DOCKET
06-AFC-10
DATE DEC 29 2006
RECD. JAN 05 2006

SUPPLEMENTAL INFORMATION
IN RESPONSE TO CEC DATA ADEQUACY REQUEST

APPLICATION FOR CERTIFICATION
STARWOOD POWER-MIDWAY, LLC PEAKING PROJECT

SUBMITTED TO THE
CALIFORNIA ENERGY COMMISSION
DECEMBER 2006

SUBMITTED BY
STARWOOD POWER-MIDWAY, LLC

WITH SUPPORT FROM
URS
1615 MURRAY CANYON ROAD, SUITE 1000
SAN DIEGO, CA 92108
TEL: 619.294.9400
FAX: 619.293.7920

URS

December 29, 2006

Che McFarlin
California Energy Commission
1516 9th Street, MS15
Sacramento, CA 95814-5504

Subject: Starwood-Midway Project (06-AFC-10)
Supplemental Information in Response to CEC Data Adequacy Request
URS Project No. 27656131.00400

Dear Mr. McFarlin:

On behalf of Starwood Power-Midway, LLC, URS Corporation Americas (URS) hereby submits this Supplemental Information in Response to CEC Data Adequacy Requests.

I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit this Supplemental Information on the behalf of Starwood Power-Midway, LLC.

Sincerely,

URS CORPORATION

Angela Leiba
Project Manager

AL:ml

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
Tel: 619.294.9400
Fax: 619.293.7920

W:\27656131\00400-c-l.doc\27-Dec-06\SDG

Data Response Guide

Data Request	Page
Air Quality	
AQ-1	AQ-1
AQ-2	AQ-2
AQ-3*	AQ-3
AQ-4*	AQ-4
Biological Resources	
BIO-5	BIO-1
BIO-6	BIO-2
BIO-7	BIO-3
Project Overview	
PO-8	PO-1
PO-9*	PO-2
PO-10	PO-3
PO-11	PO-4
Reliability	
REL-12	REL-1
Socioeconomics	
SOCIO-13	SOCIO-1
SOCIO-14	SOCIO-2
SOCIO-15	SOCIO-3
SOCIO-16*	SOCIO-4
Traffic and Transportation	
TRAFFIC-17	TRAFFIC-1
TRAFFIC-18	TRAFFIC-2
Transmission System Engineering	
TSE-19	TSE-1
Visual Resources	
VISRES-20	VISRES-1
* Information is Confidential and has been submitted under separate cover	

TECHNICAL AREA: AIR QUALITY

Data Request 1 Rev: Please provide notice from the San Joaquin Valley Air Pollution Control District (SJVAPCD) that the project application is sufficient to complete a Determination of Compliance.

(SJVAPCD received permit application on 11/22/06 and has by rule until 12/22/06 to finish the completeness evaluation).

Response: It is our understanding that the CEC will consider this data request complete upon receipt of the SJVAPCD notice that signifies the project application is sufficient to complete a Determination of Compliance. URS will submit the notice to the CEC upon receipt from the SJVAPCD.

John Lague/SanDiego/URSCorp
12/28/2006 09:45 AM

To Amy Gramlich/SanDiego/URSCorp@URSCorp, Angela Leiba/SanDiego/URSCorp@URSCorp, David Marx/SanDiego/URSCorp@URSCORP
cc
bcc
Subject Fw: Starwood Completeness Determination

fyi

John Lague
Senior Air Quality Consultant
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, California 92108
Phone: (619) 294-9400
Fax: (619) 293-7920

This e-mail and any attachments are confidential. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

----- Forwarded by John Lague/SanDiego/URSCorp on 12/28/2006 09:35 AM -----

Dustin Brown <Dustin.Brown@valleyair.org>

12/21/2006 03:36 PM

To "'John_Lague@URSCorp.com'" <John_Lague@URSCorp.com>
cc rweiss@houston.rr.com, "'wwalters@aspeneg.com'" <wwalters@aspeneg.com>
Subject Starwood Completeness Determination

John,

I have completed my review of the information the District currently has received for the proposed 120 MW peak demand power plant for Starwood Power - Midway, LLC (Facility C-7286, Project 1063535). With the exception of a few minor issues that we have previously discussed, it looks like the District has everything it will need to deem the applications complete. I will draft a completeness letter for this project and submit it for review and signature by management. My supervisor is off today and our entire office is closed tomorrow, so it is not looking like the letter will get mailed until next week sometime. Please let me know if you have any questions or need additional information. Thanks!

Dustin Brown
Senior Air Quality Engineer
San Joaquin Valley APCD
1990 E. Gettysburg Avenue
Fresno, CA 93726
(559) 230-5932

TECHNICAL AREA: AIR QUALITY

Data Request 2 Rev: Please provide the heating value and chemical characteristics of the proposed turbine natural gas fuel.

Response: Provided as attachments to this sheet, are the Certificates of Analysis for the natural gas fuel used at the exiting CalPeak Panoche plant located adjacent to the proposed Midway site. The proposed Midway project will utilize natural gas with the same composition.

Certificate of Analysis

SINCE 1985

Quality Controlled Through Analysis

10630 FALLSTONE RD. HOUSTON, TEXAS 77099
P.O. BOX 741905, HOUSTON, TEXAS 77274

TEL: (281) 495-2400
FAX: (281) 495-2410

CLIENT:	Calpeak Power LLC	**REQUESTED BY:**	Mr. John Bryant
SAMPLE:	Natural Gas Sample Cylinder # 5979 7/7 1430 Panoche (San Diego, CA)	**REPORT DATE:**	July 17, 2006
LABORATORY NO:	42063-03	**PURCHASE ORDER NO:**	2365

TEST **RESULTS**

Composition of Natural Gas by Gas Chromatography(TCD/FID), ASTM D 1945:

TEST	***Mol %***
Nitrogen	1.152
Hydrogen	0.002
Oxygen / Argon	0.009
Carbon dioxide	0.806
Carbon Monoxide	0.000
Methane	94.934
Ethane	2.804
Propane	0.206
Iso-butane	0.027
N-butane	0.034
Iso-Pentane	0.009
N-pentane	0.006
Hexanes Plus	0.011
TOTAL	**100.000**

Caloric Value and Specific Gravity of Gases, ASTM D 3588:

Specific Gravity at 60°F (air=1)	0.5836

Calculated B.T.U./cu.ft. @ 14.696 psia and 60°F

NET (**Dry basis**)	916.0
Gross (**Dry basis**)	1,016.7

Calculated B.T.U./lb.

NET (**Dry basis**)	20,567.8
Gross (**Dry basis**)	22,831.6

Respectfully submitted
FOR TEXAS OILTECH LABORATORIES, L.P.

A. Phil Sorurbakhsh
Director of Laboratory Operations

These analyses, opinions or interpretations are based on material supplied by the client to whom, and for whose exclusive and confidential use this report is made. Texas Oiltech Laboratories, Inc. and its officers assume no responsibility and make no warranty for proper operations of any petroleum, oil, gas or any other material in connection with which this report is used or relied on.

Cert. No. 5085

Certificate of Analysis

SINCE 1985

Quality Controlled Through Analysis

10630 FALLSTONE RD. HOUSTON, TEXAS 77099
P.O. BOX 741905, HOUSTON, TEXAS 77274

TEL: (281) 495-2400
FAX: (281) 495-2410

CLIENT:	Calpeak Power LLC	**REQUESTED BY:**	Mr. John Bryant
SAMPLE:	Natural Gas Sample Cylinder # 5644 7/7 1830 Panoche (San Diego, CA)	**REPORT DATE:**	July 17, 2006
LABORATORY NO:	42063-04	**PURCHASE ORDER NO:**	2365

TEST **RESULTS**

Composition of Natural Gas by Gas Chromatography(TCD/FID), ASTM D 1945:

TEST	***Mol %***
Nitrogen	1.155
Hydrogen	0.003
Oxygen / Argon	0.012
Carbon dioxide	0.811
Carbon Monoxide	0.000
Methane	94.826
Ethane	2.900
Propane	0.204
Iso-butane	0.027
N-butane	0.035
Iso-Pentane	0.009
N-pentane	0.006
Hexanes Plus	0.012
TOTAL	**100.000**

Caloric Value and Specific Gravity of Gases, ASTM D 3588:

Specific Gravity at 60°F (air=1)	0.5841

Calculated B.T.U./cu.ft. @ 14.696 psia and 60°F

NET **(Dry basis)**	916.6
Gross **(Dry basis)**	1,017.4

Calculated B.T.U./lb.

NET **(Dry basis)**	20,562.3
Gross **(Dry basis)**	22,824.8

Respectfully submitted
FOR TEXAS OILTECH LABORATORIES, L.P.

A. Phil Sorurbakhsh
Director of Laboratory Operations

These analyses, opinions or interpretations are based on material supplied by the client to whom, and for whose exclusive and confidential use this report is made. Texas Oiltech Laboratories, Inc. and its officers assume no responsibility and make no warranty for proper operations of any petroleum, oil, gas or any other material in connection with which this report is used or relied on.

Cert. No. 5085

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 5 Rev: Applicant needs to provide the qualifications for the biologist who conducted the biological surveys.

Response: Provided as attachments to this sheet, are the qualifications/resumes for the biologists who conducted the biological surveys and assisted in the preparation of the AFC.

URS

Johanna La Claire

Biologist

Overview

Ms. La Claire's combined work experience and education provide a wide range of ecological training. She has over seven years of experience working in the fields of botany, wildlife, habitat restoration, stream monitoring, and ecosystem inventory, assessment, and monitoring. Ms. La Claire's position at URS involves vegetation surveys and mapping, habitat assessment, habitat restoration, wildlife surveys (particularly birds and California red-legged frogs), wetland delineation, construction compliance and monitoring, GIS mapping, and project management.

