Proposal

Environmental Impact Report
Lompoc Wind Energy Project

Submitted to:

County of Santa Barbara
Planning and Development Department
Energy Division

Submitted by:

CH2MHILL

Originally Submitted on July 21, 2006
Revisions Accepted on July 28, 2006

ES072006006SCO3475\1\B1.ZZ

CH2M HILL
610 Anacapa Street
Santa Barbara, CA 93101
Tel 805.568.0650
Fax 714.424.2083

CH2MHILL

July 21, 2006

County of Santa Barbara
Planning and Development Department
Energy Division
Attn: John Day, Planner
123 East Anapamu Street
Santa Barbara, CA 93101-2058

Subject: Proposal – Environmental Impact Report for the Lompoc Wind Energy Project

Dear Mr. Day:

It is with great pleasure that CH2M HILL submits this proposal to County of Santa Barbara (County) Planning and Development Department, Energy Division, for preparation of an Environmental Impact Report (EIR) for the Lompoc Wind Energy Project. We thank you for this opportunity to present the qualifications, insights, and approaches that make up our response. As shown throughout this submittal, our team has the technical expertise, local resources, and relevant experience in preparing EIRs throughout California.

Our team is very well qualified to serve on this project. They have in-depth understanding of wind energy projects and the environmental aspects of power line construction and operation, including CEQA processes and the Santa Barbara County policy and environmental framework.

As requested in the Request for Proposal (RFP), enclosed are five copies of the CH2M HILL team's proposal. Also included are five copies of our fee proposal is a separate sealed envelope. We are committed to delivering a high quality product at a competitive price, and will work hard to demonstrate our commitment to quality and efficiency.

The contents of our submittal, including the not-to-exceed cost plus contingency highlighted in our cost proposal, will remain effective for a period of not less than sixty (60) days from July 21, 2006. We have reviewed the County's Standard Contract provisions, and CH2M HILL has some minor changes to the terms and conditions that we will discuss with the County, should we be selected for award.

CH2M HILL acknowledges that;

> "Neither CH2M HILL, nor any member of the project team, has been hired by the applicant (the *applicant, agents and consultants hired by the applicant*), to assist in the preparation of material directly related to any component of the proposed project or related projects under study in the EIR. No member of the contractors' team has a financial gain or an interest in the final outcome of the project."

We look forward to the prospect of serving the County and are fully committed to proceed without delay. If you have any questions, Jennifer Scholl, our team's proposed Project Manager, is the designated contact responsible for this submittal. She can be reached at (805) 568-0650, ext: 374 or by e-mail at Jennifer.Scholl@ch2m.com.

Most sincerely,

John W Caldwell

John Caldwell
Vice President

Jennifer Scholl

Jennifer Scholl
Project Manager

Contents

Section 1

Introduction

CH2M HILL appreciates the opportunity to submit this proposal for the preparation of an Environmental Impact Report (EIR) for the Lompoc Wind Energy Project. Our team is able to apply its considerable experience in all phases of wind energy and power line development to this project, allowing a detailed and thoughtful analysis that meets regulatory requirements within the defined schedule. Our team includes local staff filling key roles who, not only understand Santa Barbara County (County) policies, issues and procedures, but are committed to exceeding the County's expectations through responsive professional service.

There are several compelling reasons for the County to select CH2M HILL for this important project:

- Considerable team experience in wind energy and transmission/power line development and California Environmental Quality Act (CEQA) compliance and document preparation – *We understand key issues for this project and have prior experience in evaluating them.*
- Exceptional local project manager with unique insight and understanding of the County's EIR process and ability to interpret County policies – *There will be no project management learning curve. A project manager already familiar with the County's processes and policies requiring no adjustment and learning that could impede timely progress.*
- A project manager with recent experience coordinating with Vandenberg Air Force Base (VAFB) Environmental Flight (30th Space Wing) – *A clear understanding of the potential concerns of VAFB will be important for assessing potential project constraints imposed by VAFB missions.*
- A Principal-in-Charge and Senior Consultants who are professionally regarded as experts in the assessment of environmental impacts from wind energy and power line projects – *Our team will benefit from their technical oversight in developing the project description, assessing impacts, and preparing a document that is compliant with CEQA and County of Santa Barbara guidelines, plans, and policies.*
- Extensive experience in preparing complex environmental review documents for public agencies – *our team knows the importance of preparing third party EIRs.*
- Outstanding technical team supplemented by specialty subcontractors in visual resources, avian collisions, and Gaviota tarplant – *We have the appropriate team resources to prepare a thorough, technically defensible EIR.*
- Access to Geographic Information System (GIS) resources that allow us to efficiently manage data to conduct impact assessments and develop maps and figures that can be used for depicting project impacts as well as public presentations – *We have extensive GIS resources throughout California.*
- Unparalleled project delivery system that emphasizes responsiveness, technical accuracy, quality and thoughtful management of change – *The County can rest assured that we will deliver a highly responsive team and a quality project with no surprises.*
- A full service office in downtown Santa Barbara – *The close proximity of our office to the County Administration Building/Planning and Development Department will allow for efficient communication and make regular County/EIR Consultant meetings cost effective.*

Project Understanding

The objective of this project is to construct a wind energy generation facility on private agricultural properties. Between 60 and 80 wind turbine generators would be constructed, ranging in height from 315-490 feet. Other project components include onsite gravel access roads and improvement of existing farm roads, an operations and maintenance building, a concrete batch plant, a new onsite electrical substation, electrical lines, a staging area, and other ancillary onsite facilities. Additionally, a new 115 kV power line would be constructed by PG&E from the project site to the southeast corner of Lompoc, along with PG&E system upgrades needed to accommodate the newly generated electrical power. Amendments to Santa Barbara County's Inland Zoning Ordinance provisions pertaining to Height and Ridgeline and Hillside Development Guidelines would be required. Project construction would occur in 2007-2008, and the operational life of the project would be approximately 30 years.

General Approach

The EIR will discuss the environmental impacts of constructing, operating, and decommissioning the project, which will vary depending on the resource being evaluated. All impacts will be assessed through comparison to the County's thresholds of significance. The air quality analysis also will rely on the Santa Barbara County Air Pollution Control District's thresholds of significance. Cumulative impacts will be identified for each resource that would be affected by the project; the projects to be included in the cumulative impact analysis will be determined in consultation with County staff. Mitigation measures will be feasible, specific, and enforceable and will be written in the County's standard format. The applicant's proposed mitigation measures will be reviewed to determine whether they conform to this format and that they meet the County's requirement to mitigate impacts to acceptable levels. Alternatives that can reduce project impacts will be evaluated, as will short-term versus long-term impacts, the project's consistency with relevant local, state, and federal policies, and other required CEQA sections, such as growth inducement. This discussion will focus on the project's potential to remove an obstacle to population growth, as well as PG&E's mandate to provide a greater percentage of its electricity from renewable sources, through the provision of enough electricity to power over 30,000 residences.

CH2M HILL recognizes that considerable effort has gone into describing existing conditions, potential impacts, and mitigation measures, and we will use this information to the extent possible. Team members will provide an independent evaluation of this documentation and will supplement it as needed to ensure that the EIR provides an accurate and thorough analysis. Because our team has specialized knowledge of wind energy developments along with Santa Barbara County issues and expectations, we will be able to focus quickly on the issues that matter the most, allowing us to prepare the EIR efficiently and cost-effectively, while adhering to the project schedule. CH2M HILL also recognizes that maintaining the schedule requires the successful coordination of, and communication between all members of the project team, including County staff. Meeting milestones requires timely submittals from all team members, including CH2M HILL, our subconsultants, the County, and the applicant, as the project schedule requires. Our approach is one of continuous coordination to ensure all team members have the needed information about the project and that the County is kept informed of our progress and any issues that may arise. Good communication will reduce unnecessary work and minimize delays.

Team Organization

We have assembled a project team that offers the County the expertise to successfully complete the EIR for the Lompoc Wind Energy Project. CH2M HILL will be the prime consultant with overall responsibility for executing and delivering a successful project.

All of the firms and individuals on our team have worked with the County or on similar projects to provide similar services. Our team organization, including firms and overall responsibilities of the proposed team are summarized in Exhibit 1-1.

EXHIBIT 1-1
Proposed Team Members and Responsibilities

CH2M HILL	
■ Project Management	■ Transportation/Circulation
■ Cost Estimating	■ Noise
■ Final Report	■ Air Quality
■ Quality Assurance	■ Land Use
■ Zone of Visual Influence	■ Agriculture
■ Biological Resources	■ Energy/Electric Utilities
■ Archeological/Paleontological	■ Fire Protection and Emergency Services
■ Geology/Soils	■ Risk of Accidents/Hazardous Materials/Safety
■ Water Resources	

Subconsultants		
Estep Environmental Consulting	**Tanowitz Academic & Biological Consulting**	**Wallace Group (Andrew Merriam)**
■ Avian Collisions	■ Gaviota Tarplant	■ Aesthetic Visual Resources

Section 2

Qualifications

This section provides an overview of the qualifications of CH2M HILL and our subcontractors, Andrew Merriam to lead our visual resources assessment, Barry Tanowitz to support our assessment of impacts to Gaviota tarplant populations, and Jim Estep to access avian collision impacts, including an overview of capabilities, history, organizational structure/top management, and recent experience.

CH2M HILL

Capabilities

CH2M HILL is a global leader in full-service environmental, engineering, construction, operations, and related services, and recently was identified as the top environmental firm by *Engineering News-Record*. CH2M HILL's commitment to providing environmental services is reflected in Chief Executive Ralph Peterson's comments upon receiving this recognition:

> "*This level of recognition for CH2M HILL is a result of the global leadership role the firm has taken to implement innovative solutions for our clients, while focusing heavily on environmental sustainment and protection. This ranking is a direct reflection of our commitment to improve the world's environment over the last six decades and attract the best minds who really want to make a difference. Certainly, being recognized as number one is an honor, but helping our customers and the communities we serve improve our environment is what really makes us get up in the morning."*

CH2M HILL has over 18,000 professionals in regional offices worldwide, including over 300 environmental professionals in Santa Barbara and other California offices. CH2M HILL has grown to this size through steady repeat business with our base of clients - more than 75 percent of our revenue comes from repeat clients year to year. We believe this fact attests to our commitment to service, and the high technical quality of our work.

CH2M HILL's work is concentrated in the areas of energy, environment, transportation, communications, and industrial facilities and provides fast-track environmental, planning, and engineering services to support siting, environmental documentation, and licensing/permitting for wind energy and transmission/ power line projects. These services range from initial fatal-flaw analyses, engineering, geotechnical analyses, environmental impact studies, permit applications, construction monitoring, and compliance inspections. Our recent experience with wind energy and power lines is described in this section. Additionally, our proposed management team has considerable personal experience working on EIRs in Santa Barbara County, which is detailed in Section 3, Personnel.

Brief History

CH2M HILL was founded in Corvallis, Oregon in 1946 as a professional partnership of four men—Cornell, Howland, Hayes, and Merryfield (CH2M). In 1971, the original firm merged with Clair A. Hill & Associates to become CH2M HILL. Initially, the firm focused on water and wastewater, but throughout the 1970s and 1980s, CH2M HILL grew its offerings into transportation, environmental, energy, and industrial clients.

Organizational Structure/Management

CH2M HILL is headquartered in Denver, Colorado, and is led by Ralph Peterson, Chairman of the Board and Chief Executive Officer and Lee McIntire, President and Chief Operating Officer. CH2M HILL is entirely employee-owned, the benefits of which include shared ownership and accountability, an ability to attract the brightest and best employees, higher employee retention, and personal investment in job performance—which ultimately enable us to provide our clients the best value. CH2M HILL is composed of a family of companies that includes CH2M HILL Inc. (INC) (Federal ID No. 59-0918189), a U.S. company providing complete program management, planning, engineering design, technology, construction, financing and project development services to private industry and public sector clients. INC includes three business groups that focus on client needs: Energy, Environment & Systems; Water; and Transportation. Our proposed team is composed of INC employees; and our offices are managed on a broad regional basis and interact seamlessly across business groups to share staff and project data. Offices are electronically networked through our wide-area network, local-area network, Internet, and Intranet, allowing us to provide efficient, cost-effective project delivery. Use of these tools allows us to draw support from our most qualified staff.

Recent Experience

CH2M HILL has extensive experience in assessing the environmental impacts of electric power generation and transmission projects, including wind energy generation projects. Our engineering and geotechnical work to support wind energy projects provides us with a full understanding of how wind energy projects operate, which in turn helps us understand environmental impacts. This experience embraces both project proponent and regulatory agency perspectives. We have prepared federal and state environmental compliance documentation for proposed projects throughout the western states as well as provided site assessment and pre-development services for wind energy project proponents.

Following are descriptions of selected projects that best represent CH2M HILL understanding of wind energy and power line projects as well as our environmental assessment capabilities in the areas of wind energy generation, electrical generation plant siting, and electrical transmission line siting.

Wind Energy Generation

Stateline Wind Project, FPL Energy, Inc., Oregon/Washington

FPL Energy (FPLE), the largest developer/operator of wind energy facilities in the United States, hired CH2M HILL to assist with the permitting and site civil design of the Stateline Wind Project. The Stateline project currently consists of 454 turbines generating 300 megawatts (MW) of electricity. For each of several phases of the project, CH2M HILL provided development support services to FPLE, including the following:

Permitting – was complicated by the fact that Stateline spans two states, each with its own regulatory process. In Washington, CH2M HILL prepared a State Environmental Policy Act Environmental Impact Statement (EIS). In Oregon, the firm completed the Energy Facility Site Certificate Application. In addition to the master environmental permits, CH2M HILL prepared U.S. Army Corps of Engineers wetlands and waterways permits, Federal Aviation Administration (FAA) obstruction review and lighting requirements, stormwater permits, building permits, and multiple access permits with counties and other easement holders.

Direct Relevance to Lompoc Wind Energy Project

- ▲ Transmission and roadway upgrades
- ▲ Existing rangeland setting
- ▲ Special status plant and animal species
- ▲ Full range of environmental resource analyses

Environmental Analysis – augmented the geotechnical data with biological, botanical, visual, land use, and cultural resource analyses to determine optimal locations for turbines, substations, and access roads. Individual turbine sites were also chosen based on results of radar studies that tracked the nighttime migration of birds and bats during the spring.

Stakeholder Relations – negotiated with stakeholders, including the Confederated Tribes of the Umatilla Indian Reservation, environmental groups, government officials, landowners, and citizens. To gain support from the Blue Mountain Audubon Society, CH2M HILL crafted an agreement that addressed concerns about potential impacts to migratory birds. Finally, CH2M HILL helped to develop a mitigation plan that, for the first time in Oregon, allowed construction of an energy facility within the habitat of an endangered species.

Geotechnical Analysis – geotechnical analysis on steep and difficult terrain. Accurate geotechnical data were critical to siting the 20-story high turbine towers safely and ensuring the turbines' ability to withstand hurricane-speed winds.

Site/Civil Design – siting and civil design for 20 miles of roads over steep slopes, accommodating farmers' land use needs and sensitive environmental areas, while providing cost-effective access to the project.

CEQA Documentation and Local Permitting for New Wind Energy Generation Facility, Confidential Client, Southern California

CH2M HILL prepared preliminary studies for cultural resources, biological resources, and visual resources to support a conditional use permit application and preparation of an EIR for the Fairmont Wind Energy Project. The facility would have generation capacity in excess of 100 MWs and would be located on 2,800 acres with complex topography in Los Angeles County. The cultural resources evaluation included field reconnaissance in a highly archaeologically sensitive area. As part of the biological resources evaluation, multi-year and multi-season avian surveys were conducted. Visual resources support included a Zone of Visual Influence (ZVI) analysis, identification of key observation points, and preparation of visual simulations from eight locations. Additionally, CH2M HILL closely supported the project proponent with extensive agency consultation, including local environmental groups, state agencies, and local jurisdictions, and worked closely with personnel out of Edwards Air Force Base to ensure that the project did not conflict with U.S. military air space and flight training needs.

Visual simulation prepared by CH2M HILL of a portion of the proposed wind farm project in Southern California

Direct Relevance to Lompoc Wind Energy Project

- ▲ Similar project acreage and turbine number
- ▲ Full range of environmental resource analysis
- ▲ Transmission line installation and upgrade
- ▲ Controversial and politically sensitive project
- ▲ Public agency coordination

Leaning Juniper Wind Project, PPM Energy, Oregon

PPM Energy proposed a 103.5 MW wind generation project in north-central Oregon (Gilliam County). CH2M HILL assisted PPM Energy in finalizing the layout of turbines, substation, and related facilities; developing the Conditional Use Permit (CUP) Application; and coordinating public meetings. Studies conducted in support of the CUP application included avian use review, rare plant surveys, threatened and endangered animal species surveys, archaeological surveys, land use investigation, and wetland surveys.

Permitting assistance included developing permit applications through negotiations with the Federal Aviation Administration, U.S. Army Corps of Engineers, Oregon Department of Environmental Quality, and Oregon Department of State Lands while coordinating with various wildlife agencies. Engineering support included maintaining the master site layout and design drawing files, assisting in the final turbine locations, and developing drawings for permit applications.

Wild Horse Wind Project, Zilkha Renewable Energy, Washington

Zilkha Renewable Energy proposed construction of the Wild Horse Wind Project on high open ridge tops in Central Washington's Kittitas Valley. The project will consist of up to 136 wind turbine generators with an installed capacity of up to 312 MWs, and associated transmission lines, roads, a substation, and an operation and maintenance facility.

CH2M HILL assisted Zilkha with environmental and engineering studies to produce the "Application for Site Certification" for Washington's Energy Facility Site Evaluation Council (EFSEC) and our staff served as expert witnesses in the EFSEC proceedings. We also worked with Zilkha to support the development of a Draft and Final EIS by EFSEC's third party consultant.

A team of CH2M HILL's environmental and engineering wind project experts completed a comprehensive impact analysis for aesthetic values, noise, land use, traffic and transportation, geology and soils, and socioeconomics.

Vansycle Wind Project, FPL Energy, Inc., Oregon

CH2M HILL conducted the environmental analysis, permitting, and civil design to support development of the Vansycle wind project for FPL Energy. The 24.9 MW wind generation facility, the first such project to be developed in the state, is located on Vansycle Ridge, north of Pendleton, Oregon. Output from the facility is sold to Portland General Electric, the largest utility in the state.

CH2M HILL conducted wildlife, botanical, cultural resource, and land use analyses; prepared the application for a conditional use permit from Umatilla County; and prepared associated environmental permits including a National Pollutant Discharge Elimination System (NPDES) stormwater permit, a FAA notice of proposed construction, and a county zoning permit.

CH2M HILL secured additional necessary permits, testified at public hearings, and supported public involvement for the project.

Klondike Wind Project, Northwestern Wind Power, Oregon and Washington

Northwestern Wind Power, LLC (NWP) installed a 25-MW wind energy pilot project near Sherman County, Oregon, to generate electricity for two aluminum smelting facilities in the states of Washington and Oregon.

CH2M HILL provided permitting assistance to NWP at the local and state levels. Services included archaeological, visual impact, transportation, and land-use studies as well as an investigation of bird and bat migratory habits and mortality. CH2M HILL prepared a Conditional Use Permit Application and an Oregon Energy Facility Siting Certificate for the client.

Maiden Springs Wind Project, Bonneville Power Administration, Sunnyside, Washington

CH2M HILL assisted the Bonneville Power Administration (BPA) in the preparation of a Draft EIS for the Maiden Springs wind project, whose output BPA plans to acquire. The project is located in the Rattlesnake Hills near Sunnyside, Washington. CH2M HILL had the lead responsibility to prepare a joint federal National Environmental Policy Act (NEPA) and Washington State Environmental Policy Act (SEPA) EIS, which required analyses of the project's impacts to native shrub-steppe habitat, avian and bat mortality, cultural resources, visual resources, land use, and transportation.

Electric Transmission Lines

Jefferson-Martin 230 kV Transmission Line, Pacific Gas & Electric, San Francisco, California

CH2M HILL prepared environmental documentation and provided related consulting services for submittal of a Proponent's Environmental Assessment (PEA) to the California Public Utilities Commission (CPUC) in support of an application for a Certificate of Public Convenience and Necessity on an approximately 30-mile 60/230kV transmission line installation and upgrade in the San Francisco Bay Area.

The proposed project will upgrade an existing, approximately 14-mile overhead transmission line and the installation of a new line underground for approximately 14 miles. The project also includes modifications to substations, tap structures, and installation of a new transition station.

> "*Your significant contribution was instrumental in PG&E meeting the important CPCN milestone.*"
>
> ***Linda Chinn***
> ***Pacific Gas & Electric***

Over a three-month period, CH2M HILL performed general, biological, and cultural field surveys and prepared a detailed environmental analysis and PEA. (The level of analysis for a PEA is equivalent to an EIR.) The CH2M HILL team coordinated with public agencies on this controversial and politically sensitive project to prepare information for the client that would assist in their decision-making for the preferred alternative. We worked closely with PG&E's internal environmental specialists and sub-consultants, legal counsel and legal counsel consultant, and engineers and the engineering consultant to obtain necessary information about the project and to assist PG&E in finalizing the project description, purpose and need, and environmental analysis in a very short timeframe.

CH2M HILL analyzed the effects of the upgrade of the existing overhead transmission line in a largely residential and protected natural resource setting in southern San Mateo County. We also analyzed the effects of the installation of a new underground line in the densely populated and urbanized northern San Mateo County.

As part of the analysis and production of the PEA, CH2M HILL worked closely with PG&E and the engineering consultant to consider the most environmentally sensitive construction and access methods for the project site.

Environmental Impact Report, Avenue 42 230 kV Transmission Line Project, Imperial Irrigation District, California

CH2M HILL prepared an Environmental Impact Report (EIR) for the Imperial Irrigation District (IID) to evaluate the environmental impacts of 2.5 miles of new 230-kV transmission line and a new substation near Indio, California. The EIR was prepared to evaluate the environmental impacts of the proposed project under CEQA.

The EIR contained a complete environmental analysis of the proposed project. Resource areas of particular concern included land use, biological and cultural resources, and visual resources.

North Area Right-of-Way, Environmental Assessment, Western Area Power Administration, California

CH2M HILL is conducting biological and cultural resources inventories of Western Area Power Administration's (WAPA) North Area facilities in Northern California. These surveys will be incorporated into an Environmental Assessment prepared under the NEPA for WAPA's operation and maintenance procedures along the rights-of-way. These procedures include vegetation management for fire control.

CH2M HILL's role in the project is to conduct cultural resource and biological resource habitat inventories of 770 miles of 230 kV and 500 kV transmission line right-of-way and more than 100 miles of access roads, and to enter this data into a Geographical Information System (GIS) that includes WAPA's infrastructure and environmental resources. Our field teams are collecting cultural and biological resources data as well as infrastructure data and mapping locations using high-precision Global Positioning System (GPS) equipment. This technique efficiently locates resource data with a lower error rate than manual transcription of field notes.

WAPA's North Area system consists of 432 miles of 230 kV and 500 kV lines and runs between Malin, Oregon and the Sacramento, California area. The project also includes surveys and GPS data collection for the California-Oregon Transmission Project, a 340-mile-long 500 kV transmission line between Southern Oregon and the Tesla Substation in Central California.

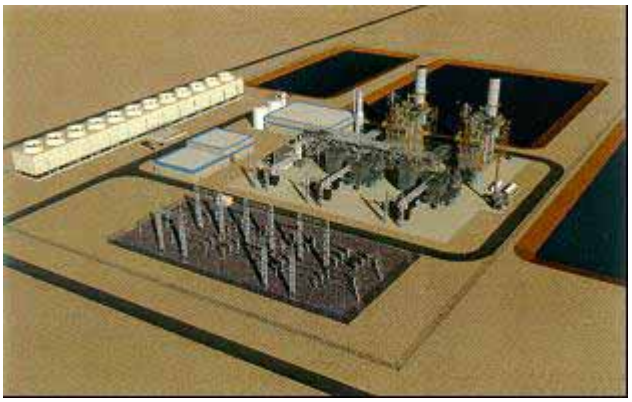
CEQA Documents and Permitting, Long Valley – Haiwee 34.5 kV Power Line: Cartago to Los Angeles Aqueduct Project, LADWP – Owens Valley Electric Service

The purpose of this ongoing task is to assist Los Angeles Department of Water and Power - Owens Valley Electric Service (LADWP–OVES) in the preparation of CEQA documentation and applications for permit(s) for the maintenance/minor upgrade of an existing power alignment and the installation of a second power alignment to ensure that adequate, reliable, and flexible power service is provided to the southern Owens Valley. A new power line will be installed approximately 12 feet from the existing alignment with wooden pole spacing similar to and nearly mirroring the existing and adjacent power alignment.

CH2M HILL has undertaken agency coordination to facilitate adoption of CEQA documentation and permit(s) approval, including coordination with agencies to ascertain strategies to obtain approvals and their ensuing conditions. Continued coordination is taking place with Ridgecrest and Bishop Field Offices of the U. S. Bureau of Land Management (BLM); California State Land Commission (CSLC); California Department of Fish and Game; Regional Water Quality Control Board, Lahontan Region; U.S. Army Corps of Engineers; and other interested parties.

Electric Generation Plants

Teayawa Energy Center, Torres-Martinez Reservation, Riverside County, California



CH2M HILL completed a joint Draft EIS/EIR and Final EIS for a new 600-MW natural-gas-fired power plant located on Indian Trust land in Southern California. The plant will contain two gas turbines, one steam turbine, cooling towers, a switchyard, and associated ancillary equipment.

Regulatory Compliance – CH2M HILL supported the client in the definition of NEPA significance criteria for each impact category. In many cases, existing regulatory or legislative standards served as the significance criteria concurrent with the regulatory framework. Identifiable, quantifiable, qualitative, and performance-based standards were used as the primary basis for determining impact significance standards.

"I would like to personally extend my thanks for the extraordinary efforts that you made to produce the…Draft EIR/EIS on an extremely tight schedule"

Ralph Hollenbacher. Project Manager
Calpine Corporation

Environmental Analysis – CH2M HILL also conducted analyses and field studies to support preparation of an environmental document to satisfy requirements of CEQA, NEPA, and the rigorous California Energy Commission process, to maintain the project schedule in the event that the CEC asserted jurisdiction over the project (ultimately, it did not do so). Seventeen resource areas were exhaustively evaluated in the Draft EIS/EIR, including land use; water resources; geology, soils, and geologic hazards; agricultural resources; biological resources; cultural resources; paleontological resources; mineral resources; traffic and transportation; noise; air quality; public health and environmental hazards; public services and utilities; hazardous material, hazardous waste handling, and worker safety; socioeconomics and environmental justice; Indian trust assets; and visual resources. The Final EIS was successfully completed in 2002.

