absence of significant cultural resources within the project area, PaleoWest recommends that the proposed undertaking be determined to have no effect on historic properties. However, if ground-disturbing activities expose previously undocumented archaeological remains, work in the area of the discovery should cease until the discovery can be evaluated by a professional archaeologist.

PROJECT SETTING

The project area is a broad valley at the south end of the Harquahala Plain, drained by Centennial Wash within the Phoenix Basin physiographic region, which includes the Lower Colorado River Subdivision of the Sonoran Desert. This area is characterized by the creosote bush-bursage and palo verde-cacti biotic communities (Brown 1994). The area receives approximately nine inches of rainfall annually, with maximum temperatures exceeding 100 degrees (F) during the summer months. The specific project area is dominated by creosote bushes. The most significant drainage in the project area is Centennial Wash. Elevation within the project area varies between 850 and 900 feet above mean sea level (msl).

CULTURE HISTORY

The project area lies near the western limit of the Hohokam area near its border with the area typically associated with the prehistoric Yuman (Patayan). Reid and Whittlesey indicate that "[f]rom Gila Bend and Ajo westward to California and from Yuma northeast to the Grand Canyon lies a vast region that was the home of the Patayan people" (1997:111). In the following discussion pertinent features of the prehistoric Hohokam and Patayan cultures are examined, followed by a review of significant historic developments.

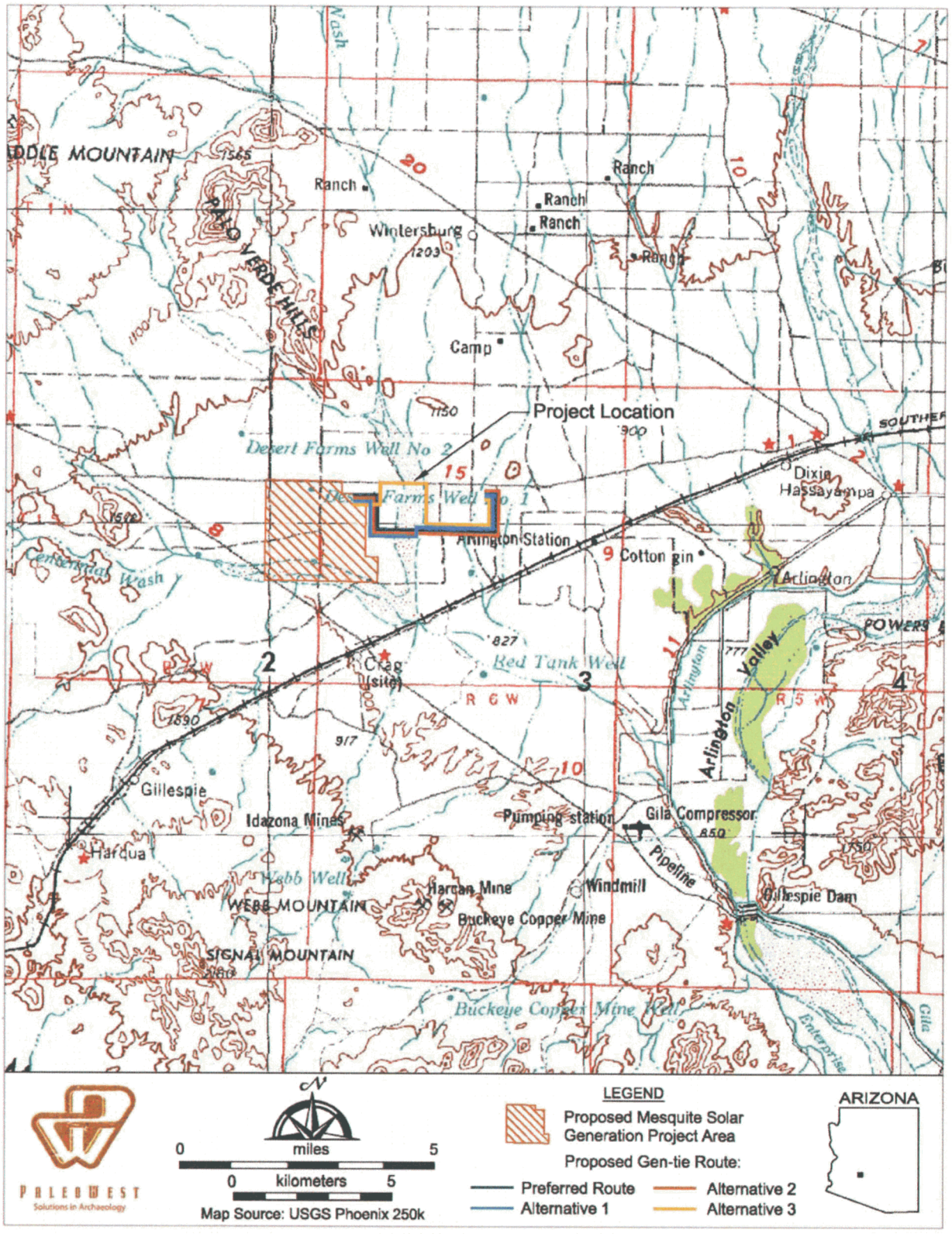


Figure 1. General Location of the Project Area.

Archaic Period

The earliest evidence of human occupation known for this area dates to the Middle Archaic period, approximately 5,000 years ago (Cordell 1997). Middle Archaic use of the area appears to have been on a temporary basis by residentially mobile hunter-gatherers. Habitation structures are generally absent or, if present, they are ephemeral in construction (Cordell 1997). By 2,000 years ago, pit houses, ceramics, and intensively used ground stone assemblages signify the beginnings of sedentism in the Santa Cruz Valley (Huckell 1995). Evidence of agriculture is lacking at this time, which may support a model of short-term sedentism prior to the adoption of maize. However, cultigens are well-documented elsewhere in central and southern Arizona centuries before the Late Archaic period pit house sites known from the nearby Santa Cruz Valley, including sites along the Upper Santa Cruz River (Huckell 1995:139). This strongly suggests that groups living in this area had adopted maize and other cultigens by at least 2,000 years ago. Between 2,000 and 1,600 years ago, there is evidence that Late Archaic period groups across southern Arizona developed into the Hohokam culture.

Hohokam

The earliest Hohokam manifestation, the Pioneer period (A.D. 100–750) Red Mountain phase (A.D. 1–500) (Dean 1991), is a time when people subsisted on wild resources and agricultural products. House forms included small circular and "bean-shaped" pit houses (Mabry 2000). Around A.D. 400, canal irrigation appears along the Salt River (Ackerly and Henderson 1989). By the Vahki phase, A.D. 500–650, irrigation expands and becomes well established (Ackerly and Henderson 1989; Haury 1976). Subsistence was based on a mixture of wild resources and agricultural produce. Domestic architecture was characterized by square and rectangular pit houses of various sizes (Ciolek-Torrello et al. 2000). The late Pioneer period, A.D. 650–750, saw the appearance of Hohokam decorated pottery (Estrella, Sweetwater, and Snaketown Red-on-buff), which is characterized by red-painted designs on a light-colored buff or brown background (Abbott 2001; Haury 1976; Wallace 2001). House types (moderate-sized pit structures with square or rectangular floor plans and formal, plastered hearths) associated with the late Pioneer period varied greatly.

The Gila Butte and Santa Cruz phases of the Colonial period (A.D. 750–950) were times of cultural expansion and elaboration among the Hohokam (e.g., Haury 1976). It is during this time that the Hohokam achieved their highest level of sophistication in the production of arts and crafts (particularly ceramics and shell). They also expanded their territory and economic interaction with their neighbors. In part, Colonial period Hohokam social organization appears tied to the exchange of ritual and subsistence goods (Doyel 1985).

Ballcourts, which were first built in the early A.D. 800s, became the dominant form of public architecture in southern Arizona (Wallace 2001). They are thought to mark the onset of a regional system bound by religious, economic, and political links that crosscut the geophysical boundaries of the region (Abbott 2001; Wilcox and Shenk 1977). Subsistence was based on a mix of wild resources and agriculture (Bohrer 1987). The construction, expansion, and

maintenance of irrigation systems of the Salt and Gila River valleys had a significant impact on Hohokam social and political organization (e.g., Abbott 2000).

The Sedentary period (Sacaton phase—A.D. 950–1150) saw a general decline in the quality of Hohokam material culture. Early, ballcourts were the dominant form of public architecture. However, by the end of the period, few ballcourts were being built and the construction of capped mounds or platform mounds became more common. Platform mounds were built near village centers around plazas surrounded by domestic features. Houses, which exhibited significant variability in form, were more closely packed and organized in courtyard groups or village segments (Wilcox, McGuire, and Sternberg 1981).

Agriculture still provided the majority of foodstuffs, although some wild plant species were intensively exploited. Cotton production (for weaving of textiles and its seeds as food) was also of major importance.

By the end of the Sedentary period, a major reorganization of Hohokam society occurred. Many village sites and areas were abandoned as populations began to concentrate in larger villages along the Salt River. These changes were also reflected in public architecture and in the nature of ceramic and shell production.

The Classic period is divided into the Soho (A.D. 1150–1300) and the Civano (A.D. 1300–1450) phases. Differences in ceramic decoration and architectural styles differentiate these two phases. Low frequencies of red-on-buff ceramics continued to be produced during the Soho phase as redwares become increasingly common. The introduction of long-necked jars also marks a break with earlier ceramic styles. Structures with post-reinforced adobe walls and surface structures are common during the Soho phase. These were replaced by solid, adobe-walled surface rooms in the Civano phase, although the use of some pit houses continued. Houses were more closely spaced or contiguous, and surrounded by compound walls that often also enclosed small plazas. There was a significant increase in the construction and use of platform mounds (Gregory et al. 1988), and the construction of ballcourts declined to its lowest point. The apex of Hohokam public architecture was achieved during the Civano phase with the building of "big houses." These structures, which often co-occur with platform mounds, likely served multiple functions. It is argued that they were clear symbols of elite status in Hohokam society (Wilcox and Shenk 1977).

The Classic period Hohokam subsisted increasingly upon domesticates, although agave and cholla continued to be commonly used (e.g., Miller 1994), and canal irrigation continued to be very important. Redwares and the disappearance of buffwares mark the Civano phase, although plainwares continue to dominate the total ceramic assemblage. Gila and Tonto Polychrome and local imitations are present after A.D. 1320 (Reid and Whittlesey 1992).

Civano phase Hohokam social organization was clearly different from what preceded it and from what was to follow. Population size and density at many of the large sites reached never-before-seen levels, and although the level of social and political organization actually achieved at this time is much debated, some increase in social complexity was undoubtedly necessary to manage the higher population densities.

By the late Civano phase, the success the Hohokam had enjoyed had vanished. High population densities, depletion of food resources, decline in agricultural productivity, disease and malnutrition, flooding, drought, and the collapse of many irrigation systems are cited as reasons for the collapse of the Hohokam (e.g., Bayman 2001; Van Gerven and Sheridan 1994).