Areas of Expertise

- Restoration Planning, Implementation, and Monitoring (bioswales, grassland, vernal pool, riparian, coastal sage scrub, chaparral, and oak woodland)
- Vegetation/Rare Plant surveys
- California Red-legged Frog USFW Protocol Surveys
- Least Bell's Vireo Surveys
- General Wildlife Surveys
- Stream monitoring
- Wetland Delineation
- Construction Compliance and Monitoring
- GPS and GIS mapping

Years of Experience

With URS: 3 Years
With Other Firms: 5 Years

Education

MS/Environmental Science and Management/2001/University of California, Santa Barbara

BS/Environmental Studies/1999/ University of California, Santa Barbara

Project Specific Experience

Project Management Experience

Project manager for several restoration projects including Ellwood Mesa Native Grassland Restoration, Santa Barbara Airport Safety Grading Mitigation Restoration Monitoring, Calleguas Creek Restoration Monitoring, and Bohnett Park Creek Restoration Monitoring.

Habitat Restoration Experience

- Monitor and implement several restoration projects in Santa Barbara and Ventura counties, such as Turnpike Bioswale, Rhoads Bioswale, Bohnett Park, Firestone Drainage, Las Vegas Creek, Calleguas Creek, Foster Park, and Casitas Dam Modernization Project.

- Restoration Coordinator, University of California. Responsible for creating native grassland, vernal marsh, and vernal pool habitat related to environmental mitigation. Supervised the initial grading of the landscape for proper topography. Duties included collecting native seed, planting native species, and removing exotic species. Conducting various flora, fauna, and environmental monitoring for performance criteria. Developing research projects related to vernal pool habitat restoration. Supervise several student interns, volunteers, and assistants.

- Assistant Resource Ecologist, California State Parks. Served as the lead person and supervised up to six employees for several ecological restoration, species monitoring, inventory, and exotic species removal projects. Conducted and Ecological Condition Assessment for the Inland Empire District. Managed a program for the removal of Brown-headed cowbirds. Prepared environmental permit applications, state contracts, and purchased supplies. Managed a native plant nursery, GIS databases, and other natural resource databases.

- Habitat Restoration Assistant, Santa Barbara Audubon Society. Teamed in restoration activities in the Goleta Slough that included: plant inventory, planning for and removal of exotics, and

development and implementation of a planting program using native species.

Botanical Experience

Botanical experience includes work in Santa Barbara, Ventura, and San Luis Obispo Counties, Berkeley, Mojave Desert, and Southern California.

- Prepared several vegetation maps for projects such as Lake Casitas Recreation Area Resource Management Plan (RMP), Lake Cachuma State Recreation Area (SRA) RMP, Santa Barbara Fire Management EIR, Meiners Oaks Trunk Sewer Relocation, Goleta Slough Fish and Game Properties, Mountain View Power Project, Gaviota Creek, Ventura River, Piru Creek, and Lauro Reservoir.

- Conducted point-intercept vegetation transect monitoring for several projects such as Lake Perris Recreation Area Grassland Experiment, UCSB Restoration Projects, Santa Barbara Airport Safety Area Grading Project.

- Performed rare plant surveys for Mountain View Power Project, Lauro Reservoir, Lake Cachuma RMP, Lake Casitas RMP, and MWD Colorado Aqueduct HCP (Mojave Desert).

- Performed vegetation transect surveys using the quadrat method for vernal pools and grasslands at UCSB and Ellwood.

- Volunteered for the Catalina Conservancy to conduct weed mapping using a GPS unit (Summer 2002)

Wildlife Surveys and Monitoring

- Performed USFWS protocol surveys for the California Red-legged Frog (CRLF) for several projects in Santa Barbara, San Luis Obispo, and Ventura Counties. Received training on USFWS protocol surveys from Vince Semonsen. We conducted several day and night surveys within several drainages of the Lake Casitas Recreation Area and along Gaviota Creek. Observed numerous adult red-legged frogs during the day and night surveys at Gaviota Creek (2003 and 2004). Individually performed protocol surveys along the Ventura River near Foster Park, Tecolotito Creek, and Salinas River (2004 and 2005). Conducted habitat assessment for CRLF at Winchester Canyon Creek and egg mass surveys at Guadalupe Dunes (2006).

- Performed bird surveys including riparian, waterfowl, raptor, and passerines. Survey sites in Santa Barbara and Ventura counties include Lake Cachuma, Lake Casitas, Santa Barbara Airport, Firestone Drainage, Las Vegas Creek, and UCSB vernal pool sites.

- Assisted in Southwestern willow flycatcher and Least Bell's vireo surveys at Gaviota Creek, Ventura River, Arroyo Simi River, and Lake Perris SRA.

- Conducted point count bird surveys during the breeding season and assisted in the Audubon Christmas bird count for Lake Perris SRA.
- Conducted an inventory of Arroyo chub in Aliso creek at Chino Hills State Park with seine nets.
- Performed Burrowing owls surveys at Lake Perris SRA and San Jacinto Wildlife Refuge, and developed a GIS map of all occupied burrows.
- Assisted in surveys to monitor the populations of Stephen's kangaroo rat at Lake Perris SRA.
- Biological monitor for the southwestern pond turtle for two small bridge crossing projects at Chino Hills State Park and Laguna Channel Maintenance Project.
- Conducted Western Snowy Plover surveys at McGrath State Beach during the wintering and breeding seasons.
- Volunteer for the White-tailed Kite Monitoring and Tree Swallow Nesting Program, Santa Barbara Audubon Society (Fall 2004 to present).

Wetland Delineations and Functional Assessments

- Performed wetland delineations for the Gaviota Bridge Project and Goleta Old Town Improvement Project.
- Assisted in a wetland functional assessment for Newhall Ranch.

Construction Compliance and Monitoring

- Environmental monitor during entire construction of two bridge creek crossings at Chino Hills State Park and Pueblo Bridge repair project in Santa Barbara.
- Oversight of fire crews making fire breaks and covering fire breaks with vegetation for restoration at Chino Hills State Park.
- Periodic sight inspections to minimize and assess biological impacts during construction for the Meiners Oaks Trunk Sewer Relocation Project.

Other Relevant Experience

- Environmental Services Technician, California State Parks. Managed the District Volunteer Stream Monitoring Program for Gaviota, El Capitan, Refugio, and Carpinteria Creeks, which included recruiting, coordinating, training, and supervising student interns and volunteers. Performed biological field surveys including macroinvertebrate rapid bioassessment, habitat assessment, and water quality sampling. Also,

performed data entry and data analysis. Other duties included preparing environmental permit and grant applications.

Specialized Training

- OSHA 40-Hour HAZWOPER
  February 2006
- Loss Prevention System
  March 2006
- CNPS Vegetation Mapping and Classification Workshop
  August 2005
- Basic Wetland Delineation Training
  Summer 2004
- CEQA/NEPA Workshop
  April 2001
- American Red Cross First Aide & CPR (May 3, 2005)

Contact Information

URS Corporation
130 Robin Hill Road, Suite 100
Santa Barbara, CA 93117
Tel: 805.964.6010 Ext. 333
Cell: 805.895.9178
Fax: 805.964.0259
johanna_laclaire@urscorp.com

Areas of Expertise	Biological Resources Identification of Southern California habitats, flora, and fauna Habitat mapping Protocol surveys for arroyo toad, least Bell's vireo, and burrowing owl
Total Years of Experience URS Other Firms	6 < 1 6
Education	BS/2003/Biology/San Diego State University
Overview	Cheryl Delekto has six years of relevant experience in the field of environmental consulting. She has extensive field experience in habitat mapping, general and focused wildlife and plant surveying, biological technical report production, and mitigation monitoring plan creation and implementation. Cheryl is currently a staff biologist in the San Diego office.
Project Experience	**MTDB, Mission Valley, San Diego, CA** Mitigation revegetation project along the San Diego River in which annual vegetation transect data was collected, analyzed, and implemented into reports. In addition, regular monitoring visits were conducted and problems reported to the client landscape maintenance crew. ***(2000-2004)*** **Montecito Ranch, Ramona, CA** Performed extensive general and focused plant and wildlife surveys and habitat mapping. Assisted with wetland delineation and vernal pool identification. ***(2000-2006)*** **Star Ranch, Jamul, CA** Performed extensive general plant and wildlife surveys and habitat mapping. ***(2004)*** **Sycamore Springs, Oceanside, CA** Implemented and monitored wetland buffer revegetation including the collection and analysis of vegetation transects for annual reports. ***(2002-2005)*** **Rancho San Diego Towne Center, San Diego, CA** Mitigation revegetation project in eastern San Diego in which annual vegetation transect data was collected, analyzed, and implemented into reports. In addition, regular monitoring visits were conducted and problems reported to the client and landscape maintenance crew. ***(2000-2005)*** **Maderas Golf Course, Poway, CA** Hydrology study performed to determine the effect of water drawdown from the golf course on adjacent Sycamore and Thompson Creeks. Vegetation transects conducted biannually and revegetation of *Ericameria palmeri* implemented and monitored. ***(2001-2006)*** **Passerelle, Pala, CA** Performed extensive general and focused plant and wildlife surveys and habitat mapping. Focused surveys performed included least Bell's vireo and arroyo toad. ***(2003-2005)***

Travel Plaza, Otay Mesa, CA
Conducted protocol level surveys for the burrowing owl. ***(2006)***

Champagne Lakes, Valley Center, CA
Performed protocol level surveys for the arroyo toad. ***(2006)***

Pappas, Pala, CA
Performed protocol level surveys for the least Bell's vireo and arroyo toad. ***(2004)***

Barrett Junction, CA
Performed protocol level surveys for the least Bell's vireo and arroyo toad. ***(2004)***