Cosumnes Power Project, Sacramento Municipal Utility District, California

The Sacramento Municipal Utility District (SMUD) proposed to build a two-phase 1,000-MW combined-cycle power plant on buffer lands near the decommissioned Rancho Seco Nuclear Plant. CH2M HILL prepared an Application for Certification (AFC) for the proposed plant, for submission to the California Energy Commission (CEC).

"Your hard work is clearly evident by your attention to the data requests. I'm impressed by your vast knowledge of so many topics and by your coordination of all the activities and details."

Licensing Project Manager
Sacramento Municipal Utility District

The proposed project is located on a 30-acre parcel that is part of 2,480 acres owned by SMUD at the Rancho Seco site. The project will be constructed in two 500-MW phases. In addition to the plant site, the Application for Certification (AFC) required analysis of 26 miles of new natural gas supply pipeline. This line crosses the Cosumnes River and several creeks. The project also included a 0.4-mile electrical transmission line to connect the new plant to the Rancho Seco switchyard, and a new 0.4-mile-long supply water pipeline.

CH2M HILL prepared the AFC, and oversaw the work of the preliminary engineering design subcontractor, the air quality subcontractor, and subcontractors for other technical specialties needed for the AFC. CH2M HILL provided strong technical support to SMUD to resolve key environmental issues that were the subject of the greatest scrutiny during the AFC process. These were: water supply (the contentious issue of consumptive use of high-quality surface water for cooling), air quality, cultural resources, sensitive biological resources, visual resources, and noise.

Delta Energy Center, Calpine Corporation, Pittsburg, California

Calpine Corporation and Bechtel Enterprises, Inc. developed a modern, natural gas-fueled cogeneration facility located approximately 35 miles northeast of San Francisco. The Delta Energy Center (DEC) project is a high efficiency, combined-cycle combustion turbine power generation facility. It is located at the Dow Chemical complex in Pittsburg, California.

CH2M HILL prepared an Application for Certification (AFC), which was used by the California Energy Commission (CEC) staff to prepare its independent environmental analysis of the proposed project. The independent CEC environmental analysis, called a Final Staff Assessment, is the functional equivalent to an Environmental Impact Report (EIR) under CEQA.

The AFC entailed an environmental analysis of 16 potential environmental impact issue areas, as well as a number of engineering aspects. These included air quality, biological resources, cultural resources, land use, noise, public health, worker health and safety, socioeconomics, agriculture and soils, traffic and transportation, visual resources, hazardous materials handling, waste management, water resources, geologic hazards and resources, and paleontological resources. CH2M HILL provided construction monitoring to ensure that all environmental impacts were mitigated as described in the AFC and Final Staff Assessment.

Subconsultants

To augment our full-service capability, we have teamed with three local firms and individuals – Wallace Group, Tanowitz Academic & Biological Consulting, and Estep Environmental Consulting – that have relevant local experience, specialty knowledge, and expertise. Brief firm qualifications and the percentages of contribution of each subconsultants are included in Exhibit 2-1.

EXHIBIT 2-1
Percentages of Contribution of Subs

Firm	Percentage of Contribution (%)	Brief Qualifications
Estep Environmental Consulting 3202 Spinning Rod Way, Sacramento, CA 95833 Tel 916.921.2515	2.0%	Estep Environmental Consulting is a sole proprietorship of James A. (Jim) Estep. With over 20 years as an environmental professional and consulting biologist, Jim specializes in resource conservation and wildlife management planning; CEQA and NEPA compliance; biological resource assessments; avian collision assessment, endangered species surveys, impact assessments, and consultations with state and federal resource agencies; mitigation planning and compliance; wildlife management techniques; and field study design. He works on projects focusing on natural resources and wildlife management planning for a variety of clients and industries, including energy, state and federal resource and land management agencies.
Tanowitz Academic & Biological Consulting 5861 Via Fiori Goleta, CA 93117 Tel 805.403.1179	0.9%	Mr. Tanowitz serves as an Independent Consultant for several firms regarding identification of Gaviota tarplant specimens. He has more than 30 years working on the native flora of California. He is an expert in the systematics and analysis of the sunflower and mint families of California. Recent Experience includes Site Assessment and Mitigation of Gaviota Tarplant on Parcel 84, Hollister Ranch. He was the first botanist to key the Gaviota tarplant.
Wallace Group 4115 Broad Street, Suite B-5 San Luis Obispo, CA 93401 Tel 805.544.4011	5.3%	An engineering consulting firm focusing on consulting services for municipal and special district clients. Mr. Andrew Merriam will serve as a task lead. He is an award-winning planner and architect, and has more than 35 years experience in permitting general planning, Coastal Commission approvals, environmental impact analyses, visual and aesthetic evaluations, multi-disciplinary specific plans, and community and public relations.

Section 3

Personnel

The CH2M HILL team has been built from an experienced pool of top professionals and experts with the full suite of skills necessary to assist the County of Santa Barbara on any environmental-review assignment. The individuals proposed for this project and shown in our organizational chart (Exhibit 3-1) have been selected because they each have the unique technical skills and specific experience necessary to ensure the successful completion of this project. Our team members offer the following:

- A Project Manager, Jennifer Scholl, who has a track record of leading successful projects on industrial facilities, transmission lines, power generation facilities, and complex EIRs as well as providing the County of Santa Barbara with high quality, fast, and responsive service.
- Local team members with an understanding of local policies, environmental conditions, and community concerns, and the County's political climate.
- Support from a Fortune 500 company who prides itself in innovation and cost-effective alternatives to meet and exceed your project needs.
- Extensive experience working on similar projects and with County of Santa Barbara and local agencies.

Project Management

Our proposed team will be led by Jennifer Scholl. She will serve as primary point of contact for the County staff, and will be directly responsible for delivery and quality of all Tasks. She will provide direction to the CH2M HILL team to ensure preparation of a CEQA/County of Santa Barbara CEQA Guidelines-compliant EIR. In addition, she will work closely with our principal-in-charge, Jim Hunter, to ensure efficient delivery teams are provided for each task orders.

Jennifer Scholl, Project Manager. Ms. Scholl has more than 16 years of experience in environmental planning and permitting of complex and controversial development projects. Ms. Scholl has extensive experience working with the County of Santa Barbara, Planning and Development Department. In addition to working as a Planner in the Energy Division (1989 – 1995) on several high profile projects such as Chevron's request for marine tankering, the Mobil Clearview project, the Gaviota Marine Terminal and Venoco's onshore facility, she also worked in the Development Review Division (1995-1995) supporting the land use clearance for the Bacara Resort and Spa, as well as managing the processing of several residential subdivisions. In addition, under contract to the County of Santa Barbara, City of Goleta, and UCSB, from 2003-2005, Ms. Scholl served as the Project Manager and Jurisdictional Coordinator for the preparation of the Ellwood-Devereux EIRs and Open Space and Habitat Management Plan. From 2004-early 2006, Ms. Scholl also participated as an environmental consulting representative on the County's Process Improvement Team. In this role, she had the opportunity to work with County staff on providing input on improving the Planning and Development's image and processes. She also has extensive experience in leading Public Participation Programs. In addition, in early 2006, under contract to the Sunset Partners, Ms. Scholl assisted in the preparation of the applications submitted to the County and the State Lands Commission, for the Vahevala Project, located on Vandenberg Air Force Base (VAFB). Her assistance included direct coordination with the VAFB 30th Space Wing Environmental Flight on issues related to environmental review and VAFB Mission constraints. Through this work, she has become familiar with the development concerns that exist among the different VAFB Flights and tenants. These experiences support Ms. Scholl's strong resume for understanding the County polices and processes, power line projects, CEQA, and VAFB policy concerns.

Jim Hunter, Principal-in-Charge. As principal-in-charge, Mr. Hunter will work with Jennifer Scholl to ensure all of your project needs are met. Mr. Hunter is a principal project manager and environmental/ permitting professional at CH2M HILL. He has more than 20 years of experience in providing environmental and regulatory compliance consulting services to numerous municipal, including industrial clients in the Los Angeles basin and other areas of the United States. Significant responsibilities have included preparation of CEQA and/or NEPA documents for acquisition of local, state, and federal permits and entitlements for major land developments in California. As a senior project manager of land use entitlement and development permitting services, Mr. Hunter prepared many environmental studies under both CEQA and NEPA, including preparation of programmatic and project-specific environmental impact reports (EIRs), initial studies, specific and master plans, mitigated negative declarations (MNDs), mitigation monitoring plans, findings, and statements of overriding considerations.

EXHIBIT 3-1
Organization Chart

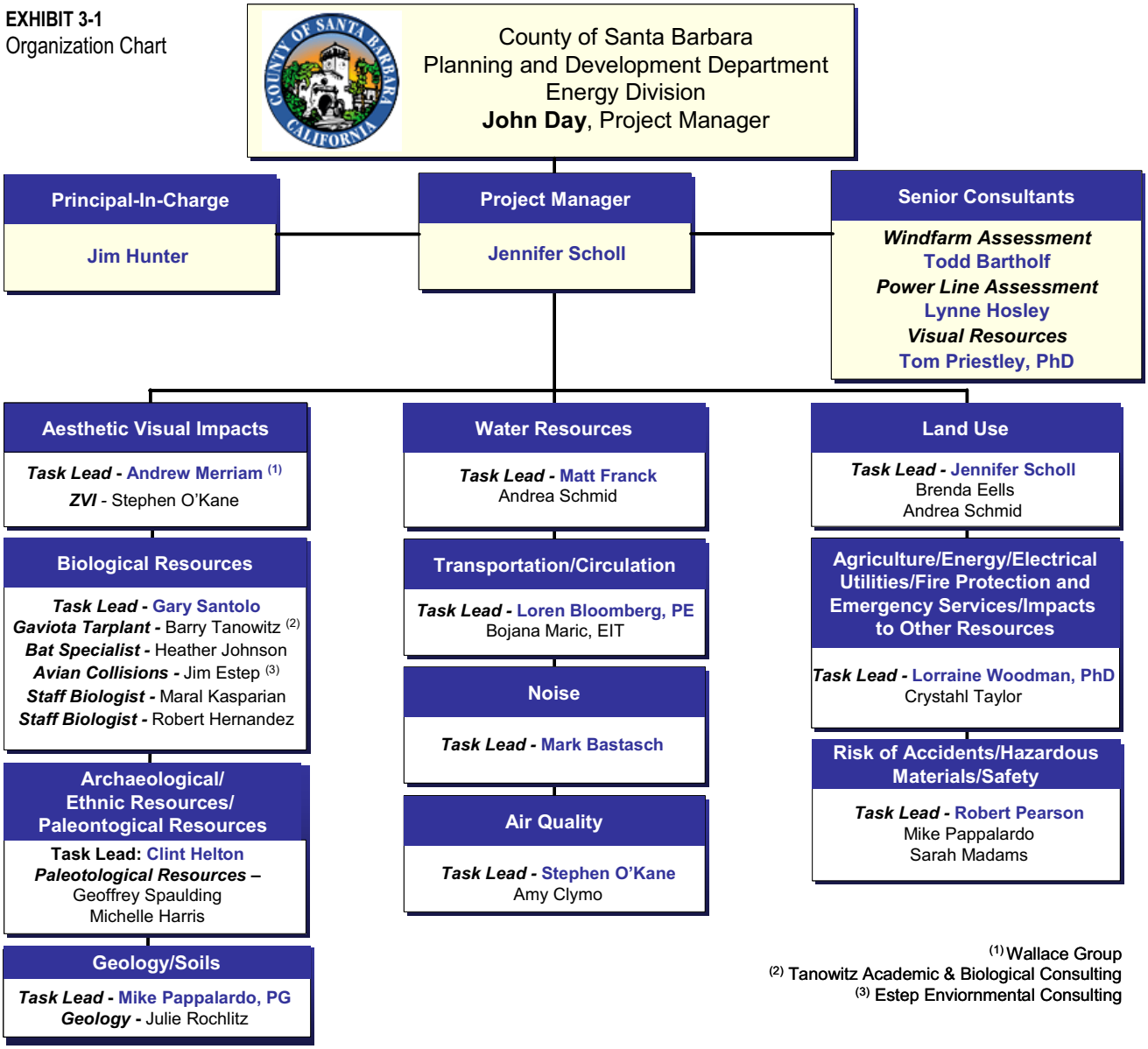


Exhibit 3-2 highlights project management responsibilities.

EXHIBIT 3-2
Roles and Responsibilities

Name/Role	Responsibility
Jennifer Scholl Project Manager	■ Serves as your primary point of contact ■ Ensures overall quality control ■ Coordinates all efforts ■ Tracks progress and prepares monthly progress reports ■ Provides overall cost and schedule control ■ Reviews all deliverables ■ Supports public presentations ■ Supports County and VAFB policy analyses ■ Establishes Project Management and Quality Assurance Plan
Jim Hunter Principal-in-Charge	■ Serves as a back-up point of contact ■ Assists with developing project schedule and establish milestones ■ Supports technical aspects of Project Description ■ Supports technical CEQA issues ■ Reviews and ensures quality control of deliverables ■ Works with Project Manager to prepare task orders and input for progress reports ■ Provides cost and schedule control of tasks

Senior Consultants

The senior consultants will provide guidance, technical support and advice, and quality assurance control. They also will work with the technical staff to provide adequate staff and task order oversight to incorporate local issues and concerns as part of the task order development and completion. All of the senior consultants have completed similar projects and have a thorough understanding of your goals and objective.

- ***Todd Bartholf, Windfarm Assessment Expert.*** Mr. Bartholf has extensive experience in energy and environmental project development, with particular expertise in renewable energy strategic planning, market assessment, project design, product development and management. He has been involved in developing wind energy projects since 1982, and has extensive worldwide experience.
- ***Lynne Hosley, Power Line Assessment Expert.*** Ms. Hosley is a senior environmental scientist with 25 years of experience in comprehensive environmental resources studies for large, complex projects, including transmission lines, highways, and pipelines throughout California and the western States. She has managed the preparation of CEQA and NEPA documents, has extensive experience with regulatory agency negotiations for federal and state endangered species, wetlands, and water quality permits, and managed environmental compliance during construction on a variety of projects.
- ***Tom Priestley, Visual Resources Expert.*** Dr. Priestley has more than 28 years of professional experience in urban and environmental planning and project assessment. He is known nationwide for his expertise in evaluating aesthetic, land use, property value, and public acceptance issues related to electric energy projects. His experience includes projecting community land use development trends to determine facility needs and optimal location; assessing land use and visual effects of proposed electric facilities; and conducting studies of public perceptions of project visual effects.

Task Leaders

Our team includes a lead for each of the specialty areas identified in the Request for Proposal (RFP). These individuals have been selected for their knowledge and project expertise. They will work with Jennifer Scholl and Jim Hunter to develop the teams for assignments requiring their skills and expertise.

- ***Mark Bastasch, Noise.*** Mr. Bastasch is a registered professional acoustical, civil and environmental engineer with more than 9 years experience conducting acoustical studies for power, industrial and transportation projects. Mr. Bastasch's experience includes extensive acoustical consulting, regulatory permitting with numerous state agencies and regulatory negotiations for wind energy projects, including revising the Oregon noise rule for the wind turbine development community. He provided preliminary acoustical modeling and permit assistance at the local and state levels and developed a noise monitoring protocol for the Klondike Wind Farm in Oregon and Washington, and he served as the acoustical technical lead for all phases of the Stateline Wind Project in Oregon and Washington. He also was the acoustical technical lead for the Maiden Wind project in Washington.
- ***Loren Bloomberg, Transportation/Circulation.*** Mr. Bloomberg is an experienced traffic engineer and transportation planner who has led or played a key role in numerous large-scale planning and operations analyses. He has conducted studies and developed plans for local areas, corridors, and entire regions, including roadways, maritime facilities, and airports. Mr. Bloomberg's technical expertise is in simulation modeling and traffic operations, with a particular focus on conceptual engineering and traffic analysis. Mr. Bloomberg is a member of the Highway Capacity Committee of the Transportation Research Board, the international group of 30 professionals charged with developing and maintaining the *Highway Capacity Manual.*
- ***Matt Franck, Water Resources.*** Mr. Franck has 15 years of experience in managing and writing environmental impact assessment documents in compliance with NEPA and CEQA. He prepared the Water Resources sections for the San Francisco Electric Reliability Project, an Application for Certification, and the Modesto Irrigation District Electric Generation Station Small Power Plant Exemption (these are California Energy Commission processes that are functionally equivalent to CEQA); he also was the Task Manager for environmental documentation and permitting support for the contract operation of the City of Stockton's wastewater, water, and stormwater infrastructure.
- ***Clint Helton, Archeological/Ethnic Resources***. Mr. Helton has more than 10 years of environmental management experience in the western United States. Mr. Helton has significant expertise conducting consultation with state and federal agencies, as well as facilitating formal government-to-government consultation with Native American groups and tribes throughout the western U.S. Mr. Helton has authored numerous environmental technical reports, cultural resources management plans, cultural resources studies, Programmatic Agreements, Memorandums of Understanding (MOU), and contributed to many environmental documents for a variety of private and public sector clients. He managed an interdisciplinary team of over 20 environmental specialists including archaeologists, biologists, and paleontologists during construction of 26-mile gas pipeline and associated power generation plant and provided overall management of cultural resources services for the Parker-Blythe #1 161-kilovolt (kV) transmission line project. He also managed a major cultural resources services contract with Williams Energy, in support of the 700-mile Kern River Pipeline Expansion Project, traversing Utah, Nevada, Wyoming, and California.
- ***Andrew Merriam, Aesthetic/Visual Impacts.*** Mr. Andrew Merriam has worked in the area of visual analysis for over 20 years. His work is statewide and currently includes such projects as the extension of transmission lines from Tehachapi to Southern California, a major direct current underwater transmission line from Pittsburg to San Francisco including eight alternative locations and options for the land based converter stations, and numerous residential and commercial projects. Mr. Merriam has been a presenter at American Planning Association conventions on this subject. One

EIR in which he participated (Copeland Center in downtown San Luis Obispo) won an APA award for its visual communication and presentation effectiveness. Nighttime lighting and glare are a common concern with many of the projects Mr. Merriam has worked with Ms. Scholl on several major projects such as the energy facility (power plant) at Pastoria at the southern end of the San Joaquin Valley and the residential simulations and analysis of the impacts for the Ellwood Mesa area northwest of the University of California at Santa Barbara in the City of Goleta. He is familiar with the County of Santa Barbara CEQA requirements and processes.

- ***Stephen O'Kane, Air Quality.*** As a meteorologist atCH2M HILL's , Mr. O'Kane has extensive experience and training the fields of wind energy resource assessment, air quality impact assessment, zone of visual influence (ZVI) assessments, boundary layer meteorology, numerical modeling, project management, and environmental permitting. Mr. O'Kane has completed numerical modeling analyses on a regional and local scale for meteorological applications including forecasting, resource assessment, air quality analyses and risk management plans. He assists clients with a wide range of professional services from calibration and analysis of data for existing meteorological data systems, to scoping and analysis of air quality issues, assessment of air quality impacts, wind energy resource assessment and recommendation of monitoring and mitigation programs.
- ***Mike Pappalardo, Geology/Soils***. Mr. Pappalardo has 17 years of experience in environmental planning, permitting water resources, and geologic services. His background includes wind energy facility permitting, watershed planning and hydraulic studies, dam decommissioning, surface water intake and National Pollutant Discharge Elimination System (NPDES) outfall and storm water permitting, environmental monitoring and monitoring plans, environmental compliance, Storm Water Pollution Prevention Plans (SWPPP) and Spill Prevention Control and Countermeasures (SPCC) plans. He develops site-specific Sediment and Erosion Control Best Management Practices (BMP). In addition he has conducted a number of geologic and hydrogeologic investigations.
- ***Bob Pearson- PhD, Risk of Accidents/Hazardous Materials/Safety (EMF).*** Dr. Pearson has more than 25 years of experience in environmental and technical engineering, regulatory review and assessment, preparation of industrial compliance policy, and environmental consulting. He is a nationally recognized expert concerning environmental issues in the electric utility industry, including EMF analysis. He has a proven ability to work with clients to assess regulatory programs, define needs, and develop programs to satisfy those needs including getting needed constructions permits with acceptable terms and conditions on time. His program administrative experience includes projects in electric and magnetic fields, air pollution control and assessment, water quality control, environmental permitting, and environmental research and development.
- ***Gary Santolo, Biological Resources.*** Mr. Santolo is a wildlife biologist and toxicologist. He has technical expertise in vertebrate biology and ecology and in wildlife toxicology and has experience in conducting biological, ecological, and toxicological studies. He has conducted field surveys and inventories for common and special-status vertebrate species for environmental documents to determine impacts to wildlife and associated habitats. He has developed and co-authored a report recommending guidelines for conducting ecological risk assessments in California for the California EPA. He has also participated in preliminary site characterizations, habitat mapping, and plant species inventories in several ecosystems throughout California, Oregon, Washington, Nevada, and Alaska.
- ***Lorraine Woodman, Agriculture/Energy/Electrical Utilities/Fire Protection and Emergency Services/Impacts to Other Resources.*** In addition to serving as task lead for these resources, Dr. Woodman will review all sections for compliance with CEQA/County of Santa Barbara guidelines and ensure that the EIR is internally consistent. She has more than 20 years of experience preparing environmental compliance documents. Dr. Woodman is known for her ability to translate complex technical concepts into terms that can be readily understood by the layperson and for preparing technically sound documents that meet regulatory requirements. Dr. Woodman is knowledgeable

about local issues and has managed multiple EIRs for Santa Barbara County, including those for the Carpinteria Salt Marsh Enhancement Plan, Rancho San Marcos Golf Course, Bay Canyon Oaks, Bluffs at Mesa Oaks (Administrative Draft), Long-term Maintenance Activities in the Goleta Slough, and Long-term Disposition of the Maria Ygnacio Creek Debris Basins. She recently participated in an agricultural economics analysis for the Goleta Valley and will be the task lead for the preparation of the Santa Barbara Countywide Integrated Regional Water Management Plan.

Technical and Support Staff

Backing up the expertise of our management and task leaders is a support staff equally skilled in their respective areas of specialization. The CH2M HILL team depth of local and regionally based resources allows us to dedicate multiple highly qualified professionals for each technical specialty. The table below, Exhibit 3-3, provides a brief summary of qualifications for these technical specialists, including their proposed roles and relevant experience. Resumes of key personnel are provided at the end of this section.

EXHIBIT 3-3
Support Team Qualifications

Name, Role, Registration	Key Skills/Representative Projects
Amy Clymo *Air Quality*	■ Experience in providing support on air quality, groundwater monitoring and reporting, and landfill projects. ■ Task lead, Air Quality Analysis, multiple CEQA and NEPA documents at the Port of Long Beach. ■ Task lead, Air Quality Analysis, State Route 79 Widening, Riverside County. ■ Task lead, Air Quality Analysis, Clinton Keith Road Extension, Riverside County.
Brenda Eells *Land Use*	■ Experience with the NEPA and CEQA, and public involvement segment of many projects. ■ Prepared the land use section of the joint environmental impact statement/environmental impact report for Calpine's 600-MW Teayawa Energy Center in Riverside County. ■ Project Manager PPM Energy Fairmont Wind Development Project, Los Angeles County, CA.
Jim Estep *Avian Collisions*	■ Wrote Avian Mortality at Large Wind Energy Facilities in California: Identification of a Problem for the California Energy Commission. ■ Prepared a comprehensive environmental screening analysis that explores and analyzes potential constraints to development of a wind energy facility on Sherman Island in the Sacramento-San Joaquin River Delta. ■ Prepared an avian assessment that documents monitoring and mortality studies conducted in the Montezuma Hills, California, determines the need for additional monitoring, and assesses the potential avian mortality-related impacts of the proposed windfarm. ■ Prepared the biological resources section and a biological resources management plan for Alameda County's Repowering a Portion of the Altamont Pass Wind Resource Area EIR. The plan established measures to avoid and protect biological resources in the context of windfarm development and operation. ■ Project Director to prepare an Initial Study/Mitigated Negative Declaration for the enXco V repowering project in the Montezuma Hills, Solano County, CA. With Solano County as the lead agency under CEQA, analyzed potential impacts of the project, including the beneficial impact on avian mortality from repowering a portion of the windfarm
Michelle Harris *Paleontological Resources*	■ Experience identifying paleontologically sensitive sediments in compliance with the CEC and CEQA regulations to performing air quality tests

EXHIBIT 3-3
Support Team Qualifications

Name, Role, Registration	Key Skills/Representative Projects
Robert Hernandez *Staff Biologist*	■ Experience in surveying for multiple species, including, least Bell's vireo, Swainson's hawk, raven, crow, jay, northern spotted owl, northern goshawk, marbled murrelet, and western snowy plover ■ Ornithological experience in identifying neo-tropical migrants, raptors, waterfowl, shorebirds, and upland-game birds by site and song ■ Performs jurisdictional waters and wetland delineations ■ Trained in the use of GPS technology with submeter accuracy in the field ■ Extensive knowledge of California native plants, shrubs, trees ■ Field biologist, Fairmont Wind Project, Pacificorp Power Marketing. Fairmont, California. Conducted field surveys of the project site for biological resources, including surveys for avian species, burrowing owl, and vegetation.
Heather Johnson *Bat Specialist*	■ Experience on wide variety of surveys and wildlife investigations. ■ Expertise in bat surveying and sensitive species monitoring.
Maral Kasparian *Staff Biologist*	■ Experience with writing documents pertaining to CEQA and AFC, especially analysis relevant to biological resources. ■ Expertise in terrestrial, wildlife ecology, human-wildlife interactions, and California, endangered species ecology. ■ Extensive, technical writing experience as author of four, peer-reviewed publications and editor of UC Davis journal.
Sarah Madams *Risk of Accidents/ Hazardous Materials/ Safety*	■ Experience in project management, regulatory compliance, permitting, public involvement/community relations, data collection and analysis, database management, compliance audits, document preparation, and technical writing ■ Hazardous Materials Business Plan, Parks Reserve Forces Training Area (PRFTA), CA.
Bojana Maric *Transportation/ Circulation*	■ Experienced in preparing traffic analyses, traffic management plans and evaluating projects' transportation/traffic impacts. ■ Experienced in transportation design. ■ Identified transportation baseline conditions and project impacts for the Salton Sea Ecosystem Restoration Plan EIR.
Julie Rochlitz *Geology*	■ Extensive experience preparing environmental impact reports and statements under the CEQA and NEPA. ■ Experienced in participating in a variety of environmental sampling, monitoring, and remedial activities.
W. Geoffrey Spaulding *Paleontological Resources*	■ Approved Paleontological Resources Specialist, California Energy Commission, State of California ■ Qualifications as Paleontological Resources Expert Witness accepted by the Attorney General of the State of Washington ■ Paleontological Resources Specialist, Power Generation Projects, Southern California; developed paleontological resources assessments and prepared appropriate sections on paleontological resources for the projects' Application for Certification before the California Energy Commission. ■ Metropolitan Water District of Southern California, West Valley Lateral and Eastside Reservoir Projects, Cultural and Paleontological Resources Support Services; designed and conducted archaeobotanical, paleoecological, and paleoclimatic studies in support of paleontological and cultural resources testing and mitigation programs for a large reservoir development program.
Andrea Schmid *Water Resources/Land Use*	■ Experience in technical writing, storm water management, and erosion and sediment control.