The post-Classic period (Polvorón phase—A.D. 1450–1540) in the Phoenix Basin is somewhat of a hazy gap between the late Classic period Hohokam and the arrival of the first Europeans (Bayman 2001; Chenault 2000; Henderson and Hackbarth 2000). The Polvorón phase is defined by jacal structures, polychrome ceramics, and an abundance of obsidian. However, many argue that these characteristics, as well as available chronometric dates (e.g., Dean 1991:87) are not sufficient to distinguish it from the late Civano phase. Others have suggested that the Hohokam may have persisted until the early 1500s and that Hohokam and Salado peoples may have been directly encountered by the Spanish (Bayman 2001; Reff 1992). The debate over the cause or causes for the decline and disappearance of the Hohokam is far from resolved.

Prehistoric Yuman (Patayan)

The Prehistoric Yuman (Patayan) people occupied the desert territory in the southwestern part of Arizona. From an archaeological perspective, the Patayan is one of the most poorly known prehistoric cultures of the Southwest (Reid and Whittlesey 1997:111). This sentiment is echoed by Cordell in her observation that "[d]espite considerable research, the Patayan area remains poorly documented compared with other Southwestern regions" (Cordell 1997:211).

Rogers (1939) originally proposed the term "Yuman" to describe the prehistoric ceramic assemblages in the Colorado Desert. He divided the ceramic period into three phases, termed Yuman I, II, and III. He further clarified this idea (1945), claiming that Patayan referred to a specific cultural manifestation, while Yuman referred to a loosely knit constellation of material culture that was contained in the ceramic assemblages of the Colorado Desert, and he asserted that because the material culture and settlement adaptations of prehistoric peoples here continued into the historic period, the term Yuman was more appropriate.

According to Waters (1982), Patayan I (A.D. 700–1000) begins in the A.D. 700s with the expansion of Patayan peoples out of southern California. In southwestern Arizona, these early Patayan came into contact with the Hohokam, while to the north they were influenced by interaction with the Anasazi (Rogers 1945). Patayan I is defined by the presence of four major ceramic types: Black Mesa Buff, Colorado Beige, Colorado Red, Colorado Red-on-beige (Waters 1982).

Patayan I ceramics were made from the fine-textured, buff-colored clays deposited by the Colorado River. Decorative techniques include the direct "chimney neck" rim, notched rims, lug and loop handles, the so-called "Colorado shoulder," incising, burnishing, and a red clay slip. Sites with Patayan I ceramics extend from near El Centro, California, eastward to the vicinity of Gila Bend, Arizona, with Parker, Arizona, being the point of their most northern distribution and the Sierra Pinacate, Sonora the southern extent (McGuire 1982; Waters 1982). McGuire (1982:219) notes that the distribution of Patayan II and III ceramics does not differ significantly.

Patayan I peoples were apparently highly mobile and actively engaged in trade. Excavations at the Willow Beach site resulted in the recovery of pottery, shell, steatite, asphaltum, and turtle shell rattles from California (Schroeder 1952; Stone 1986).

Dramatic changes in the Patayan ceramic assemblage signal the start of the Patayan II period (A.D. 1000–1500). Patayan II ceramics are found in the Mojave Desert, north along the Colorado River, and along the Gila River east to Aqua Caliente. This distribution is taken to indicate a widespread expansion of Patayan groups, perhaps in response to the immigration of other groups and/or internecine warfare along the Colorado River (Stone 1986).

Five Lower Colorado Buffware plainwares and their red-on-buff equivalents define or appear during the Patayan II period: Tumco Buff, Parker Buff, and Topoc Buff (along the Lower Colorado River); Palomas Buff (along the Gila River); and Salton Buff (along the 12-m shoreline of Lake Cahuilla) (Waters 1982:287). The painted varieties borrow design elements from the Hohokam. The new ceramic traits that appear in the Lower Colorado Buffwares include re-curved rims, a stucco finish, new vessel forms, and an increased use of fine-line geometric designs (Rogers 1945:188; Waters 1982:287). Little is known of Patayan II society and socioeconomic and political organization. Sites are common in the Lower Colorado River valley, in the Gila River valley, and along the shore of Lake Cahuilla. Faunal remains at sites along the shore of the lake indicate that Patayan II peoples exploited freshwater shellfish, fish, and birds (Stone 1986:67). There was increased interaction with the Hohokam in the western desert area of Arizona and it appears that a group of Patayan occupied a residential area within the large Hohokam site of Las Colinas in the Phoenix Basin (Reid and Whittlesey 1997:123).

The Patayan III period (A.D. 1500–1850) represents a significant shift in settlement, with movement away from the Salton Trough (although some occupation continued there). It is during this time that Lower Colorado Buffwares reach their maximum distribution; from the Pacific coast eastward to Phoenix, from southern Nevada southward to the Colorado River delta (Waters 1982:291–293). This expansion of Patayan populations is likely associated with the desiccation of Lake Cahuilla (Rogers 1945).

The co-occurrence of Patayan and Hohokam materials over a broad expanse of territory suggests a long history of trade and interaction, and even co-residence, as at the site of Las Colinas in Phoenix (Reid and Whittlesey 1997:122–126). The history of interaction between Hohokam and Patayan groups started as early as A.D. 900, when Patayan ceramics first appear at Hohokam sites in the Gila Bend area. This area is seen as an important locus for the interaction and intermixture of these two cultural groups; however, many of the Patayan sites in these areas were small, specialized procurement loci. After the demise of the Hohokam, prehistoric Patayan populations are believed to have spread east along the Gila River until they reached the distribution observed by Spanish explorers in the eighteenth century (McGuire 1982:219; Reid and Whittlesey 1997:124).

Historic Period

The Historic period began with the first Spanish explorations into Arizona in the late 1600s. Permanent Euroamerican settlements in the Salt River Valley and nearby environs began in the late 1860s. In the immediate region around the project area, historic uses reflect its

marginal setting relative to important historical locations such as Phoenix and Prescott. The Santa Fe, Prescott, and Phoenix Railroad was constructed through the area in 1895, linking Phoenix with the mining communities in Yavapai County and the main Santa Fe transcontinental railroad across northern Arizona. The Southern Pacific Railroad (SPRR) was established further to the south and that corridor, later known as the Gila Trail and which eventually became the Butterfield Stage Overland Route, has a long history. Much of the influx of people into the area can be traced to mining, and subsequent homesteading. Though homesteading, mining, and farming were all tried in the area through the early part of the 20th century, the economy and population of the region grew only a small amount until recent master planned residential developments began attracting residents.

RECORDS REVIEW

A review of the AZSITE database maintained by the Arizona State Museum and the General Land Office (GLO) records housed by the Bureau of Land Management was conducted of the project area and one mile around it. Twenty-one surveys have been conducted across and near the project area. Thirteen archaeological sites are recorded in the vicinity but only one crosses portions of the project area. The 1915 and 1916 GLO records indicate that roads passed through the project area and one of these roads had been assigned an Arizona State Museum (ASM) site number by a previous survey (Hart 2000). The previous surveys and recorded sites are listed in Tables 1 and 2 and illustrated in Figure 2.

Table 1. Previously Recorded Surveys in the 1-mile Study Radius.

Survey No.	Description	In Project Area?	Reference
1955-3.ASM	Southern Pacific Pipeline	No	Komerska and Breternitz 1955
1981-162.ASM	Yuma 500 Kv Transmission Line	Partial	Effland et al. 1982
1994-270.ASM	PacifiCorp Turbine Pipeline Project–Wintersburg Alternatives	Partial	Rogge and Darrington 1994
1999-409.ASM	Palo Verde Switchyard Survey	No	Hart 2000
1999-435.ASM	Redhawk Power Plant	No	Rogge et al. 1999
1999-542.ASM	Harquahala Generating Project	Partial	Rogge et al. 2000
1999-587.ASM	PBNS Level 3 Fiber Optic Line	No	Doak 1999
2000-429.ASM	Redhawk Pipeline Project	Partial	Rogge and Bauer 2000
2000-118.ASM	Sempra Energy Power Station	No	No report
2000-428.ASM	Redhawk-Hassayampa Powerline Intertie	No	Rogge and Bauer 2000
2000-429.ASM			
2000-631.ASM	Palo Verde Steam Transportation Route	No	Garcia and Folb 2001
2001-724.ASM	AT&T NexGen/Core project – Addendum	Partial	Smith and Wheeler 2001
2003-951.ASM	Hassayampa to Jojoba Transmission line	No	Chapin-Pyritz and Hill 2002
2004-237.ASM	Arlington Valley Project	Partial	Copeland and Breternitz 2000
7.984.SHPO	No information available	No	--

Table 1. Previously Recorded Surveys in the 1-mile Study Radius.

Survey No.	Description	In Project Area?	Reference
BLM-020-10-84	No information available	No	--
BLM-020-10-98	No information available	No	--
BLM-020-10-101	No information available	No	--
BLM-020-10-108	No information available	No	--
BLM-020-11-42	No information available	Partial	--

Notes: ASM - Arizona State Museum; SHPO - State Historic Preservation Office; BLM - Bureau of Land Management.

Table 2. Previously Documented Sites in the 1-mile Study Radius.

Site No. and NRHP eligibility	Site Type	Reference
AZ T:9:21 (ASM) – E	Hohokam Artifacts Scatter with Possible Hearths	Rogge et al. 2000 Luhnow and Dickenson 2007
AZ T:9:24 (ASM) – U	Historic Homestead	Effland et al. 1982
AZ T:9:55 (ASM) – NE	Historic Farm Labor Camp	Rogge et al. 2000
AZ T:9:56 (ASM) – NE	Historic Ramada	Rogge et al. 1999
AZ T:9:58 (ASM) – NE	Historic and Modern Trash Dump	Walsh 2000
AZ T:9:59 (ASM) – NE	Historic Trash Dump	Walsh 2000
AZ T:9:60 (ASM) – NE	Historic Trash Dump	Hart 2000
AZ T:9:61 (ASM) – NE	Historic Trash Dump	Hart 2000
AZ T:9:62 (ASM) – NE	Historic homestead	Hart 2000
AZ T:9:63 (ASM) – NE	Historic Road Segment	Hart 2000
AZ T:9:65 (ASM) – NE	Historic Homestead and Trash Scatter	Rogge et al. 2000
AZ T:9:70 (ASM) – NE	Prehistoric Lithic Scatter with Two Rockpiles	Copeland and Breternitz 2000
AZ T:10:84 (ASM) – E	Southern Pacific Railroad Phoenix to Eloy Spur	Harmon et al. 1995 Ellis et al. 1999

Notes: ASM - Arizona State Museum.
National Register Eligibility; NE = not eligible; E = considered eligible by recorders, U = unknown, not evaluated

SURVEY METHODS

The survey was carried out on March 24, 2009 by PaleoWest archaeologists Douglas R. Mitchell and Cory D. Breternitz. The inventory was conducted by walking a transects spaced approximately 20 m apart within the 150 ft wide survey corridor until it had been completely covered. All methods followed procedures outlined in the Arizona State Museum's *Standards for Conducting and Reporting Cultural Resource Surveys on State Lands*. The project area was dominated by creosote bushes and in general the surface visibility was approximately 85 percent. One site, 17 trail segments, and five isolated occurrences were identified (see Figure 3).