Professional Associations

Golden Key International Honour Society
Horned Lizard Conservation Society
Anza Borrego Desert Foundation

Areas of Expertise	Wildlife Biology Biological Impact Assessment ESA/Wetlands Permitting Habitat Conservation Planning Wildlife Corridor Assessment
Years of Experience URS Other Firms	26 7 19
Education	PhD/1990/Biology/University of California, Los Angeles CPh/1983/Biology/University of California, Los Angeles BS/1979/Wildlife Biology/University of California, Davis
Registration/Certification	Certified Senior Ecologist/Ecological Society of America Certified Wildlife Biologist/The Wildlife Society Training in ACOE Wetland Delineation Methods OSHA Hazardous Waste Operations and Emergency Response Training/Section 1910.120 Training in Use of ArcView and Auto Cad R14 Software
Overview	Dr. Mock has over 26 years of professional experience as a wildlife biologist and environmental consultant. He has served as principal investigator for studies of endangered wildlife, directing and participating in field investigations, data analysis, and preparation and review of technical reports and mitigation plans. Dr. Mock has extensive national and international experience in the assessment of impacts on biological resources, especially in relation to wetland ecosystems, coastal sage scrub, and endangered species. Dr. Mock has produced environmental impact assessments of various development projects throughout southern California and the Pacific Rim in conformance with NEPA, CEQA, and ESA. His specific area of expertise is in the ecology, management, and monitoring of vertebrate populations. He has conducted investigations of several sensitive bird species, including California least tern, brown pelican, least Bell's vireo, California gnatcatcher, coastal cactus wren, and bald eagle. He is experienced in landscape scale habitat evaluation modeling, preserve design, wildlife corridor assessment, and population viability analysis. He is certified as a senior ecologist by the Ecological Society of America and a wildlife biologist by The Wildlife Society. Dr. Mock participates in all aspects of project management, including client liaison, budgeting, field investigations and research, supervision of field biologists, regulatory permitting assistance, agency liaison, report preparation and review, public presentations, and expert testimony. Dr. Mock has also served as a Lecturer at the University of San Diego and University of California, San Diego, where he has taught courses on biological assessment, principles of ecology, and wildlife management.
Project Experience	**ECOLOGICAL RESEARCH** **Ecological Studies of California Gnatcatcher (*Polioptila californica*), Home Capital Corporation, Weingarten, Siegel, Fletcher Group, Inc., and Skyline Wesleyan Presbyterian Church** - Served as project manager/principal investigator for a comprehensive ecological study of over 40 pairs of California gnatcatchers in the Rancho San Diego area in order to document home range size, habitat preferences, dispersal behavior, breeding/population biology, and effects of development.

Foraging Ecology of California Least Tern (*Sterna antillarum browni*), Mission Bay, Department of Parks and Recreation, City of San Diego, California - Served as project manager/principal investigator, responsible for documentation of least tern foraging habitats within Mission Bay Park.

Habitat Characterization of Ephemeral Watercourses Receiving Treated Wastewater Effluents in the Arid Western U.S., Wastewater Management Department, Pima County, Arizona/EPA - Served as project coordinator for the research team assigned to gather data at two southern California sites and acted as the lead wildlife biologist for the overall program.

Behavioral Study of the Effects of Military Helicopter Activity on Breeding Least Bell's Vireo, U.S. Navy - Served as the principal investigator for an intensive behavioral study of least Bell's vireo breeding adjacent to Camp Pendleton Marine Corps Air Station. This empirical study verified a theoretical model of noise impacts to breeding vireos.

Study of the Effects Associated with Modification of Sand Grain-size on Shorebird Foraging Behavior, Department of Parks and Recreation, City of San Diego, California - Project manager/principal investigator for an impact assessment of proposed modification of sand grain-size as an erosion-control measure in Mission Bay Park. Study involved documentation of changes in shorebird foraging behavior associated with erosion-control methods.

San Diego Bay Waterbird Survey, U.S. Navy - Project Director of a three-year study of waterbird use of north and central San Diego Bay. Involved weekly boat surveys of waterbirds and other sensitive species. This study allowed for a detailed analysis of spatial and temporal variation of waterbird abundance and habitat use within San Diego Bay.

Behavioral Study of the Effects of Military, Fixed-wing Aircraft Activity on Idaho Bighorn Sheep, U.S. Air Force - Dr. Mock participated in the experimental design and statistical analysis of this intensive behavioral study of bighorn sheep in the Owahee Range of western Idaho.

Wildlife Corridor Study of the 23,000-Acre Otay Ranch, San Diego County, City of Chula Vista, California - Project director responsible for documentation of wildlife corridors on Otay Ranch and the Miramar-Peñasquitos area of San Diego, made recommendations for the retention and protection of regionally significant corridors within and throughout the ranch.

Wildlife Corridor Assessment for Canyon Crest Development Project, Brea California. City of Brea, California - Senior biologist for a detailed, wildlife corridor assessment for the project vicinity around a proposed residential development project in the City of Brea, California. Landscape-scale wildlife movement routes between open space areas associated with Carbon Canyon Road were identified and redundant routes through the project site were conserved as part of the project design.

Raptor Ecology and Management Study on Otay Ranch, City of Chula Vista,

California - Project director responsible for documenting nesting, roosting, and foraging areas of sensitive bird-of-prey species using radio telemetry methods. Species studied included golden eagle, northern harrier, black-shouldered kite, Cooper's hawk, and burrowing owl.

Analysis of Brown Pelican Migration Patterns from Band Recovery Data, Los Angeles County Natural History Museum - Principal investigator. Dr. Mock also assisted Dr. R.W. Schreiber in his field studies of the reproductive ecology of pelicaniform birds on Johnston Atoll, Central Pacific Ocean.

Study of Growth Energetics and Food Intake of Nestling Thick-billed Murre (*Uria lomvia*) Pribilof Islands, Bering Sea, Alaska, Department of Ecology and Evolutionary Biology, University of California, Irvine, CA - Principal investigator for a study that included use of isotopically labeled water and body composition analysis. Dr. Mock was a member of a large research team led by Dr. G.L. Hunt, which studied the effects of colony size on the reproductive ecology and energetics of colonial seabirds.

Comprehensive Studies of the Reproductive Energetics and Ecology of the Western Bluebird (*Sialia mexicana*), Department of Biology and Laboratory of Biomedical and Environmental Sciences, University of California, Los Angeles, California - As a doctoral candidate, Dr. Mock's studies included comparative growth energetics of nestling western bluebird and ash-throated flycatcher (*Myarchus cinerascens*), use of the doubly-labeled water method, time-activity budget analysis, nestling growth analysis, laboratory measurement of animal metabolism, body composition analysis, bird banding methods, and statistical analysis.

Development of an *in vivo* Method to Estimate Lipid Reserves of Vertebrates, Laboratory of Biomedical and Environmental Sciences, University of California, Los Angeles, California - As a research associate in Dr. Ken Nagy's Lab, Dr. Mock participated in validation studies of the cyclopropane methods to estimate lipid reserves of vertebrates.

San Diego County Breeding and Wintering Bird Atlas Project, San Diego Natural History Museum - A principal participant in the design and implementation of 6-year atlas project. Providing GIS mapping support and assistance in data analysis.

REGIONAL NATURAL RESOURCE PLANNING

Multiple Species Conservation Program, City of San Diego Clean Water Program - Principal wildlife biologist directing the gap analysis, preserve design, wildlife corridor analysis, and resource assessment to delineate a network of potential preserve areas for a 900-square mile area in southwestern San Diego County. The objective of this three-year program is to develop a plan for the conservation and management of self-sustaining, viable populations of federally listed species and key candidate species and their habitats. Included in this program is the development of population viability analyses for California gnatcatcher and coastal cactus wren, a comprehensive GIS-based habitat

evaluation model to aid in the relative valuation of habitat areas and identification preserve planning areas, and a long-term monitoring plan of conserved habitats and selected target species. This project received numerous citations and awards for excellence in resource planning.

Rancho Palos Verdes Natural Communities Conservation Program Subarea Habitat Conservation Plan and EIR, City of Rancho Palos Verdes, California - Project Manager and Technical Lead for program assisting the City of Rancho Palos Verdes in the first phase of a NCCP subarea plan for coastal sage scrub habitats. Phase I involves the following tasks: (1) assemble and review existing information on biological resources, land uses, and land-use constraints, (2) perform reconnaissance and focused biological surveys, (3) refine current vegetation mapping and assess the restoration/enhancement potential of disturbed habitats and non-native vegetation, (4) develop three preliminary preserve design alternatives being evaluated in Phase II of the program, and (5) interact with resource agencies, landowners, and local working group of interested parties to incorporate their concerns into the preserve design process. Phase II involved the preparation of the HCP document for public review and Phase III involved the preparation of the EIR and Implementing Agreement documents. Key sensitive species being evaluated in the plan include Palos Verdes Blue and El Segundo Blue butterflies, California gnatcatcher, coastal cactus wren, and bright green dudleya.

North County Multiple Habitat Conservation Program, San Diego Association of Governments - Principal member of a team of biologists formulating a regional preserve design for a 1,000-square-mile area in northwestern San Diego County. This program is similar to the City of San Diego's MSCP program (see above).

Key Deer Habitat Conservation Plan (HCP), Florida Department of Transportation and Monroe County - A principal participant in habitat and target species assessments and the development of a conservation plan for Big Pine Key and No Name Key encompassing over 5,000 acres of potential Key Deer habitat.

Adaptive Management Research Program for Sweetwater Reservoir Least Bell's Vireo Population, Sweetwater Authority - Dr. Mock provided technical assistance in the development of testable hypotheses, including statistical power analyses for the habitat and population monitoring of the large least Bell's vireo population associated with the reservoir.