EXHIBIT 3-3
Support Team Qualifications

Name, Role, Registration	Key Skills/Representative Projects
Barry Tanowitz *Gaviota Tarplant*	■ Gaviota Tarplant Expert. ■ More than 30 years working on the native flora of CA. ■ Expertise in systematic and analysis of the sunflower and mint families of CA. ■ First botanist to key Gaviota tarplant
Crystahl Taylor *Agriculture/Energy/ Electrical Utilities/Fire Protection and Emergency Services/ Impacts to Other Resources*	■ CEQA Documentation and Compliance ■ Project manager for various environmental tasks for San Luis Bay Drive Bridge Replacement Project; County of San Luis Obispo Public Works Department; San Luis Obispo County, CA. ■ Permitting and Permit Compliance (including extensive knowledge of Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Game jurisdictions and regulations)

Project Commitment

The project roles and estimate hours and percentage of total hours each key member will commit to the project are included in Exhibit 3-4. Key personnel assigned to the project will be the actual persons performing the work. Modifications during contract performance or team reassignment will not occur without prior approval from the County.

EXHIBIT 3-4
Key Team Project Commitment

Team Member/Role	Estimated Hours	Percentage of Total Hours (%)
Project Management		
Jennifer Scholl *Project Manager*	374	14.5%
Jim Hunter *Principal-in-Charge*	44	1.7%
Senior Consultants		
Todd Bartholf *Windfarm Assessment*	8	0.3%
Lynne Hosley *Power Line Assessment*	15	0.6%
Tom Priestley *Visual Resources*	21	0.8%
Task Leaders		
Mark Bastasch *Noise*	25	1.0%
Loren Bloomberg *Transportation/Circulation*	11	0.4%
Matt Franck *Water Resources*	26	1.0%
Clint Helton *Archeological/Ethnic Resources*	83	3.2%
Stephen O'Kane *Air Quality*	17	0.7%
Mike Pappalardo	49	1.9%

EXHIBIT 3-4
Key Team Project Commitment

Team Member/Role	Estimated Hours	Percentage of Total Hours (%)
Geology/Soils		
Bob Pearson *Risk of Accidents/Hazardous Materials/Safety*	6	0.2%
Gary Santolo *Biological Resources*	64	2.5%
Lorraine Woodman *Agriculture/Energy/Electrical Utilities/ Fire Protection and Emergency Services/Impacts to Other Resources/ Technical Oversight on EIR Sections*	167	6.5%
Technical and Support Staff		
Amy Clymo *Air Quality*	53	2.1%
Brenda Eells *Land Use*	16	6.2%
Michelle Harris *Paleontological Resources*	8	0.3%
Robert Hernandez *Staff Biologist*	40	1.6%
Heather Johnson *Bat Specialist*	10	0.4%
Maral Kasparian *Staff Biologist*	49	1.9%
Sarah Madams *Risk of Accidents/Hazardous Materials/Safety*	23	0.9%
Bojana Maric *Transportation/Circulation*	31	1.2%
Julie Rochlitz *Geology*	33	1.3%
Geoffrey Spaulding *Paleontological Resources*	8	0.3%
Andrea Schmid *Water Resources/Land Use*	147	5.7%
Crystahl Taylor *Agriculture/Energy/Electrical Utilities/ Fire Protection and Emergency Services/Impacts to Other Resources/ Project Management Support*	410	16.0%
Administrative	408	16.0%
GIS/Graphics	425	16.5%

RESUMES

Jennifer Scholl
Project Manager

Firm
CH2M HILL

Education
B.A., Double Major in Environmental Studies and Political Science, University of California at Santa Barbara

Years of Experience: 16

Qualifications
- Project management
- NEPA/CEQA compliance
- Environmental planning and permitting
- Permit compliance management
- Land use planning
- Industrial Facility Siting Studies
- Socioeconomic evaluation
- Public participation and community involvement

Ms. Scholl has more than sixteen years of experience in environmental planning and permitting of complex and controversial development projects. Specifically, Ms. Scholl has been involved with the permitting and construction compliance for power generation projects and ancillary facilities (i.e., transmission, gas, water, and sewer lines) and offshore oil and gas facilities with onshore processing and storage components in California. Recently, under contract to the County of Santa Barbara, City of Goleta, and UCSB, Ms. Scholl served as the Project Manager and Jurisdictional Coordinator for the preparation of the Ellwood-Devereux environmental impact reports (EIRs) and Open Space and Habitat Management Plan. She also has extensive experience in leading Public Participation Programs. Prior to her work in private consulting, Ms. Scholl managed the permitting and environmental review of major oil and gas development projects, resort and residential developments, and oversaw the implementation of mitigation monitoring plans for the Santa Barbara County Planning and Development Department.

Relevant Experience

Project Manager, Ellwood-Devereux Joint Proposal EIRs. Project Manager and Jurisdictional Coordinator for the preparation of three EIRS and an Open Space and Habitat Management Plan for the County of Santa Barbara, UCSB, and the City of Goleta for development proposed in the Ellwood-Devereux Joint Proposal area. Also coordinated directly with the Ellwood-Devereux Joint Review Panel, during preparation of these documents.

Technical Reviewer and Land Use Task Leader; Santa Barbara Ranch EIR and Transfer of Development Rights Study; County of Santa Barbara; December 2004-March 2006. Provided technical oversight and served as the Land Use/Santa Barbara County Policy Consistency Task Leader for the preparation of this EIR and TDR Study evaluating proposed residential development in the Gaviota Coast area of Santa Barbara County.

Planner; County of Santa Barbara, Planning and Development Department, Development Review Division; Santa Barbara, California; 1995-1997. Managed various permitting, NEPA/CEQA related reviews, and operation and compliance monitoring for projects which had a high level of public controversy including onshore components of offshore oil and gas projects, resort developments, and residential subdivisions. Specific project assignments included: Mobil Clearview, Gaviota Marine Terminal Facility/Marine Tanker Transport Request, Bacara Resort and Spa, Windermere Ranch Peace Retreat, and numerous housing subdivisions. Responsibilities included: organizing public meetings including scoping, environmental review, and public comment hearings, serving as the key media and public outreach contact, preparing initial studies, conducting state and local policy analyses, coordinating local, state and federal agencies, managing consultants, giving presentations to County elected and appointed officials, and reviewing compliance and engineering plans.

Regulatory Specialist; Vahevala Project; Sunset Exploration, Inc. and ExxonMobil Corporation; Vandenberg Air Force Base (VAFB), Lompoc, California; July 2004 to Present. Assisted the Project Manager with preparation of applications to the County of Santa Barbara and State Lands Commission for the development of offshore oil and gas reserves from an onshore location on VAFB. Also assisted with agency coordination issues related to County and State Lands Commission application requirements, coordination with VAFB Environmental Wing staff on the CEQA/NEPA environmental review

processes, including participation in the VAFB Site Survey process, and coordination with researching state and local policy issues.

Project Manager; Pastoria Energy Facility; Calpine Corporation; Kern County; California; July 1998 to August 2006. Project Manager for Preparation of two Applications for Certification (AFCs) (CEQA EIR equivalent) to the CEC for a 750 MW combined cycle and 160 MW simple cycle addition at the Pastoria Energy Facility in southern Kern County. Responsible for day-to-day coordination with the client and CEC staff for addressing agency requirements. AFC for 750 MW submitted to the CEC in November 1999 and project was in commercial operation in Summer 2005. Also managed the environmental compliance for pre-construction and construction activities. Responsibilities included managing the following activities: providing ongoing compliance support, preparing and docketing CEC license amendments, assisting with agency coordination, preparing compliance plans, managing onsite compliance monitors, providing oversight for flood control and geotechnical support, and providing ongoing historical support. Presently managing the AFC licensing process for a 160 MW addition that is currently going through the CEC licensing process and is expected to be approved and in commercial operation in Summer 2008.

AFC Project Manager/AFC Task Leader/Regulatory Advisor/Siting Study Manager; Additional Support to Cogeneration Proposals in California; Numerous Clients; California; 1998-Present. Currently supports numerous electrical power generation proposals for multiple clients in California with power plant and transmission line siting, project development, agency coordination, AFC preparation, land use permit reconnaissance and strategy for AFC filing. Previous and current projects are in the following areas in California: San Jose, Arcata, Roseville, Pittsburg, San Francisco, Los Banos, Antelope Valley, Hayward, Vernon, Otay Mesa, Redondo Beach, Riverside, Port of Long Beach, and Port of San Diego.

Public Participation Coordinator; Public Participation Coordination; Various Clients; Southern California and Montana/Idaho; June 1997- June 1998. Provided public participation services for the Yellowstone Pipeline EIS, under contract to the U.S. Forest Service; Whitewater River / Thousand Palms Flood Control Feasibility Study EIS/EIR, under contract to the U.S. Army Corps of Engineers, Los Angeles District; and the Santa Fe Pacific Partners Carson to Norwalk Pipeline Project , under contract to the California Public Utilities Commission. Tasks included: managing the public involvement efforts for the NEPA and CEQA environmental review processes, agency coordination, set-up and logistics for scoping and informational meetings, community outreach, meeting facilitation, preparation of all meeting handouts, preparation of project newsletters and public notices, website development, and maintenance of project repository sites.

Jim Hunter
Principal-in-Charge

Firm

CH2M HILL

Education

B.S., University of California, Davis, College of Agriculture and Environmental Sciences

Years of Experience: 22

Qualifications

- Expertise in the practical application of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA)
- Experienced in land use entitlement and environmental permit processing and acquisition
- Served as a liaison for local, state, and federal agency interaction on numerous complex and controversial projects.
- Experienced in regulatory and environmental compliance

Mr. Hunter is a principal project manager and environmental planner in CH2M HILL's Southern California office. He has more than 20 years of experience in providing environmental and regulatory compliance consulting services to numerous municipal and industrial clients in Southern California and other areas of the United States. Significant responsibilities have included preparation of CEQA and/or NEPA documents for acquisition of local, state, and federal permits and entitlements for major land developments in California; development of environmental compliance programs for municipal solid waste and hazardous waste transportation, treatment, and disposal facilities in several states; and the investigation, decontamination, and closure of industrial fabrication facilities in the Los Angeles area.

As a senior project manager of land use entitlement and development permitting services, Mr. Hunter prepared several environmental studies under both CEQA and NEPA. As project manager, he has managed controversial projects and projects that involve multiple jurisdictions requiring close coordination and cooperation with federal, state, and local agencies. Typical CEQA projects include preparation of programmatic and project-specific environmental impact reports (EIRs), initial studies, specific and master plans, mitigated negative declarations (MNDs), mitigation monitoring plans, findings, and statements of overriding considerations. Mr. Hunter has also prepared NEPA-related projects including environmental assessments (EAs), environmental impact studies (EISs), and permits obtained through sensitive negotiations with United States Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and Bureau of Land Management (BLM).

Relevant Experience

Representative Projects Draft EIR/EIS and Final EIS for the Teayawa Energy Center (TEC), a 600-megawatt natural-gas-fired power plant to be located on Indian Trust land in Riverside County, California. Managed report preparation and resource agency interaction for this project that included evaluation of potential impacts of the proposed energy center and onsite substation, 12 to 17 miles of 20-inch-diameter, natural-gas pipeline along three alternative routes, approximately 48 miles of new or upgraded 230-kilovolt (kV) or 115-kV electricity transmission lines, and three water supply alternatives, plus a variety of other project alternatives. Analyses and field studies were conducted to support preparation of an environmental document to satisfy requirements of CEQA, NEPA, and the California Energy Commission. Seventeen resource areas were exhaustively evaluated in the Draft EIS/EIR, including land use; water resources; geology, soils, and geologic hazards; agricultural resources; biological resources; cultural resources; paleontological resources; mineral resources; traffic and transportation; noise; air quality; public health and environmental hazards; public services and utilities; hazardous material, hazardous waste handling, and worker safety; socioeconomics and environmental justice; Indian trust assets; and visual resources. CH2M HILL also performed a Phase I Environmental Site Assessment for the TEC site.

Silver Lake Reservoir Storage Replacement Project EIR, City of Los Angeles Department of Water and Power. Project Manager for preparation of an Environmental Impact Report (EIR) for the Silver Lake Reservoir Complex (SLRC) Storage Replacement Project (SRP). The SLRC SRP would remove Silver Lake and Ivanhoe Reservoirs (located in the community of Silver Lake, from direct service to the LADWP water distribution system and replace water storage currently provided by the SLRC with a 110-million-gallon buried storage reservoir at the former Headworks Spreading Grounds that is located

alongside the Los Angeles River. The scoping and definition of this project required significant interaction with several City Departments and local community groups. This project also provided the unique opportunity to work cooperatively with the Army Corps of Engineers to facilitate a long term ecosystem restoration project along the LA River. The new water storage reservoir would be accompanied by a 4-megawatt hydroelectric power generating facility at the HWSG site to capture energy from the water pressure flowing into the reservoir. A regulating station at the southern end of the SLRC and a new bypass pipeline around the SLRC would convey water to existing service areas, while Silver Lake and Ivanhoe Reservoirs would be removed from the LADWP water distribution system and maintained as non-operating water system facilities.

Final EIR for the LADWP Stone Canyon-Encino Water Quality Improvement Project. Served as project manager for report preparation for this project that involved preparing detailed responses for comments received during the public review process and working with Department staff and Los Angeles community groups to assemble the Final EIR that complied with CEQA requirements for content, while being sensitive to the needs of the project and several active community groups.

Serrano Heights Specific Plan, EIR and Development Agreement, Woodcrest Development, Orange, CA Managed the report preparation for the Specific Plan and EIR and contributed to formulation of the Development Agreement. This effort included coordinating the work of architects, engineers and land planners to generate a specific development plan for 1,800 homes on 727 acres of hillside property. The specific plan addressed unique environmental factors of the site, and included a public facilities plan, landscaping program and zoning and development standards. The Specific Plan focused on consolidating development into the central portions of the site, preserving prominent ridgelines, and creating a substantial open space buffer for the adjacent regional park.

Groundwater Recovery Enhancement and Treatment (GREAT) Program, Oxnard, California EIR and EA. Served as project manager for a project to assist the City of Oxnard with planning and implementation the City's Groundwater Recovery Enhancement and Treatment (GREAT) program. Responsible for preparing a combined Program and project EIR and EA to accomplish NEPA/CEQA compliance for a phased $70 million infrastructure improvement program. The GREAT Program includes proposed infrastructure and facility improvements at several locations within a large geographic area of the Oxnard Plain.

CEQA and NEPA documents, State and Federal Natural Resource Permitting and Civil Engineering Services for the California City Correctional Center prison project in the City of California City, Kern County, California. Project manager for this project that involved preparing all necessary documents to comply with the requirements of CEQA and NEPA for the development of a 2,816-bed correctional facility on 70 acres. CEQA documentation included a Supplemental EIR, Responses to Public Comments, Mitigation Monitoring Plan, Finding, and Statement of Overriding Considerations. NEPA documents prepared included an Environmental Assessment; a Multispecies Habitat Conservation Plan; and an Implementing Agreement for an Incidental Take Permit for the Threatened Desert Tortoise, Mojave Ground Squirrel, and the Burrowing Owl. Was responsible for site grading plans and drainage and major infrastructure improvements, including onsite and offsite water and sewer line extensions. Assisted in the preparation of Storm Water Pollution Prevention Plans and provided ongoing mitigation monitoring. Also directed the acquisition of all federal, state, and local agency permits necessary to construct several miles of sanitary sewer and water infrastructure in this rural Mojave Desert community. Public agency interaction for this client included:

- California Water Resources Control Board
- California Department of Fish and Game
- Federal Bureau of Land Management
- U. S. Fish and Wildlife Service
- U. S. Army Corps of Engineers
- County of Kern Air Pollution Control District
- Lahontan Regional Water Quality Control Board

Todd Bartholf
Senior Consultant – Windfarm Assessment

Firm
CH2M HILL

Education
B.A., Business, University of Colorado

Years of Experience: 28

Qualifications

- More than 28 years of experience in international energy activities, with particular expertise in wind and renewable energy project design and development
- Former president of Northern Power Systems, a project- and technology-based firm specializing in the supply of highly reliable, renewable energy systems to the utility and telecommunications marketplace
- Senior Associate of Winrock International, a non-profit international development assistance organization founded in 1973 by the charitable trust of the late Winthrop Rockefeller

Mr. Bartholf has international energy and environment experience, with particular expertise in renewable energy strategic planning, market assessment, project design, product development and project management. He has been involved in the development of wind energy projects since 1982, and has experience in India, China, Indonesia, the Philippines, Thailand, Brazil, Chile, Dominican Republic, Guatemala, Mexico, Russia, Canada, and the United States, including extensive US and host country government involvement.

Relevant Experience

Director, Renewable Energy, CH2M HILL, Denver, CO. Responsible for the development and deployment of company services to renewable energy projects worldwide. Has served as wind energy advisor to various projects implemented by CH2M HILL for wind developers in the U.S. since 2002.

Experience Prior to CH2M HILL

Project Development Advisor, NREL, Golden, CO. Assisted US DOE sponsored, NREL led multi-year initiative, *Wind Powering America,* to encourage and support increased wind power project development in many regions of the US.

Project Development Advisor, NREL, Golden, CO. Assisted international project team in connecting wind project development opportunities in China, Brazil, Mexico and Egypt with interested technical and financial partners.

Wind Market Specialist, NREL, Golden, CO (1998, 1999, and 2000). Served as international markets specialist on Technical Review Committee to the Director of the National Renewable Energy Laboratory's National Wind Technology Center.

Advisor, Federal Wind Program, U.S. DOE, Golden, CO (1998 & 2000). Served as advisor to the U.S. Department of Energy in their review of the Federal Wind Program at the National Renewable Energy Laboratory.

Trainer, Renewable Energy Training Courses and Workshops (1999 & 2000). Conducted IIE/USAID-sponsored business training classes for renewable energy entrepreneurial interests in the Philippines and Brazil, and for the "Renewable Energy for the Developing World" workshop hosted by Solar Energy International.

Project Manager, EUI/Xcel Ponnequin Wind Project, CO. Provided project support to developer and facilities owner through entire design, construction and operation phases, including identification of third party investors.

Director, Renewable and Distributed Resources, Econergy, Boulder, CO (1999). Led in the formulation of a strategic marketing plan to promote international consulting firm's services in sustainable design and carbon management to corporate clients.

Senior Renewable Energy Engineer, Bechtel Corporation, Gaithersburg, MD (1997). Led internal assessment team in developing technology roadmaps for solar photovoltaic, solar thermal and wind energy technologies for Bechtel Corporation's Advanced Power Division.

Technical Advisor, Battelle PNNL, Chile (1997). Served as technical advisor to Battelle's Pacific Northwest National Laboratory in their US/International Joint Implementation project preparation efforts for a wind energy project in northern Chile.

Consultant, Winrock International, India (1997). Developed an India PV Commercialization Strategy.

Principal Solar and Wind Energy Expert, Winrock International/USAID (1992-1996). Served as principal solar and wind energy expert for Winrock International's renewable energy program and the U.S. Agency for International Development.

Project Manager, Winrock International/USAID, the Philippines (1994-1996). Designed and managed a US$4 million Global Environmental Facility (GEF) project for USAID/Manila to provide a local source of technically-based investment options for renewable energy projects in the Philippines.

Project Manager, Winrock International/USAID, Indonesia (1993-1996). Designed and managed a US$3 million GEF project for USAID/Jakarta to train local communities of Indonesia's eastern island region in the use of small-scale wind energy technology to meet local water supply, lighting, communications, and ice-making needs.

Project Originator, Winrock International Renewable Energy Division (1992-1995). Led the design and establishment of an international network of renewable energy project support offices (REPSO) to establish a global presence for Winrock International's Renewable Energy Division.

Member, Special Multi-Sector Task Force (1996). Task force addressed barriers to deployment of commercially viable renewable energy technologies in Native American communities.

Project Originator, Chevron Kutubu Pipeline Power System, Papua New Guinea. Led development team at Northern Power Systems (NPS) in the design, manufacture, test and delivery of complete photovoltaic (PV)/diesel hybrid power systems to support communications along Chevron's Kutubu oil pipeline.

Project Manager, AWS Scientific/Niagara Mohawk Power Corporation Solar System, Latham, New York. Led Northern Power Systems' design and installation team for a grid-connected demand side photovoltaic project as a demonstration of the technology's capability to provide peak load-shaving benefits to total building energy demand.

Project Supervisor, Ford Aerospace/US Navy Solar Powered Defense Communication System, Sardinia, Italy. Supervised all phases of Northern Power project delivery for power systems to support offshore equipment for Tactical Air Combat Training Systems (TACTS) range located in the Mediterranean Sea.

Project Supervisor, Codetel Wind/Solar Project, Dominican Republic. Provided supervision for all phases of a Northern Power project to design, manufacture and assemble a complete wind/solar/diesel system to power a key microwave link for the Dominican Republic Telephone Company.

Project Manager, Kollsman/US Air Force Solar Powered Defense Communication System, Alaska. Overall supervision and client manager for Northern Power project to design, manufacture and deliver several self-contained systems to power remote monitoring equipment for an Air Combat Maneuvering Instrumentation (ACMI) range in Alaska.

Project Supervisor, AT&T Worldwide Services/ENTEL Solar Powered Communications Network, Bolivia. Overall supervision and client manager for Northern Power project to design, manufacture and install a series of fully configured PV/diesel power systems to support a microwave communications network spanning Bolivia.

Product Developer/Project Manager, Pacific Gas & Electric Solar Powered Obstruction Lighting Systems. Led design and delivery of SOLSTM units for difficult to maintain section of the utility's above water transmission network located near Moffat Field air base in San Francisco Bay.

Lynne Hosley
Senior Consultant – Power Line Assessment

Firm
CH2M HILL

Education
M.S., Environmental Science, University of Quebeck

B.S., Ocean/Ecology, McGill University

Years of Experience: 28

Qualifications

- Managed several Pacific Gas and Electric (PG&E) projects, including the McDonald Island Gas Storage Expansion Project Preliminary Environmental Assessment (PEA) and Jefferson-Martin PEA
- Managed site selection studies for the California Super Collider transmission lines
- Managed Richmond-San Rafael Bridge Seismic Retrofit, Section 7 consultations under the ESA

Ms. Hosley is a senior environmental scientist with 25 years' experience in comprehensive environmental resources studies for large, complex projects, including transmission lines, highways, and pipelines throughout California and the western states. She has managed the preparation of CEQA and NEPA documents, has extensive experience with regulatory agency negotiations for federal and state endangered species, wetlands, and water quality permits, and managed environmental compliance during construction on a variety of projects.

Relevant Experience

Project Manager and Senior Biologist, PG&E Jefferson-Martin PEA and Related Services, Pacific Gas & Electric Company. Project manager and senior biologist for the preparation of the Jefferson-Martin Proponent's Environmental Assessment, and subsequent environmental services during the CPUC process for an approximately 28-mile 230kV overhead and underground transmission line in the San Francisco Bay Area. Coordinated closely with PG&E's engineering, transmission planning, and environmental planning, and biology staff to bring in all phases of this project successfully within their extremely tight time frames. Provided expert witness testimony for PG&E during the CPUC hearings for general environmental issues, especially for biological resources testimony, and oversaw CH2M HILL's geotechnical and visual expert witness testimony preparation.

Geothermal Facility Closure Project, PG&E and Cooperating Entities, Lake County, California. Provided senior review for CEQA compliance and permitting for the closure of the facility.

Project Manager, Caltrans On-Call Environmental Services Contract. Project Manager for a 4-year, 10-million dollar on-call environmental contract for Caltrans District 4. Projects have included cultural resources surveys, development of mitigation plans, and environmental compliance monitoring for numerous highway projects; site characterization and remediation for freeway construction in San Francisco; hydrology and water quality analyses; preparation of Natural Environment Surveys (NES) and Biological Assessments (BA) for numerous roadway and bridge projects; and providing resource agency permitting support throughout the District.

BART SFO Extension, San Mateo County, CA. Environmental compliance manager for construction oversight of this $1.6 billion, 8-mile-long project. Monitored implementation of and compliance with EIR/EIS measures and permit requirements; reviewed contractor's plans; and identified design changes requiring further environmental review or permit amendments. Managed field monitoring crews during construction, including endangered species protection, erosion control and stormwater pollution prevention, cultural resources monitoring and recovery, habitat and wetlands protection and restoration, noise and vibration abatement, traffic control, and hazardous materials handling and disposal.

Program Manager for Environmental Services IDQ, U.S. Army Corps of Engineers. Ms Hosley was program manager for a 3-year, 5 million dollar Indefinite Quantities Contract to provide environmental services to the SF District of the U.S. Army Corps of Engineers. Projects included marsh restoration projects, dredging analyses, eel grass bed characterization and mitigation, wetland habitat quality evaluations, and development of a General Permit covering seasonal wetlands (vernal pool) fill in Sonoma County. She was project manager for monitoring the success of the Corps of Engineers Sonoma Baylands Demonstration wetlands restoration project, including collection and analysis of biological, hydrological, water quality and surveying data, and recommendations for corrective actions.

Caltrans Richmond-San Rafael Bridge Seismic Retrofit, CA. Managed the environmental components of this project, including preparation of the NES/BA and soil and groundwater investigations and environmental services during construction including noise, water quality, and biological and cultural resources impacts. Managed permitting activities, including Section 7 consultations for impacts to winter-run Chinook salmon, steelhead, and peregrine falcons. Mitigation design and monitoring for impacts to wetlands, eelgrass beds, and harbor seal haul-out were significant permitting issues for the project.

Coyote Creek Flood Control Project, San Jose, CA. Prepared CEQA/NEPA documents, biological resources studies, and permitting for this 6-mile flood control project. Developed revegetation plans for 23 acres of riparian forest, managed the development and comparative analysis of fishery mitigation plans, and developed mitigation and monitoring plans for freshwater, brackish water, and salt marsh habitats.