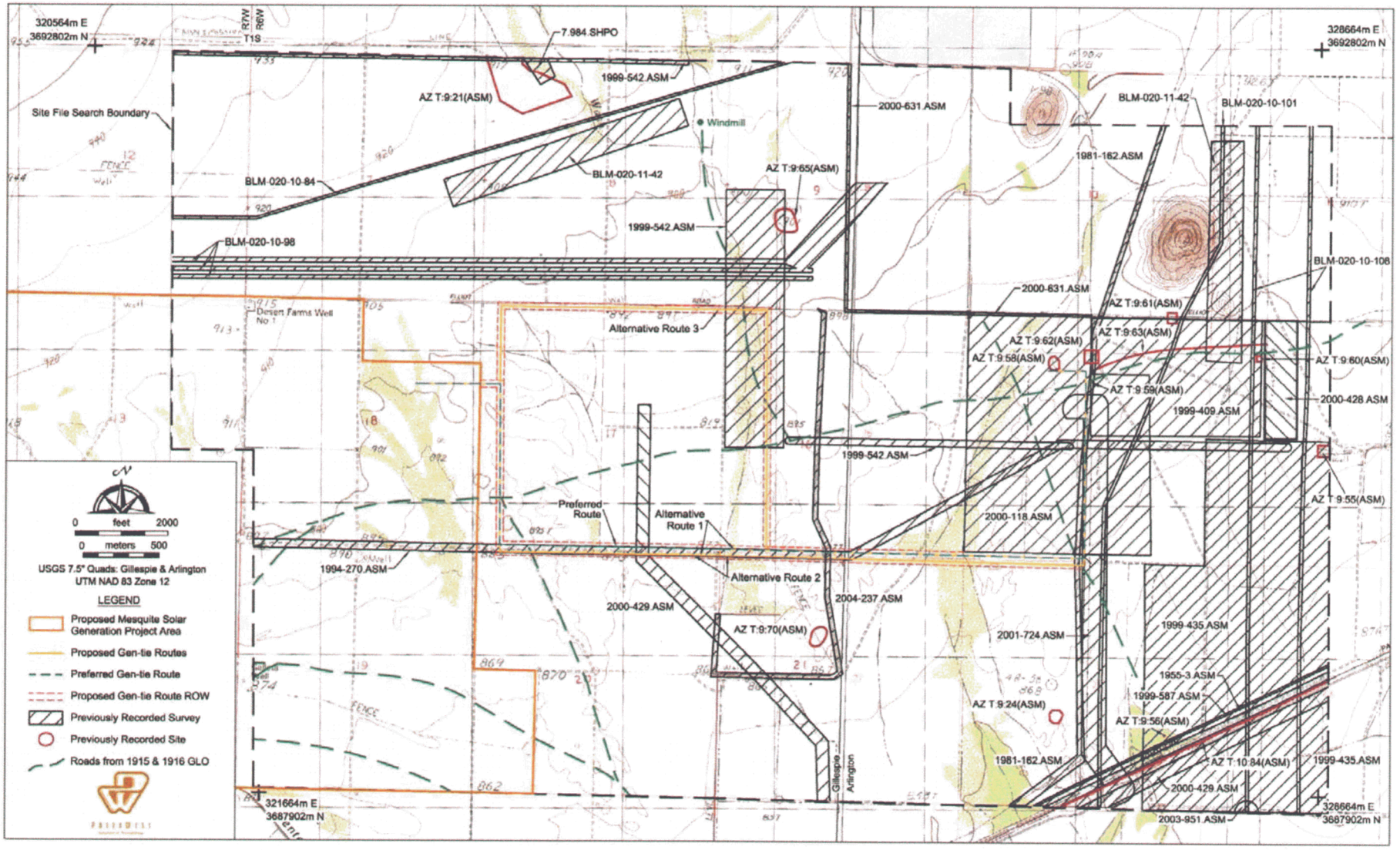


Figure 2. Previous surveys and sites recorded in the project area.

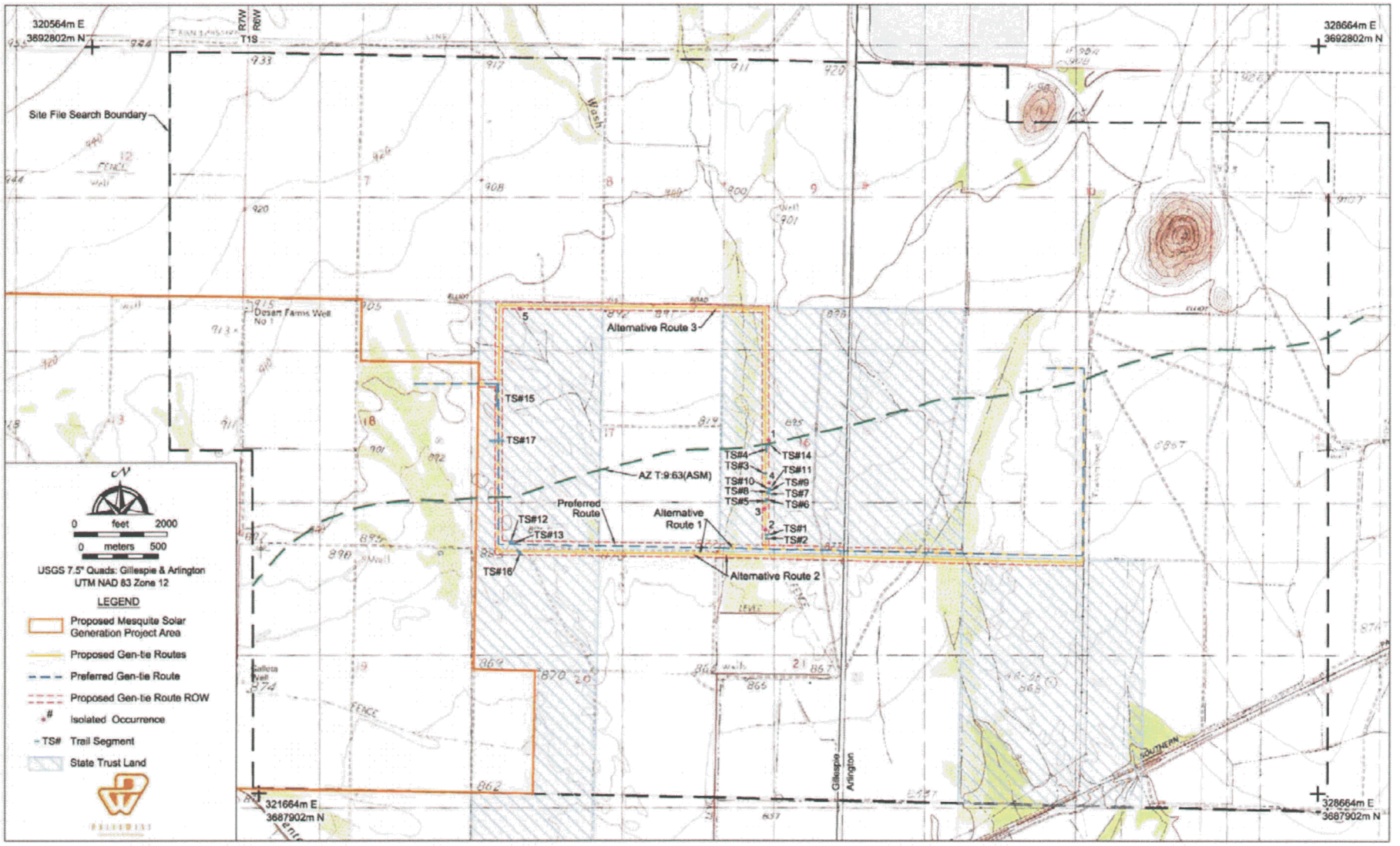


Figure 3. The project area alignments and the results of the archaeological survey.

SURVEY RESULTS

AZ T:9:63(ASM)

Site Type/Function: Road/transportation
Cultural Affiliation: Euro-American
Temporal Affiliation: 1900-1950
Dimensions/Area: 12 feet wide by several miles long
Elevation: 890 feet amsl
Vegetation: Creosote, mesquite
Local Topography: Creosote flat
Center UTM Location: (Zone 12, NAD 83): intersects project area at two points: 323126E, 3690230N; and 324904E, 3690593N,
Legal Description: Sections 15-18, Township 1 South, Range 6 West, Maricopa County, on the USGS Gillespie and Arlington, Arizona, 7.5-minute quadrangle
Description: As described by Hart (2000), the historic road segment is oriented west by southwest to east by northeast and passes through Sections 14 and 15 and continues in either direction. The road is affiliated with the Anglo-historic occupation of the area and is most likely associated with the homesteading activity. The GLO plat maps indicate that the road did not exist in 1883, but was in place by 1916 and is not shown on the 1984 USGS topographic map. The road continues to the southwest into Sections 16, 17, and 18 and is clearly visible on an aerial photograph of the area (see Figure 4).
NRHP Eligibility Recommendation: The site was recommended as **ineligible** in the original survey report (Hart 2000) because of the unlikelihood that further archaeological investigation of this site would yield new or significant information on the local or regional history of the area (Criterion D) and the SHPO concurred with that recommendation.

Trail Segments

Several portions of the proposed transmission line corridor occur in areas where the ground is covered in desert pavement, that consist of "large flat areas devoid of vegetation and covered by a layer of tightly packed small stones" (McAuliffe 2000:94). This physiographic setting is easily disturbed and in certain locations, trails become very visible. A number of trails and tracks were observed in the project area; some were obviously created by modern vehicles and some were clearly made by animals but the origins of many of these tracks could not be determined. We recorded the trail segments crossing the survey corridor that were not obviously modern or animal. This resulted in the recording of 17 trail segments.

Seventeen trail segments were identified in the project area. The trails were all visible in the desert pavement as straight to slightly curving linear features varying between 20 to 30 cm in width. Trail lengths varied from 20 to over 100 meters and their orientations also varied. Characteristics for each trail segment are included in Table 3 (also see Figure 5-7). No prehistoric artifacts were found along any of the trails.

Figure 4. Aerial photograph of Section 17 showing the road identified on the 1916 GLO map and designated as AZ T:9:63(ASM). The proposed transmission line alignment is parallel to, and approximately 500 ft east of, 395th Avenue.

Table 3. Characteristics of the trail segments recorded during the survey.