Chevron Lokern HCP EIR, Chevron Oil Corporation - Senior biologist overseeing EIR assessment of proposed HCP for over 14,400 acres of sensitive habitats and 31 sensitive species within Kern County.

Santa Monica Mountains National Recreation Area General Development Plan EIS, National Parks Service - Senior biologist overseeing biological assessment of the master plan for the 150,000-acre NRA in coastal Los Angeles County.

California Gnatcatcher Sweetwater River HCP, Home Capital Corporation/San Diego Association of Governments - Project manager and

principal author of the first HCP developed for the California gnatcatcher. This HCP presented a program designed to ensure the continued existence of the California gnatcatcher in the Rancho San Diego/Sweetwater River Drainage and proposed to merge the management of the upland habitats with the riparian habitat proposed for management of the least Bell's vireo. This document presented information on the status and biology of the gnatcatcher, including a population viability analysis of the Sweetwater River gnatcatcher subpopulation as an isolate. The plan set guidelines for the conservation and management of coastal sage scrub designated as Conserved Habitat. Management actions were identified in a structured program within the Sweetwater River Drainage through preservation and active management of sage scrub habitat, specifically applied land use controls, and local private and public agreements.

City-wide Biological Resource Assessment and Environmental Planning for the City of Poway, San Diego County, Department of Planning, City of Poway, California - Task manager for a city-wide California gnatcatcher survey encompassing over 8,000 acres of suitable habitat and development of habitat assessment for coastal sage scrub habitats. Suitable California gnatcatcher habitat within Poway and its Sphere of Influence was identified and recommendations for habitat acquisition priorities and management of biological open space to sustain viable California gnatcatcher populations were made. This project won an Orchid award in the 1991 Orchids and Onions Community Awareness Program.

Oceanside Subarea Habitat Conservation Plan/NCCP, Department of Planning, City of Oceanside, California - A principal participant in habitat and target species assessments and the evaluation of a regional California gnatcatcher movement corridor between San Marcos and Camp Pendleton through Carlsbad and Oceanside.

Carlsbad Subarea Habitat Conservation Plan/NCCP, Department of Planning, City of Carlsbad, California - A principal participant in the evaluation of habitat and target species evaluations for proposed city-wide preserve system.

San Marcos Subarea Habitat Conservation Plan/NCCP, Department of Planning, City of San Marcos, California - Providing technical assistance to City staff regarding habitat and target species evaluations for proposed city-wide preserve system; Technical review of subarea plan document.

Point Loma Habitat Management Plan, U.S. Navy - Participated in the development of a habitat evaluation model to aid in the relative valuation of habitat areas and assignment of conservation and habitat management priorities within the study area.

Escondido Master Plan of Parks, Trails, and Open Space/EIR, Department of Planning, City of Escondido, California - Task manager for identification of regionally significant wildlife corridors throughout the City of Escondido. Regional and site-specific analyses of Escondido's biological resources were made as part of the city's commitment to expand park and recreation facilities, establish long-term open space, and identify mitigation priorities. The regional analysis identified a primary wildlife corridor system to be retained within the city, and concentrations of high quality biological resources recommended for protection through open space

easements or for use as mitigation.

Wetlands Management Plan for the Island of Saipan, Coastal Resource Management Office, Commonwealth Government of the Northern Mariana Islands - Project manager/zoologist for a comprehensive wetlands management plan for the island of Saipan. Study involved habitat evaluation and assessment. Recommendations for habitat acquisition priorities and management were made for the conservation of significant wetland resources on Saipan.

The Oasis Project, U.S. Air Force, Air Combat Command - Senior wildlife biologist involved in landscape level evaluation of biodiversity on two Air Force training ranges (in Idaho and North Carolina) compared to adjacent areas where land use patterns differ from the training ranges.

DeLuz Habitat Mitigation Bank, The Eadington Companies - Biological consultant assisting the formation and wildlife agency approval of a 141-acre San Diego County mitigation bank dominated by riparian and oak woodlands.

BIOLOGICAL ASSESSMENT/MITIGATION
DEPARTMENT OF DEFENSE

Biological Assessment/EIS of BRAC Actions at MCAS Camp Pendleton, U.S. Navy - Principal Investigator for an intensive behavioral ecology study of potential effects of helicopter overflight activity on the vocalization behavior of the endangered least Bell's vireo. This study also included a statistical analysis of vireo breeding success in relation to CNEL noise contours for the MCAS. Senior Biologist overseeing preparation of NEPA/EIS documents that focused on indirect effects to least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher.

Biological Assessment/EIS of BRAC Actions at NAS Miramar, U.S. Navy - Senior Biologist overseeing biological assessment of realigning NAS Miramar as MCAS Miramar. NEPA/EIS documents that focused on potential adverse effect to vernal pool habitat and associated sensitive species, wetlands, California gnatcatcher, and regional wildlife corridors.

Programmatic EIS for Testing and Operations at Pt. Mugu Air Warfare Center, U.S. Navy - Senior Biologist overseeing biological assessment of testing and operation programs. Emphasis was on associated biological effects on sensitive waterbirds and marine mammals within the 36,000 square mile Sea Test Range in the Southern California bight.

Biological Assessment/EA of Helicopter Outlying Landing Field, MCB Camp Pendleton, U.S. Navy - Senior Biologist overseeing preparation of NEPA/ESA documents for proposed HOLF facility. Biological issues included potential impacts to vernal pool habitat and associated sensitive species, Stephen's kangaroo rat, arroyo southwestern toad, and indirect effects to California gnatcatcher and least Bells' vireo.

Construction Biological Monitoring Program for VertRep Project, Camp

Pendleton, Stronghold Electric/U.S. Navy - Project manager for implementation of construction monitoring and environmental awareness program for contractor staff for a construction of a helicopter landing facility at a coastal bluff site. Sensitive resources protected included vernal pools, coastal sage scrub, and California gnatcatcher.

Homeporting Project EIS, San Diego Bay, U.S. Navy - Senior Biologist assessing impacts on wildlife associated with dredging and site improvements for the homeporting of two aircraft carriers in San Diego Bay.

San Nicolas Island Barge Landing EA, U.S. Navy - Principal biologist for the biological assessment of existing barge landing activities and evaluation of alternative landing sites on the island. EA focused on potential impacts to marine mammals, snowy plover, seabird colonies and sensitive plants.

Preconstruction Survey for Micronesian Megapode at the Saipan Radar Installation, Commonwealth of the Northern Marian Islands, U.S. Air Force - Principal investigator that conducted focused surveys for the sensitive Micronesian megapode and recommended mitigation to minimize impacts to this species.

TRANSPORTATION PROJECTS

Wetland Mitigation Planning and Permitting Assistance for Light Rail Transit (LRT) Projects in San Diego County, Metropolitan and North County Transit Development Boards - Project manager responsible for impact assessment, mitigation planning, and permitting assistance for several proposed commuter rail projects whose alignments must cross wetland habitat.

North County Light Rail Transit Project EIR, North County Transit Development Board - Principal wildlife biologist assessing potential biological impacts associated with a light rail transit line between Oceanside and Escondido.

Biological Assessments of Four Road Widening Projects, County of San Diego, California - Senior biologist overseeing the biological assessment of four road-widening projects in southeastern San Diego County. Sensitive species included least Bell's vireo and California gnatcatcher.

Biological Assessments of Proposed Widening and Extension of San Elijo Road, Twin Oaks Valley Road, Rancho Santa Fe Road, and Melrose Drive, City of San Marcos, California - Senior biologist and author of biological assessments for four critical regional road projects in San Marcos. Key biological issues included California gnatcatcher and regional wildlife corridors.

Biological Assessment and EIR for Scripps-Poway Parkway, City of Poway, California - Senior biologist for this major roadway project through the undeveloped portion of south Poway that provides a regional linkage between SR 167 and I-15. Major issues included California gnatcatcher, wildlife corridors, and potential conflicts with the City's habitat conservation plan.

Sorrento Valley Road Improvement Project EIR, City of San Diego, California - Senior biologist providing biological assessment for road project

directly adjacent to Los Peñasquitos Lagoon. Sensitive resources included saltmarsh and riparian wetlands, clapper rail, Belding's Savannah sparrow, and California gnatcatcher and two regional wildlife corridors.

Construction Monitoring and Burrowing Owl Mitigation Program for Union Pacific Track Removal Project, Union Pacific Railroad - Project manager for implementation of biological monitoring program for track removal between Holtville and El Centro, Imperial County, California.

Las Pilitas Bridge Replacement Project, County of San Luis Obispo, California Senior biologist providing technical review of Natural Environment Study documents.

Rigel Street Bridge Replacement Project, City of San Diego, California - Provided biological assessment and assistance in processing streambed alteration agreement.

Atchinson Avenue Bridge Replacement Project, City of Roseville, California - Senior biologist overseeing the preparation of Natural Environment Study document and wetlands delineation for wetlands permitting process. Sensitive species include Coho salmon, steelhead, and valley oak

Ford Avenue Bridge Replacement Project, Alameda Corridor Project Team - Provided wetlands permitting assistance.

INFRASTRUCTURE FACILITY PROJECTS

Big Tujunga Dam Seismic Rehabilitation and Spillway Modification Project - Senior Biologist assisting FEMA and Los Angeles County Department of Public Works in the CEQA/NEPA compliance for the proposed seismic retrofit of Big Tujunga Dam, near Sunland, Los Angeles County. URS is conducting biological surveys of the project area and is preparing CEQA/NEPA and Section 7 documents. Key issues include construction and dam operational impacts to Santa Ana Sucker and Arroyo Toad Designated Critical Habitat.

CHEVRONTEXACO de MEXICO Onshore LNG Receiving Terminal, Baja California - Senior biologist overseeing biological assessment of an offshore LNG terminal located near the Coronado Islands, Baja California, Mexico. Key issues included assessment of potential impacts to seabirds.