Tuscarora Pipeline Environmental Services. Ms. Hosley served as biological resources task manager for an environmental analysis of the proposed 240-mile Tuscarora pipeline in northeastern California and part of Nevada, including siting studies, preparation biological resources reports, and managing botanical, wildlife, and fisheries surveys. She worked closely with BLM to prepare guidelines for restoration with native species, including establishment of test plots. She recently managed the vegetation and wetland studies for siting of three natural gas pipelines in Oregon for PGT, totaling over 200 miles.

James Bay Energy Corporation. As senior environmental analyst for the James Bay Energy Corporation, a government-owned energy and hydroelectric corporation with jurisdiction covering over 80,000 square miles in northern Quebec, Ms. Hosley participated in the environmental impact analyses, permitting, and construction oversight for dam construction, reservoir creation, road, and high energy transmission line projects. She provided the natural resource and land use analyses for an 800-mile transmission line corridor and alignment study and EIR. She managed the natural resources, land use, and water quality analyses for several access road projects over 50 miles in length. She participated in the development of wetlands mitigation plans for the inundation of several hundred square miles of reservoirs on two major river systems, and of borrow site revegetation programs for road projects.

Tom Priestley. PhD
Senior Consultant – Visual Resources

Firm
CH2M HILL

Education
Ph.D., Environmental Planning, University of California, Berkeley

MCP, University of California, Berkeley

MLA, University of California, Berkeley

BUP, University of Illinois

Years of Experience: 28

Qualifications
- Visual assessment specialist with involvement in more 75 visual impact assessments
- Expertise in preparing California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents
- Proficiency in methods for siting electric generation, transmission, and substation facilities and mitigating their land use and aesthetic effects
- Skilled in scoping aesthetic and urban design issues and in developing and implementing the appropriate analyses

Dr. Priestley has more than 28 years of professional experience in urban and environmental planning and project assessment. He is known nationwide for his expertise in evaluating aesthetic, land use, property value, and public acceptance issues related to electric energy projects. His experience includes projecting community land use development trends to determine facility needs and optimal location; assessing land use and visual effects of proposed electric facilities; and conducting studies of public perceptions of project visual effects. Through his project experience and research conducted for utility clients, Dr. Priestley has developed expertise in methods used for siting electric generation, transmission, and substation facilities and mitigating their land use, aesthetic, and other environmental effects. As editor or co-author, he has made major contributions to Edison Electric Institute publications related to understanding and evaluating the environmental effects of electric facilities.

Relevant Experience

Senior Reviewer/Senior Consultant, Jefferson-Martin Transmission Project, Proponent's Environmental Assessment, San Mateo County, California. Senior reviewer and consultant for an analysis of the aesthetic issues associated with the proposed replacement of a 14.7-mile segment of an existing electric transmission line with a 230-kV line on larger towers. The transmission line's location in an open space area prized for its scenic qualities and in proximity to affluent residential areas made the visual issues a sensitive and critical dimension of this project, requiring an intensive degree of analysis. Contributed to a detailed critique of the PUC's conclusions regarding project aesthetic effects. Prepared written expert witness testimony.

Aesthetic/Visual Resources Analyst, Tri-Valley Transmission Upgrade, Project Proponent's Environmental Assessment, Alameda County, California. Analyzed aesthetic issues associated with a system of new 230-kV electric transmission lines and substations proposed by Pacific Gas and Electric Company (PG&E) to upgrade service to the Livermore/Pleasanton/San Ramon area. Scoped issues and evaluated a large set of candidate routes to aid selection of a smaller set of preferred routes. Conducted detailed visual analyses of the preferred routes, wrote the draft of the visual analysis report, and proposed mitigation measures in preparation for filing a permit application with the California Public Utilities Commission (CPUC).

Aesthetic Analyst and Expert Witness, Russell City Energy Center, Alameda County, California. Assisted with decision making for the architectural design of a 600-MW natural gas-fired, combined-cycle power plant proposed for a highly visible location at the western gateway to the City of Hayward. Prepared the AFC visual resources analysis for the power plant and an associated 230-kV transmission line. Prepared supplemental analysis of the visual impacts of relocating a cluster of tall radio towers to a new location to accommodate development of the power plant. Prepared written testimony and testified as an expert witness on visual resources during hearings before the CEC.

Aesthetic Analyst and Expert Witness, Metcalf Energy Center, Santa Clara County, California. Responsible for all aspects of the visual resources analysis for a 600-MW natural gas-fired power plant and associated 230-kV transmission line proposed for development at the southern edge of the City of San Jose. Assisted in reviewing architectural and landscape treatments, prepared visual resources analysis for the AFC, reviewed and critiqued relevant sections of the CEC's Preliminary Staff Analysis (PSA) and

Final Staff Analysis (FSA), and evaluated the visual issues associated with CEC-proposed alternative sites. Testified during hearings before the CEC as an expert witness on visual resources.

Aesthetic Analyst, Red Bluff Diversion Dam, Tehama-Colusa Canal Authority, Tehama County, California. Developed the analysis plan and directed the assessment of the aesthetic changes associated with a set of alternatives being considered for changes in operations at the Red Bluff Diversion Dam to enhance passage for anadromous fish. Changes being considered included construction of a massive pumping facility, new fish ladders, and a dam bypass and elimination of an aesthetically and recreationally important lake created by the dam either entirely, or for all but two or four months of the year. The analysis, which included preparation of simulations, was summarized in an aesthetics chapter prepared to meet the requirements of both the NEPA and CEQA.

Mark Bastasch, PE, INCE
Noise

Firm
CH2M HILL

Education
M.S., Environmental Engineering, William Marsh Rice University, Houston, Texas

B.S. (cum laude), Environmental Engineering, Cal Poly San Luis Obispo, California

Registrations
Professional Acoustical Engineer: Oregon

Professional Environmental Engineer: Oregon

Professional Civil Engineer: Oregon

Member, Institute of Noise Control Engineering

Member, Acoustical Society of America

Years of Experience: 9

Qualifications
- Has prepared acoustical analysis or expert testimony for more 9,000 megawatts (MW) from gas-fired facilities and more than 2,000 MW from wind generation facilities
- Specializes in industrial noise measurements, modeling and control for power, industrial and transportation clients
- Has prepared detailed noise models of numerous power facilities with CADNA/A modeling software and other modeling techniques.
- Has prepared comprehensive and cost effective compliance reports for numerous gas-fired and wind energy facilities demonstrating that permit conditions were satisfied.
- Lead technical consultant for Renewable Northwest Project's successful effort to modify the Oregon Noise Rule for wind turbines.

Mr. Bastasch is a registered professional acoustical, civil and environmental engineer with more than 9 years experience conducting acoustical studies for power, industrial and transportation projects.. Mr. Bastasch's experience includes extensive acoustical consulting, regulatory permitting with numerous state agencies and regulatory negotiations (including revising the Oregon noise rule for the wind turbine development community).

Relevant Experience

Klondike Wind, Northwestern Wind Power, Oregon and Washington. Northwestern Wind currently has a 25-MW pilot project in Sherman County, Oregon, which uses the Enron Wind 1.5-MW generators. Subsequent phases would add up to 400 MWs of wind generation. Provided preliminary acoustical modeling and permit assistance at the local and state levels and developed a noise monitoring protocol. Helped draft alternatives for revisions to the state noise standard as it applies to wind energy facilities.

Stateline Wind Project, Oregon and Washington. Acoustical technical lead for all phases of this wind farm in northeast Oregon (Umatilla County) and southeast Washington (Walla Walla County). Tasks included monitoring at existing Vestas wind turbines and proposed turbine locations, authoring a noise impact evaluation, and preparing environmental documentation to comply with both Oregon and Washington standards.

Maiden Wind, Prosser, Washington. Acoustical technical lead. Prepared operational and construction noise assessment of a 300-MW wind generating facility for local, state, and federal authorities. Tasks included ambient noise measurements and detailed modeling of both NEG Micon and Enron Wind Turbines. Developed mitigation and permitting strategy that gave client flexibility to postpone final turbine selection.

Walnut Energy Center, Turlock Irrigation District, Turlock, California. Acoustical technical lead for a combined cycle power plant. Tasks included evaluating and measuring background noise levels; development of detailed noise model, comparison of expected noise levels with the City of Turlock, County of Stanislaus, and the California Energy Commission's (CEC) noise guidelines; preparing Application for Certification and subsequent amendments submitted to the CEC; regulatory negotiation; and review of Conditions of Certification. Additional tasks included development assistance with acoustical bid and guarantee specifications and independent analysis of manufacturer steam turbine generator enclosure.

Delta Energy Center, Calpine Corporation, Pittsburg, California. Conducted detailed environmental noise survey to demonstrate this combined cycle facility complied with Conditions of Certification. Report was accepted by the California Energy Commission without comment.

Peoples Energy Resources Corporation (PERC), COB Energy Facility, Klamath County, Oregon. **PERC** proposes to construct and operate a 1,150-MW combined-cycle gas-fired generation facility in southern Oregon, approximately 3 miles south of Bonanza. Because of the project's size, it must go through Oregon's Energy Facility Siting Council review, a rigorous and lengthy process that requires evaluation of a broad range of environmental issues. Prepared site certificate for the plant and associated transmission line.

Hermiston Power Project, Calpine Corporation, Hermiston, Oregon. Conducted acoustical and vibration monitoring to determine if steam turbine generator, heat recovery steam generators, stacks and combustion turbine generators complied with warranted levels within a time critical schedule. Prepared detailed environmental noise monitoring to demonstrate that the facility complied with permit conditions and minimized the time full load operation was needed during off-peak hours. Oregon Office of Energy accepted the report without comment.

Metcalf Energy Center, San Jose, California. Acoustical technical lead for a 600-MW power plant. Tasks include the following: evaluating and measuring background noise levels; comparison of expected noise levels with the City of San Jose, County of Santa Clara standards, and the California Energy Commission's (CEC) noise guidelines; recommendations to acquire additional property; preparing Application for Certification submitted to the CEC; regulatory negotiation; and review of Conditions of Certification, testimony at public hearings, and CEC evidentiary hearings, which included detailed cross-examination. Successful negotiations saved the client more than $5 million in capital expenditures.

Los Esteros Critical Energy Facility, San Joaquin Valley Energy Center, East Altamont Energy Center, Delta Energy Center, Calpine Corporation, California. Services similar to Metcalf Energy Center. Prepared Applications for Certification or testimony and expert witness testimony for regulatory proceedings.

Loren Bloomberg
Transportation/Circulation

Firm
CH2M HILL

Education
M.E., Civil Engineering, University of California, Berkeley

M.S., Civil Engineering, University of California, Berkeley

B.S., Systems Engineering, University of Virginia

Registrations
Professional Engineer: California Traffic (2000; No. 2060)

Years of Experience: 16

Qualifications
- Experienced in practical and theoretical applications of traffic operations, particularly for freeways, arterials, and ramp metering
- Broad background in transportation planning, conceptual design, and transportation systems analysis
- Expert in traffic simulation modeling
- More than 16 years of experience, including transportation modeling and analysis for local areas, corridors, and entire regions

Mr. Bloomberg is an experienced traffic engineer and transportation planner who has led or played a key role in numerous large-scale planning and operations analyses. He has conducted studies and developed plans for local areas, corridors, and entire regions, including roadways, maritime facilities, and airports. Mr. Bloomberg's technical expertise is in simulation modeling and traffic operations, with a particular focus on conceptual engineering and traffic analysis. He is often called upon as a technical expert for CH2M HILL's modeling projects, and is known as a project manager for his ability to complete traffic analyses accurately, efficiently, and meeting client requirements. Mr. Bloomberg is a member of the Highway Capacity Committee of the Transportation Research Board, the international group of 30 professionals charged with developing and maintaining the *Highway Capacity Manual*.

Relevant Experience

Traffic Control Task Lead; Metcalf Energy Center Offsite Utilities; San Jose, California; 2001-2002. Task lead for traffic control. As part of a fast-track, design-build effort to design and construct linear facilities (recycled water, sewer, and potable water) to support a new energy center, led the traffic control task for the project. Developed plans to support two pipeline alignments through 6 to 10 miles of urban streets. Worked with local agencies to develop a transportation management plan (TMP) to support agency requirements and maintain construction schedules.

Traffic Task Lead; San Francisco Energy Reliability Project; San Francisco, California; 2004-2005. Was the task lead for traffic for completing the traffic and transportation section of the Application for Certification (AFC), a process similar to an EIR. The project is an energy plant in San Francisco, and traffic impacts focused on the construction activities.

Project Engineer; Walnut Energy Center Traffic Control and Implementation Plan (TCIP); Turlock, California; 2004. Developed the traffic control plan for the utility (potable and recycled water) lines for the Walnut Energy Center in Turlock, California. The TCIP addressed the mitigation of traffic impacts to the existing transportation facilities to satisfy the requirements of the California Energy Commission (CEC) Conditions of Certification.

Project Manager; Broadway-Jackson Feasibility Study; Oakland, California; 2004 to Present. Serves as the project manager on an effort to develop feasible alternatives for the Interstate (I)-880 corridor in downtown Oakland, California. Previous studies had recommended infeasible and/or undesirable alternatives; CH2M HILL was selected to build consensus and develop innovative solutions. Is leading the development of alternatives and directing the technical work and consensus-building activities. Two sets of advisory panels have been engaged: the first includes agency stakeholders (California Department of Transportation [Caltrans], Oakland, and Alameda); the second includes neighborhood groups (e.g., Chinatown, members of business community, and other agencies). The team has developed a focused set of alternatives (some of which simplify ramps and provide pedestrian-friendly boulevards).

Project Manager; I-880 Operations and Safety Study; Oakland, California; 2002-2003. Was the CH2M HILL project manager for this study to evaluate opportunities to enhance the operations, safety,

and appearance of the northern segment of I-880 in Oakland. Led the safety evaluation and traffic operations analysis, and played a major role in developing improvement strategies, including conceptual design of interchange improvements. The end product was a set of 10 projects, ready for Caltrans planning and environmental analysis, that were developed with the consensus of a multijurisdictional group of stakeholders.

Traffic Lead; I-680 Corridor Study; Contra Costa County, California; 2003. Was the traffic lead on a project to conduct conceptual engineering on the I-680 freeway corridor in Contra Costa County, California. Conducted freeway analysis of high occupancy vehicle (HOV) alternatives using the FREQ model, including combinations of HOV and general-purpose lane improvements. Played a key role in the development of concepts for HOV and transit line options, and served as senior reviewer for the striping plans.

Project Manager and Lead Traffic Engineer; Nikon Traffic Study; Belmont, California; 2004. Project manager and lead traffic engineer on a project to evaluate traffic impacts of a proposed addition to the Nikon facility in Belmont, California. Led data collection, traffic analysis, and impact assessment as a precursor to the CEQA analysis for the project.

Transportation Analysis Task Lead; Proponent's Environmental Assessment (PEA); San Mateo County, California; 2002-2004. Was the task lead for the transportation analysis to support the PEA and associated EIR for a major utility company. The project involved trenching and overhead construction throughout San Mateo County, with potential impacts to freeways, ramps, surface streets, and Bay Area Rapid Transit (BART). Led the transportation analysis (including evaluation, assessment of impacts, and development of mitigation measures) and was primary author for the transportation section of the environmental document. Led the development of transportation management plans (TMPs) for the multiple jurisdictions.

Traffic Operations Lead; U.S. 101/SR 85 Interchange Design; Mountain View, California; 1999. Traffic operations lead for a design review of the U.S. 101/SR 85 interchange in Mountain View, California. As part of a multidisciplinary team, reviewed traffic operations, circulation and access, bridges, and cost and quantity elements of a $110 million design for the system interchange and three nearby interchanges. Lead author on the design review report to the design team, which recommended changes or review of 74 elements of the design.

Amy Clymo
Air Quality

Firm
CH2M HILL

Education
Bachelor of Science, Environmental Toxicology; UC Davis

Master of Science, Civil and Environmental Engineering; UC Davis

Years of Experience: 2

Qualifications
- Experience in air quality impact assessment, emission inventories, and National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA)
- Experience in preparation and submission of power plant Applications for Certification

Relevant Experience

Air Quality Analysis, Vernon Power Plant. Provided support for the air quality impact section and coordinated completion of Volumes I of the AFC. Tasks included review of construction emission estimates, review of air quality section text, organizing figures, coordinating completion of Volume I resource sections, and submitting the AFC to the California Energy Commission.

Air Quality Analysis, AES Highgrove Project. Provided support for the air quality impact section of the Application for Certification. Tasks included construction emission estimates and reviewing text of the air quality section.

Air Quality Analysis, Port of Long Beach. Provided air emission estimates from construction and operation of various projects. Tasks included emission estimates and preparation of air quality sections for CEQA and NEPA documents.

Air Quality Analysis, State Route 79 Widening, Riverside County, California. Task lead for the air quality assessment of the State Route 79 Widening project. Estimated construction emissions, prepared the air quality technical report, and reviewed EIR section.

Air Quality Analysis, Clinton Keith Road Extension, Riverside County, California. Task lead for the air quality assessment of the Clinton Keith Road Extension project. Estimated construction emissions, completed hotspot analyses, prepared the air quality technical report, and reviewed EIR section.

Brenda Eells
Land Use

Firm
CH2M HILL

Education
Master of Planning, University of Wyoming

B.A., Geography, Wittenberg University

Years of Experience: 9

Qualifications
- Experienced in managing environmental documents with complex agency and community involvement components
- Experienced in analyzing and evaluating land uses and visual resources issues
- Has been involved in public participation segments of several projects
- Knowledgeable about linear and utility facilities environmental compliance and documentation management

Ms. Eells is an environmental planner who is familiar with National Environmental Policy Act and California Environmental Quality Act and analyzes projects for their compliance to these acts. She has experience in effectively coordinating environmental documentation projects for transportation and water projects as well as private and public utilities. Her education and multidisciplinary experience, including her experience with land use and visual resource analysis, provide a solid background for evaluating complex environmental policy issues.

Relevant Experience

Task Lead for Visual Resources/Aesthetics, Riverside County Transportation Commission State Route 79 Realignment Project: Riverside County, CA. Responsible for evaluating project alternatives for new 19-mile expressway, including determination of landscape units and sensitive viewing locations, and analyzing project impacts.

Task Lead for Visual Resources/Aesthetics, Confidential Southern California Power Project, CA. Responsible for evaluating replacement of an oil-fired power plant with new gas-fired power plant, including determination of sensitive viewing areas, preparation of detailed visual simulations, and analyzing project impacts. Project includes 8.5 miles of natural gas pipeline.

Project Manager, Chiquita Canyon Landfill Master Plan Revision; Los Angeles County, CA. Tasks include analysis of land use and visual resources impacts resulting from various landfill expansion alternatives. Visual resources analysis includes preparation of detailed viewshed maps for each alternative to evaluate impacts and determine appropriate landfill expansion engineering plans and preparation of detailed visual simulations.

Project Manager, California Corrections of America Prison; Kern County, CA. Tasks include analysis of land use, public services and utilities, and visual resources impacts resulting from construction and operation of a new secure prison facility in California City, California.

Project Manager, PPM Energy Fairmont Wind Development Project; Los Angeles County, CA. Tasks included screening analysis of land use and visual resources impacts resulting from development of a 100 MW wind energy project. Preliminary visual resources analysis included establishing project viewshed, and preparation of detailed visual simulations.

Assistant Project Manager, Los Angeles Department of Water and Power Silver Lake Reservoir Complex Storage Replacement Project; Los Angeles, CA. Tasks included analysis of land use, public services and utilities, and visual resources impacts resulting from construction and operation of a 110-million-gallon underground water storage reservoir, 4-megawatt hydroelectric power-generating facility, and 1-mile bypass pipeline.

Assistant Project Manager, Teayawa Energy Center Environmental Impact Statement/Environmental Impact Report; Riverside County, CA. Tasks included analysis of land use, agriculture, public services and utilities, and visual resources impacts resulting from construction and operation of a 600-megawatt power generating facility, 15 miles of natural gas pipeline, and 43 miles of upgraded or new transmission lines.

Task Lead, Visual Resources/Aesthetics, Oxnard Groundwater Recovery Enhancement and Treatment Program; Ventura County, CA. Evaluated visual resources impacts resulting from construction and operation of a tertiary treatment facility, groundwater desalination facility, aquifer storage and recovery wells, and various associated pipelines.

Task Lead, Visual Resources/Aesthetics, Clinton Keith Road Extension Project; Riverside County, CA. Evaluated visual resources impacts resulting from changed alignment and land use conditions for a road extension project.

Task Lead, Visual Resources/Aesthetics, Los Angeles to San Diego via the Inland Empire segment of the California High Speed Rail Programmatic Environmental Impact Report/Environmental Impact Statement, Los Angeles, Riverside, and San Diego Counties, CA. Evaluated proposed High Speed Rail alignments for typical landscapes and sensitive viewing locations, and analyzed potential project impacts.

Task Lead, Visual Resources/Aesthetics, Tehama-Colusa Canal Authority Red Bluff Diversion Dam Fish Passage Improvement Project: Tehama County, CA. Evaluated impacts to visual resources/aesthetics resulting from construction of a pumping station and fish screen on the Sacramento River and corresponding change in gate operation. Analysis included participation with and presentation to stakeholder working group and preparation of detailed visual simulations.

Task Manager, Colusa Basin Drainage District Integrated Watershed Management Plan Draft Environmental Impact Report: Glenn County, CA. Tasks included analysis of land use and visual resources impacts resulting from various flood control measures, including construction and operation of dams and rice field spreading basins, and stream restoration activities.

Jim Estep
Biological Resources – Avian Collisions

Firm
Estep Environmental Consulting

Education
B.S., Wildlife Biology, UC Davis

Years of Experience: 20

Qualifications

- Manages biological resource assessment projects and prepares mitigation and conservation plans for sensitive habitats and special-status wildlife species.
- Assess project impacts on wildlife populations, designs field studies, and conducts surveys for threatened and endangered species throughout California, Oregon, and Nevada.

Mr. Estep has more than 20 years as an environmental professional and consulting biologist, Jim specializes in resource conservation and wildlife management planning; CEQA and NEPA compliance; biological resource assessments; endangered species surveys, impact assessments, and consultations with state and federal resource agencies; mitigation planning and compliance; wildlife management techniques; and field study design. He works on projects focusing on natural resources and wildlife management planning for a variety of clients and industries, including energy, transportation, communications, community planning and development, state and federal resource and land management agencies, and private land and resource conservancies. He has extensive experience working with local, state, and federal agencies, private organizations, and research groups.

Relevant Experience

Avian Study and Environmental Impact Statement – Kenetech and Conservation and Renewable Energy System Wind Generation Projects, Washington. Prepared a report describing the results of an avian study conducted to analyze the potential effects of wind farm operation above the Columbia River in southern Washington. The report included the results of extensive surveys, data compilation, and statistical analyses and made recommendations regarding the design of the planned wind farm. Included this information in the environmental impact statement (EIS) prepared for the project.

Biological Resource Studies and Construction Monitoring for the Los Vaqueros Reservoir Project – Contra Costa Water District, California. Coordinated resource studies for Contra Costa Water District's Los Vaqueros Reservoir Project. Coordinated preconstruction surveys (San Joaquin kit fox, California tiger salamander, California red-legged frog, golden eagle, burrowing owl) and construction monitoring activities during the construction phase of the project, which involved construction of the dam and reservoir, the water conveyance system, and several relocation projects, including a 230-kV powerline, a natural gas pipeline, two petroleum pipelines, and a major county road.

Altamont Pass Wind Resource Area Biological Resource Management Plan – Alameda County, California. Prepared the biological resources section and a biological resources management plan for Alameda County's Repowering a Portion of the Altamont Pass Wind Resource Area Environmental Impact Report. The plan incorporated all special-status plant and wildlife species and other biological resources and established measures to avoid and protect those resources in the context of windfarm development and operation.

Environmental Screening Analysis for Sherman Island Wind Project – PPM Energy, Inc. Representing Estep Environmental Consulting, prepared a comprehensive environmental screening analysis that explores and analyzes potential constraints to development of a wind energy facility on Sherman Island, an island in the Sacramento-San Joaquin River Delta.

Montezuma Wind Project – FPL Energy, Inc. Representing Estep Environmental Consulting, prepared an avian assessment that documents monitoring and mortality studies conducted in the Montezuma Hills, determines the need for additional monitoring, and assesses the potential avian mortality-related impacts of the proposed windfarm.

Preconstruction Surveys and Compliance Monitoring of the Shiloh Wind Project – PPM Energy, Portland, OR. Representing Estep Environmental Consulting, coordinated preconstruction surveys,

training, and compliance monitoring for the Shiloh Wind Project in the Montezuma Hills Wind Resource Area for PPM Energy.

EnXco V Repowering IS/MND – enXco, Inc. Palm Springs, CA. Project Director to prepare an Initial Study/Mitigated Negative Declaration for the enXco V repowering project in the Montezuma Hills, Solano County, CA. With Solano County as the lead agency under CEQA, analyzed potential impacts of the project, including the beneficial impact on avian mortality from repowering a portion of the windfarm.

Meteorological Tower Installation EA – PPM Energy, Portland, OR. Project Director to prepare an Environmental Assessment for the Bureau of Land Management for a met tower project east of San Diego for PPM Energy. As a precursor to wind farm development, the project included resource surveys for biological and cultural resources, coordination with the El Centro District of the BLM, and preparation of the EA and FONSI.

Experimental Wind Turbine Installation IS/MND – The Wind Turbine Company, Seattle, WA. Project manager to prepare the biological section of an Initial Study/Mitigated Negative Declaration for The Wind Turbine Company. Working directly with the Los Angeles Department of Water and Power, the section analyzed the impacts on biological resources including desert tortoise and other reptiles, rare plants, and California condor, of installing and operating an experimental turbine in the Antelope Valley, CA.

Environmental Impact Report for Solano Wind Project – Sacramento Municipal Utility District. Prepared the biological section of the environmental impact report for SMUD's Solano Wind Project in the Montezuma Hills. The section included an analysis of the potential for bird strikes during operation of the windfarm and provided a mitigation strategy that was subsequently approved by the resource agencies and the SMUD Board.

Biological and Cultural Resource Surveys for the High Winds Wind Farm – FPL/Greenridge Energy. Project Director for a project to conduct biological and cultural resource surveys in support of a CEQA document prepared by Solano County for the Highwinds Windfarm in the Montezuma Hills Wind Resource Area. Included biological and cultural resource surveys, rare plant survey, wetland delineation, and preconstruction surveys for California tiger salamander, burrowing owl, and other species.