Trail Segment No.	UTM coordinates (Zone 12S, NAD 83)	Width (m)	Length (m)	Orientation
1	324894E 3689991N	0.20	30	E-W
2	324893E 3689967N	0.20	20	E-W
3	324885E 3690393N	0.25	25	E-W
4	324891E 3690560N	0.20	60	N-S
5	324889E 3690212N	0.20	20-25	E-W
6	324892E 3690223N	0.20	20	E-W
7	324900E 3690258N	0.20	20	E-W
8	324904E 3690272N	0.20	20	E-W
9	324908E 3690282N	0.20	20	E-W
10	324909E 3690286N	0.20	20	E-W
11	324911E 3690293N	0.20	20	E-W
12	323198E 3689946N	0.20	35	E-W
13	323202E 3689934N	0.20	30	E-W
14	324905E 3690579N	0.20	30+	E-W
15	323105E 3690909N	0.20	150	N-S
16	323256E 3689875	0.20	20+; 50+	Two forks, one oriented NE-SW and the other NW-SE
17	323104E 3690610N	0.20	100+	E-W

Note: UTMs were taken in the center of the trail segments

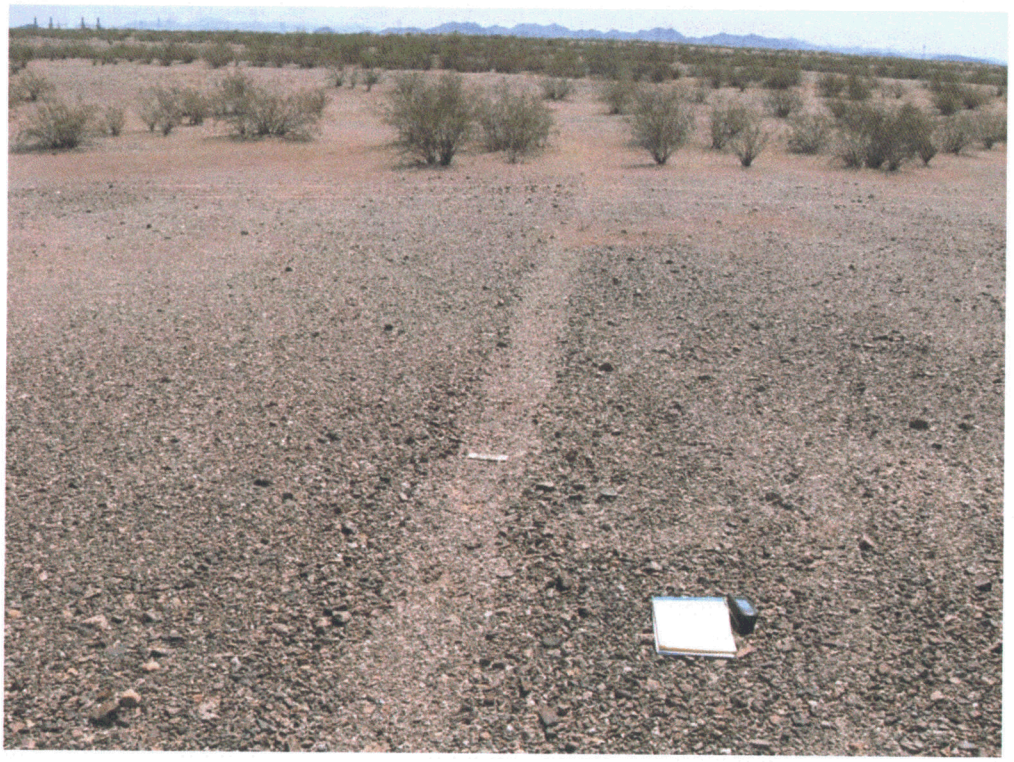


Figure 5. A trail segment visible crossing a low ridge covered with desert pavement.

Figure 6. Archaeologist walking along one of the trail segments.

Figure 7. Example of a long trail segment visible in the desert pavement.

Non-trail Isolated Occurrences

In addition to the trails, five isolated occurrences were recorded. These IOs consisted of a possible cobble mano, a deflated roasting pit or rock pile, a can dump, and two isolated cans (Table 4).

Table 4. Isolated Occurrences recorded during the survey.

IO number	UTMS (Zone 12S, NAD 83)	Description
1	324906E 3690611N	Tobacco tin
2	324883E 3690022N	Deflated rock pile including 20-25 pieces of rock, some cracked; possibly an eroded roasting pit.
3	324877E 3690159N	Possible cobble mano; quartzite cobble appears to have slight grinding on edges and flat surface
4	324909E 3690329N	Small evaporated milk can

Table 4. Isolated Occurrences recorded during the survey.

IO number	UTMS (Zone 12S, NAD 83)	Description
5	0323258 3691473	Can scatter with a couple of clear glass bottles. Main concentration is approximately 3 x 5 m in two clusters that blend together. Approximately 20 m south of Elliot Road; appears to be a single dumping episode of domestic trash. 75-100 rusted metal cans that include solder hole in top cans, 2 coffee cans, 2 square meat product cans, 4 clear glass baby food sized jars and a single rectangular, ribbed, clear glass bottle that may be a perfume or liquor bottle. 1 mason jar screw top. No lids or caps to any of the containers were observed. Age is indeterminate but probably greater than 50 years old.

RECOMMENDATIONS

The Class I cultural resource study identified several previous archaeological surveys adjacent to and overlapping the proposed transmission line corridors. One site had been recorded crossing the project area. The Class III survey identified the previously recorded site, AZ T:9:63(ASM), seventeen isolated trail segments, and five other isolated occurrences in the project area. The origin and age of the trail segments could not be determined. The previously recorded site, AZ T:9:63(ASM), is a road dating to the first half of the 20th century. It has been determined to be ineligible for inclusion on the National Register of Historic Places (NRHP) by the Arizona State Historic Preservation Office (SHPO). Due to the absence of significant cultural resources within the project area, PaleoWest recommends that the proposed undertaking be determined to have no effect on historic properties. However, if ground-disturbing activities expose previously undocumented archaeological remains, work in the area of the discovery should cease until the discovery can be evaluated by a professional archaeologist.

REFERENCES CITED

Abbott, David R.
2000 *Ceramics and Community Organization among the Hohokam.* University of Arizona Press, Tucson.

2001 Conclusions for the GARP Ceramic Analysis. In *The Grewe Archaeological Research Project, Volume 2, Part 1. Ceramic Studies*, edited by David R. Abbott, pp. 263–272. Anthropological Research Papers No. 99-01. Northland Research, Tempe.

Ackerly, Neal W., and T. Kathleen Henderson (editors)
1989 *Prehistoric Agricultural Activities on the Lehi-Mesa Terrace: Perspectives on Hohokam Irrigation Cycles.* Northland Research, Inc., Flagstaff.

Bayman, James M.
2001 The Hohokam of Southwest North America. *Journal of World Prehistory*, 15:257–311.

Bohrer, Vorsila L.
1987 The Plant Remains from La Ciudad, a Hohokam Site in Phoenix. In *La Ciudad: Specialized Studies in the Economy, Environment, and Culture of La Ciudad,* Part III, edited by JoAnn E. Kisselburg, Glen E. Rice, and Brenda L. Shears, pp. 67–202. Anthropological Field Studies No. 20, Arizona State University, Tempe.

Brown, D. E. (editor)
1994 *Biotic Communities: Southwestern United States and Northwestern Mexico.* University of Utah Press, Salt Lake City.

Chapin-Pyritz, Regina L. and Matthew E. Hill, Jr.
2002 *A Cultural Resources Survey for the Proposed Hassayampa to jojoba 500kV Transmission Line, Maricopa County, Arizona.* EPG Cultural Resource Services Technical Paper No. 10. Environmental Planning Group, Tucson.

Ciolek-Torello, Richard, Eric E. Klucas, and Stephanie M. Whittlesey
2000 Hohokam Households, Settlement Structure, and Economy in the Lower Verde Valley. In *The Hohokam Village Revisited*, edited by D. E. Doyel, S. K. Fish, and P. R. Fish, pp. 65–100. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Chenault, Mark C.
2000 In Defense of the Polvorón Phase. In *The Hohokam Village Revisited*, edited by David E. Doyel, Suzanne K. Fish, and Paul R. Fish, pp. 277–286. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Copeland, Steven R. and Cory Dale Breternitz
2000 *A Cultural Resources Survey of a Proposed Transmission Line Corridor and Access Road Across State Trust and Private Land Scheduled for Development as Part of the Arlington Valley Project in Maricopa County, Arizona.* Technical Report No. 00-51. Soil Systems, Inc. Phoenix.

Cordell, L.
1997 *Prehistory of the Southwest.* Academic Press, New York.

Dean, Jeffrey S.
1991 Thoughts on Hohokam Chronology. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest,* edited by G. J. Gumerman, pp. 61-149. Amerind Foundation New World Studies Series No. 1. Amerind Foundation, Dragoon, Arizona, and University of New Mexico Press, Albuquerque.

Doak, David P.
1999 *Archaeological Survey for a Proposed Fiber Optic Cable Line from Yuma to Phoenix, Arizona.* SWCA, Inc. Cultural Resource Report 99-185. Tucson.

Doyel, David E.
1985 Summary and Discussion. In *Hohokam Settlement and Economic Systems in the Central New River Drainage, Arizona,* Volume 1, edited by D. E. Doyel and M. D. Elson, pp. 727–734. Publications in Archaeology No. 4. Soil Systems, Inc., Phoenix.

Effland, Richard W., Jr., Margerie Green, and Eugenia Robinson
1982 *Document Four: Yuma 500 Kv Transmission Line, Technical Report on Findings.* Archaeological Consulting Services, Tempe.

Ellis, J. Grace, Steven R. Copeland, Jennifer L. Lavris, Jared A. Smith, Ian Geoff Thompson, and Roanna Weahkee
1999 *A Cultural Resources Survey of the Williams Communication Group Fiber Optic Cable Line Right-of-Way, Yuma, Arizona to the New Mexico Border: Yuma, Maricopa, Pinal, Pima, and Cochise Counties, Arizona.* Soil Systems Technical Report No. 99-17. Phoenix.

Garcia, Daniel and Lisa Folb
2001 *A Cultural Resources Survey of the Palo Verde Steam Transportation Route, from Cotton Center to Palo Verde, Maricopa County, Arizona.* Cultural Resource Report No. 00-380:6/7. EcoPlan Associates, Inc. Mesa.

Gregory, David A., William L. Deaver, Suzanne K. Fish, Ronald Gardiner, Robert W. Layhe, Fred L. Nials, and Lynn S. Teague
1988 *The 1982–1984 Excavations at Las Colinas: The Site and its Features.* Archaeological Series 162, Volume 2. Arizona State Museum, Tucson.

Harmon, Elizabeth, Lisa Beyer, Gregory Woodall, Jeremy Lite, and Jennifer Tweedy
1995 *Cultural Resources Survey of Approximately 40 Miles of Proposed State Route 85 Right-of-Way (and Associated Alternative Routes) Between Gila Bend and Buckeye, Southwestern Maricopa County, Arizona.* Archaeological Research Services, Inc. Project Report 94-45. Tempe.

Hart, David R.
2000 *Cultural Resources Survey of 240 Acres for the Palo Verde Switchyard, Maricopa County, Arizona.* Northland Research, Inc. Technical Report No. 00-01. Tempe.

Haury, Emil W.
1976 *The Hohokam: Desert Farmers and Craftsman; Snaketown.* 1964-1965. University of Arizona Press, Tucson.

Henderson, T. Kathleen, and Mark Hackbarth
2000 What is Going on at the Hohokam Village? In *The Hohokam Village Revisited*, edited by David E. Doyel, Suzanne K. Fish, and Paul R. Fish, pp. 287–316. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

Huckell, Bruce B.
1995 *Of Marshes and Maize: Preceramic Agricultural Settlements in the Cienega Valley, Southeastern Arizona.* Anthropological Papers No. 59. University of Arizona Press, Tucson.

Komerska, Robert, and David A. Breternitz
1955 Archaeological Survey for Engineering Management, Inc., Yuma and Eastward for Southern Pacific Pipeline–Weekly Reports. Arizona State Museum Archives, Tucson.