CalEnergy Salton Sea Unit 6 Geothermal Power Plant Application for Certification - Project manager overseeing AFC document preparation. The California Energy Commission processed the licensing for construction and operation of the Salton Sea Unit 6 Geothermal Power Project, a proposed 185 net megawatt power plant in Imperial County, near the southern extent of the Salton Sea. Geothermal projects from the Salton Sea Known Geothermal Resource Area rarely come to the commission for action as most of these are much smaller, ranging from 10 to 45 megawatts, not requiring Energy Commission licensing. The Salton Sea Unit 6 project was unique based upon the size of the proposed plant, the location of the project near environmentally sensitive habitat, and the Sonny Bono Salton Sea National Wildlife Refuge. In addition, Imperial County

has unique socioeconomic and geographic conditions. These factors provide the complex context within which this project was evaluated. Most CEC technical staff were not initially familiar with the area, or the unique aspects of a geothermal power facility deriving steam flashed directly from produced hot brine. The AFC document prepared by URS for the project provided an excellent platform for the CEC analysis, clearly presenting the necessary technical information. The complex information was presented in a format and context that highlighted the unique aspects of geothermal power production, and the environmental and socioeconomic conditions of the project area and this region. The AFC accurately described the environmental, engineering, and technical components of the project, and clearly addressed the potential impacts, mitigation strategies, and the technical issues across the spectrum of disciplines. Notably, the CEC deemed the AFC "data adequate" within nine months of initial project application.

Miramar General Development Plan EIR/EIS, City of San Diego Waste Management Department - Participant in the evaluation of plan proposing a variety of landfill-associated facilities. Sensitive species, habitat, and wildlife corridors were issues of concern.

Biological Assessment of Proposed International Airport at Maj Po Mash, Shenzhen, China, City of Shenzhen - Principal investigator that evaluated potential impacts to biological resources at wetlands and bay adjacent to a proposed airport site.

Emergency Water Storage Project, San Diego County Water Authority - Principal author of Biological Assessment that included detailed estimation and justification of incidental take and habitat values of endangered species and their habitats expected to be impacted by the proposed reservoir project. Assessment was used in ACOE 404 permitting and ESA Section 7 consultation with the wildlife agencies. This project received an AEP planning award.

Evaluation of Biological and Water Quality Monitoring Program of the Shanghai River, China, Shanghai Sewerage Authority - Principal investigator responsible for assessment and recommendations for biological and water quality monitoring program for the Shanghai Sewerage System.

Alvarado Water Filtration Plant Project, City of San Diego, California - Senior biologist overseeing construction monitoring impacts to coastal sage scrub and California gnatcatchers. The gnatcatcher population within the project vicinity was monitored for 3 breeding seasons during project environmental review and implementation.

Chandler Landfill Water Recharge Basin Demonstration Project, Water Replenishment District of Southern California - Senior biologist overseeing wetlands delineation and permitting assistance.

Gilroy Landslide Remediation Evaluation, Santa Clara Valley Water District - Senior biologist overseeing biological assessment and permitting for remediation of a landslide threatening a major water aqueduct. Sensitive species include red-legged frog, California tiger salamander, San Joaquin kit fox, and valley oak.

SMUSD Administration Office Complex, San Marcos Unified School District

- Senior biologist overseeing biological assessment of vernal pool site proposed for a school district office complex.

Mountain Pass Mine Expansion Project, Molycorp, Inc - Senior biologist overseeing biological assessment and wetland delineation for the 30-year expansion plan for an existing rare earth element mine in San Bernardino County. Sensitive species included desert tortoise and three rare deserts plant species.

RESIDENTIAL DEVELOPMENT PROJECTS

EIR/Mitigation Monitoring Program for San Elijo Ranch Development, City of San Marcos, California - EIR biologist and project manager for development and implementation of a mitigation monitoring program for the approved 2,100-acre San Elijo Ranch development. Tasks included evaluating potential impacts to sensitive plant and animal species and negotiating mitigation measures deemed acceptable to all concerned parties. Sensitive plant and animal surveys were conducted and format mitigation plans were prepared. Habitat restoration plans and 404/1603 permit applications for impacts to wetlands, coastal sage scrub, and native grassland were prepared.

Biological Assessment and Mitigation Planning, Calavera Heights Development, Carlsbad, Lyon Communities - Project manager overseeing assessment of biological impacts and development and implementation of mitigation monitoring program. Also provided permitting assistance and resource agency liaison services.

Otay Ranch Programmatic EIR, City of Chula Vista/County of San Diego, California - Participated in biological assessment of proposed development and preserve design of 23,000-acre Otay Ranch in southern San Diego County. Major issues included potential impacts to wildlife corridors and a multitude of sensitive wildlife species and their habitats.

On-call Consulting Services for Otay Land Company, Otay Land Co., LLC - Senior biologist overseeing on-call consulting services contract for 4,800-acre ownership within Otay Ranch planning area.

University Commons EIR and Mitigation Plan, City of San Marcos, California - Biological assessment of a residential/commercial development and preparation and implementation of a biological mitigation monitoring program. Services included resource agency liaison and permitting assistance.

Salt Creek Ranch EIR, City of Chula Vista, California - Principal wildlife biologist assessing residential/commercial development and preparation of a biological mitigation monitoring program. Services included resource agency liaison and permitting assistance.

Fanita Ranch EIR, City of Santee, California - Participated in the biological assessment of a 5,600-acre specific plan area. Impacts to sensitive habitats, species and wildlife corridors were the primary issues of concern.

Development Constraints Assessment for Tom Dyke Ranch, Saint Vincent De Paul Society - Project manager overseeing detailed development constraints assessment for a proposed children's camp and conference center facility.

San Marcos Highlands Biological Assessment, City of San Marcos, California - Project manager overseeing assessment of biological impacts for a proposed residential development on a 250-acre site.

Hampton Heights Project EIR, County of San Bernardino, California - Provided assessment of biological impacts for a proposed residential and golf course development on a 470-acre site near Redlands, California.

Willows Development Project, Temecula, Willows Investment Group, California - Senior biologist for wetlands delineation and permitting program for a 32-acre residential development.

Vista Palisades Estates Project, Capital Pacific Homes, California - Senior biologist for assessment of biological impacts for a proposed residential development on a 390-acre site near Vista, California.

Benicia Specific Plan EIR, City of Benicia - Principal wildlife biologist assessing a residential/commercial development within a 2,500-acre specific plan area. Impacts to sensitive habitats, species, and wildlife corridors were the primary issues of concern.

East Otay Mesa Biological Assessment, County of San Diego, California - Participated in the biological assessment of a 5,300-acre specific plan area. Impacts to sensitive habitats, species and wildlife corridors were the primary issues of concern.

Santa Fe Valley/4S Ranch Biological Assessment, County of San Diego, California - Participated in the biological assessment of two specific plans areas encompassing about 6,000 acres. Developed a habitat evaluation model to aid in the relative valuation of habitat areas.

COASTAL DEVELOPMENT, RECREATION PROJECTS

ESPN X-Games, Mission Bay San Diego, ESPN - Biological consultant providing technical support of California Coastal Commission permitting process. Provided biological assessment and proposed mitigation program for potential impacts to California least tern breeding colony.

Mission Bay Park Shoreline Stabilization and Restoration Project and Natural Resource Management Plan EIR, City of San Diego, California - Principal wildlife biologist in the biological evaluation of methods proposed for shoreline stabilization/restoration and the proposed long-term maintenance/enhancement plan for natural resources. Primary issues of concern included impacts to wetlands, least tern foraging habitat, and shorebird foraging habitat.

The Headlands, Dana Point, Headlands Reserve, LLC - Assisting with the processing of the development plan and California Coastal Commission coastal permit process for this 121-acre coastal property that supports California

gnatcatcher and Pacific pocket mouse.

Convair Lagoon Remediation Project EIR, San Diego Port Authority - Principal biologist assessing impacts of hazardous waste remediation project on waterbird species using the lagoon.

National City Marine Terminal Wharf Expansion Project EIR, San Diego Port Authority - Principal biologist assessing impacts of wharf expansion project on mariner resources, including waterbird species.

Biological Resource Inventory and Environmental Assessment of Proposed Marina at Ballona Lagoon, Marina del Rey, California, Silver Strand Marina Association - Principal investigator for a comprehensive assessment of potential impacts to biological resources from a proposed marina at a 13-acre lagoon. Studies included documentation of California least tern and shorebird use of the lagoon.

Biological Assessment of the Ormond Beach Area Concept Plan, City of Oxnard, California - Principal investigator for an evaluation of proposed resource management and development plan for coastal dune and wetland habitats of Ormond Beach.

Biological Assessment of Elsinore Lake Management Plan, Lake Elsinore, California, Elsinore Water Authority - Project biologist that evaluated impacts to biological resources of Elsinore Lake from a proposed water-level control facility.

Poway Amphitheater EIR, City of Poway. Principal biologist assessing impacts of proposed amphitheater - Impacts to sensitive plants, California gnatcatcher and a regional wildlife corridor were key issues addressed in the EIR.

OTHER RELEVANT EXPERIENCE

California Department of Fish and Game Biologist - Prepared bird and mammal sections of the Department's biannual report to the State Legislature on the status of California's endangered wildlife; Conducted surveys for wintering bald eagles and riparian birds.

TEACHING

Principles of Ecology for Natural Resource Management, University of California, San Diego, California - Dr. Mock taught a course for three years on ecology that emphasizes the application of ecological knowledge toward solving problems in conservation biology and regional land use planning.

Wildlife Management, University of California, San Diego, California - Dr. Mock taught a course for three years on wildlife ecology/management that emphasizes techniques for conservation of wildlife population and their habitats.