Technical and Feasibility Study Report for Path 15 – Pacific Gas & Electric Company. Project Director for initial resource surveys for technical and feasibility study report for Path 15, a proposed 84-mile-long 500 kV transmission line in western Fresno and Merced Counties.

Path 15 Transmission Line Project – Western Area Power Administration. Project Director for Path 15 resource surveys, environmental documentation, permitting, Section 7 compliance, and construction compliance monitoring.

Selected Publications

Bradbury, M.J., J.A. Estep, and R. Anderson. In prep. Migratory movements and wintering ecology of Swainson's hawks from the Central Valley, California.

England, A. S., J. A. Estep, and W. R. Holt. 1995. Nest-site selection and reproductive performance of urban-nesting Swainson's hawks in the Central Valley of California. Journal of Raptor Research 29(3):179–186.

Estep, J.A. 1989. Biology, movements, and habitat relationships of the Swainson's hawk in the Central Valley of California, 1986–87. Nongame Bird and Mammal Section Report. California Department of Fish and Game.

Estep, J.A. 1989. Avian mortality at large wind energy facilities in California: identification of a problem. California Energy Commission Staff Report 9700-89-001.

Matt Franck
Water Resources

Firm
CH2M HILL

Education
B.S., Environmental Policy Analysis and Planning, University of California at Davis

Years of Experience: 15

Qualifications
- Conducted environmental studies throughout California, Oregon, and Washington

Mr. Franck is an environmental planner with CH2M HILL. He has 15 years of experience in managing and writing environmental impact assessment documents in compliance with NEPA and CEQA. He also coordinates local, state, and federal regulatory processes. Mr. Franck's education and multidisciplinary experience, as well as his expertise in land use and resource planning, provide a solid background for evaluating complex environmental policy issues.

Relevant Experience

San Francisco Electric Reliability Project, Public Utilities District for the City and County of San Francisco, California. Task Manager for the preparation of the Water Resources section of this Application for Certification, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation is focuses on water, wastewater, and stormwater generation and use by the proposed facility in the context of Citywide compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

Modesto Irrigation District Electric Generation Station, Modesto Irrigation District, Ripon, California. Task Manager for the preparation of the Water Resources section of this Small Power Plant Exemption, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation focused on water, wastewater, and stormwater generation and use by the proposed facility in compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

Ongoing Environmental Documentation and Permitting Support, OMI-Thames Water, Stockton, California. Task Manager for environmental documentation and permitting support for the contract operation of the City of Stockton's wastewater, water, and stormwater infrastructure. To date, the major task in this support effort has been the coordination of a contractor's preparation of an Environmental Impact Report under CEQA for the upgrade of the City's wastewater treatment plant in accordance with Clean Water Act requirements. Another major task is the preparation of an application to the U.S. Coast Guard for a new utility bridge crossing of the San Joaquin River, including a NEPA Environmental Assessment. The utility bridge project has also included extensive agency coordination with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and state and local levee agencies.

Downtown-Natomas-Airport Environmental Impact Statement/Environmental Impact Report, Sacramento Regional Transit District, California. Task Manager for the preparation of an Environmental Impact Statement/Environmental Impact Report for the development of light rail facilities. The proposed light rail facility would run from Downtown Sacramento to Sacramento International Airport. Key issues of concern involve historic preservation in Downtown Sacramento; habitat, archeological, and recreation impacts in the American River Parkway, public safety impacts in developed neighborhoods, and nuisance issues associated with traffic and noise. The effort is being coordinated under the Federal Transit Administration's New Starts program.

Sacramento Valley Water Management Program, Northern California Water Agency, California. Task Manager for an Environmental Impact Statement/Environmental Impact Report for the implementation of a Sacramento Valley-wide water management program. The purpose of the program is to meet water quality standards in the Sacramento-San Joaquin Bay-Delta by increasing water supply reliability in the Sacramento Valley, requiring a coordinated effort among approximately 25 stakeholders (mostly local water districts). The project involves the application of CALSIM2, a mass-balance hydrologic model that evaluates the movement of water throughout the Central Valley, including the effects of the federal Central Valley Project and the State Water Project.

Bradshaw Interceptor and Road Widening, Sacramento Regional County Sanitation District, Sacramento, California. Task Leader for the coordination of all environmental permit activities to the construction of a large-diameter sewer interceptor along Bradshaw Road in Sacramento County, and the widening of the road from two to four lanes. Permitting agencies include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and the State Historic Preservation Officer. Managed staff in wetland delineation and special-status species surveys. Also coordinated with the County's Department of Environmental Review and Assessment to ensure the completion of environmental documentation for the project.

Water Treatment Plant Expansion, City of Sacramento, California. Coordinated preparation of the City of Sacramento's Environmental Impact Report to assess the planned expansion of the E.A. Fairbairn and Sacramento River Water Treatment Plants. Responsible for preparing and coordinating the preparation of all impact sections. The EIR required project-level impact considerations that included the application of PROSIM, a hydrologic model used to simulate Central Valley Project water deliveries.

Michelle Harris
Paleontological Resources

Firm
CH2M HILL

Education
B.S., Geology
B.A., Earth Science

Years of Experience: 1

Qualifications
- Experience identifying paleontologically sensitive sediments in compliance with the CEC and CEQA regulations to performing air quality tests

Ms. Harris is a staff consultant at CH2M HILL's Las Vegas office. She has experience with projects ranging from remedial investigations to preparing site-specific stratigraphic framework to identify paleontologically sensitive sediments in compliance with the CEC and CEQA regulations to performing air quality tests.

Relevant Experience

Conducted Soil Gas Measurements, City of Henderson Landfill, July 2006. Calibrated a TVA1000 and utilized the instrument in measuring the soil gas emission at the City of Henderson landfill.

Prepared Paleontological Section of AFC Permit, Confidential Client, June 2006. Reviewed project instructions and prepared the paleontological section of the Application For Certification (AFC) in compliance with the California Energy Commission (CEC) and California Environmental Quality Act (CEQA) for senior staff review.

Prepared Paleontological Section of AFC Permit, Humboldt Bay Repowering Project, May - June 2006. Reviewed project instructions and prepared the paleontological section of the Application For Certification (AFC) in compliance with the California Energy Commission (CEC) and California Environmental Quality Act (CEQA) for senior staff review.

Prepared Stratigraphic/Geologic Background for ACF Permit, El Paso to Phoenix Extension (EPX), May - June 2006. Conducted literature review and prepared a summary of the geologic background and assessed the paleontological sensitivity of the stratigraphic units present in the project area.

Prepared Stratigraphic/Geologic Background for ACF Permit, Salton Sea, April - May 2006. Conducted literature review and prepared a summary of the geologic background and assessed the paleontological sensitivity of the stratigraphic units present in the project area.

Summarized the DAR into the Monthly Paleontological Report, Roseville Project, March and June 2006. The Roseville project is an ongoing construction project. The Daily Activity Reports (DAR) are generated by the on-site paleontological resource monitor (PRM). Each month the DAR are reviewed and summarized into a monthly report submitted to the environmental compliance manager and the project manager.

Clint Helton, RPA
Archaeological/Ethnic Resources Task Leader

Firm
CH2M HILL

Education
MA, Anthropology, Brigham Young University, UT

BA, Language and Literature, University of Utah, UT

Registrations
Registered Professional Archaeologist (No. 11280)

Years of Experience: 10

Qualifications
- Strong background in environmental impact evaluations, with particular expertise in conducting cultural resources studies in CA, CO, ID, NV, UT, WY
- 10 years of environmental management experience in the western U.S.
- Meets Secretary of Interior Professional Qualification Standards (36CFR61)
- Highly experienced managing cultural resources studies for large linear utility projects to meet federal requirements of National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Federal Energy Regulatory Commission (FERC).and state requirements of California Environmental Qualify Act (CEQA)

Mr. Helton has more than ten years of environmental management experience in the western United States. He has a strong background in environmental impact evaluations, having directed technical studies; negotiated with lead agencies, responsible agencies and clients; and has written, edited, and produced a substantial number of environmental review and technical documents. His knowledge of regulatory compliance and cultural and paleontological resources enables him to manage National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) compliance activities and document preparation. Mr. Helton is a particularly skilled practitioner of federal regulations governing treatment of cultural resources, especially Section 106 of NHPA (36CFR800) and the Native American Graves Protection and Repatriation Act (NAGPRA) (43CFR10). Mr. Helton has Significant expertise conducting consultation with State and Federal agencies, as well as facilitating formal government-to-government consultation with Native American groups and tribes throughout the western U.S. Additionally, Mr. Helton is experienced with the challenges of preparing environmental documentation for large linear utility projects, including large interstate pipelines, and is familiar with the process and guidelines of the Federal Energy Regulatory Commission (FERC) among others.

Relevant Experience

Project Principal\, Western Area Power Administration, Transmission Line Project; Imperial County, CA. Provided overall management of cultural resources services for the Parker-Blythe #1 161-kV transmission line project. The inventory extended from Blythe, California to Parker, Arizona. A total of 147 sites (136 in California and 11 in Arizona) were recorded.

Project Principal/Quality Control Manager, Talega Residential Housing Development, Archaeological and Paleontological Compliance, Data Recovery, and Compliance Monitoring, San Clemente, CA. Project principal for multidisciplinary team providing environmental compliance services for this 3,700-acre home development in San Clemente. Assisted with frequent agency consultation with U.S. Army Corps of Engineers (USACE).

Army National Guard Cultural Resources Support Contracts, UT. Managed cultural resources services from Army National Guard for all 29 facilities within the State of Utah. Primary goal was to assist National Guard with bringing facilities into compliance with Section 106 of NHPA. Managed archaeological survey, testing, and data recovery projects. Assisted with Native American consultation. Authored an Integrated Cultural Resources Management Plan (ICRMP) to assist the Guard in complying with Department of Defense Instructions 4715.3 and Army Regulation 200-4.

Task Manager, State Route 79 Realignment Project, Riverside County, CA. Task Lead, quality control manager, and overall management of cultural and paleontological resources studies for this 19-mile highway realignment project in Riverside County, California. Provide regulatory guidance, regional technical expertise in cultural resources and coordination of subconsultants. The inventory

comprises over 7,100 acres in the vicinity of the cities of Hemet and San Jacinto. Frequent consultation and coordination with Riverside County Transportation Commission (RCTC) and Caltrans.

Task Manager, State Route 79 Widening Project, Riverside County, CA. Task Lead, quality control manager, and overall management of cultural resources studies for this highway widening project in Riverside County, California. Provide regulatory guidance, regional technical expertise in cultural resources and coordination of subconsultants. Frequent consultation and coordination with Riverside County Transportation Department (RCTD) and Caltrans.

Technical Specialist, Clinton Keith Road Extension Project, Riverside County, CA. Performed cultural resources survey and report preparation for this road widening and realignment project. Project was generally located between I-215 and SR 79 in the City of Murrieta and in Riverside County.

Deputy Project Manager, Port of Long Beach, Cultural Resources Management Plan and Architectural Survey and Evaluation, Long Beach, Los Angeles County, CA. Preparing a major Port-wide long-range management plan for cultural resources including prehistoric and historic cultural resources properties and historic architectural resources located within the operating boundaries of the Port of Long Beach.

Task Manager, Southern California Water Company (SCWC) Water Wells Project, Archaeological Surveys; Riverside and San Bernardino County, CA. Conducted cultural resources surveys and prepared CEQA documentation for the development of four water wells in San Bernardino County, California.

Deputy Project Manager, AES Pacific Inc., Highgrove Power Plant, CA. Preparation of environmental analysis component of Application For Certification for California Energy Commission in support of this proposed natural gas fired 300 MW peaking power generation facility in Riverside County, California. Additionally responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Edison Mission Energy, Walnut Creek Energy Park Power Plant, CA. Assisted with preparation of Application For Certification for California Energy Commission in support of this proposed 500 MW power generation facility in Los Angeles County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Edison Mission Energy, Sun Valley Energy Center Power Plant, CA. Assisted with preparation of Application For Certification for California Energy Commission in support of this proposed 500 MW power generation facility in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Project Manager; Sacramento Municipal Utility District (SMUD) Cosumnes Power Plant and Gas Pipeline Project, Environmental Compliance, Sacramento, CA. Managed interdisciplinary team of over 20 environmental specialists including archaeologists, biologists, and paleontologists during construction of 26-mile gas pipeline and associated power generation plant. Contract value was over $2.0 million.

Project Manager, Sierra Pacific Power Company, Third-Party Environmental Compliance, 630-Mile Silver State East Fiber Optic Project, Salt Lake City, UT, to Reno, NV. Managed multiphase contract to provide staff support to Bureau of Land Management (BLM) during preparation of POD and NEPA document, as well as well as third-party environmental compliance activities during construction of the 590-mile Silver State East Fiber Optic Project by Sierra Pacific Power Company. Led agency coordination, managed the project budget and staff, and assisted with resource data extraction from agency archives. Assisted with development of MOU, Project Charter, Programmatic Agreement, and public scoping process.

Robert Hernandez
Staff Biologist

Firm
CH2M HILL

Education
B.S., Wildlife Management, Minor in Natural Resources, Humboldt State University

Years of Experience: 7

Qualifications
- More than 7 years working with California flora and fauna
- Experience and training in jurisdictional waters and wetland delineations
- Experience and training in surveying for desert tortoise, southwestern willow flycatcher, bighorn sheep, identifying terrestrial mollusk specie, least Bell's vireo, Swainson's hawk, raven, crow, jay, northern spotted owl, northern goshawk, marbled murrelet, and western snowy plover
- Experience and training in the use of GPS technology with submeter accuracy in the field
- Ornithological experience in identifying neo-tropical migrants, raptors, waterfowl, shorebirds, and upland-game birds by site and song
- Experience in composing biological assessments and has the ability to trap, tag, and identify mammalian species by sight, tracks, and scat

Mr. Hernandez is a staff biologist in CH2M HILL's Southern California office. He has knowledge of avian and terrestrial wildlife species, California native plants, shrubs, trees, and the role they play in the environment. He is experienced in remote sensing such as photogrammetry, topographic map interpretation, radio telemetry, photographic bait stations, sooted track-plates, geographic information systems (GIS), and global positioning systems (GPS). Robert also has extensive knowledge and experience delineating wetlands and other jurisdictional waters. Mr. Hernandez has knowledge of environmental regulations and policies that protect the environment and threatened and endangered species.

Relevant Experience

Field biologist, Fairmont Wind Project, Pacificorp Power Marketing. Fairmont, California. Conducted field surveys of the project site for biological resources, including surveys for avian species, burrowing owl, and vegetation. Responsibilities also include mapping, database management, literature review, report writing.

Field biologist, Utah Forest Highway 29 Northern Goshawk Survey, Federal Highways Administration, Beaver, Utah. Conducted protocol level surveys for northern goshawk. Other responsibilities include, habitat mapping, wetland delineation, and report writing.

Field biologist, State Route 79, Riverside County Transportation Commission, Riverside County, California. Conducted jurisdictional waters and wetland delineation and rare plant surveys of the proposed project site. Other responsibilities include, use of GPS technology to map sensitive resources such as wetlands, vernal pools, rare plant populations, and sensitive wildlife observations.

Field biologist, Multiple Jurisdictional Waters Delineations; United Engineering Group Inc. Conducted jurisdictional waters and wetland delineation of four large sites within the Mojave Desert. Other responsibilities include GIS/GPS mapping, literature review, report writing.

Field biologist, State Route 39 Bighorn Sheep Study, Caltrans, Los Angeles County, California. Conducted field surveys for bighorn sheep along closed portion of State Route 39 during preconstruction phase. Responsibilities also include data management and reporting.

Field biologist, Topock IM3 Project, Pacific Gas and Electric, San Bernardino County, California. Conducted preconstruction surveys for sensitive and special-status wildlife species. Responsibilities also included jurisdictional waters and wetland delineation, environmental construction monitoring, biological sensitivity training, and report writing.

Field biologist, On-Call Biological Support, County of San Diego Department of Public Works. Conducted preconstruction surveys for sensitive and special-status wildlife species on an on-call basis. Responsibilities also included jurisdictional waters and wetland delineation, habitat mapping, GPS/GIS mapping and report writing.

Field biologist, U.S. Air Force Plant 42 Biological Surveys, Palmdale, California. Conducted biological surveys for sensitive and special-status wildlife species, including desert tortoise, Mojave groundsquirrel, and burrowing owl. Responsibilities also included habitat mapping, GPS/GIS mapping and report writing.

Field biologist, City of Burbank, California, Trunk Line. Conducted preconstruction surveys for sensitive and special-status wildlife species on a proposed pipeline replacement route in Los Angeles County for the Los Angeles Department of Water and Power (LADWP). Mr. Hernandez's responsibilities included breeding bird surveys, seine-netting for sensitive fish, night eye-shine surveys for special-status amphibians, and environmental monitoring during construction phase.

Field biologist, Whittier Narrows Operable Unit remedial Action, Environmental Protection Agency, Los Angeles County, California. Conducted preconstruction surveys for least Bell's vireo and other sensitive species in South El Monte for a groundwater remediation project for Environmental Protection Agency. Mr. Hernandez's other tasks include environmental oversight of construction activities in environmentally sensitive habitats, and environmental mitigation monitoring of construction practices, and preparation of revegetation and exotic plant species eradication plans.

Field biologist, West Mojave Plan, Bureau of Land Management. Conducted GIS analyses on potential route closure designation as they pertain to environmentally sensitive habitats for the U.S. Department of the Interior's Bureau of Land Management (BLM).

Field biologist, Headwaters Forest Reserve in California. Conducted pre land acquisition and preconstruction surveys for sensitive and special-status species for the BLM, Arcata Field Office. Surveys of the 7,400-acre Headwaters Forest Reserve included northern spotted owl nest searches, terrestrial mollusk surveys, corvid monitoring, small forest carnivore surveys, herpetological surveys, and survey route designation.

Technical Skills

- Experience in jurisdictional waters delineation
- Able to identify avian species by sight and song
- Knowledge of west coast mammals, including trapping and tagging
- Experience in interpreting aerial photos and the use of topographic maps
- Experienced in the use of global positioning systems (GPS)
- Able to map and measure vegetation cover
- Experience in the use of various computer software programs

Heather Johnson
Biological Resources – Bat Specialist

Firm
CH2M HILL

Education
M.S., Conservation Biology, California State University, Sacramento

B.S., Biological Sciences, California State University, Sacramento

Permits
California Department of Fish and Game Scientific Collecting Permit for Mammals, Reptiles and Amphibians

Years of Experience: 13

Qualifications
- Experience in a wide variety of surveys and wildlife investigations. She has particular expertise in bat surveying and sensitive species monitoring

Heather Johnson is a wildlife biologist with experience in a wide variety of surveys and wildlife investigations. She has particular expertise in bat surveying and sensitive species monitoring. She has performed assessments for bat roosting habitat in a variety of natural and man-made structures, such as trees (PG&E installation project), bridges (Natural Environment Studies under CEQA), hydroelectric facilities (FERC re-licensing for PG&E), and reservoirs (CEQA Initial Study).

Relevant Experience

Ms. Johnson has been a biological monitor in sensitive habitat for desert tortoise, burrowing owls, and rare plants as part of mining operations (U.S. Borax), highway construction (Caltrans), pipeline construction and expansion (Williams), and general facility maintenance (PG&E). Monitoring duties included attending pre-construction meetings, performing surveys, and communicating with contractors and training employees on environmental compliance issues. Specific relevant projects follow:

- **Presidio Viaduct Maintenance Project, Alameda County, California.** Conducted bird and bat surveys on the bridge section and assessed impacts of proposed Caltrans maintenance activities.
- **River Road Bridge Replacement Project, San Luis Obispo County, California.** Inspected bridge for use by sensitive species, assessed project impacts and recommended mitigation.
- **Natural Environment Study, San Simeon Creek Bridge, San Luis Obispo County, California.** Conducted sensitive species surveys, assessed project impacts and recommended mitigation.
- **Price Canyon Road Bridge, San Luis Obispo County, California.** Performed sensitive species surveys, assessed project impacts and recommended mitigation.
- **Niles Canyon Bridge, Alameda County, California.** Provided technical support during bird and bat exclusion from bridge as part of Caltrans project mitigation.
- **Sonoma Marin Area Regional Transit (SMART), California.** Surveyed for sensitive species in bridges, overcrossings, and buildings along former railroad route as part of transit project planning.
- **Highway Construction Project, Mojave, San Bernardino County, California.** Monitored sensitive species and habitats in Mojave Desert as part of Caltrans project constructing 9 miles of highway

Maral Kasparian
Staff Biologist

Firm

CH2M HILL

Education

M.S., Wildlife and Fisheries Ecology, Oklahoma State University, Stillwater

B.S., Wildlife, Fish and Conservation Biology, University of California, Davis

Years of Experience: 2

Qualifications

- Experience with writing documents pertaining to CEQA and AFC, especially analysis relevant to biological resources.
- Expertise in terrestrial, wildlife ecology, human-wildlife interactions, and California, endangered species ecology.
- Extensive technical writing experience as author of four, peer-reviewed publications and editor of UC Davis journal.

Ms. Kasparian's relevant experience stems from her present work writing CEQA documents and compiling biological resource chapters for AFC documents for public and private sector clients. She has experience with the preparation of special-status species, wetlands, land use, traffic, noise, community services, environmental justice, agricultural resources, utilities, energy, recreation, growth inducement, and visual impact analyses. She also has an extensive fieldwork background surveying plants and animals, their associated habitats and compiling information from primary and secondary sources.

Relevant Experience

Project Staff, Application for Certification

- Tierra Energy, Eastshore Energy Power Plant, Hayward, CA.; conducted field surveys on project site and surrounding area; writing the biological resources chapter of the AFC.

Project Staff, Initial Study/Mitigated Negative Declaration

- Caltrans, East Washington Interchange, City of Petaluma, Sonoma County, CA; preparing and writing all necessary sections of the CEQA document, as well as coordinating and managing information between CH2M HILL staff, Caltrans (client) and subcontractors.

Project Staff, Natural Environment Study

- Caltrans, Jameson Canyon HWY 12, Napa and Sonoma Counties, CA; preparing analyses and writing of the NES. Assisting with field surveys, survey reports, GIS and analyses.

Other Experience

- Conducted:
  - Live-trapping and handling of over 300 carnivores, various rodent and marsupial species, and amphibians
  - Vegetation sampling including use of densitometer, Daubenmier frame for percent cover estimates, visual obstruction board and dbh tape
  - Tree, grass and herbaceous vegetation identification
  - Tracked movements by radio-telemetry, homing, and triangulation of opossums, black bears, and feral cats; able to identify and mark amphibians
  - Transect surveys for raptor fatalities by wind turbines
- Proficient in researching literature using online search engines and journals, formulating reports, data summaries, and field notes.
- Accomplished in GPS unit, radio-telemetry instrument, map and compass use.

Sarah Madams
Risk of Accidents/Hazardous Materials/Safety

Firm
CH2M HILL

Education
B.S., Environmental Toxicology

Years of Experience: 9

Qualifications
- Expertise includes working with multidisciplinary teams to assess the environmental impacts of power plant projects on the environment

Ms. Madams has more than 9 years of professional experience including project management, regulatory compliance, permitting, public involvement/community relations, data collection and analysis, database management, compliance audits, document preparation, and technical writing. For the last 4 years, Ms. Madams has served as the Deputy Project Manager for power plant licensing work performed by CH2M HILL. Her expertise includes working with multidisciplinary teams to assess the environmental impacts of power plant projects on the environment. These assessments include impacts to air, biological and cultural resources, land uses, noise, socioeconomics, public health, water and visual resources, soils and geology, and paleontology.

Relevant Experience

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California (2002 to 2003). Project Coordinator for the AFC for a 180-MW power plant. The project required the preparation of numerous other studies/documents to satisfy the CEC staff request. These studies/documents included the preparation of a General Plan amendment and planned development zoning applications, archaeological and paleontological survey reports, and biological resource protection permits. Ms. Madams assisted with the development and implementation of biological, cultural, and paleontological resource monitoring programs; risk management plan; and traffic and transportation management plan. The plant is currently in operation.

Application for Certification, San Francisco Electric Reliability Project, San Francisco Public Utilities Commission, California (2003 to present). Project Coordinator for the AFC for a 145-MW simple-cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, attended public workshops, and prepared a site investigation report for the process water route. Assisted in preparation of Hazardous Materials and Hazardous Waste Sections for the AFC. In addition, she served as liaison and coordinated efforts between CEC project management and staff.

Application for Certification, Walnut Energy Center, Turlock Irrigation District, California (2002 to 2003). Project Coordinator for the AFC for a 250-MW combined cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and coordinated efforts between CEC project management and CH2M HILL staff. Ms. Madams assisted with the development of the waste management plan, security plan and emergency response plan. The plant is currently in operation.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California (2002 to 2004). Project Coordinator for the licensing of the 185-MW geothermal power plant. The power plant design was based on the flash geothermal power plant process, which produces both solid and liquid byproducts that required disposal. The project site was in a rural area of Imperial County, but was adjacent to a National Wildlife Refugee that supports significant populations of avian species. The licensing process involved the review of all environmental areas, and specifically focused on waste disposal, air quality, hazardous materials handling, and biological resources. Ms. Madams was responsible for the development and tracking of data response submittals requested by the CEC. The project was successfully completed, with a license issued by the CEC.

Various Power Plant Applications for Certification (AFCs) – Prepared or assisted on the Worker Health and Safety, Hazardous Materials Handling, and Waste Management sections. In addition prepared Field Safety Instructions, Health and Safety Plans and served as the Site Safety Coordinator for the following power plant Applications for Certification:

- South Bay Replacement Project (2005 to present)
- San Francisco Electric Reliability Project (2003 to present)
- Walnut Creek Energy Park (2005 to present)
- Sun Valley Energy Project (2005 to present)
- Confidential Southern California Power Project (2004 to present)

Air Quality Audits, SMUD, California (2004). Conducted air quality audits of the Central Valley Finance Authority's Carson Energy Facility and McClellan Gas Turbine Facility. Responsibilities included assisting with the development of the pre-audit checklist and field interview forms, conducting field interviews and audits, and assisting with summarizing and presenting findings in the final audit report.

Initial Study, August Substation, Turlock Irrigation District, California (2004). Managed the preparation of an Initial Study for the construction and operation of a proposed substation in Hilmar. The IS evaluated all environmental resources and identified mitigation for significant impacts. She also prepared the hazardous materials portion of the IS.

Environmental Assessment, Sierra Army Depot, Herlong, California (2003). Assisted in preparation of the hazardous materials impacts and mitigation for the Environmental Assessment for the Child Development Center and Railroad Loop project at Sierra Army Depot. The EA evaluated the potential impacts on biological resources, hazardous materials, and visual resources for the two proposed projects.