Luhnow, Glennda Gene, and Joseph Harkins Dickinson
2007 *A Cultural Resources Survey for the Palo Verde Subalternative, Devers-Palo Verde No. 2 Transmission Project, Maricopa County, Arizona.* Environmental Planning Group Cultural Resource Services Technical Paper No. 2003-1389. Phoenix.

Mabry, Jonathan B.
2000 The Red Mountain Phase and the Origins of Hohokam Villages. In *The Hohokam Village Revisited*, edited by D. E. Doyel, S. K. Fish, and P. R. Fish, pp. 37–64. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Colorado State University, Department of Biology, Fort Collins.

McAuliffe, Joseph R.
2000 Desert Soils. In *A Natural History of the Sonoran Desert*, edited by Steven J. Phillips and Patricia Wentworth Comus, pp. 87-104. Arizona-Sonora Desert Museum Press, Tucson.

McGuire, R.
1982 Problems in Culture History. In *Hohokam and Patayan, Prehistory of Southwestern Arizona*, edited by R. McGuire and M. Schiffer, pp. 153–222. Academic Press, New York.

Miller, JoAnne
1994 Pueblo Grande Flotation, Macrobotanical, and Wood Charcoal Analyses. In *The Pueblo Grande Project, Volume 5: Environment and Subsistence*, edited by S. Kwiatkowski, pp. 127–204. Publications in Archaeology No 20. Soil Systems, Inc., Phoenix.

Mitchell, Douglas R. and Cory Dale Breternitz
2009 Class I Cultural Resources Study for the Proposed Mesquite Solar Generation Project, Maricopa County, Arizona, Technical Report 09-03, Prepared for AECOM Environment, PaleoWest Solutions in Archaeology, February.

Reff, D. T.
1992 Contact Shock in Northwestern New Spain, 1518–1764. In *Disease and Demography in the Americas*, edited by J. Verano and D. Ubelaker, pp. 256–276. Smithsonian Press, Washington D. C.

Reid, J. Jefferson, and Stephanie Whittlesey
1992 New Evidence for Dating Gila Polychrome. In *Proceedings of the Second Salado Conference, Globe, AZ, 1992*, edited by R. C. Lang and S. Germick, pp. 223–229. Occasional Paper, Arizona Archaeological Society, Phoenix.

1997 *The Archaeology of Ancient Arizona.* University of Arizona Press. Tucson, Arizona.

Rogge, A.E. (Gene) and Sharon Bauer
2000 *Cultural Resource Overview, Survey, and Evaluation Report for the Arlington Valley/Redhawk Pipeline Project, Maricopa County, Arizona.* URS Dames & Moore, Phoenix.

Rogge, A.E. (Gene) and Sharon Bauer
2000 *Cultural Resource Survey for the Redhawk to Hassayampa Powerline Intertie Project.* URS Dames & Moore, Phoenix.

Rogge, A. E., and Glenn P. Darrington
1994 *PacifiCorp Turbine Pipeline Project Wintersburg Alternatives: A Class III Cultural Resource Survey, Phoenix, Arizona.* Dames & Moore, Phoenix.

Rogge, A.E. (Gene), Douglas Avann, Cara Lonardo, and Matthew E. Hill, Jr.
1999 *Cultural Resources Survey for the Proposed Redhawk Power Plant.* Dames & Moore, Phoenix.

Rogge, A. E. (Gene) and Rachel Davies
2000 *Cultural Resource Survey of Eroded Sections of Two Kinder Morgan Pipelines at Centennial Wash, Maricopa County, Arizona. URS D*ames & Moore. Phoenix.

Rogers, M.
1939 *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Areas.* Museum of Man Papers No. 3. San Diego.

1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:167–198.

Schroeder, A.
1952 A Brief Survey of the Lower Colorado River from Davis Dam to the International Border. Ms. on file, Lower Colorado Regional Office, U.S. Department of the Interior Bureau of Reclamation, Boulder City, Nevada.

Smith, Matthew B. and Charles W. Wheeler
2001*An Archaeological Survey of the Proposed Wilson Family and Donald Kachman Reroute: Addendum 3 to an Archaeological Survey of the Arizona Portion of Link Two of the AT&T NexGen/Core Project.* Report No. WCRM(F)221. Western Cultural Resource Management, Inc., Farmington.

Stone, Connie
1986 *People of the Desert, Canyons and Pines: Prehistory of the Patayan Country in West Central Arizona.* Cultural Resource Series No. 5. U.S. Department of the Interior, Bureau of Land Management, Arizona State Office, Phoenix.

Van Gerven, Dennis P., and Susan Guise Sheridan
1994 A Biocultural Reconstruction of a Classic Period Hohokam Community. In *The Pueblo Grande Project: Volume 6: The Bioethnography of a Classic Period Hohokam Population*, edited by Dennis P. van Gerven and Susan Guise Sheridan, pp. 123–128. Publications in Archaeology, No. 20, Soil Systems, Inc., Phoenix.

Wallace, Henry D.
2001 Time Seriation and Typological Refinement of the Middle Gila Buffware Sequence: Snaketown through Soho Phase. In *The Grewe Archaeological Research Project,* Vol. 2, Part 1: *Ceramic Studies*, edited by D. R. Abbott, pp. 177–259. Anthropological Papers 99-1. Northland Research, Inc., Tempe.

Walsh, Mary-Ellen
2000 *A Cultural Resources Survey 440 Acres of Private Land Near the Palo Verde Nuclear Generating Station, Maricopa County, Arizona.* Entranco Project Report No. 1999-010. Phoenix.

Waters, M.
1982 The Lowland Patayan Ceramic Tradition. In *Hohokam and Patayan: Prehistory of Southwestern Arizona*, edited by Randall H. McGuire and Michael B. Schiffer, pp. 275–297. Academic Press, New York.

Wilcox, David R., and Lynette O. Shenk
1977 *The Architecture of the Casa Grande and its Interpretation.* Archaeological Series No. 115. Arizona State Museum, University of Arizona, Tucson.

Wilcox, David R., Thomas R. McGuire, and Charles Sternberg
1981 *Snaketown Revisited.* Archaeological Series No. 155. Arizona State Museum, University of Arizona, Tucson.

Exhibit C:
Unique Biological Features

Exhibit C Requirements

Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state the effects, if any, the proposed facilities will have thereon.

The United States Fish and Wildlife Service (USFWS), Arizona Natural Heritage Program, and Arizona Department of Agriculture (AZDA) species lists for Maricopa County were reviewed (USFWS 2008; AZGFD 2008; AZDA 2009). Twenty-eight species with potential to occur within the Mesquite Solar project area were identified by AECOM during initial review (see Exhibit B for the complete Biological Site Assessment) and are listed in the Table C-1.

Table C-1 :
Special Status Species with Potential to Occur within the Proposed Mesquite Solar Gen-Tie Project Area

Common Name	Scientific Name	Status
Birds		
Cactus Ferruginous Pygmy-Owl	*Glaucidium brasilianum cactorum*	USFWS SC; AZ WSC
Western Burrowing Owl	*Athene cunicularia hypugaea*	USFWS SC
Common Black Hawk	*Buteogallus anthracinus*	AZ WSC
Mammals		
Common Name	**Scientific Name**	**Status**
Cave Myotis	*Myotis velifer*	USFWS SC
Lesser Longnosed Bat	*Leptonycteris curasoae yerbabuenae*	USFWS E; AZ WSC
Pale Townsend's Big-eared Bat	*Choeronycteris mexicana*	USFWS SC
Greater Western Bonneted Bat	*Eumops perotis californicus*	USFWS SC
Yuma Myotis	*Myotis Yumanenis*	USFWS SC
California Leaf-nosed Bat	*Macrotus californicus*	AZ WSC
Western Red Bat	*Lasiurus blossevillii*	AZ WSC
Amphibians/Reptiles		
Common Name	**Scientific Name**	**Status**
Sonoran Desert Tortoise	*Gopherus agassizii (Sonoran Population)*	USFWS SC; AZ WSC
Mexican Garter Snake	*Thamnophis eques megalops*	USFWS SC; AZ WSC
Arizona Toad	*Bufo microscaphus*	USFWS SC
Redback Whiptail	*Aspidoscelis xanthonota*	USFWS SC
Mexican Rosy Boa	*Charina trivirgata trivirgata*	USFWS SC
Desert Rosy Boa	*Charina trivirgata gracia*	USFWS SC
Arizona Chuckwalla	*Sauromalus aterv* (Arizona population)	USFWS SC

Common Name	Scientific Name	Status
Common Chuckwalla	*Sauromalus ater* (Western population)	USFWS SC
Great Plains Narrow-mouthed Toad	*Chionactis palarostris organica*	AZ WSC
Lowland Leopard Frog	*Lithobates yavapaiensis*	AZ WSC
Lowland Burrowing Treefrog	*Ptenohyla fodiens*	AZ WSC
Plants		
Common Name	**Scientific Name**	**Status**
Toumey Agave	*Agave toumeyana* var. *bella*	AZ SR
California Barrel Cactus	*Ferocactus cylindraceus* var. *cylindraceus*	AZ SR
Golden Barrel Cactus	*Ferocactus cylindraceus* var. *eastwoodiae*	AZ SR
Emory's Barrel-cactus	*Ferocactus emoryi*	AZ SR
Straw-top Cholla	*Opuntia echinocarpa*	AZ SR
Tumamoc Globeberry	*Tumamoca macdougalii*	AS SR

AZ SR State of Arizona Salvage Restricted Protected Native Plants

AZ WSC State of Arizona Wildlife Species of Concern

USFWS E U.S. Fish and Wildlife Service Endangered

USFWS SC U.S. Fish and Wildlife Service Species of Concern

Of the species listed in Table C-1, only two species of concern were identified during agency consultation, the straw-top cholla and western burrowing owl. Element occurrence data were evaluated for a five-mile radius centered on the Mesquite Solar project area. Only one species, the straw-top cholla, was identified in the search. Straw-top cholla and western burrowing owl are discussed in detail below.

USFWS indicated that although unlikely, there is potential for desert tortoise within the Mesquite Solar project area; however, any desert tortoise in this area would be part of the Sonoran population that is not listed and that currently has no regulatory status (Martinez 2009). The desert tortoise is considered a species of concern by the state of Arizona, but it does not have regulatory status under Arizona law (AZGFD 2008).

Special Status Vegetation

Straw-top cholla is found in arid environments in Southern California, Nevada, Utah, western Arizona, and Sonoran and Baja California, Mexico (efloras 2008; Quinn 2001). It is most commonly found in the Mojave and Sonoran deserts in creosote bush scrub, desert grasslands, juniper, and oak-juniper woodlands vegetative communities (NatureServe 2009; elforas 2008). It is typically located on bajadas, canyons, benches, slopes, mesas, flats, and washes usually at elevations ranging from 1,000 to 5,000 feet (NatureServe 2009; efloras 2008, Quinn 2001). Substrates usually consist of sandy loam, alluvium, and gravelly soils (NatureServe 2009; efloras 2008). Plants are shrubby and can grow from one to 6 feet tall. They are covered in dense spines that can be white or yellow and determine the color of the

plant (Quinn 2001). It blooms from March to June (efloras 2008) The Maricopa, Mohave, and Cocopa Indians rolled the fruits on the ground to remove the spines and ate the fruit raw; they also ate the buds as greens in the spring (Native American Ethnobotany 2003, Quinn 2001). The straw-top cholla is classified as imperiled in Arizona by NatureServe (2009). Its primary threat is collecting of the species by horticulturists. Construction in its range could increase access to the species through the building of new roads and facilities. In addition, construction would result in the trampling and removal of aboveground vegetation and could result in the harming or destruction of any potential straw-top cholla in the Mesquite Solar project site. Permanent impacts from the construction of facilities associated with the site could result in the long-term loss of potentially suitable habitat. AZDA indicated a notice of intent must be filed because straw-top cholla is designated as a salvage-restricted species.