Biological Assessment, University of San Diego, California - Dr. Mock taught a course on Biological Assessment that emphasized the requirements of CEQA,

NEPA and ESA. Project case histories were used to provide students with real world examples of the types of environmental issues, which typically need to be addressed in a biological assessment.

Masters Thesis Committee Member, Geography Department, San Diego State University, California - Dr. Mock served as an adjunct member of a thesis committee of a biogeography graduate student, who evaluated the umbrella species concept as it applied to the conservation of the California gnatcatcher. Dr. Mock advised the student on habitat reserve design and population viability analysis.

Teaching Fellow, Biology Department, University of California, Los Angeles, California - Dr. Mock taught laboratory sessions for various biology courses while a graduate student. Courses included ornithology, comparative physiology, cell physiology, animal behavior, and introductory biology.

Technical Reviewer
Conservation Biology, The Auk, Ecology, Condor, Ecological Monographs, Western Birds, *Ornis Scandinavica*,

- Proceedings of Symposium on Wildlife Habitat Restoration and Management
- Proceedings of a Symposium on Wildlife Habitat Restoration
- Proceedings of the Wildland Interface II Symposium
- Reviewer of Partners-in-Flight conservation plan for Southern California shrubland habitats
- Natural Communities Conservation Planning (NCCP) Core Group Reviewer of the Research Agenda
- Reviewer for selected sections and species accounts of *San Diego Bird Atlas*
- Reviewer of draft CDFG report on Bird Species of Special Concern

Professional Societies

Ecological Society of America
The Wildlife Society
Pacific Seabird Group, Southern California Representative
Society for Conservation Biology
Sigma Xi, The Research Society
American Ornithologist Union
Associate of Field Ornithologists
Cooper Ornithological Society
Wilson Ornithological Society
The Waterbird Group
California Native Plant Society

Publications

At the Crossroads 1980: A report on California's endangered and rare fish and wildlife. California Department of Fish and Game report to the California Legislature. 1982. Dr. Mock contributed sections pertaining to endangered birds and mammals.

Christmas bird counts as indices of population status of brown pelicans and three gull species in Florida. American Birds 41: 1334-1339, 1987. R.W. Schreiber co-author.

Eastern brown pelicans: what does sixty years of banding tell us? Journal of Field

Ornithology 59: 171-182, 1988. R.W. Schreiber co-author.

Energetics of growth and maturation in sympatric passerines that fledge at different ages. The Auk 108: 34-41, 1991. M. Khubesrian and D.M. Larcheveque co-authors.

Daily allocation of time and energy by adult western bluebirds feeding nestlings. Condor 93: 598-611, 1991.

Energetic constraints to the distribution and abundance of the California gnatcatcher. Western Birds 29:413-420.

California gnatcatcher territorial behavior. Western Birds 29:242-257. K. Preston, M. Grishaver, E. Bailey, and D. King co-authors.

California gnatcatcher vocalization behavior. Western Birds 29:258-268. K. Preston and M. Grishaver co-authors.

Dispersal capabilities of the coastal California gnatcatcher: a landscape analysis of distribution data. Western Birds 29:351-360. E. Bailey co-author.

Is the California gnatcatcher a good umbrella species for habitat reserve design? Western Birds 29:453-467. S. Fleury and J. O'Leary co-authors.

Breeding behavior of the California gnatcatcher in the vicinity of Rancho San Diego, California. Western Birds 299-322. M. Grishaver and K. Preston, co-authors.

California Gnatcatcher – Dr. Mock contributed the species account in Partners-in-Flight conservation plan for Southern California shrubland habitats.

California Gnatcatcher – Dr. Mock contributed the species account in the *San Diego Bird Atlas*, authored by Phil Unitt in 2004.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 6 Rev: Applicant needs to provide a discussion of potential biological impacts from the use and discharge of water during construction and operation, specifically as it relates to the discharge of water into the proposed evaporation pond.

Response: Construction Phase

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared prior to construction of the site. This plan will be utilized at the site to control and minimize storm water during the construction of the facility. The plan will use best management practices such as stabilized construction entrances, silt fencing, berms, hay bales, and detention basins to control runoff from all construction areas. Implementation of a SWPPP will minimize biological impacts during construction.

Operational Phase

The project includes a lined evaporation pond for disposal of wastewater via atmospheric drying. The on-site, lined evaporation pond will be able to accommodate 30 acre-feet per year. The average wastewater generation rate that will require disposal is expected to be approximately 25gpm.

As the proposed on-site evaporation pond will be lined and water is not expected to pool there for long periods of time due to the wastewater generation and evaporation rates, it is unlikely that biological conditions suitable for plant growth or animal use will develop onsite.

No significant impacts to biological resources related to the use or discharge of water is expected during project construction or operation. As stated, implementation of a SWPPP will minimize biological impacts during construction.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 7 Rev: Applicant needs to include a discussion of whether or not any native fish and wildlife species with commercial or recreational value exist in the project region and whether they will be affected.

Response: No native fish or wildlife species with commercial or recreational value are expected to occur or be impacted by the implementation of the Midway project. The nearest hunting and fishing areas are the Tumey Hills BLM wilderness area (approximately 5 miles west of the project area), the Panoche Hills Ecological Reserve (approximately 14.5 miles northwest of the project area), the Little Panoche Reservoir Wildlife Area (approximately 15 miles northwest of the project area), and the Mendota Wildlife Area (approximately 10 miles east of the project site). Due to the disturbed nature of the project site, it is unlikely that it would be used as a nesting or breeding site for game bird or mammal species or as a wildlife corridor. Therefore, no impacts to native fish and/or wildlife species with commercial or recreational value is expected with project implementation.

TECHNICAL AREA: PROJECT OVERVIEW

Data Request 8 Rev: Please provide full-page color photographic reproduction depicting the visual appearance of the site prior to construction and a full-page color simulation of the site after construction. The AFC includes the necessary figures in half page format. Please provide Fig 5.13-2 and Fig 5.13-13 in a scaleable electronic format.

Response: Provided as attachments to this sheet, are the following full-page color figures:

- Figure 5.13-2 (A) – Architectural Rendering of the Project Site Prior to Construction

  Please note: Figure 5.13-2 was provided as an architectural rendering and was not developed from a photograph taken at the site. Therefore, Figure 5.13-2(A) is merely an aerial photograph of the site in an effort to show a related overhead view of existing conditions (site prior to construction) at the site.

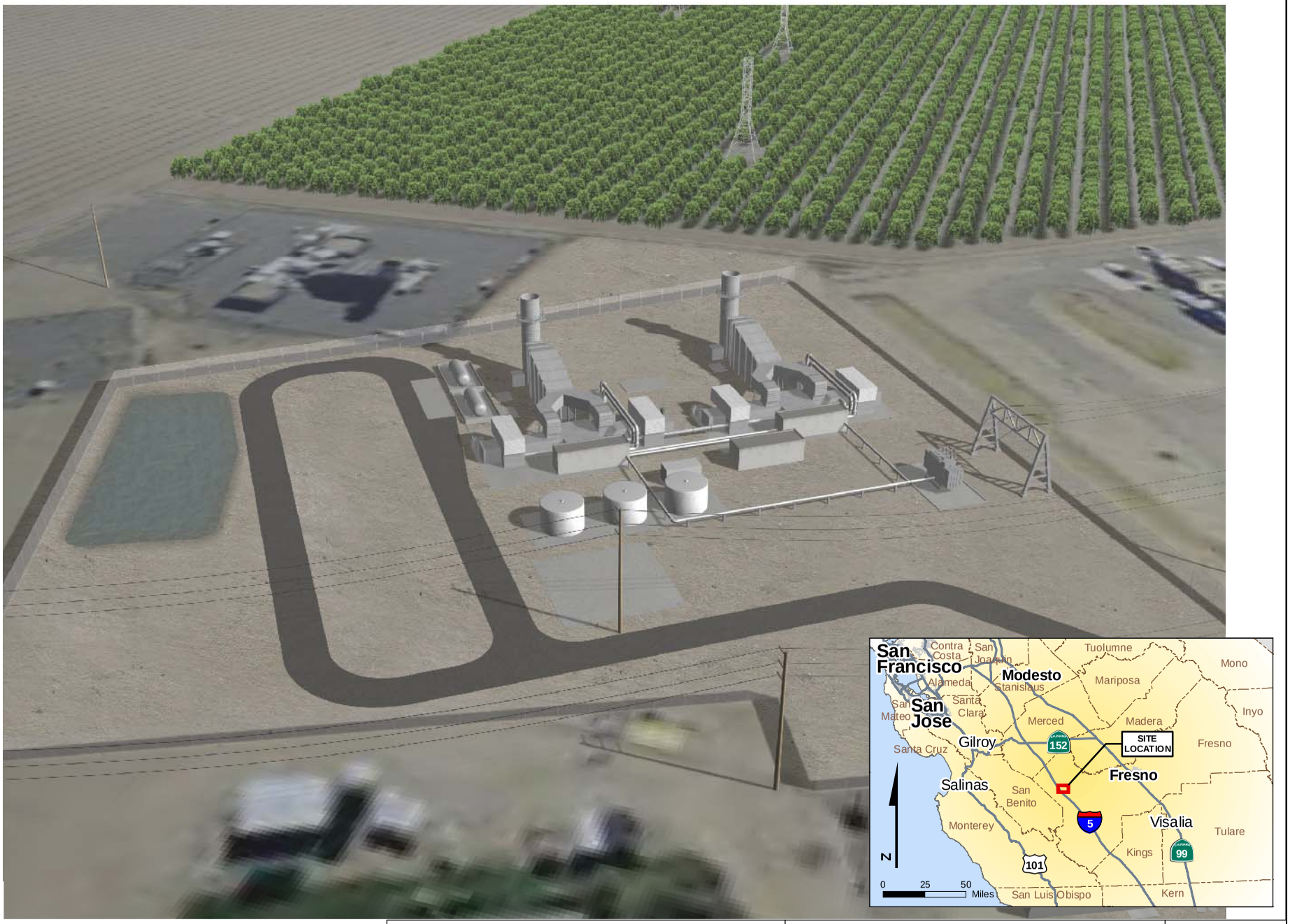
- Figure 5.13-2 (B) – Architectural Rendering of the Project Site After Construction

- Figure 5.13-13(A) – Existing View of Proposed Plant Site from KOP#1.