Health and Safety Audits, Various Clients, Bay Area, California (1998 to 1999). Managed environmental health and safety compliance programs for multiple confidential clients within the San Francisco Bay Area. Performed weekly site inspections of hazardous waste storage facilities and satellite accumulation areas. Reviewed safety plans and conducted safety inspections in preparation for Cal-OSHA audits. Prepared reports of findings, advised clients on compliance deficiencies, and corrected deficiencies prior to audits. Collected, profiled, packaged, and shipped hazardous waste from customer site to Treatment, Storage and Disposal Facilities (TSDF).

Bojana Maric
Transportation/Circulation

Firm
CH2M HILL

Education
M.S., Transportation Engineering, University of California, Berkeley

B.S., Civil Engineering, California State University, Sacramento

Registrations
Engineer in Training, Certificate No EIT 117234

Years of Experience: 1.5

Qualifications
- Developed a design development plan for Lower Guadalupe River Trail Project for the City of San Jose and the Santa Clara Valley Water District.

Bojana Maric has experience in site/civil design as well as in the design of roadways, bicycle facilities, and related improvements for transportation projects. Her experience also includes preparing traffic analyses, traffic management plans and evaluating projects' transportation/traffic impacts. Her basic knowledge and experience in the areas of general civil engineering, such as transportation, land development, and water/sanitary sewer design, come from both the public and private sectors. In addition, she has excellent knowledge of AutoCAD and experience with Land Desktop, MicroStation and InRoads.

Relevant Experience

State Route 237/Lower Guadalupe River Bridge, Santa Clara Valley Water District/City of San Jose, California. Design engineer preparing a feasibility study and PS&E for a bicycle path design for the City of San Jose.

California Department of Corrections, Salinas Valley State Prison 64-Bed Mental Heath Facility Expansion. Design engineer providing PS&E services for the site/civil design of the building expansion. The project requires site grading, utilities relocations, parking lot construction, drainage and stormwater treatment facilities, and LEEDS certification processes.

Henderson Landfill, City of Henderson, Nevada. Design engineer preparing the PS&E for bike trails and maintenance access roads for this landfill re-development project.

U.S. 50/Watt Avenue Interchange, Sacramento County, California. Design engineer assisting in the geometric design, utility relocation, and right of way needs for this project.

12th and 16th Streets at Richards Boulevard, City of Sacramento, California. Design engineer that provided PS&E design for the realignment of 12th and 16th Streets at Richards Boulevard in the City of Sacramento, California.

Salton Sea Unit 6 Traffic Management Plan (TMP), Department of Defense. Design engineer that assisted in the preparation of traffic handling memos involving traffic modeling using Synchro.

Vernon Power Plant, Walnut Creek Energy Park, Sun Valley Energy Park, South Bay Energy Facility, Eastshore Energy Project. Design engineer that prepared Applications for Certification (AFC) Traffic Sections.

Andrew Merriam
Aesthetic/Visual Impacts Task Leader

Firm

Wallace Group

Education

M.S., Urban Planning, Columbia University, NY

M.A., Architecture, Columbia University, NY

B.S., Architectural Engineering, California State Polytechnic University, San Luis Obispo

Registrations

Certified Planner, American Institute of Certified Planners (AICP) (1972, No. 003663)

Registered Architect, California (1970, No. C6524)

Years of Experience: 35

Qualifications

- Experience in developing Specific Plans, master and general plans, as well as evaluating the aesthetic impact of urban and rural developments

Mr. Merriam is an award-winning planner and architect. He has managed architecture and planning firms for more than 30 years and through the years has managed over 40 large-scale planning and nearly 100 environmental projects.

Mr. Merriam has become particularly recognized for his experience in developing Specific Plans, master and general plans, as well as evaluating the aesthetic impact of urban and rural developments. He has more than 35 years experience in permitting architectural and planning projects along the California Coast, an area well known for its strict regulations. He has a lifetime's worth of experience in general planning, permitting, Coastal Commission approvals, environmental impact analyses, visual and aesthetic evaluations, multi-disciplinary specific plans, transportation projects, community and public relations and work with historical structures. As a supervising principal, he directed the successful completion of more than 70 environmental impact analyses following California Environmental Quality Act (CEQA) or National Environmental Protection Act (NEPA) standards.

Relevant Experience

Major Energy Facility Evaluations

SCE Antelope Transmission Line, Palmdale, CA. As visual consultant to URS, Santa Barbara, provided analysis and supervised the simulations for 104-mile corridor transmission line from the windmill farm near Tehachapi to the Santa Clarita and Vincent substations in northern Los Angeles County. Issues were to simulate 90- to 100-foot transmission towers accurately to determine impacts on rural and urban areas as well in Los Angeles National Forest. Analysis had to meet both CEQA and Public Utilities Commission standards and thresholds of significance.

Big West Flying J Refinery, Bakersfield, CA. As consultant to URS, Santa Barbara, provided the analysis and supervised the simulations for the demolition and 12-acre addition to the existing refinery adjacent to the Kern River and a major arterial. Special issues required defining how the impact of the new facility compared with the removal of an earlier structure.

Transbay Cable, Pittsburg to San Francisco, CA. Served as visual consultant to URS Santa Barbara evaluating the onshore impacts of this million volt direct current cable which required converter stations as large as a typical power plant. The analysis was particularly complex in that there were 10 alternatives that required review and determinations as to visual impact based upon their location and adjacency to city streets and residential neighborhoods. There were also several sets of local ordinance and review bodies that would be involved which meant that the standards varied somewhat between the two cities of origin.

Project San Miguel, San Miguel, CA. Visual consultant to URS, now SAIC, Santa Barbara, California. Evaluation covered the identification of impacts of visual resources for an offshore oil platform as well as the development of an on-shore primary refinery adjacent to Highway 1.

Project Shell Hercules, Off Shore, Santa Barbara County, CA. Visual consultant to Jacobs Engineering, Pasadena, CA. Evaluation covered the identification of impact to visual resources for an offshore oil platform near Gaviota and Refugio Beaches as well as the development of additional onshore facilities at Los Flores Canyon and at the Gaviota Refinery. All were potentially visible from Highway 101.

Unocal Refinery Addition (1989), Guadalupe, CA. Evaluation of visual impact of adding two flaring stacks to the Santa Maria Refinery that would be visible to Highway 1.

Utilities and Public Agencies

Nacimiento Water Transmission Pipeline, San Luis Obispo County, CA. Visual consultant to Ogden Environmental and Energy. The visual analysis consisted in evaluating the impact of constructing over 60 miles of pipeline and the character of the supporting facilities. The compatibility of intake structures, treatment plants and storage tanks in rural settings were the primary focus of this analysis.

Pacific Bell Monopoles and Transmission Tower, San Luis Obispo County, CA. Visual consultant to Pac Bell. The visual analysis evaluated the impacts of a 120-foot high transmission tower and of 30-foot high monopoles with microwave receiving dishes in rural neighborhoods. Mitigation measures included relocation of some facilities and camouflage painting of others.

Port San Luis Development Options, Avila Beach, San Luis Obispo, CA. Visual and planning consultant to the Port San Luis Harbor District. Work for the Port evaluated architectural character ad computability for new waterfront facilities proposed on the pier and adjacent landfill. The visual impacts of development on the inland bluff were also analyzed to minimize visual intrusion on the recreation and waterfront character of the area.

Stephen O'Kane
ZVI/Air Quality

Firm
CH2M HILL

Education
M.S., Atmospheric Science; University of British Columbia

B.S., Atmospheric Science; University of British Columbia

Coursework in Resource Assessment and WAsP Modeling; Riso National Laboratory, Denmark

Coursework in WindFarm Modeling, ReSoft, Bedford, UK

Coursework in CALMET Modeling; Earth Tech Inc., Massachusetts, USA

Registrations
Canadian Meteorological and Oceanographic Society

Air and Waste Management Association

Years of Experience: 12

Qualifications
- More than 12 years of meteorological modeling, monitoring and analysis experience
- Special focus on boundary layer meteorology and numerical modeling in complex terrain
- Developed modeling, assessment and forecasting protocol for sour gas well test flares in data poor areas of the east slope of the northern Rocky mountains
- Formally trained by the Riso National Laboratory, Denmark in wind energy resource assessment
- Developed and designed specialized meteorological monitoring stations in support of air quality assessments

As a meteorologist in CH2M HILL's Energy, Environment and Systems Business Group, Mr. O'Kane has extensive experience and training the fields of wind energy resource assessment, air quality impact assessment, boundary layer meteorology, numerical modeling, project management, and environmental permitting. Mr. O'Kane has completed numerical modeling analyses on a regional and local scale for meteorological applications including forecasting, resource assessment, air quality analyses and risk management plans. He assists clients with a wide range of professional services from calibration and analysis of data for existing meteorological data systems, to scoping and analysis of air quality issues, assessment of air quality impacts, wind energy resource assessment and recommendation of monitoring and mitigation programs. He is a computer programmer and has an extensive list of clients in the energy and oil and gas industries.

Relevant Experience

Placer Dome, Alaska. Conducted a wind energy resource assessment for a potential 80 MW development in Alaska. Prepared a wind atlas and maps for potential turbine locations and supported the siting and commissioning of meteorological monitoring towers and SODAR systems.

Black Hills Power, Colorado. Prepared a wind energy assessment of confidential sites in eastern Colorado for the development of new generation. Prepared a wind atlas for the region and developed high resolution wind maps for prospecting and turbine siting.

enXco, Colorado and New Mexico. Prepared data summaries of potential wind farm sites in confidential locations in Colorado and New Mexico.

United Parcel Service Inc., California Locations. Conducted an assessment of the available wind energy resource at 8 sites in California for a distributed generation project. 50kW turbines were eventually proposed at three potential sites for on site generation at UPS distribution centers. Completed the environmental permitting and obtained project approval by local planning agency in Solano County.

PPM Energy, Confidential California, Washington and Oregon Locations. Performed visual assessment modeling and zone of visual influence analysis of proposed wind farms as a screening process prior to energy assessment and micro-siting of turbines.

BP Energy, Burlington Resources, Talisman Energy, North Star Energy, Canadian Natural Resources Ltd., British Columbia and Alberta Canada. Designed and installed meteorological monitoring system for numerous natural gas producers on the eastern slope of the northern Rocky Mountains in north-eastern BC. The monitoring stations were designed for assisting both air quality impact analysis and conducting local micro scale wind forecasts. On-site real time data was compared with mesoscale forecasts from the MM5 model to develop a localized meteorological model to minimize sulfur dioxide impacts from well test flares. Numerous pre and post flare air quality impact assessments

of sulfur dioxide emissions from sour gas well tests were conducted using the on-site monitoring data and model forecast data.

TransAlta Power, Alberta, Canada. Conducted an air quality impact analysis of emissions from three coal fired power plants to estimate the contribution to airborne particulate in the airshed of a major Canadian city. The analysis employed the CALMET/CALPUFF modeling system, a comprehensive three dimensional regional scale meteorological and numerical model, to assess the contributions of both primary and secondary particulate on visibility and ground level concentrations. Follow up work estimated the levels of gaseous and particulate mercury emissions contributing to the airshed.

BC Hydro, British Columbia, Canada Completed the air quality assessment of a combined cycle cogeneration plant, as part of the comprehensive environmental assessment required in an "Application for a Project Approval Certificate" for the BC Environmental Assessment Office. As senior meteorologist, completed a review and analysis of all applicable meteorological, climatological, and ambient air quality data; conducted numerical modeling of all criteria emissions from the proposed power plant, cooling tower, and adjacent sour gas plant; impact assessment of acid deposition resulting from the project, and was the primary author for the environmental assessment section of the project report. Also conducted an analysis of potential fogging and icing conditions on the nearby highway resulting from cooling tower emissions.

CU Power British Columbia, Canada. Completed the air quality assessment of a combined cycle cogeneration plant, as part of the comprehensive environmental assessment required in an "Application for a Project Approval Certificate" for the BC Environmental Assessment Office. The assessment included the review and analysis of all applicable meteorological, climatological, and ambient air quality data; numerical modeling of all criteria emissions from the proposed power plant, cooling tower and adjacent paper mill; impact assessment of acid deposition and ozone formation resulting from the project, and was the primary author for the environmental assessment section of the project report. Held public open houses and was the air quality liaison for the public and relevant regulatory agencies.

Island Cogeneration Project, British Columbia, Canada. Completed the air quality assessment of a combined cycle cogeneration plant, as part of the comprehensive environmental assessment required in an "Application for a Project Approval Certificate" for the BC Environmental Assessment Office. As senior meteorologist, completed a review and analysis of all applicable meteorological, climatological, and ambient air quality data; conducted numerical modeling of all criteria emissions from the proposed power plant, cooling tower, and adjacent pulp mill; impact assessment of acid deposition and ozone formation resulting from the project, consultation with relevant regulatory agencies, assisting the client in obtaining an air discharge operating permit, and writing the environmental assessment section of the project report. Provided ambient monitoring services for total reduced sulfur during construction

Calpine Power, San Jose, California Conducted numerical modeling of all criteria emissions from the Los Esteros Critical Energy Facility in San Jose, CA. The energy facility included four combined cycle natural gas turbines, associated cooling towers, emergency backup generator and fire pump. Model results were included in an "Application for Certification" submitted to the California Energy Commission.

Mike Pappalardo
Geology/Soils/Risk of Accidents/Hazardous Materials/Safety

Firm
CH2M HILL

Education
B.S., Geology, University of Oregon

Registrations
Registered Geologist: OR (# G1696), WA (# 2536)

Years of Experience: 17

Qualifications
- Extensive experience in environmental planning, permitting water resources, and geologic services

Mr. Pappalardo has extensive experience in environmental planning, permitting water resources, and geologic services. His background includes, wind energy facility permitting, watershed planning and hydraulic studies, dam decommissioning, surface water intake and National Pollutant Discharge Elimination System (NPDES) outfall and storm water permitting, anadramous fish passage improvement projects, transportation projects, environmental monitoring and monitoring plans, National Environmental Policy Act (NEPA) compliance and Environmental Impact Statements (EIS), Environmental Assessments (EA), Habitat Conservation Plans (HCPs), Storm Water Pollution Prevention Plans (SWPPP) and Spill Prevention Control and Countermeasures (SPCC) plans. He develops site-specific Sediment and Erosion Control Best Management Practices (BMP). In addition he has conducted a number of geologic and hydrogeologic investigations, environmental audits, hazardous waste site investigations and remedial actions, and is a large mine permitting specialist. Mr. Pappalardo is also a past Market Segment Leader for CH2M HILL's ES/EIS Ecosystems group, where he was responsible for ecosystems business development strategy and served as in interdisciplinary technical lead for CH2M HILL's Northwest Region.

Relevant Experience

Energy Facility Planning and Permitting Experience

Project manager for Orion Energy's successful application to the Oregon Energy Facility Siting Council (EFSC) for the 400 plus megawatt Biglow Canyon Wind Farm. Principal author of the geology, soils and natural hazards sections of the application. Provided technical assistance on all other aspects of the application including hydrology, visual, transportation, land use and socioeconomic impacts. Developed unique corridor concept for permitting that is being adopted by other wind energy developers in the region.

Senior technical lead and task manager for PPM Energy's application to the Oregon EFSC for the 200 megawatt Leaning Juniper wind energy project in Gilliam County Oregon. Principal author of the geology, soils and natural hazards sections of the application.

Project manager for PPM Energy's application to the Oregon EFSC for the 54-turbine Scenic Vista wind energy project in Umatilla County Oregon. Principal author of the geology, soils and natural hazards sections of the application. Provided technical assistance on all other aspects of the application including hydrology, visual, transportation, land use and socioeconomic impacts.

Project manager for FPL Energy's Stateline Relocation Project. Responsible for managing geotechnical services for the relocation of 25 wind turbine generators at the Stateline Wind Project in Umatilla County, Oregon.

Project manger for Horizon Wind Energy's successful application to the Washington ESFEC for the 136-turbine, Wild Horse wind energy project in Kittitas County Washington. Principal author of the hydrology, water quality, geology, soils and natural hazards sections of the application. Provided technical assistance on all other aspects of the application including visual, transportation and socioeconomic impacts. Assisted Zilkha in responding to comments for the project's EIS and EFSEC application. Provided expert testimony for the EFSEC application review and adjudicated hearing.

Project manger for Horizon Wind Energy's application to the Washington Energy Facility Siting Evaluation Council (EFSEC) for a 121-turbine wind energy project in the Kittitas Valley of central Washington. Principal author of the geology, soils and natural hazards sections of the application.

Task manger for FPL Energy's Stateline Wind Project Phase II Supplemental EIS in Walla Walla County Washington. Responsible for the management of key task leaders and the development of the SEIS for a 126-turbine expansion of the project. Principal author of the geology and soils sections of the document.

Task manger for the Phase III Amendment Application to the Oregon Energy Facility Siting Council for a 180-turbine expansion of FPL Energy's Stateline Wind Project in Umatilla County Oregon.

Robert Pearson
Risk of Accidents/Hazardous Materials/Safety

Firm
CH2M HILL

Education
Ph.D., Remote Sensing of Natural Resources, Colorado State University

M.S., Remote Sensing of Natural Resources, Colorado State University

Professional Diploma, Geophysical Engineering, Colorado School of Mines

Registrations
Registered Professional Engineer: Colorado (12582)

Qualified Environmental Professional, Institute of Professional Practice (Air and Waste Management Association)

Years of Experience: 37

Qualifications
- Extensive experience in environmental and technical engineering and regulatory review and assessment
- Served as state water quality regulator
- Teaches masters-level air pollution class

Dr. Pearson has over 37 years of experience in environmental and technical engineering, regulatory review and assessment, preparation of industrial compliance policy, and environmental consulting. Dr. Pearson has proven ability to work with clients to assess regulatory programs, define needs, and develop programs to satisfy those needs including getting needed constructions permits with acceptable terms and conditions on time. His program administrative experience includes projects in electric and magnetic fields, air pollution control and assessment, water quality control, environmental permitting, and environmental research and development. Prior to joining Radian, Dr. Pearson was a nationally recognized expert concerning environmental issues in the electric utility industry. He was also a state water quality regulatory commissioner and commission chairman appointed by the governor, as well as a member and chairman of a water quality operator certification board, also governor appointed. Dr. Pearson is also a member of the adjunct faculty of the University of Colorado, Denver campus, where he team teaches a masters-level air pollution class.

Relevant Experience

Managed utility company participation in two state-of-the-art epidemiologic research studies on the relationship between electric power lines and the occurrence of childhood cancer. Much of the data required for the studies were provided from company data files and the overall study design and execution was critiqued for its correctness and appropriateness.

Provided electromagnetic field (EMF) analysis and testimony for a 115-kilovolt (kV) underground electric transmission project that had been stalled by community opposition. As a result, the concerns of the citizens were allayed and the project was allowed to be constructed and placed into operation on schedule.

Provided EMF analysis and expert testimony to governmental bodies for an overhead electric transmission project being relocated as a result of construction of the new Denver International Airport. The EMF concerns raised by the governmental bodies were reduced to a level allowing them to approve the project to be built on schedule.

Chaired the EMF Health Studies Task Force of the Electric Power Research Institute. This industry advisory committee directs the EMF health studies research program of the Institute is the largest such basic EMF research program in the world.

Participated in the organization and conduct of annual EMF scientific meetings for the Electric Power Research Institute (EPRI). These annual meetings are the principal informational meetings for representatives of the electric utility industry.

Provided analysis and expert opinion on the EMF effects of a proposed Regional Transportation District light rail transportation system. This system, which is to be electrically powered, will run through several residential neighborhoods as well as commercial and industrial districts in the Denver area.

Serving as co-principal investigator and project manager of a study to investigate the "wire code paradox," sponsored by the Electric Power Research Institute. The paradox was revealed when earlier EMF epidemiologic studies done in Denver and elsewhere demonstrated a relationship between a surrogate measure of magnetic fields exposure, the wire code, and the occurrence of childhood cancer.

Actual measures of magnetic fields showed no such relationship. The study is investigating the nature of the wire code paradox and to determine if the wire code is related to other parameters of the neighborhood such as its layout or of the house such as its age where the child lived. Papers on the design and status of this project were presented to the 1993 and 1994 DOE/EPRI Annual Contractor's Review Meeting on the status of EMF research and the 1994 annual meeting of the Bioelectromagnetics Society.

Serving as co-principal investigator and project manager of a study to investigate the feasibility of conducting an epidemiologic investigation of children living in very high current configuration residences, sponsored by the Electric Power Research Institute. This study is exploring the feasibility of identifying children who live near larger power lines who could be surveyed for their incidence of contracting various forms of cancer including leukemia.

Serving as co-principal investigator and project manager of a study to further investigate the earlier observation that children who live near high-traffic streets have a significantly elevated risk of cancer. This study is looking at a distance weighted traffic density metric of exposure as a risk factor for cancer and leukemia. The study will then use standard EPA air pollution models to transform the traffic density metric to an estimate of exposure to volatile organic compounds (VOCs) emitted by motor vehicles and test them as a cancer risk.

Served as project director of an assessment of the magnetic fields to be generated by the proposed high-speed electric rail system to be built in Texas. This project determined the background levels of magnetic fields and the field levels that will be generated by the transit system when it is placed into service. Areas that will be exposed to an elevated magnetic field as a result of the operation of the transit system were determined. These magnetic field levels were then screened to determine if existing occupational or environmental guidelines or standards will be exceeded and, if so, what health implications there may be given the current scientific knowledge on the subject. As a portion of this project, measurements were made of the magnetic fields produced by the Spanish high-speed rail train, the AVE, which operates between Madrid and Seville. This rail system is identical to the system proposed for construction in Texas. Measurements were made both on the train as well as along side the tracks and at a power substation that supplies electricity for the AVE rail system.

Conducted two surveys of magnetic fields produced by 25-kilovolt (kV) distribution power lines for an electric utility in Granada, Spain. The utility had received two requests to relocate two primary voltage distribution power lines, one from the local government and one from a group of concerned neighbors. Measurements were made of the magnetic fields produced by each of these lines, which demonstrated the magnetic fields to be very low. Reports were produced for the utility for presentation to the city government and the group of concerned neighbors.

Representing two electric utilities in Colorado at public meetings on the construction of new 115- and 230-kilovolt (kV) electric transmission lines to be built to serve eight separate areas in Colorado and New Mexico. Presented information on the expected magnetic field levels to be produced by the transmission lines and the broader issue of the status of scientific knowledge on human health effects of electric and magnetic fields. That information was specifically requested by the public to be presented by a recognized expert in the field other than an employee of the utilities.

Modeled the magnetic fields in the transmission switchyard and in an underground power transmission cable at the Protrero Power plant in California. The project is to add a seventh unit to the power plant. The California Energy Commission requested that the modeling be done as part of the environmental impact analysis for the plant.

Served as principal investigator of an EMF research project on the Denver area for the Electric Power Research Institute. The project measured the voltages induced in grounded water pipes and electric neutrals along with magnetic fields in the homes and wire codes from nearby power lines in 191 homes selected from the Denver metropolitan area.

Julie Rochlitz
Geology

Firm
CH2M HILL

Education
B.S., Biology, Austin Peay State University, TN

Years of Experience: 2

Qualifications
- Extensive experience preparing environmental impact reports and statements under the CEQA and NEPA

Ms. Rochlitz is an environmental scientist within the Ecosystems Management Practice business group. She participates in multidiscipline teams that prepare environmental impact reports and statements under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

Ms Rochlitz is 40 hour HAZWOPER certified and has experienced in participating in a variety of environmental sampling, monitoring, and remedial activities. She conducts and helps manage surfacewater, soil, sediment, and biota sampling programs.

Relevant Experience

Team Member; Fort Carson and Pinon Canyon Maneuver Site Environmental Impact Statements; U.S. Army Corps of Engineers; Mobile District; 2006-2007. Assisted in writing, organization and preparation of two EISs**.** Authored Geology and Soils Resource sections, coordinated figure production, assisted with Administrative Record, and authored sections of Public Involvement Plans.

Team Member; Construction of FY06 Facilities at Fort Carson, Colorado, Environmental Assessment; U.S. Army Corps of Engineers; Mobile District; 2005-2006. Authored biological resource, land use and geology and soil resource sections of Environmental Assessment. Coordinated with GIS personnel for production of project graphics. Provided general support to include background research, data analysis and database organization.

Team Member; Natural Resource Liability Asset Management (NRLAM) Valuation Studies Department of Defense, 2005. Coordinated document production, and organization of NRLAM Valuation documents for Shaw Air Force Base (AFB), Seymour-Johnson AFB, McChord AFB and Fairchild AFB.

Team Member, Confidential Client, Northern California, 2005. Assisted in preparation and authoring of Fatal Flaws Analysis for proposed wind farm. Conducted reconnaissance level biological survey of project area and provided general support to include background research, data analysis and database organization.

Environmental Sampling and Monitoring

Field Team Member; North Wetland Investigation; EPA; Sulphur Bank Mercury Mine Superfund Site; Clear Lake Oaks, California; 2006. Participated as a member of the field sampling team for mercury, methyl mercury, metals, and nutrient concentrations in surface water, sediments, and biota at a 28-acre wetland. Responsibilities also included database management, and field sampling event preparation.

Field Team Member; Stormwater Investigation; EPA; Sulphur Bank Mercury Mine Superfund Site; Clearlake Oaks, California; 2006. Participated in collection of surface water sampling at SBMM. Responsibilities included data collection, data management and analysis.

Environmental Scientist; Tributary Investigation; EPA; Sulphur Bank Mercury Mine Superfund Site; Clear Lake Oaks, California; 2006. Participated in collection of surface water sampling at SBMM. Responsibilities also included data collection, data management and analysis.

Field Team Leader, Cottonwood Watershed Management Plan Long-Term Monitoring Program, Cottonwood Creek Watershed Group, 2005 – 2007. Developed a Quality Assurance Project Plan and Monitoring Plan for temperature, turbidity, *Escherichia coli* and benthic macroinvertebrates in surface water, at a 934 acre watershed. The long-term monitoring program is a part of an ongoing watershed

analysis to obtain baseline data for future management decisions within the watershed group and will be implemented in fall of 2006. Responsibilities include leading monitoring activities, conducting data management and analysis, and preparation of project reports.

Field Team Member; Surface Water Monitoring Program; EPA; Iron Mountain Mine Superfund Site; Redding, California; 2006. Assisted in collection of surface water sampling at IMM, a CIRCLA NPL site.