Special Status Wildlife

Western burrowing owls inhabit open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands often associated with burrowing mammals. They sometimes occur in open areas such as vacant lots near human habitation, golf courses or airports (AZGFD 2001). Burrowing owls sleep and roost in the mouth of nest burrows, satellite burrows, or depressions in the ground. Although they are most active during the period from late afternoon until full dark, they can be observed at almost any time of the day. They commonly perch on fence posts or on top of mounds outside their burrows. High ambient temperatures seem to limit their daytime activities (AZGFD 2001). Burrowing owl use of burrows makes them susceptible to impacts from ground disturbing activities. Despite the fact that burrowing owls are active during the day and are adaptable to human presence, the burrowing owl can go unnoticed in an area due to their secretive nature. Over the past 50 years, most burrowing owl populations have experienced declines throughout their range in North America, and for this reason, these owls are protected by various federal, state, and local laws. While this species is not considered an Arizona Wildlife Species of Concern, all owls in Arizona are protected by the Migratory Bird Treaty Act (MBTA) and Arizona State law (ARS Title 17). The Mesquite Solar project area contains moderate habitat for this species especially if vegetation is cleared for a period of time prior to the construction of the Mesquite Solar project. Direct impacts could occur to this species if construction were to begin during the breeding season for this species, from March 1 through August 31 in Arizona (AZGFD 2009). The Arizona Game and Fish Department (AZGFD) indicated they had concerns regarding impacts to this species and requested that a survey be conducted prior to construction of this project (Ritter 2009). Surveys should follow guidelines compiled by the ADGFD for burrowing owl (AZGFD 2009).

References

AZDA (Arizona Department of Agriculture). 2009. Arizona Protected Native Plants by Categories. Website: http://www.azda.gov/esd/protplantlst.htm. Accessed February 26, 2009.

———.2008. Notice of Final Rulemaking Title 3. Chapter 3. (R3-3) Article 3. Arizona Native Plants compiled by the Environmental Services Division. Website: http://www.azda.gov/Main/NOFR_(Native_Plants)_second_attempt_(GRRC_revisions)%5b1%5d.pdf. Accessed February 26, 2009.

AZGFD (Arizona Game and Fish Department). 2009. Burrowing Owl Project Clearance Guidance for Landowners compiled and edited by the Arizona Burrowing Owl Working Group, Arizona Game and Fish Department, Phoenix, Arizona. 9 pp.

———.2008. Heritage Data Management System Element Status Designations by County, Taxon, Scientific Name. Updated December 1, 2008. 90 pp. Website: http://www.azgfd.gov/w_c/edits/documents/allspecies_bycounty.pdf. Accessed February 25, 2009.

———.2001. Burrowing Owl Abstract, Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 6 pp.

eFloras. 2008. Flora of North America. Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA. Website: http://www.efloras.org. Accessed February 26, 2009.

Martinez. 2009. Personal communication between M. Martinez, Federal Projects Coordinator, U.S. Fish and Wildlife Service, and J. Rubado, AECOM Environment. February 25, 2009.

Native American Ethnobotany. 2003. A Database of Foods, Drugs, Dyes and Fibers of Native American Peoples, Derived from Plants. University of Michigan, Deerborne. Website: http://herb.umd.umich.edu/herb/search.pl?searchstring=Opuntia+echinocarpa. Accessed February 26, 2009.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1.NatureServe, Arlington, Virginia. Website: http://www.natureserve.org/explorer. Accessed February 26, 2009.

Ritter. 2009. Letter response dated February 18, 2009, from G. Ritter, Project Evaluation Project Specialist, Arizona Game and Fish Department, to J. Rubado (AECOM Environment).

USFWS (U.S. Fish and Wildlife Service). 2008. Maricopa County, Arizona Species List. Revised April, 2008. Website: http://www.fws.gov/southwest/es/Arizona/Documents/CountyLists/Maricopa.pdf. Accessed February 25, 2009.

Quinn, Meg. 2001. *Cacti of the Desert Southwest*. Rio Nuevo Publishers, Tucson, Arizona.

Exhibit D:
Lists of Wildlife and Plant Life

Exhibit D Requirements

List the fish, wildlife, plant life and associated forms of life in the vicinity of the proposed site or route and describe the effects, if any, the proposed facilities will have thereon.

Common Wildlife

Representative wildlife species with potential to occur within the Mesquite Solar Gen-Tie alternative route areas are included in Table D-1. A comprehensive list of species with potential to occur within Mesquite Solar project habitat types is available in Arizona's Comprehensive Wildlife Conservation Strategy (AZGFD 2006).

Table D-1 :
Common Wildlife Species in Habitats within the Proposed Mesquite Solar Gen-Tie Project Area

Habitat Type	Common Species
Birds	Cooper's Hawk, Sharp-shinned Hawk, Cassin's Sparrow, Rufous-crowned Sparrow, Western Scrub-Jay, Western Burrowing Owl, Verdin, Red-tailed Hawk, Lark Bunting, Chestnut-collared Longspur, Gambel's Quail, Cactus Wren, Turkey Vulture, Hermit Thrush, Swainson's Thrush, Common Ground-Dove, Olive-sided Flycatcher, American Crow, Common Raven, Chihuahuan Raven, Steller's Jay, Horned Lark, Prairie Falcon, Greater Roadrunner, Cactus Ferruginous Pygmy- Owl, Dark-eyed Junco, Loggerhead Shrike, Western Screech-Owl, Northern Mockingbird, Brown-headed Cowbird, Phainopepla, Common Poorwill, Greattailed Grackle, Brewer's Sparrow, Chipping Sparrow, Northern Roughwinged Swallow, Western Meadowlark, House Wren, Warbling Vireo, Mourning Dove and White-crowned Sparrow
Mammals	Pallid Bat, Coyote, Bailey's Pocket Mouse, Sonoran Desert Pocket Mouse, Pale Townsend's Big-eared Bat, Desert Kangaroo Rat, Lesser Longnosed Bat, Blacktailed Jackrabbit, Striped Skunk, California Myotis, Desert Woodrat, Desert Mule Deer, Desert Bighorn Sheep, Arizona Pocket Mouse, Little Pocket Mouse, Western Harvest Mouse, Plains Harvest Mouse, Arizona Cotton Rat, Colorado River Cotton Rat, Round-tailed Ground Squirrel, Rock Squirrel, Western Spotted Skunk, Desert Cottontail, American Badger, Botta's Pocket Gopher, and Kit Fox
Amphibians and Reptiles	Arizona Glossy Snake, Tiger Whiptail, Zebra-tailed Lizard, Variable Sandsnake, Tucson Shovelnosed Snake, Tucson Banded Gecko, Desert Banded Gecko, Chihuahuan Greater Earless Lizard, Western Diamond-backed Rattlesnake, Mojave Desert Sidewinder, Sonoran Sidewinder, Northern Mohave Rattlesnake, Great Basin Collared Lizard, Eastern Collared Lizard, Sonoran Collared Lizard, Northern Desert Iguana, Sonoran Desert Tortoise, Banded Gila Monster, California Kingsnake, Desert Threadsnake, Sonoran Whipsnake, Red Arizona (Sonoran) Coralsnake, Desert Horned Lizard, Sonoran Gophersnake, Western Longnosed Snake, Desert Patchnosed Snake, Common Chuckwalla, Mojave Fringetoed Lizard, Long-tailed Brush Lizard, Ornate Tree Lizard, and Common Sideblotched Lizard

The proposed construction of the Mesquite Solar Gen-Tie through the Project area may result in impacts to common wildlife. Potential impacts may include short-term avoidance of the area because of the noise generated by construction activities. Clearing vegetation along the Mesquite Solar Gen-Tie will result in relatively minor habitat fragmentation. Placement of the

Mesquite Solar Gen-Tie may provide raptor perching locations that will result in adverse impacts to their prey base. This impact can be mitigated with the use of perch diverters. The transmission lines may also pose a collision and electrocution threat for birds. The transmission line would be constructed following the APLIC and USFWS guidelines (2006) to mitigate electrocution impacts. Construction and travel along temporary access roads may result in some minimal direct impact to wildlife from crushing. This impact should be minimized by the relatively small construction footprint and minimal footprint for access roads.

The Arizona Game and Fish Department (AZGFD) has indicated the need for project compliance with the Migratory Bird Treaty Act (MBTA). A variety of migratory bird species are regulated under the MBTA, including songbirds and raptors, and these species may use the vegetation communities within the Mesquite Solar project area. Direct impacts to these species and the possibility of a violation of MBTA can be avoided if construction occurs outside of the breeding season, generally May 1 through August 31 in Arizona (AZGFD 2009). It should be noted that breeding season varies according to species and pre-construction surveys should coincide with the breeding habits of the species that are known to occur, or have the potential to occur, in the Mesquite Solar project area.

Plant Life

The Mesquite Solar Gen-Tie alternatives are located within the Lower Colorado Desert subdivision of the Sonoran Desert Ecoregion. The Lower Colorado Desert subdivision is extremely arid, with average precipitation ranging from three to 10 inches a year. The vegetation is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). The Sonoran-Mojave Creosote Bush-White Bursage Desert Scrub has a sparse to moderately dense layer of xeromorphic microphyllous and broad-leaved shrubs, with a sparse herbaceous layer. The Sonoran-Mojave Mixed Salt Desert Scrub is found in saline basins and around playas on fine-textured, saline soils. Plant communities consist of open-canopied shrublands usually composed of one or more saltbush species. The North American Warm Desert Riparian Mesquite Bosque is found along low-elevation intermittent streams, such as Centennial Wash and Winters Wash, both located in the vicinity of the proposed Mesquite Solar Gen-Tie. Vegetation in these riparian corridors consists of tree and shrub species, such as velvet mesquite, dependent on the annual rise in the groundwater table for growth and reproduction.

Table D-2 provides a common plant species list for the Mesquite Solar Gen-Tie alternatives area. Vegetation types and community characterizations were compiled based on aerial photograph interpretation and Southwest Regional Gap Analysis Project (SWReGAP) Land Cover descriptions (USGS 2004). Plant species names are consistent with the USDA Plants Database (NRCS 2009).