- Figure 5.13-13(B) – Simulated View of Proposed Plant Site from KOP#1.

G:\gis\projects\1577\276561130\mxd\visual_existing_site.mxd

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-2A	AERIAL VIEW OF PROJECT SITE PRIOR TO CONSTRUCTION	2006



STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-2B	ARCHITECTURAL RENDERING OF THE PROJECT SITE AFTER CONSTRUCTION	2006

G:\gis\projects\1577\27656130\mxd\visual_arch_rendering.mxd

Existing backyard view from one of five residences on West Panoche Road, just north of the existing substation*.

*This view is taken from the backyard of the closest of five attached residences along West Panoche Road, just east of the existing Panoche substation. This photo is meant to represent all five residential views as well as views from those traveling along West Panoche Road.

G:\gis\projects\157\2765\130\mxd\visual_kop_photo_1A.mxd

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-13A	EXISTING VIEW OF PROPOSED PLANT SITE FROM KOP #1	2006

Simulated backyard view from one of five residences on West Panoche Road, just north of the existing substation*.

*This view is taken from the backyard of the closest of five attached residences along West Panoche Road, just east of the existing Panoche substation. This photo is meant to represent all five residential views as well as views from those traveling along West Panoche Road.

G:\gis\projects\157\2\2765\6130\mxd\visual_kop_photo_1B.mxd

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-13B	SIMULATED VIEW OF PROPOSED PLANT SITE FROM KOP #1	2006

TECHNICAL AREA: PROJECT OVERVIEW

Data Request 10 Rev: Please provide a map depicting the existing and proposed transmission lines within one mile of the project site.

Response: The Project will interconnect to the 115kV bus at PG&E's Panoche Substation via the existing CalPeak Panoche generator tie line. The tie line connecting the existing CalPeak Panoche Plant to PG&E's system is already sized to carry the output of the Midway plant. Midway will construct a 300-foot generator tap line that will extend from the Midway site to a pole located just north of and perpendicular to the CalPeak Panoche site, to then extend from the pole to the point of interconnection (the existing CalPeak Panoche tie line).

The figures identified below are provided as attachments to this sheet. The Figures show the proposed transmission line connection from the Midway project site to the adjacent CalPeak Panoche site. Please also see Figure 3.4-1 Preliminary Plan provided in Section 3.0 of the project document (06-AFC-10).

- Figure A - Existing View Transmission Line Location
- Figure B - Simulated View of Transmission Lines

Existing backyard view from one of five residences on West Panoche Road, just north of the existing substation.*

*This view is taken from the backyard of the closest of five attached residences along West Panoche Road, just east of the existing Panoche substation.
This photo is meant to represent all five residential views as well as views from those travelling along West Panoche Road.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure A	EXISTING VIEW OF TRANSMISSION LINE LOCATION	2006

G:\gis\projects\1577\27656\130\mxd\visual_sim_transmission_line_location_a.mxd

Simulated backyard view from one of five residences on West Panoche Road, just north of the existing substation.*

*This view is taken from the backyard of the closest of five attached residences along West Panoche Road, just east of the existing Panoche substation.
This photo is meant to represent all five residential views as well as views from those travelling along West Panoche Road.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure B	SIMULATED VIEW OF TRANSMISSION LINES	2006

G:\gis\projects\1577\27656\130\mxd\visual_sim_transmission_line_location_b.mxd

TECHNICAL AREA: PROJECT OVERVIEW

Data Request 11 Rev: Please provide a full page photographic reproduction of the route for the proposed transmission line and a full page color simulation showing the proposed transmission line after reconductoring.

Response: The figures identified below are provided as attachments to Data Request 10, above. The Figures show the proposed transmission line connection from the Midway project site to the adjacent CalPeak Panoche site. The Midway project does not propose to connect directly to the PG&E substation.

- Figure A - Existing View Transmission Line Location
- Figure B - Simulated View of Transmission Lines

TECHNICAL AREA: RELIABILITY

Data Request 12 Rev: Describe the period required to demonstrate the reliability of the power plant.

Response: Reliable operation will be achieved upon the completion of the commissioning test. These tests are expected to take not more than approximately 70 hours of plant operating time. This equipment is pre-packed and tested prior to shipment to the site. Any deficiencies are corrected before the equipment is shipped to the site. Site testing is to verify correct field installation and fix any errors. Reliable operation will be proven before the plant achieves commercial operation.

The North American Electric Reliability Council (NERC) and the Western System Coordinating Council (WSCC) Reliability Criteria for Transmission System Planning, the Independent System Operator (ISO) and the PG&E Reliability Criteria, will be used in the evaluation of the interconnection of this facility to the transmission system. These criteria will also be utilized in the analysis to insure minimum criteria requirements are adhered to and project objectives are met. The ISO processes will be monitored throughout the transmission system evaluation to insure that any changes to the criteria are considered.

Construction will conclude with start-up and testing activities, which will continue until the entire facility is capable of reliable operation within permit requirements and good operating practice. All of the systems and subsystems in each unit will be tested and adjusted, first individually and then combined with others, before the project is deemed ready for startup.

The facility will be designed for an operating life of 30 years. Reliability and availability projections are based on this operating life. Operations and maintenance procedures will be consistent with industry standard practices to maintain the useful life status of the plant components.

TECHNICAL AREA: SOCIOECONOMICS

Data Request 13 Rev: Please provide a list of applicable local agencies with taxing powers and the most recent and projected revenues.

Response: The County of Fresno is the local agency with taxing powers. The total tax revenue for the County of Fresno for the July 2006 - June 2007 fiscal year is approximately $1,607,292,040.

TECHNICAL AREA: SOCIOECONOMICS

Data Request 14 Rev: Please provide County or MSA quantitative estimates for the availability of skilled workers by craft required for construction and operation of the project.

Response: According to John Hutson, representing the Building and Construction Trades Council of Fresno, Madera, Tulare, and Kings County, the available population within a daily commute distance will be adequate to support the required workforce for project construction. The Council has reviewed the estimated labor demands (Table 5.10-3), and is confident that the supply of workforce within a commuting distance is available for project needs. The available construction worker population exceeds the current need by 50%.

Construction is not expected to cause a significant impact to the local employment.

TABLE 5.10-3 (Revised)
LABOR PERSONNEL REQUIREMENTS BY MONTH

Months After Notice to Proceed												
	1	2	3	4	5	6	7	8	9	10		
Discipline	Construction Phase										Project Required Total	Total Available for Project*
Carpenters	4	10	10	12	10	2					48	48
Cement Masons	5	7	10	7							29	29
Electricians		6	6	12	15	15	15	15	5	2	91	91
Insulation Workers					10	10	10	10	10	4	54	54
Ironworkers (rebar	4	8	8	8	8	8					44	44
Laborers	5	5	16	16	16	10	10	10	6	6	100	100
Millwrights			6	8	8	8	6	4			40	40
Mech Equip Erection		6	16	10	10	10	10	10	10	2	84	84
Operating Engineers	2	2	4	4	4	4	4	4	4	2	30	30
Painters			2	6	6	6	6	6			32	32
Pipe fitters		6	6	16	16	20	20	20	16	6	126	126
Teamsters	1	1	1	2	2	2	2	2	1	1	15	15
Field Staff	5	5	5	5	5	5	5	5	5	5	50	50
Total Workforce	26	56	90	106	110	100	88	86	55	26	743	743

*Represents total available number of workers for the Midway project – matches required for the project

TECHNICAL AREA: SOCIOECONOMICS

Data Request 15 Rev: Please provide an estimate for locally purchased materials for the operation phase of the project.

Response: Estimated annual expenditures for locally purchased materials during operation of the Midway Project are approximately $100,000.

TECHNICAL AREA: TRAFFIC AND TRANSPORTATION

Data Request 17 Rev: Please provide a discussion of the transportation of hazardous materials during operation of the project, including the types, estimated quantities, estimated number of trips, anticipated routes, means of transportation, and any transportation hazards associated with such transport.

Response: The table below provides a description of the hazardous materials that will be delivered to and removed from the Midway Project site during normal operations over a one-year period. All transportation of hazardous materials will be provided by vendors or certified disposal companies, no plant personnel will transport any hazardous materials.

California Vehicle Code, Section 31303-31309, requires transporters of hazardous materials to use the shortest route possible. Midway would comply with this law by requiring that shippers/transporters of hazardous materials use the shortest route possible to and from the project site. The majority of disposal and delivery routes to and from the site are anticipated be along northbound/southbound I-5 and the short segment of West Panoche Road between the Midway site's service road and the I-5.

Use of West Panoche Road as a hazardous material transportation route as it continues east will be minimized to the extent feasible. California Vehicle Code, Section 34500 regulates the safe operation of vehicles, including those that are used for the transportation of hazardous materials. Midway would comply with this law by requiring that shippers of hazardous wastes are properly licensed by the DTSC and hazardous waste transport vehicles are in compliance with DTSC requirements.