Gary Santolo
Biological Resources Task Leader

Firm

CH2M HILL

Education

M.S., Avian Sciences, University of California, Davis

B.S., Avian Sciences, University of California, Davis

Years of Experience: 19

Qualifications

- Prepares biological assessments for endangered species and developed mitigation plans for Section 7 and 10(a) under the Endangered Species Act.
- Conducts endangered species surveys and resolves endangered species conflicts.
- Specializes in land-use and endangered species, including willow flycatcher, California gnatcatcher, and Pacific pocket mouse. Completed USFWS Habitat Evaluation Procedures (HEP) projects

Mr. Santolo is a wildlife biologist and toxicologist. He has technical expertise in vertebrate biology and ecology and in wildlife toxicology and has experience in conducting biological, ecological, and toxicological studies. Mr. Santolo has conducted field surveys and inventories for common and special-status vertebrate species for environmental documents to determine impacts to wildlife and associated habitats. He has developed and co-authored a report recommending guidelines for conducting ecological risk assessments in California for the California EPA . He has also participated in preliminary site characterizations, habitat mapping, and plant species inventories in several ecosystems throughout California, Oregon, Washington, Nevada, and Alaska.

Relevant Experience

North First Street Assessment District Improvements, Hwy 113. City of Dixon, California. Caltrans District 4. Mr. Santolo conducted wildlife surveys, including surveys for special-status wildlife species such as the burrowing owl, Swainson's hawk, and nesting bird species. Mr. Santolo also worked with the engineering and planning team to determine specific impacts of proposed improvements and develop appropriate mitigation measures.

Northern California Storm-Damaged Highway Program. Caltrans On-Call Services. Mr. Santolo conducted environmental reviews and provided permit acquisition support at multiple storm-damaged highway sites in Northern California. Work was conducted under a Caltrans on-call contract to provide PS&E for storm-damaged highways. In support of emergency repair operations, Mr. Santolo investigated several habitat types for potentially occurring special-status species, including the marbeled murrelet, California spotted owl, and migratory bird species. Approximately 15 sites were investigated over a several hundred mile project area.

Mr. Santolo was the Designated Biologist for the LECEF project and produced environmental documentation, conducted general wildlife and burrowing owl surveys, and supervised biological monitoring during construction.

U.S. Bureau of Reclamation. Santa Nella, CA. Mr. Santolo conducted a 2-year photostation monitoring and tracking study for the endangered kit fox. The objectives of this study were to identify the locations of kit fox crossing at the Delta-Mendota canal and the California Aqueduct in the vicinity of Santa Nella.

US Army Corps of Engineers. Sonoma Baylands Wetland Demonstration Project, Sonoma, CA. A historic wetland on the San Francisco Bay was reclaimed by the US Army Corps of Engineers. Mr. Santolo conducted a monitoring study that included waterfowl and shorebird surveys twice monthly. He compared the bird use data to field data collected in the previous year to identify changes in bird use as the wetland matured.

Wetland Use Surveys, Chevron-Richmond Refinery, CA. Conducted surveys of bird use and reproduction to determine if the refinery's water enhancement wetland was beneficial to birds using it. Using hatching success as the criterion for evaluation, Mr. Santolo determined that control of predators at the site mitigated potential detrimental effects of selenium and that the wetland was clearly a benefit.

Hamilton City Pumping Plant Project Site. Glenn-Colusa Irrigation District, CA. Mr. Santolo conducted surveys for several special-status species, including the yellow-billed cuckoo, Swainson's hawk

(nest sites), and bank swallows within the GCID project site. Results of these surveys were used to avoid impacts to special-status species during construction.

Los Angeles Department of Water and Power. Owens Dry Lake Dust Mitigation Program. Conducted general wildlife surveys and specific surveys for Le Conte's thrasher and Mohave ground squirrel at Owens Lake, to determine presence prior to construction of water conveyance pipelines. Installed photostations at the south and east ends of the 110-square-mile lake over a three-year survey period to determine the presence of Mohave ground squirrel, a state-threatened species, and other common species inhabiting the area. Surveys also included migratory bird species, and species of concern such as the loggershed shrike.

Wildlife Surveys and Biological Assessment Along the Lower Colorado River, Bureau of Reclamation, California, Nevada, Arizona. Conducted desert tortoise, rare plant, and general wildlife surveys and co-authored Biological Assessment to comply with Section 7 of the Endangered Species Act. Prepared assessments to address operations of nine quarries located along the river, which were used for routine maintenance and emergency repairs to the bed and bank of the river following floods.

Wildlife and Plant Surveys, Camp Pendleton Marine Corps Base, California. Conducted bird surveys, small mammal trapping, invertebrate and plant sample collections to identify potential contaminant exposure routes for the Camp Pendleton Marine Corps base, California Ecological Risk Assessment. Conducted endangered species surveys for a biological assessment for site remediation on the base. Conducted surveys for the federally endangered arroyo southwestern toad, coastal California gnatcatcher, and Pacific pocket mouse.

Andrea Schmid
Water Resources/Land Use

Firm
CH2M HILL

Education
M.S., Interdisciplinary Graduate Studies, Iowa State University

Areas of Focus:
Natural Resource Ecology and Mgmt
Community and Regional Planning
Journalism and Communication

Years of Experience: 3

Qualifications
- Experience in technical writing, storm water management, and erosion and sediment control

Andrea is a staff planner with CH2M HILL's Water Business Group in Sacramento, California. Andrea brings experience in technical writing, storm water management, and erosion and sediment control. Andrea's multidisciplinary education and experience provides a solid background for evaluating environmental issues.

Relevant Experience

USDA Natural Resources Conservation Service, Soil Conservationist, July 2004 to May 2005. As a Soil Conservationist in Des Moines, Iowa, Andrea provided technical assistance to landowners to develop resource conservation plans that protect natural resources. She planned and implemented conservation practices and programs and also assisted with the survey, design, and installation of conservation practices. Conservation practices included filter strips, grassed waterways, riparian buffers, wetland restoration areas, and shallow water habitat areas.

Andrea wrote fact sheets, brochures, and press releases about urban conservation practices and storm water management. Urban conservation practices include rain gardens, bioswales, level spreaders, permeable paving, bioretention cells, native landscaping, and soil quality restoration.

She was also part of the team compiling specifications for the Statewide Urban Design and Specifications manual (SUDAS). The updated SUDAS manual, due out at the end of 2006, will include specifications for managing storm water quality.

Honors and Awards

Research Excellence Award, Iowa State University, 2004--(The Research Excellence Award at ISU is earned by completing graduate research deemed by the Graduate College to be in the top 10% of all graduate research completed by the graduating class).

Publications and Presentations

International Symposium on Society and Resource Management. 2004. Water Quality: Perceptions of City Residents, Community Leaders, and Developers in Cedar Rapids, Iowa. Denver, Colorado. *Oral presentation*.

Schmid, Andrea, Janette Thompson and David Bengston. 2005. Land use and water quality: A content analysis of regional newspapers in the Upper Mississippi River Basin. Journal of Soil and Water Conservation. *To be submitted.*

Schmid, Andrea and Janette Thompson. 2005. Comparing community leaders', developers', and the public's perceptions of urban development and its effects on water quality. Journal of Soil and Water Conservation. *To be submitted.*

Frost, Andrea and Henry Taber. 2003. Napropamide Effects on Newly Transplanted Tomato in Plastic Mulch. Proceedings of the 31st National Agricultural Plastics Congress (pp. 113-117). Grand Rapids, MI: American Society of Plasticulture.

Geoffrey Spaulding, PhD
Paleontological Resources

Firm
CH2M HILL

Education
Ph.D., Geology (Paleobiology), University of Arizona

M.S., Geology (Palynology & Vertebrate Paleobiology), University of Arizona

B.A., Anthropology, University of Arizona

Captain, Signal Corps, U.S. Army Reserve (Retired)

Certifications
Approved Paleontological Resources Specialist, California Energy Commission, State of California

Qualifications as Paleontological Resources Expert Witness accepted by the Attorney General of the State of Washington

Years of Experience: 32

Qualifications
- Paleontological Resources Management
- Nationally Recognized Expert in the Quaternary of Western North America
- Specialist in Site Formation Processes, Quaternary Paleobiology, Geoarchaeology, Paleohydrology
- Senior Manager, Environmental Compliance & Permitting

Dr. Spaulding is a senior scientist and paleontologist with CH2M HILL with extensive experience in paleobiology, paleontology, and paleoecology. He also is accomplished in the study of site formation processes, and the age determinations of archaeological and paleontological sites in the western United States. He has more than three decades of technical experience in the Earth and Life sciences focusing on the deserts of western North America and on California. Representative projects that he has managed in the last 12 years are listed below. Prior to joining private industry, he was on the faculty of the University of Washington, Seattle.

Relevant Experience

Paleontological Resources Specialist, Power Generation Projects, Southern California. Develop paleontological Resources Assessments and prepare appropriate sections on paleontological resources for the projects' Application for Certification before the California Energy Commission. Determine the relative levels of paleontological sensitivity of Mesozoic through Quaternary rock units in the context of the geological history of the project areas, develop the scope for and direct the field survey, and prepare the resource specific documentation. For five separate projects in Los Angeles, San Bernardino, San Diego, and Riverside counties.

Paleontological Resources Specialist, San Francisco Public Utility Commission's San Francisco Electric Reliability Center. Develop a paleontological Resources Assessment and prepare appropriate documentation on paleontological resources for the projects' Application for Certification before the California Energy Commission. Review the complex literature and determine the relative levels of paleontological sensitivity for marine and terrestrial sedimentary units rock units in the San Francisco Bay area. Prepare the resource specific documentation including impacts assessment and mitigation measures.

Paleontological Resources Specialist, Turlock Irrigation District's Walnut Energy Center. Develop and manage paleontological resources monitoring and mitigation program for the construction of the Walnut Energy Center south of Modesto, California. Prepare paleontological Resources Management and Discovery Plans, the Paleontological Resources Module of the worker education program, and visual aids for worker education. Direct the recovery of discovered paleontological resources (Quaternary vertebrate and paleobotanical remains), and consult with client representatives and the California Energy Commission on the adequacy of mitigation efforts. Develop site-specific stratigraphic framework to identify paleontologically sensitive sediments, and to provide client and the CEC with guidance regarding what construction activities need and need not be monitored.

Transportation-Related Paleontological Resources Management Services, southern California. Perform paleontological resources assessments, develop management and monitoring plans, prepare, review and amend subconsultant scopes of work, and provide audit services to clients for paleontological resources management work. Multiple contracts for the City of San Diego, the Regional Transportation Commission, and the Counties of Riverside, San Diego and Orange. Formations addressed included Quaternary terrestrial and lacustrine units, and Tertiary marine and estuarine sediments.

Paleontological Resources Assessment & Mitigation Plan Development, McKittrick Tar Pits, central California. Review the extensive literature; develop a resources assessment and preliminary management plan for paleontological resources in the vicinity of the renowned McKittrick Tar Pits in the Central Valley for a confidential client interested in the development of the oil-rich diatomites and sands of the area.

Duke Energy of North America, Paleontological Support Services for The Potrero and Contra Costa Applications For Certification. Conduct literature reviews, record searches, and site surveys; and prepare appropriate sections of Applications for Certification according to the format and data requirements of the California Energy Commission. Respond to CEC staff questions and requests for additional data. Provide cost-control strategies to client. In support of the relicensing efforts for two power plants in the Bay Area of California.

Metropolitan Water District of Southern California, West Valley Lateral and Eastside Reservoir Projects, Cultural and Paleontological Resources Support Services. Design and conduct archaeobotanical, paleoecological, and paleoclimatic studies in support of paleontological and cultural resources testing and mitigation programs for a large reservoir development program. Manage and participate in paleobotanical and archaeobotanical research programs; direct subconsultants in palynological investigations. Develop pioneering reconstructions of inland southern California's climatic and ecological history over the last 40,000 years; consider these in the context of regional environmental changes and the archaeological record.

Los Angeles Department of Water and Power, Mead/McCullough – Victorville/Adelanto Transmission Line. Manage cultural and paleontological resources monitoring and mitigation in conjunction with the construction of a 500 kV power line extending through Nevada and California. Assess levels of significance of paleontological sites discovered during survey and monitoring, implement mitigation measures for affected sites, manage analyses, prepare reports.

National Academy of Sciences, National Research Council Panel On Coupled Hydrologic, Tectonic, and Hydrothermal Processes. Appointed by the National Academy of Sciences to a three-year tenure as an expert panel member to review research and evaluate evidence for changes in water-table elevation in the vicinity of the proposed Yucca Mountain Nuclear Waste Repository.

Selected Publications

2000 – A Molecular Analysis of Ground Sloth Diet through the Last Glaciation (with M. Hofreiter, H. N. Poinar, K. Bauer, P.S. Martin, G. Possnert, and S. Paabo). *Molecular Ecology* 9: 1975-1984.

1999 – Middle to Late Quaternary Climatic Changes in Death Valley and Vicinity. In *Proceedings of Conference on Status of Geologic Research and Mapping in Death Valley National Park*. U.S. Geological Survey Open-File Report 99-153, pp. 121-124.

1996 – Paleobiotic and isotopic analysis of mollusks, fish, and plants from Core OL-92: Indicators for an open or closed lake system (with J. R. Firby, S. E. Sharpe, J. F. Whelan, and G. R. Smith). In *An 800,000-year paleoclimatic record from Owens Lake, California*, edited by G. I. Smith and J. L. Bischoff, pp. 143-160. Geological Society of America Special Paper 317.

1995 – Environmental change, ecosystem responses, and the Late Quaternary development of the Mojave Desert. In *Quaternary Environments and Deep Time: Papers in Honor of Paul S. Martin* (D. S. Steadman and J. I. Mead, eds.), pp 225-256. Fenske Printing, Inc., Rapid City, South Dakota.

1995 – Pika (*Ochotona*) and the Late Quaternary paleoecology of the Great Basin (with J. I. Mead). In *Quaternary Environments and Deep Time: Papers in Honor of Paul S. Martin* (D. S. Steadman and J. I. Mead, eds.), pp 257-283. Fenske Printing, Inc., Rapid City, South Dakota.

Barry Tanowitz
Biological Resources – Gaviota Tarplant

Firm
Tanowitz Academic & Biological Consulting

Education
B.A., Zoology, University of California, Los Angeles

M.A., Botany, University of California, Santa Barbara

Ph.D., Biology, University of California, Santa Barbara

Years of Experience: 29

Qualifications
- Gaviota Tarplant Expert

Teaching and Relevant Employment

Associate Professor of Biology, Santa Barbara City College, August 2006

Director of Science Education, Santa Barbara Botanic Garden, 2001 to present.

Adjunct Professor of Biology, Dept. of Biology, Santa Barbara City College, 2003 – present.

Adjunct Professor of Biology, Dept. of Biology, Westmont, 2002 – 2004.

Lecturer, Dept. Biological Sciences, UCSB, 1983-2000.

Professor of Human Anatomy and Physiology, Cancer Foundation of Santa Barbara, 1988-1996.

Lecturer, Medtronic – PS Medical Corporation,

Lecturer, Medtronic – PS Medical Corporation, 1997, 1998.

Visiting Lecturer, Dept. Biological Sciences, UCSB, 1981.

Visiting Lecturer, Division of Natural Sciences, University of California, Santa Cruz, 1980-1981.

Visiting Lecturer, Dept. of Biology, California State University at Fresno, 1978-1979.

Visiting Lecturer, Dept. of Biology, Santa Barbara City College, 1977-1978.

Visiting Lecturer, Dept. Biological Sciences, UCSB, June-September 1977.

Teaching Associate, Dept. Biological Sciences, UCSB, 1977, 1978, 1980, 1981.

Teaching Assistant, Dept. Biological Sciences, UCSB, 1973-1977.

Teaching Assistant, Dept. of Zoology, UCLA, 1971-1972. Course instruction in Vertebrate Morphology; Embryology.

Research Employment

Research Associate, Dept. Biological Sciences, UCSB, 1980-2000.

Postdoctoral Research Fellow, Dept. Biological Sciences, UCSB, 1980-1981.

Assistant Herbarium Scientist, UCSB Herbarium, 1975-1976.

Research Assistant, Dept. Biological Sciences, UCLA, 1971-1972.

Research and Field Assistant, Dept. Biological Sciences, UCLA, 1971 (summer).

Related Research Employment

Tanowitz Academic & Biological Consulting, 1980 – present.

Consultant, Chatsworth remediation Project, Zander & Associates, 'Biological Assessment for Wetlands Remediation' 2005-2006.

Consultant, Vandenberg Air Force Base, 'Biological Assessment of Gaviota Tarweed' 2005-2006.

Consultant, Hollister Ranch, 'Survey of Gaviota Tarweed' 2003-2005.

Consultant, Texaco, 'Management Plan for Oil Refinery', 1991-1993 (and occasional consultation)

Consultant, Celeron Pipeline Company, `Gaviota Project', 1986-present. (occasional)

Consultant, Madonna Company, `Bradley, Monterey County Project', 1990.

Consultant, UCSB, `Los Carneros Creek', 1983.

Consultant, Phillips Petroleum Company and the Environmental Planning Commission of San Luis Obispo County, `Indian Knob Project', 1981-1983.

Consultant, UCSB, `Hollister Ranch Flora', 1981-1983.

Consultant, UCSB, `West Campus Flora', 1980.

Publications

Tanowitz, Barry D. 1975. Epidermal silicification patterns in *Equisetum*. Amer. Jour. Bot. (Supplement 48). 61: 146.

_____. 1977. An intersectional hybrid in *Hemizonia* (Compositae: Madiinae). Madroño 24: 55-61.

_____. 1978. *Hemizonia conjugens* Distribution, chromosome number, and relationships. Madroño 25: 159.

_____. 1982. Taxonomy of *Hemizonia* sect. *Madiomeris* (Asteraceae: Madiinae). Syst. Bot. 7: 314-339.

_____. 1983. Taxonomic status of *Hemizonia congesta* DC. and *Hemizonia congesta* (DC.) T. & G. (Asteraceae: Madiinae). Bull. Torrey Bot. Club 110: 12-17.

_____. 1985. Systematic studies in Hemizonia: Hybridization of *H. fasciculata* with *H. clementina* and *H. minthornii*. Syst. Bot. 10: 110-118.

_____ and P. Gordon. 1980. The occurrence of *Hemizonia minthornii* Jeps. Madroño 27: 156-157.

_____ and D.M. Smith. 1984. A rapid method for the qualitative and quantitative analysis of simple carbohydrates in nectars. Annals of Botany 53: 453-456.

_____, S.A. Junak, and D.M. Smith. 1984. Terpenoids of *Hyptis emoryi*. Jour. Nat. Products 47: 739-740.

_____, T. Lowrey, and P. Gordon. 1981. IOPB chromosome reports. Taxon 30: 860- 861.

_____, D.M. Smith, and S.A. Junak. 1984. Terpenoids of *Monardella hypoleuca*. Jour. Nat. Products 47: 738-739.

Proksch, P., H. Budzikiewicz, B.D. Tanowitz, and D.M. Smith. 1984. Flavonoids from the leaf resins of four *Hemizonia* species (Asteraceae). Phytochemistry 23: 679-680.

_____ and J. Adams. 1986. Natural hybridization between *Layia glandulosa* and *L. paniculata* (Asteraceae). Madroño 33: 245-252.

_____ and D.L. Koehler. 1986. Comparison of the carbohydrates of floral and extra-floral nectars in *Sansevieria* and its possible relationship to its pollination biology. Annals of Botany 58: 541-546.

_____, P.F. Salopek, and B.E. Mahall. 1987. Differential germination of ray and disc achenes in *Hemizonia increscens* (Asteraceae). American Journal of Botany 74: 303-312.

_____, D.M. Smith, and S.A. Junak. 1987. Terpenoids of three taxa of *Monardella*. Phytochemistry 26: 2751-2752.

_____, G. Leeder, P. Ross, and P. Proksch. 1987. Foliar flavonoid exudates and sectional taxonomy in *Hemizonia*. Biochemical Systematics and Ecology 15:535-540.

Patterson, R.W. and B.D. Tanowitz. 1989. Comparative morphological and eco-anatomical relationships among the subspecies of *Eriastrum densifolium* (Polemoniaceae). Amer. J. Bot. 76: 706-713.

_____. 1997. Carbohydrate composition in floral nectar of *Anigozanthos* species (Haemodoraceae) and its systematic implications. Current Topics in Phytochemistry. 14: 47-50

Manuscripts in Preparation

Tanowitz, B.D. The associations of nectars with floral types in *Aloe* (Agavaceae).

_____. Notes on the distribution of *Deinandra paniculata*.

_____. A reassessment of *Stachys bullata* from the Northern Channel Islands.

_____. The anatomy of the dispersal mechanism in *Deinandra*.

Crystahl Taylor
Agriculture/Energy/Electrical Utilities/Fire Protection and Emergency Services/Impacts to Other Resources

Firm

CH2M HILL

Education

B.S., Natural Resource Management, California Polytechnic State University, San Luis Obispo, Concentration in Wildlife Biology

Years of Experience: 7

Qualifications

- Permitting and Permit Compliance (including extensive knowledge of Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Game jurisdictions and regulations)
- Caltrans Capital and Non-Capital (Local Assistance) Project Experience
- CEQA Documentation and Compliance
- ESA Section 7 Compliance
- NHPA Section 106 Compliance

Ms. Taylor has experience preparing environmental documents, regulatory agency permit compliance, and sensitive species surveys. She specializes in the state and federal permit application process for the Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Game. She also specializes in NEPA and CEQA compliance through the Caltrans Local Assistance process. Ms. Taylor has managed projects involving environmental monitoring, road realignment, bridge replacement, air quality, and noise. Her expertise includes knowledge of Natural Environment Studies, Biological Assessments, Section 4(f) Evaluations, Section 7 of the Endangered Species Act process, and Section 106 of the National Historic Preservation Act process. Ms. Taylor has performed numerous United States Fish and Wildlife protocol-level surveys, preconstruction surveys, and has prepared multiple habitat assessments for the California red-legged frog, southern steelhead trout, southwestern pond turtle, two-striped garter snake, and San Joaquin kit fox.

Relevant Experience

Project Manager; San Luis Bay Drive Bridge Replacement Project; County of San Luis Obispo Public Works Department; San Luis Obispo County, California; 2001 to 2005. Responsibilities included project management of the various environmental tasks, California red-legged frog surveys and survey report preparation, assistance with the Habitat Mitigation and Monitoring Plan, and the preparation of the Historic Property Survey Report. Responsibilities also included agency coordination with the Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Game, National Marine Fisheries Service, and Caltrans Local Assistance. Prepared permit application packages for and acquired the Nationwide Permit from the Army Corps of Engineers, Water Quality Certification from the Regional Water Quality Control Board, and the Streambed Alteration Agreement from the California Department of Fish and Game. Assisted the County with response to comments from the National Marine Fisheries Service.

Project Manager; Foothill Boulevard Bridge Replacement Project; City of San Luis Obispo Public Works Department; San Luis Obispo County, California; 2001 to 2006. Responsibilities included project management of the various environmental tasks, California red-legged frog surveys and survey report preparation, preparation of the Habitat Mitigation and Monitoring Plan, southern steelhead trout capture and relocation, environmental/ biological monitoring, and revegetation monitoring. Prepared permit application packages for and acquired the Nationwide Permit from the Army Corps of Engineers, Water Quality Certification from the Regional Water Quality Control Board, and the Streambed Alteration Agreement from the California Department of Fish and Game.

Project Manager; Halcyon/Highway 1 Realignment Project; County of San Luis Obispo Public Works Department; San Luis Obispo County, California; 2001 to 2006. Responsibilities included project management of the various environmental tasks, coordination with the project engineer through the Project Approval & Environmental Document (PA&ED) phase of the project, coordination of subconsultants, California red-legged frog surveys and survey report preparation, and assistance in the preparation of the Natural Environment Study and Biological Assessment. Provided assistance to the County through the Local Assistance process, Section 106 of the NHPA compliance, and Section 7 of the

ESA compliance. Maintained an open line of communication with the County project manager, project engineer, and Caltrans Local Assistance staff.

Project Manager; Hollister Road Bridge Replacement Project; Cuesta College; San Luis Obispo County, California; 2002 to 2006. Responsibilities included project management of the various environmental tasks, coordination with the project engineer through the PA&ED phase of the project, coordination of subconsultants, California red-legged frog surveys and survey report preparation, and assistance in the preparation of the Natural Environment Study, Biological Assessment, and Habitat Mitigation and Monitoring Plan. Provided assistance to Cuesta College through the Local Assistance process, Section 106 of the NHPA compliance, and Section 7 of the ESA compliance. Prepared permit application packages for and acquired the Nationwide Permit from the Army Corps of Engineers, Water Quality Certification from the Regional Water Quality Control Board, and the Streambed Alteration Agreement from the California Department of Fish and Game.

Project Manager; Moonstone Beach Drive Bridge, Main Street Bridge, and Picachio Road Bridge Replacement Projects; County of San Luis Obispo Public Works Department; San Luis Obispo County, California; 2003 to 2006. Responsibilities for all three projects included project management of the various environmental tasks, coordination with the project engineer through the PA&ED phase of the project, coordination of subconsultants, California red-legged frog surveys and survey report preparation, and assistance in the preparation of the Natural Environment Study and Biological Assessment.

Project Manager; Biddle Ranch Agricultural Subdivision Project (West and East); Talley Farms; San Luis Obispo County, California; 2002 to 2006. Coordinated with the project engineer and maintained communication with the Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Game throughout the planning phase of the project. Assisted in the preparation of the Habitat Mitigation and Monitoring Plan for the West Biddle Ranch Agricultural Subdivision Project.

Project Manager; Shandon Study Area Environmental Constraints Analysis; County of San Luis Obispo Planning and Building Department; San Luis Obispo County, California; 2005 to 2006. Assisted the County of San Luis Obispo, Department of Planning and Building with the preparation of the Shandon Study Area Environmental Constraints Analysis. Responsibilities included management of subconsultants, report preparation, and project coordination.

Professional Development

CEQA Workshop Series, Association of Environmental Professionals, November 5, 2004, San Luis Obispo, California.

CEQA Workshop Series, Association of Environmental Professionals, November 8, 2002, San Luis Obispo, California.

Nationwide Permits Complete, Wetland Training Institute, March 20-21, 2002, San Francisco, California.

CEQA Workshop Series, Association of Environmental Professionals, March 8, 2002, San Luis Obispo, California.

Fundamentals of Environmental Impact Assessment, Association of Environmental Professionals, January 12, 2002, Santa Barbara, California.

CEQA Workshop Series, Association of Environmental Professionals, March 2, 2001, San Luis Obispo, California.