Table D-2:
Common Plant Species—Lower Colorado Desert Subdivision/Sonoran Desert Ecoregion

Type	Common Name	Scientific Name
Trees	honey mesquite	*Prosopis glandulosa*
	velvet mesquite	*Prosopis velutina*
Shrubs	creosote bush	*Larrea tridentata*
	white bursage	*Ambrosia dumosa*
	fourwing saltbush	*Atriplex canescens*
	Desert holly	*Atriplex hymenelytra*
	brittlebush	*Encelia farinosa*
	rough jointfir	*Ephedra nevadensis*
	ocotillo	*Fouquieria splendens*
	water jacket	*Lycium andersonii*
	beavertail pricklypear	*Opuntia basilaris*
	mule-fat	*Baccharis salicifolia*
	sandbar willow	*Salix exigua*
Herbs	sandmat species	*Chamaesyce* spp.
	desert trumpet	*Eriogonum inflatum*
	cryptantha species	*Cryptantha* spp.
	fiddleleaf	*Nama* spp.
	phacelia species	*Phacelia* spp.
	allenrolfea species	*Allenrolfea* spp.
	pickleweed species	*Salicornia* spp.
	seepweed	*Suaeda* spp.
Grasses	low woollygrass	*Dasyochloa pulchella*
	threeawn	*Aristida* spp.

The proposed construction of a Mesquite Solar Gen-Tie through the project area may result in permanent removal of an unknown amount of native vegetation. This impact should be minimized by the relatively small construction footprint for Mesquite Solar Gen-Tie pole structures. Temporary impacts to native vegetation may result from the construction of access roads along the Mesquite Solar Gen-Tie route for construction vehicles. Disturbed soils and native plant communities may suffer from noxious weed invasions.

The Arizona State Department of Agriculture (AZDA) should be consulted in accordance with the Native Plant Law. On May 3, 2008, AZDA implemented the new rules for native plants (AZDA 2008). These laws pertain to the use and harvest of native plants for commercial

purposes. Under these new rules, the movement of a native plant species from its habitat is regulated based on four categories of protection. These categories are Highly Safeguarded Protected Native Plants, Salvage Restricted Protected Native Plants, Salvage Assessed Protected Native Plants, and Harvest Restricted Protected Native Plants. The straw-top cholla is a Salvage Restricted species, which requires a salvage permit be issued by AZDA before the plant may be removed from its native habitat for commercial purposes.

In addition, the Native Plant Law requires that a notice of intent must be filed with the Department of Agriculture before clearing of native plants on private lands (AZDA 2009). The notice of intent must be filed 60 days before the clearing of native vegetation on private lands can start. The filing of the notice of intent allows AZDA to determine whether there are any native plants on the site. If native plants are present, salvage operators can be notified, with the landowner's permission, and can examine the potential for salvage (AZDA 2009).

References

AZDA (Arizona Department of Agriculture). 2009. Arizona Protected Native Plants by Categories. Website: http://www.azda.gov/esd/protplantlst.htm. Accessed February 26, 2009.

———. 2008. Notice of Final Rulemaking Title 3. Chapter 3. (R3-3) Article 3. Arizona Native Plants compiled by the Environmental Services Division. Website: http://www.azda.gov/Main/NOFR_(Native_Plants)_second_attempt_(GRRC_revisions)%5b1%5d.pdf. Accessed February 26, 2009.

AZGFD (Arizona Game and Fish Department). 2009. Burrowing Owl Project Clearance Guidance for Landowners compiled and edited by the Arizona Burrowing Owl Working Group, Arizona Game and Fish Department, Phoenix, Arizona. 9 pp.

———. 2006. Arizona's Comprehensive Wildlife. Conservation Strategy: 2005–2015. Draft. Arizona Game and Fish Department, Phoenix, Arizona.

NRCS (Natural Resources Conservation Service). 2009. The PLANTS Database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA. Website: http://plants.usda.gov. Accessed February 26, 2009.

U.S. Geological Survey (USGS). 2004. Southwest Regional GAP (SWReGAP) Digital Landcover Dataset for the Southwestern United States. Website: http://earth.gis.usu.edu/swgap/swgap_legend_desc.pdf. Accessed February 26, 2009.

Exhibit E:
Cultural Resources Description

Exhibit E Requirements

Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon.

Cultural resources in the general vicinity of the Mesquite Solar project area include prehistoric human artifacts from as early as 5,000 years ago as well as more recent historic artifacts beginning with the first Spanish explorations into Arizona in the late 1600s. A Class I Cultural Resources study was performed for a one-mile-wide Mesquite Solar Gen-Tie corridor in February 2009. The complete Class I report is included as Exhibit B. The study file search was conducted using the AZSITE database maintained by the Arizona State Museum and the General Land Office (GLO) records maintained by the Bureau of Land Management. Twenty-nine surveys have been conducted across and near the Mesquite Solar project area. No archaeological sites are recorded in the Mesquite Solar project area, but 14 sites are recorded in the Mesquite Solar general vicinity of the project.

The Class I study identified several previous archaeological surveys that overlap with the proposed Mesquite Solar Gen-Tie corridor. However, no sites have been recorded within the search area (one-mile-wide corridor).

A Class III Cultural Resources Survey of the transmission corridors located on state lands was performed in April 2009. The entire report is provided in Exhibit B. The 1915 and 1916 GLO records indicate that roads once passed through the Mesquite Solar project area, and a windmill is recorded in the southern half of Section 24, Township 1 South, Range 7 West. The Class III survey identified a previously recorded site, AZ T:9:63 (ASM), 17 isolated trail segments, and five other isolated occurrences in the Mesquite Solar project survey area. The origin and age of the trail segments could not be determined. The previously recorded site, AZ T:9:63 (ASM), is a road dating to the first half of the 20th century. It has been determined to be ineligible for inclusion on the National Register of Historic Places (NRHP) by the Arizona State Historic Preservation Office (SHPO). Given the absence of significant cultural resources within the Mesquite Solar project area, the study recommended that the proposed Mesquite Solar Gen-Tie project be determined to have no effect on historic properties. However, if ground-disturbing activities expose previously undocumented archaeological remains, work in the area of the discovery would cease until the discovery can be evaluated by a professional archaeologist.

The proposed project would include minimal footprint impacts and is not expected to have any adverse effects on cultural resources.

Exhibit F:
Recreational Use

Exhibit F Requirements

State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations and attach any plans the applicant may have concerning the development of the recreational aspects of the proposed site or route.

There are no plans to offer any recreational opportunities in association with the proposed Mesquite Solar Gen-Tie. There are no public recreational areas within a 10-mile radius of the Mesquite Solar Gen-Tie alternatives. The closest recreation area is the Buckeye Hills Recreation Area, a Maricopa County-managed recreation area, located approximately 13.5 miles southeast of the Mesquite Solar Gen-Tie alternatives. The Mesquite Solar project area is primarily industrial and open lands and the proposed Mesquite Solar Gen-Tie would not affect area recreation amenities.

Exhibit G:
Design Drawings

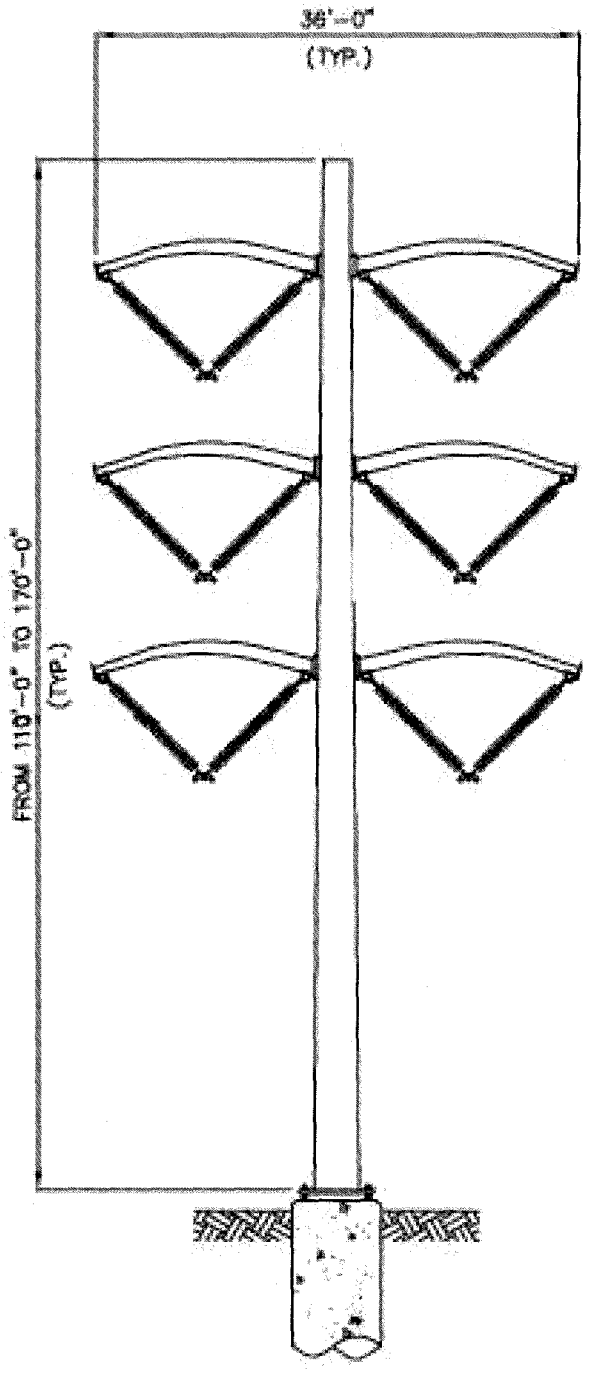
Exhibit G Requirements

Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyards, which applicant believes may be informative to the Committee.

Three drawings are attached:

- Exhibit G-1, Transmission Line Schematic
- Exhibit G-2, Mesquite Solar 230/34.5kV Substation General Arrangement
- Exhibit G-3, Mesquite Solar Site Arrangement, Option 2