ANNUAL MIDWAY PROJECT HAZARDOUS MATERIALS TRANSPORTATION

Type of Material	Quantity	Number of Trips	Anticipated Route	Means of Transportation
New Oil	660 gals	6	From Fresno	Vendor Delivery
RO Unit Chemicals	400 gals	4	From Fresno	Vendor Delivery
Compressed Gases	3,456 cubic feet - 24 Cylinders	4	From Los Angeles	Vendor Delivery
Ammonia	18,000 Gallons	3	From Los Angeles	Vendor Delivery
Waste Oil	300 gallons	3	To Fresno	Certified Disposal Company
Used Oil Filters	600 lbs	3	To Fresno	Certified Disposal Company
Universal Waste	600 lbs	3	To Fresno	Certified Disposal Company
Waste Water	24,000 gals	6	To Los Angeles	Certified Disposal Company

TECHNICAL AREA: TRAFFIC AND TRANSPORTATION

Data Request 18 Rev: Please provide a schedule indicating the steps the applicant has taken or plans to take to obtain an encroachment permits from Fresno County.

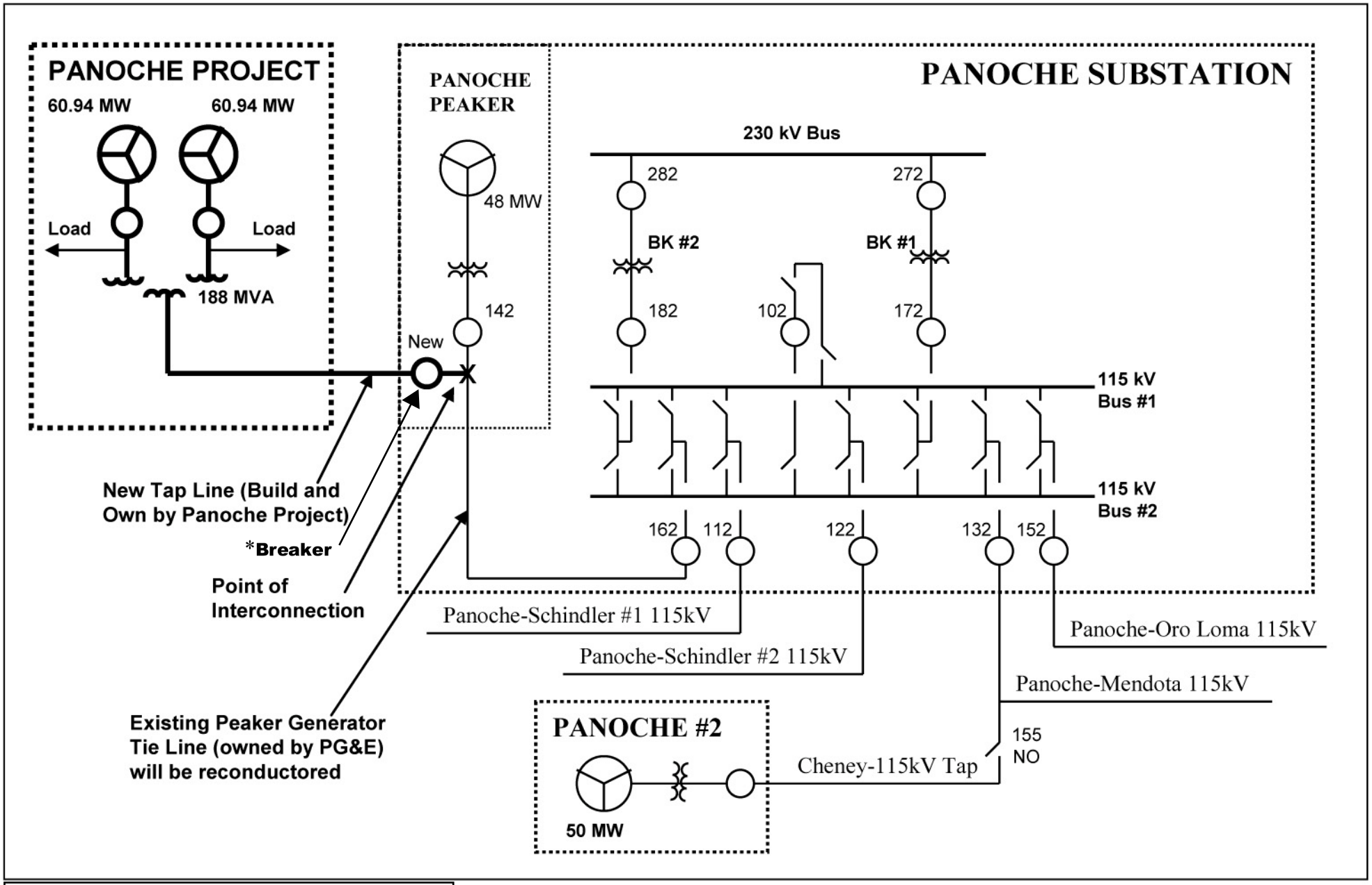
Response: According to the County of Fresno Roads Maintenance Department, and their preliminary review of the Midway project design, it is anticipated that an encroachment permit for the construction and installation of the proposed gas line extension will not be required. The County of Fresno Roads Maintenance Department requires encroachment permits for projects proposed to be constructed within existing right-of-ways and/or road easements. The gas line extension is not proposed across or within any right-of-ways and/or road easements. Please refer to Figure 3.4-1, Preliminary Plan, provided in Section 3.0 of the project document (06-AFC-10).

TECHNICAL AREA: TRANSMISSION SYSTEM ENGINEERING

Data Request 19 Rev: Please resubmit Single Line Diagrams (Figure 3.6-1) for the Panoche Substation. The current figure doesn't contain the equipment ratings for breakers, and does not include a disconnect switches.

Response: The proposed Midway project does not include disconnect switches. A description of the breaker equipment ratings is provided below:

Free standing SF6 gas power outdoor circuit breaker, 121 kV, 1200 amps continuous rating, 40 kA, maximum interrupting capability, three cycle interrupting time, weather proof control cabinet, total of two sets of current transformers per bushing, with a ratio of MR 1200:5, accuracy of C800, 125 volt DC control circuits, set of instrumentation to monitor SF6 gas pressure and provide low pressure alarm, gas fill valve per phase to compete filling the breaker with SF6, mechanical operation counter, lightweight air compressor to provide storage air pressure for five closing operations, air storage tank, pneumatic air condensate drain valve, set of cabinet heaters to prevent condensation, ground pads diagonally opposite on the breaker frame.



*Free standing SF6 gas power outdoor circuit breaker, 121 kV, 1200 amps continuous rating, 40 kA, maximum interrupting capability, three cycle interrupting time, weather proof control cabinet, total of two sets of current transformers per bushing, with a ratio of MR 1200:5, accuracy of C800, 125 volt DC control circuits, set of instrumentation to monitor SF6 gas pressure and provide low pressure alarm, gas fill valve per phase to compete filling the breaker with SF6, mechanical operation counter, lightweight air compressor to provide storage air pressure for five closing operations, air storage tank, pneumatic air condensate drain valve, set of cabinet heaters to prevent condensation, ground pads diagonally opposite on the breaker frame.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	**Figure 3.6-1** CONCEPTUAL INTERCONNECTION ONE LINE DIAGRAM	2006

TECHNICAL AREA: VISUAL RESOURCES

Data Request 20 Rev: Provide full-page color photographic reproductions of the existing site and full-page color simulations including electronic files.

Response: Provided as attachments to this sheet are the following figures:

- Full-page color photographic reproductions of the existing site

  Figure 5.13-14(A) - Existing View of Proposed Plant Site from KOP #2

  Figure 5.13-15(A) - Existing view of Proposed Plant Site from KOP #3

- Full-page color simulations of the site after construction

  Figure 5.13-14(B) - Simulated View of Proposed Plant Site from KOP #2

  Figure 5.13-15(B) - Simulated View of Proposed Plant Site from KOP #3

Additionally, electronic files of all four (4) figures are provided.

Existing front yard view from one of three residences on West Panoche Road, just west of the proposed project site*.

*This view is taken from the only unscreened residence of three across the street from the proposed Project site and is meant to represent all three residential views as well as views from those traveling along West Panoche Road.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-14A	EXISTING VIEW OF PROPOSED PLANT SITE FROM KOP #2	2006

G:\gis\projects\1577\27656\130\mxd\visual_kop_photo_2A.mxd

Existing traveler view from the overpass of Interstate 5 and West Panoche Road*.

*The entire length of Interstate 5 within the Fresno County limits is considered by the County a Designated Scenic Highway. This photo location is meant to represent "worst-case" views (e.g., elevated, unscreened, closest proximity views) from Interstate 5. It should be noted that there are only pockets of highway that the topography raises to a point where you can see the project site, and even fewer spots where there is no vegetative screening.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-15A	EXISTING VIEW OF PROPOSED PLANT SITE FROM KOP #3	2006

G:\gis\projects\1577\27656\130\mxd\visual_kop_photo_3A.mxd

Simulated front yard view from one of three residences on West Panoche Road, just west of the proposed project site*.

*This view is taken from the only unscreened residence of three across the street from the proposed Project site and is meant to represent all three residential views as well as views from those traveling along West Panoche Road.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-14B	SIMULATED VIEW OF PROPOSED PLANT SITE FROM KOP #2	2006

G:\gis\projects\1577\27656\130\mxd\visual_kop_photo_2B.mxd

Simulated traveler view from the overpass of Interstate 5 and West Panoche Road*.

*The entire length of Interstate 5 within the Fresno County limits is considered by the County a Designated Scenic Highway. This photo location is meant to represent "worst-case" views (e.g., elevated, unscreened, closest proximity views) from Interstate 5. It should be noted that there are only pockets of highway that the topography raises to a point where you can see the project site, and even fewer spots where there is no vegetative screening.

STARWOOD POWER - MIDWAY, LLC PEAKING PROJECT	Figure 5.13-15B	SIMULATED VIEW OF PROPOSED PLANT SITE FROM KOP #3	2006

G:\gis\projects\1577\27656\130\mxd\visual_kop_photo_3B.mxd