Exhibit G-1, Transmission Line Schematic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FROM 110'-0" TO 170'-0"
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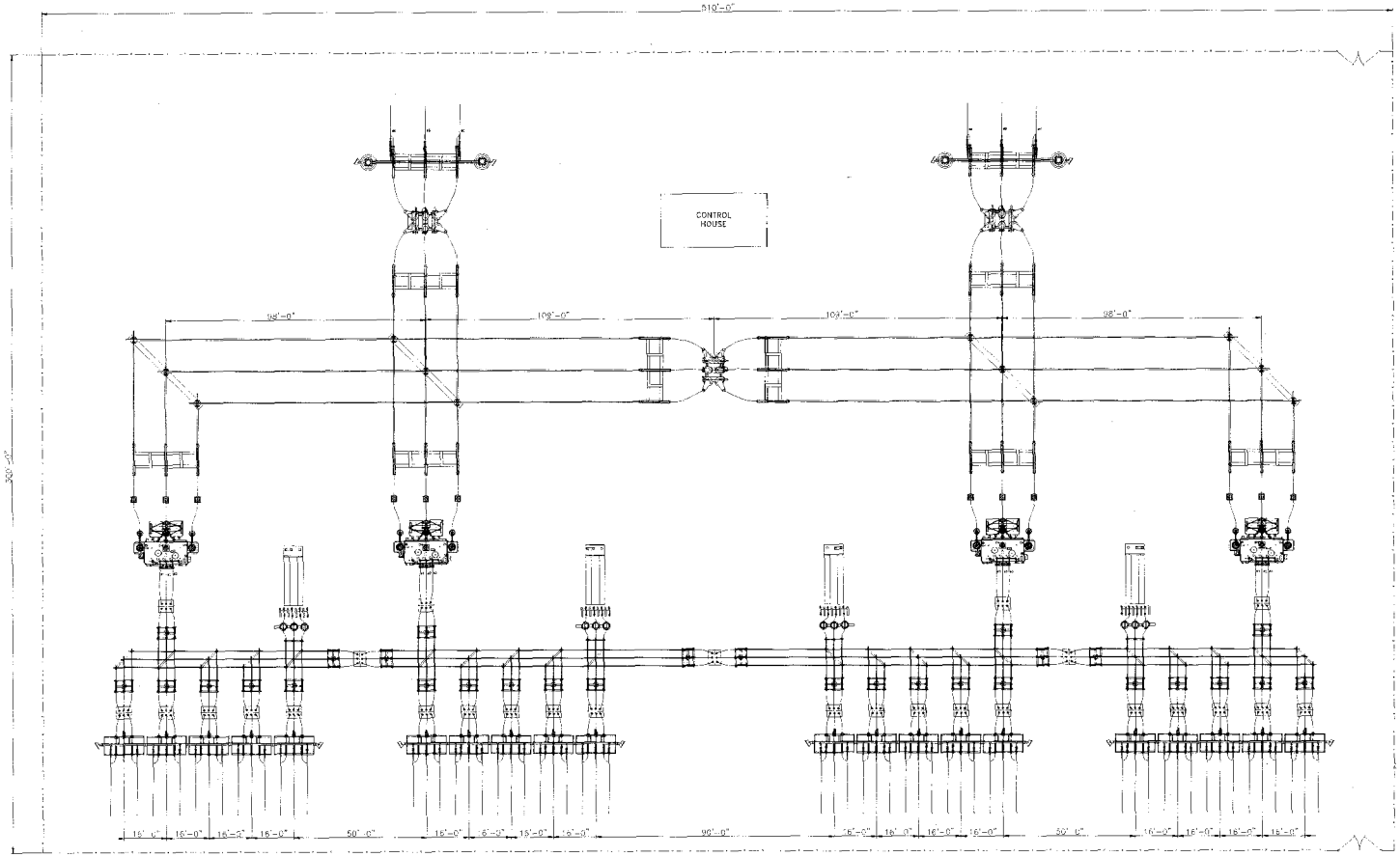
Exhibit G-2, Mesquite Solar 230/34.5kV Substation General Arrangement



NORTH

no.	date	by	ckd	description
A	09/04/09	TT	-	ISSUED FOR REVIEW

SCALE IN FEET

PRELIMINARY - NOT FOR CONSTRUCTION

Burns & McDonnell

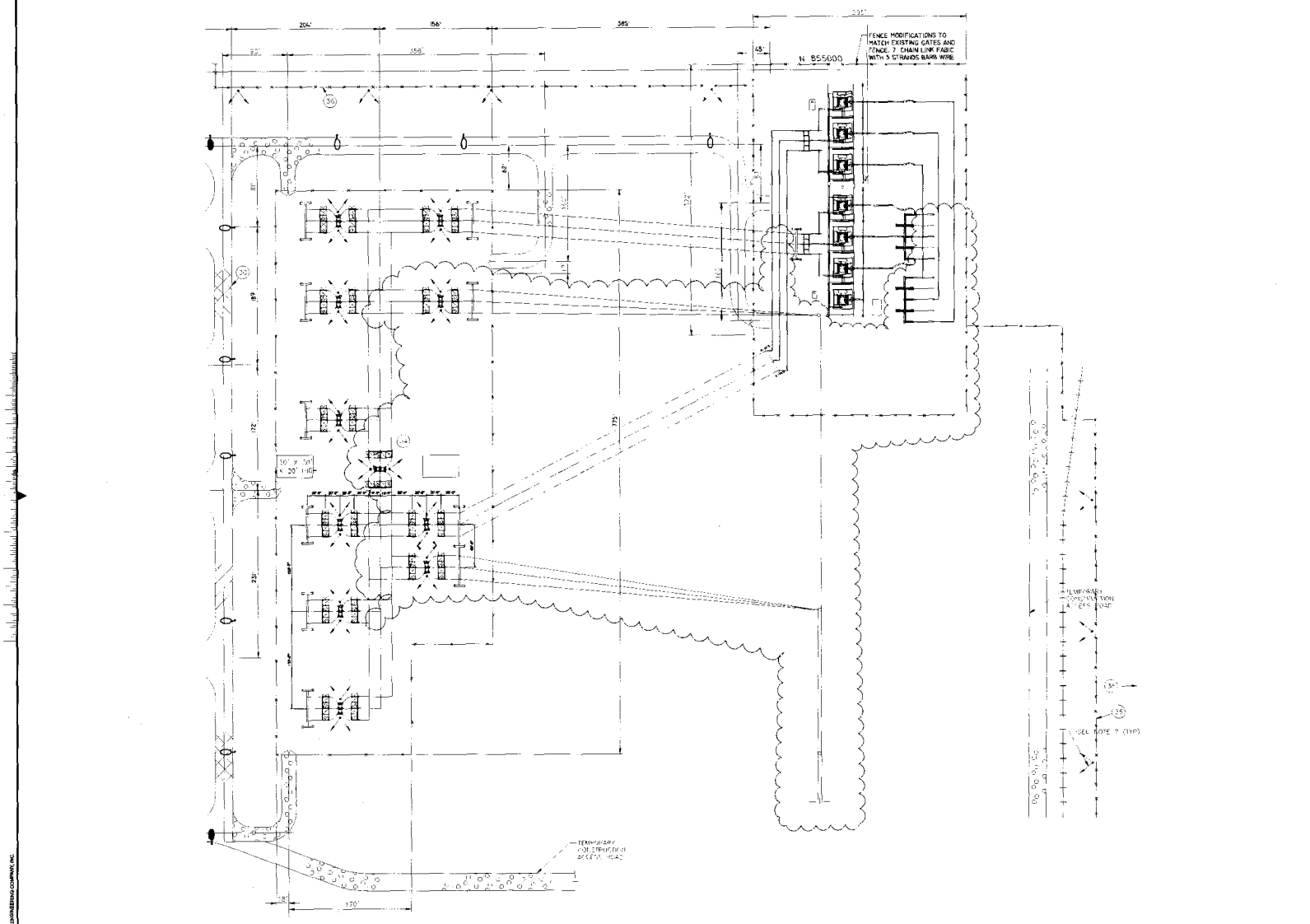
date 02/11/09	detailed T.THOMURE
designed T.THOMURE	checked -

SEMPRA
MESQUITE SOLAR
230/34.5kV SUBSTATION
GENERAL ARRANGEMENT

project 51680	contract -
drawing SK	rev. - A
sheet 1 of ###	sheets

file COLLECTORSUBLAYOUT

Exhibit G-3, Mesquite Solar Site Arrangement, Option 2



no.	date	by	ckd	description

Burns & McDonnell

date APRIL 17, 2009	detailed R.HORMANN
designed D.HANKS	checked CHECKER

SEMPRA
MESQUITE SOLAR
SITE ARRANGEMENT

project 52219	contract CONTRACT
drawing **OPTION 2 –**	rev.
sheet	of sheets
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Exhibit H:
Other Developments

Exhibit H Requirements

To the extent applicant is able to determine, state the existing plans of the state, local government and private entities for other developments at or in the vicinity of the proposed site or route.

SEP-II is aware that Dynegy/LS Power plans to develop solar generation in the vicinity of the site and SEP-II has been in discussions with them in an attempt to coordinate gen-tie siting and routes. No existing plans of the state or local government for other developments at or in the vicinity of the proposed site were able to be determined, and none are known.

Exhibit I:
Noise Levels

Exhibit I Requirements

Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities.

Noise Emission

Audible noise from an overhead electric transmission line is produced by a phenomenon called corona. Corona is caused by the ionization of the air, due to very high electric-field strength, at the surface of the energized conductor and suspension hardware. Corona is a function of voltage, the diameter of the conductor, the number of conductors per phase and the condition of the conductor and suspension hardware. The electric field around an energized conductor is directly related to the line voltage and is the greatest at the surface. The proposed 230 kV conductors for the Mesquite Solar Gen-Tie will use two conductors per phase of sufficient diameter to control corona effects. With 230 kV overhead construction, standard conductor attachment hardware is typically adequate to control corona. Higher voltages require special low-corona hardware.

Environmental noise, including electric transmission line noise, is usually measured in decibels on the audible scale (dBA), which models the sound to correspond to human perception. Table E-1 shows typical dBA for various settings. The background ambient noise level varies with wind, rain, traffic, or other human activity. There are generally few complaints about electric transmission line noise for levels below 50 dBA. The proposed Mesquite Solar Gen-Tie will meet state noise standards at the property line and edge of the right-of-way.

Table E-1:
Typical Ambient Noise Levels

Setting	Typical Ambient Noise Level
Quiet suburban or rural community (remote from large cities and from industrial activity and trucking)	50 dBA
Normal suburban community (not located near industrial activity)	55 dBA
Urban residential community (not immediately adjacent to heavily traveled roads and industrial areas)	60 dBA
Noisy urban residential community (near relatively busy roads or industrial areas)	65 dBA
Very noisy urban residential community	70 dBA

Communication Signals

Exhibit A3 includes locations of communication towers within a three to four-mile radius of the Mesquite Solar Gen-Tie area. Numerous land mobile and microwave towers are located at the Palo Verde Nuclear Generation Station. Microwave towers are located at the Arlington Valley Energy Facility and the Hassayampa Switchyard. Land mobile towers are located

along the Union Pacific Railroad alignment to the south, and a few land mobile towers are scattered three miles to the east and west.

Corona-generated radio interference from transmission lines is most likely to affect the amplitude modulated (AM) broadcast band; frequency modulated (FM) radio reception is rarely affected. An acceptable level of maximum fair-weather radio interference at the edge of a right-of-way is 40 to 45 dBuV/m (decibels above one microvolt per meter). Average levels during foul weather are typically 16 to 22 decibels higher than average fair-weather levels. The predicted fair-weather level for the proposed Mesquite Solar Gen-Tie is 29 dBuV/m at the edge of the right-of-way.

Television interference (TVI) caused by corona occurs during foul weather and is generally caused by transmission lines with voltage more than 345-kV. The level of corona-generated TVI is less than 10 dBuV/m at the edge of the right-of-way. This is a lower level than occurs on many existing lines.

Various techniques exist for eliminating adverse impacts on radio and television reception. SEP-II would address individual complaints concerning radio and television interference as needed.

Corona-generated interference can disrupt communication bands such as the citizen's and mobile bands. However, mobile-radio communications are not susceptible to transmission line interference because they are generally FM. If interference occurs with these types of communications, the same techniques used to alleviate television and radio interference can be used. Shielding, where practicable, would alleviate interference with electronic monitoring equipment.

Exhibit J:
Special Factors

Exhibit J Requirements

Describe any special factors not previously covered herein, which applicant believes to be relevant to an informed decision on its application.

No additional special factors are submitted.