Nationwide Permit Update, Caltrans and the Army Corps of Engineers, April 26, 2000, San Luis Obispo, California.

Lorraine Woodman
Agriculture/Energy/Electrical Utilities/Fire Protection and Emergency Services/Impacts to Other Resources

Firm

CH2M HILL

Education

Ph.D., Anthropology, University of California, Santa Barbara

M.A., Anthropology, University of California, Santa Barbara

B.A., Anthropology, Pomona College, Claremont, California

Years of Experience: 20

Qualifications

- More than 20 years of experience preparing and managing California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents
- Expertise in a wide variety of technical resources, including agricultural resources, energy, community services, utilities, aesthetics, land use, traffic, noise, environmental justice, recreation, and growth inducement
- Project manager for multiple EIRs in Santa Barbara County

Dr. Woodman will review all sections for compliance with CEQA/County of Santa Barbara guidelines and ensure that the EIR is internally consistent. She also will serve as task lead for Agriculture, Energy/Electric Utilities, Fire Protection and Emergency Services, and Impacts to Other Resources. She is located in CH2M HILL's Santa Barbara office and has more than 20 years of experience preparing environmental compliance documents. Dr. Woodman is known for her ability to translate complex technical concepts into terms that can be readily understood by the layperson and for preparing technically sound documents that meet regulatory requirements. Dr. Woodman is knowledgeable about local issues and has managed multiple EIRs for Santa Barbara County, including those for the Carpinteria Salt Marsh Enhancement Plan, Rancho San Marcos Golf Course, Bay Canyon Oaks, Bluffs at Mesa Oaks (Administrative Draft), Long-term Maintenance Activities in the Goleta Slough, and Long-term Disposition of the Maria Ygnacio Creek Debris Basins. She is currently participating in an agricultural economics analysis for the Goleta Valley and is the task lead for the preparation of the Santa Barbara Countywide Integrated Regional Water Management Plan.

Relevant Experience

Project Manager, Multiple EIRs; Santa Barbara Planning and Development/Division of Environmental Review:

- Rancho San Marcos Golf Course
- Bay Canyon Oaks EIR, a 16-unit housing development in Goleta
- Bluffs at Mesa Oaks (Administrative Draft EIR), a 109-unit residential development near Lompoc.

Principal Investigator, Multiple Santa Barbara Planning and Development/Division of Environmental Review EIRs: Prepared the energy, fire hazards, and consistency with plans and policies sections of an EIS/EIR for the Southern California Edison 66-kV transmission line extending from Goleta to Gaviota; contributed to the land use, recreation, and transportation sections; agricultural resources section of the Glen Annie Golf Course EIR; socioeconomics section and public safety policy analysis for the Camino Real Project EIR.

Project Manager, Multiple EIRs; Santa Barbara County Flood Control and Water Conservation District:

- Carpinteria Salt Marsh Enhancement Plan, a combined flood control and wetland restoration project, including dredging/desilting, construction of berms and walls, and a number of habitat restoration activities
- Long-term maintenance activities in the Goleta Slough, including dredging and desilting operations
- Long-term disposition of the Maria Ygnacio Creek debris basins

Principal Investigator, Santa Barbara Municipal Airport Aviation Facilities Plan EIS/EIR and Specific Plan EIR/EA; City of Santa Barbara. Addressed consistency with plans and policies, public services, and land use. Co-authored a document analyzing conflicts between plans and policies affecting activities in the Goleta Slough.

Project Manager, Honby Pipeline EIR, Santa Clarita, California; Castaic Lake Water Agency. The project is the construction of a new 9,500 foot, 60-inch buried water pipeline in Santa Clarita, California. The pipeline alignment includes a river crossing in proximity to proposed critical habitat for the California gnatcatcher and construction in undeveloped and urban areas.

Project Manager, Stevenson Ranch Phase V EIR, Santa Clarita Valley, California; Lennar Communities, Inc. This EIR addresses impacts of developing 1,800 acres of land with about 3,200 residences, commercial development, several schools, and recreational facilities. Key issues include impacts to transportation, biological resources, public safety from EMF exposure, water supply, air quality, and parks and recreation.

Project Manager, Lower Colorado River Multi-Species Conservation Plan Programmatic EIS/EIR; U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and The Metropolitan Water District of Southern California. The EIS/EIR evaluated the impacts of converting over 8,000 acres of agricultural and undeveloped land to habitat by implementing a conservation plan and issuance of a section 10(a)(1)(B) permit.

Project Manager, GATX Los Angeles Marine Terminal(Berths 171-173) Lease Renewal EIR; Port of Los Angeles. The project involved increased throughput of a variety of petrochemical products, facility improvements, construction of several pipelines both in roadways and under the Main Channel of Los Angeles Harbor, and transfer of crude unloading operations to other sites. Dr. Woodman analyzed consistency with plans and policies, noise and energy impacts, and developed project alternatives.

QA/QC, Principal Investigator, Tejon Ranch Water Management and Exchange and 850 Canal/ Reservoir No. 1 Pump-Back Facility EIR; Tejon Ranch Corporation; Wheeler Ridge-Maricopa Water Storage District. Performed quality assurance/quality control and prepared multiple technical sections, including agricultural resources.

QA/QC, Principal Investigator, Seven Oaks Dam Initial Study and EIR; San Bernardino Valley Municipal Water District and the Western Municipal Water District of Riverside County Prepared aesthetics, land use and planning, and recreational resources sections and performed technical review. The project includes construction of multiple water pipelines ranging from 3-15 feet in diameter at several locations within San Bernardino County.

Project Manager, John F. Baldwin Dredging Project Final EIR/EIS; U.S. Army Corps of Engineers. This project included a marine terminal/pipeline system alternative, involving the rehabilitation and operation of an existing 35-mile long petroleum pipeline or construction of a new 20-inch pipeline. It also included a new connecting pipeline from a marine terminal at the Port of Richmond to an existing pipeline.

Section 4

Study Methodology

Overview of Approach to Environmental Analyses

Because of our extensive involvement with wind energy developments, we will be able to focus quickly on the key issues and produce a technically sound EIR. Additionally, our familiarity with the expectations of the Santa Barbara County Planning and Development Department, Energy Division will allow us to focus immediately on other important factors: maximize efficiency, adhere to project schedule, and minimize costs.

Our general study approach comprises a number of steps; these are listed below and not repeated in the subsequent discussions:

- Communicate regularly with the Energy Division and all team members, including subcontractors, to ensure that expectations, information, and issues of concern are conveyed promptly and that any issues are resolved in a timely manner.
- Immediately identify any deficiencies in the project description and. Work with the Energy Division and project applicant to develop the information necessary to enable a complete and thorough environmental analysis.
- Establish current baseline conditions for the area potentially affected by all components of the wind farm and power lines for each of the resource areas to be assessed.
- Rely on existing information to the extent possible, including existing archeological and biological analyses, but provide limited peer review.
- Analyze short-term and long-term project impacts during construction, operations, and decommissioning.
- Assume a "worst-case" project configuration for each resource, recognizing that there is some flexibility in the placement of project elements. Identify environmental constraints related to the proposed placement of turbines within each turbine corridor, roads, and other project components.
- The PG&E system upgrades that include: reconductoring on a portion of the Divide-Carrillo #2 115kV line between Manville Junction and Switch 115, about ½-mile south of the Cabrillo Substation in the City of Lompoc; replacement of line relays and other equipment in the Divide Substation located on the east side of Highway 1 approximately 8.7 miles south of downtown Santa Maria; installation of protection equipment at the Morro Bay Substation at Duke Energy Power Plant (now LS Power) located in the City of Morro Bay and the Atascadero Substation in Atascadero; and possible additional reconductoring on the Midway-Temblor 115 kV line and modifications at the Morro Bay and Templeton Substations are all expected to occur within existing facilities. Further, it is assumed that impacts associated with these modifications would be related to short-term construction and an increase in visual impacts is not expected to occur.
- Determine impact significance by comparing potential impacts to County thresholds of significance (air quality impacts also will be compared to the Air Pollution Control District thresholds of significance). Consult with Energy Division staff should additional project-specific significance criteria be considered important.

- Perform peer review of applicant-provided mitigation measures, which are assumed to be part of the project description. Develop additional mitigation measures for significant impacts, as needed, in consultation with the Energy Division and project applicant, using the County's standard format.
- Assess cumulative impacts, identifying projects to be included in the analysis in consultation with the Energy Division.
- Work with the Energy Division staff to identify alternatives, including alternative sites that would reduce project impacts; compare the impacts of the alternatives with those of the proposed project, and identify the environmentally superior alternative that meets project objectives.
- Develop a mitigation monitoring and reporting plan as a companion to the final EIR.

Task 1 – Project Definition

A well-defined project is essential to the preparation of a successful EIR. The objective of this task is to develop a comprehensive, CEQA-compliant project description that will be used by our discipline leads and staff to evaluate the potential impacts associated with implementing (and decommissioning) the proposed project. The project application will be reviewed by each resource task lead, who will provide a description of the type of additional information needed (if any) to support a complete impact analysis. The project description also will include the project objectives, which are essential to the development of alternatives and identification of the environmentally superior alternative. Where appropriate, CH2M HILL will identify opportunities to incorporate mitigation into the project description to avoid or lessen environmental impacts.

Key Assumptions

- The Energy Division will concur with the project description before CH2M HILL begins fieldwork and environmental analysis. Although we expect the specific turbine locations within the turbine corridors to be unknown at the start of this process, the locations of the turbine corridors themselves are not expected to change substantially.
- The Energy Division will provide site plans and descriptions, or direct us to easily available sources for this material. Descriptions will include project construction methods and schedule; sources for gravel, sand, fill material and water (for concrete, roads, other uses); specifics on transmission inter-tie requirements; location of operations and maintenance (O & M) building, staging areas, turbine strings, roads, collection lines (overhead and underground), and substation; and other project design features intended to protect the environment and public health and safety (e.g., signs, erosion matting, seeding plans, dust abatement, weed control, wildfire protection).
- For the purposes of the EIR, the spatial extent of the project area is proposed to be extended 300 feet south along the southern perimeter, eastward from the point where the Vandenberg Air Force Base (VAFB) property line and the Coastal Zone boundaries diverge. No VAFB property is to be included in the project area. This change to the original project description is necessary, in the event that the applicant is successful in its application to the California Coastal Commission to adjust the Coastal Zone Boundary, as discussed at the July 13, 2006 Bidders' Conference.
- A discussion of the proposed height ordinance amendment will be included in the project description. Information on this item will be derived, in part, from the County's current Negative Declaration that addresses this issue, as applicable to wind energy projects. Information from this ND will be incorporated into the project description and land use sections, as described below. County staff will provide all materials in an electronic format.
- One field trip to the project site by the CH2M HILL project manager and one Task Leader is assumed as part of scoping and refining the project description.

- Maps will be developed by CH2M HILL using both GIS and graphic techniques.
- One site visit by two CH2M HILL staff and 2 meetings with Energy Division staff to review and finalize the project description.
- There will be no substantive changes to the project description once CH2M HILL commences work, other than to include mitigation as appropriate.

Deliverables

- Draft and Final Project Description

Task 2 – Conduct Environmental Analyses

Task 2.1 – Aesthetics/Visual Impacts

This section will address the aesthetic/visual impacts of the wind farm turbines, associated facilities, and the power line when viewed from nearby and distant locations. The analysis will be consistent with the County's Visual Impact Assessment Guidelines. The short-term and long-term changes to the existing visual character and aesthetic qualities of the area will be discussed, and the dominance of the turbines and other structures will be described. FAA regulations for lighting will be reviewed and impacts from night lighting will be analyzed. Specific subtasks to be performed include:

- Prepare a "zone of visual influence" (ZVI) viewshed analysis to identify the area from which the project will be potentially visible. This analysis will include an identification of the numbers of turbines that will be potentially visible from each point within the viewshed, and the viewshed map will be color-coded to display this information.
- Prepare an inventory and description of the visual resources in the project area.
- Identify and review Santa Barbara County plans and other policy documents relevant to visual resources to identify special scenic or aesthetic values in the area that lies within the project viewshed that have been recognized or given special treatment in adopted plans and policies.
- Identify up to sixteen key observation points (KOPs) that will be used for the development of baseline conditions, simulations, and assessments of the project's visual effects. The initial identification of these viewpoints will be based on a review of: (i) existing data on visual conditions, (ii) potential view sensitivity, and (iii) policy objectives. We will utilize aerial photographic analyses and the results of field observations. The final selection of the KOPs will be made in consultation with Energy Division staff, and high-resolution photographs of the views from each of these key viewpoints will be taken for use as the basis for the visual simulations.
- Produce up to sixteen photo simulations that will present a clear image of the location, scale, and visual appearance of the proposed wind turbines and power line as seen from each of the representative or highly sensitive viewing locations selected for analysis. For each of the views, computer modeling and rendering techniques will be used to create a 3D model of the wind turbine facilities. The visual simulations will be presented in color in 11 x 17 format. Up to 3 photo simulations will be prepared as early in the process as possible for use in public outreach activities. Our preliminary evaluation of potential project impacts suggests that possible KOPs and simulations would be selected from among the following vantage points:
    - Power line: Intersection of Highway 101 and Ocean Avenue looking at new poles and line as they head towards the residential development adjacent to Ocean Avenue
    - Power line: Highway 101 Northbound looking up towards the foothills where the power line will traverse the ridge towards Miguelito Canyon

- Power line: Miguelito Canyon Road near existing residences
- Power line: Miguelito Canyon Road near Larsen Ranch driveway looking towards Celite plant
- Power line, O&M facility, staging area, and site for Alternative Substation #2: End of Miguelito Canyon Road
- Turbine Towers: End of Miguelito Canyon Road looking towards the foothills
- Turbine Towers – Daytime: Residential neighborhood in east Lompoc Valley foothills looking towards Tranquillon Ridge
- Turbine Towers – Late Dusk: Residential neighborhood in east Lompoc Valley foothills looking towards Tranquillon Ridge depicting towers with FAA-compliant obstruction lighting. Turbine Towers – Daytime: Views from Jalama Beach County Park towards turbine tower locations
- Turbine Towers – Late Dusk: Views from Jalama Beach County Park towards turbine tower locations depicting towers with FAA-compliant obstruction lighting.

Assumptions

- The ZVI analysis and simulations will be prepared for a single layout and a single turbine type (additional analyses and simulations for different layouts and turbine sizes can be completed for additional cost).
- Refined placement of turbines will not result in new viewpoints or photo simulations.

Task 2.2 – Biological Resources

The analysis of biological resources will address vegetation and wildlife, including special status species. Existing conditions will be documented based on extensive primary and secondary research and analysis conducted on behalf of the applicant. CH2M HILL anticipates relying heavily on the material submitted by the applicant in the EIR, but will perform a limited peer review and identify any perceived deficiencies. Additional information will be collected to address areas outside the area covered by the applicant's study, such as within areas of the proposed turbine corridors and roadways not previously addressed in the applicant-provided biological resources study (e.g., the new road at the west project perimeter and the Larsen parcel) and the vicinity of the proposed power line. Similarly, team biologists will perform a peer review of the applicant-provided impact analysis and augment it to address areas not covered by the existing study. As indicated above, it is assumed that the applicant-provided mitigation measures, described in detail in the existing technical report, will be part of the project description, and we will determine whether they are adequate to reduce impacts to less than significant. As needed, we will provide additional measures. Where future surveys are identified, we will ensure that the EIR clearly outlines the procedures that are to be followed and the means by which it will be determined whether the impact will be avoided in order to avoid a perception of deferred mitigation.

Specific issues to be addressed in the EIR include: (i) ground disturbance from road construction and widening; (ii) effects on wildlife from operational factors such as noise, night lighting, introduction and spread of weeds, vehicle emissions, and human activity; and (iii) collisions of birds and bats with project facilities, especially turbines, power poles, and power lines.

Specific subtasks to be performed include:

- Identify relevant federal, state, and local regulations.
- Query relevant databases, including the California Natural Diversity Data Base (CNDDB) and California Native Plant Society Electronic Inventory.

- Request a list of special-status plant and wildlife species known to occur in the general project vicinity from U.S. Fish and Wildlife Service.
- Contact local resource agencies (e.g., California Department of Fish and Game and County of Santa Barbara) to locate any known sensitive biological sites in the general project vicinity.
- Review relevant and recent environmental studies.
- Conduct a reconnaissance-level survey within areas of the proposed turbine corridors and roadways not previously addressed in the applicant-provided biological resources study (e.g., the new road at the west project perimeter and the Larsen parcel) and the power line corridor
- Conduct visit at turbine corridor locations and wind farm support facilities.
- Complete habitat/vegetative community mapping for an area of 200 feet--100 feet on either side of the center line of the power line alignment and within areas of the proposed turbine corridors and roadways not previously addressed in the applicant-provided biological resources study (e.g., the new road at the west project perimeter and the Larsen parcel). Use aerial photographic and information gathered from the reconnaissance level survey to map the vegetative communities for an area of 2,000 feet--1,000 feet on either side of the center line of the power line alignment and within a buffer, not to exceed 200 feet, of the areas not previously surveyed in the applicant-provided biological resources study. Complete mapping on aerial photographs to be transferred to GIS coverage. Use existing reports to verify habitat/vegetative communities.
- Identify any jurisdictional waters and wetlands within the 200-foot wide survey area near the power lines, described above. Use existing reports, aerial photography review and information from the site visit and fieldwork to verify these locations.
- Conduct an avian mortality assessment based upon the following actions:
    - Conduct fall bird surveys using previously identified survey points from the 2002 and 2005 surveys. This is a budgeted optional task, to be conducted only upon authorization by the County Project Manager if existing data is determined by the County to be insufficient or inadequate to assess impacts to birds.
    - Coordinate with the La Purisima Audubon Society on bird survey data related to local bird populations collected in the vicinity of the project
    - Qualify the expected prey base from using the identification of habitat-types and field surveys to identify the expected level of prey in the areas of high susceptibility for avian collisions.
    - Project anticipated bird/bat migration routes based upon past surveys and, if necessary supplemented with information collected as part of the fall bird survey (optional task, as discussed above).
    - Review applicant proposed mitigation measures intended to reduce this impacts and revise the mitigation measures, if needed to minimize impacts further
- Create maps depicting wildlife habitat classifications and specific locations on the proposed project site where raptors, migratory birds, and other species of protected wildlife are present.
- Compile detailed plant and wildlife species lists based on the existing technical study, modified as needed given the results of the database search, reconnaissance survey, and the habitat mapping activities.

Assumptions

- Special status species surveys will not be conducted to biological resources agency standards. In the event that these species are discovered during our fieldwork, CH2M HILL will consult with the

County on the need to collect information and determine whether the additional work should be conducted by CH2M HILL, requiring an additional level of effort, or whether the applicant's consultants can be engaged, at the applicant's expense to complete the surveys.

- If special status species are discovered during the site visit to the turbine corridors, and these species were not identified or surveyed as part of the application materials, CH2M HILL will consult with the County on the need to collect information and determine whether the additional work should be conducted by CH2M HILL, requiring an additional level of effort, or whether the applicant's consultants can be engaged, at the applicant's expense to complete the surveys.
- Because there is an expectation that there will be project description refinements related to the location of the power line and the wind farm components, for the purposes of this scope and budget, it is assumed that only areas not previously studied as part of the applicant-provided biological resources study and the current description of the power line corridor will be required.
- Access will be provided to CH2M HILL for all surveys and site visits.

Task 2.3 – Archeological/Ethnic and Paleontological Resources

Archeological/Ethnic Resources

The archeological/ethnic resources to be addressed are archaeological sites, historic buildings and structures, and tribal Traditional Cultural Properties (TCP). CH2M HILL anticipates relying heavily on the material submitted by the applicant in the EIR, but will perform a limited peer review and identify any perceived deficiencies. Additional information will be collected to address areas outside the area covered by the applicant's study, such as the proposed power line corridor. As indicated above, it is assumed that the applicant-provided mitigation measures, described in detail in the existing technical report, will be part of the project description, and we will determine whether they are adequate to reduce impacts to less than significant. Additional measures will be provided as needed. Specific subtasks to be performed include:

- Identify documents or other data sources for applicable federal, state and local cultural resource information, including the Phase I Archaeological Report prepared by the project proponent.
- Conduct background research at the California Historical Resources Information System (CHRIS) at the University of California, Santa Barbara. Any studies previously completed for the project vicinity will be reviewed to determine their applicability to the proposed project.
- Conduct an intensive surface-only cultural resources reconnaissance survey of the power line corridor within a 200-foot area, 100 feet on either side of center line of the power line corridor, the area of potential affect that might be disturbed by the project including the power line corridor, access roads, substation and laydown/staging areas.
- Contact the Native American Heritage Commission (NAHC) to check their Sacred Lands files and secure names of individual Most Likely Descendants (MLDs) to contact (by letter) for their comments and concerns about the project and possible impacts to Native American cultural resources.
- Identify existing cultural resources, including TCPs, through site record/literature research and field survey, as well as the Phase I Archaeological Report prepared by the applicant for the turbine tower corridors; record them in accordance with applicable standards required by the SHPO.

Paleontological Resources

In addition to the archaeological and ethic resource evaluation discussed above, consistent with the requirements of the CEQA Guidelines, this section will also address paleontological resources. Specific subtasks to be performed include:

- Conduct an archival search at the Santa Barbara Museum of Natural History and, if necessary, the University of California Santa Barbara, to document the occurrence of any previously recorded vertebrate fossil site in the strata at or near the project site.
- Review geologic and paleontological literature and maps covering the strata in the project site vicinity. The data searches will be used to develop a paleontological resource inventory of the strata and to determine the potential for previously recorded and unrecorded fossil sites being adversely affected by earth-moving activities associated with the project.

Assumptions

- Work will be to County of Santa Barbara CEQA standards; CH2M HILL interaction with tribes will be limited to NAHC and letters to listed MLDs.
- The archaeological survey will examine a power line corridor 100 feet on center (200 feet wide) including the areas for power line access roads. Sites proposed for substations, O&M facilities, staging areas, and other ground disturbance would be examined to include a 100-foot wide area of potential effect (APE) buffer around each site. This is based on our understanding of the project and guidance received from PG&E at the bidders' conference site visit.
- No more than two archaeological sites (including historic buildings or structures) will be discovered and recorded on appropriate DPR 523 forms and submitted to CHRIS for registration.
- The Draft EIR will provide preliminary evaluations of National Register of Historic Places/California Register of Historic Places eligibility assessments. If sites cannot be avoided, additional formal Determinations of Eligibility and Determinations of Effect will be required. However, preparation of these documents is not included in this scope.
- The scope does not include any tribal-recommended TCP studies or other kinds of oral history investigations.
- Access will be provided to CH2M HILL for all surveys and site visits.
- No fieldwork for paleontological resources will be undertaken.

Task 2.4 – Geology/Soils

This analysis will focus on the potential for erosion, slope failure, topsoil loss, and the possibility of turbine structural failure during earthquakes. Specific subtasks to be performed include:

- Collect and review available geologic, seismic, and soils data. This will include United States Geological Survey (USGS) and State maps, National Resource Conservation Service soils maps, published reports, application materials, aerial photographs, and available unpublished data. This review will be coordinated by a California Registered Geotechnical Engineer.
- Briefly describe topography, geology, seismicity, unique physical land features, potential geologic hazards, and soils, including erosion risk for each project area based on existing information.
- The EIR will evaluate geotechnical and construction-related conditions that could constrain placement of roads, turbines, and power poles, resulting in excessive grading or adverse impacts. Preliminary geotechnical review will be conducted using existing data, application materials and from a site visit by a California Registered Geologist or California Geotechnical Engineer to determine areas of the project that could be problematic from a geophysical perspective.
- Collect and review County policies related to grading including County codes and policies related to minimizing impacts from grading.

Task 2.5 – Water Resources

This section will address impacts to water quality from creek crossings, as well as the potential for erosion and siltation. Additionally, impacts to groundwater will be described. Impacts from the use of a water truck will be addressed in other resources (e.g., transportation and air quality) and are not considered impacts to water resources. Specific subtasks to be performed include:

- Evaluate site and vicinity conditions based on existing information (reports and other data) from federal, state, county, application materials, and other local sources, including the United States Geological Survey (USGS), State Water Resources Board.
- Quantify water use by the project (dust abatement during construction, blade wash water, potable water for the O&M buildings, etc.) and briefly describe the source, use, and disposal of water.
- Identify applicable permit requirements, if any.

Assumptions

- Field investigations will not be undertaken.
- Groundwater resources, if used, will be adequate to supply the project.
- Hydrologic information (reports and other data) will be readily available from the information sources noted above.
- Potential impacts to wetlands and waters of the United States will be addressed in the Biological Resources section of the Draft EIR.
- Water rights will not be evaluated. Water supplies will come from existing sources that will be identified and quantified by the applicant.
- Sanitary wastewater will be disposed of according to state and local regulations. Clean Water Act (i.e., wetlands and waters of the United States) and floodplain permit application preparation is not included as part of this scope of work.

Task 2.6 – Transportation/Circulation

This section will describe the existing traffic and transportation system and will identify traffic impacts during construction and operations, including potential safety issues during construction and design features that might result in motorist strandings. Specific subtasks to be performed include:

- Review current and projected daily and peak traffic counts on the traffic circulation system, weight and load limitations, capacity limitations, levels of service (LOS), and overall roadway conditions.
- Determine increases in vehicle and equipment movement on the existing transportation network serving the project area based on short-term construction and long-term operation of the project.
- Determine volume to capacity changes resulting from project-related traffic that could trigger changes in area roadways' LOS.
- Address any special routing concerns related to the transport of hazardous materials or over-size loads during construction and operation.

Assumptions

- Current traffic and roadway data will be obtained from the County, City of Lompoc, and Caltrans, or other sources; new traffic counts will not be required.

Task 2.7 – Noise

This discussion will address impacts from construction, including blasting, as well as long-term noise impacts from turbine operations. Specific subtasks to be performed include:

- Identify and review applicable federal, state and Santa Barbara County noise standards and/or criteria.
- Identify potential noise-sensitive receptors in the vicinity of the project.
- Calculate construction noise impacts, based on equipment assumptions provided for the air quality analysis.
- Develop a noise contour map to illustrate potential noise impacts from project operation relative to sensitive receptors. Noise modeling will be based on site-specific conditions and manufacturer's data on noise levels produced by the proposed turbines.

Assumptions

- Potential permanent noise impacts of the project will be analyzed based on full operation of the proposed project.
- Background monitoring for 24-hour period to establish ambient noise conditions will not be collected since it is assumed that conditions are typical of a rural area.
- The Energy Division will coordinate with the applicant to provide noise curves for all turbine models under consideration. If noise characteristics differ among models, a noise analysis will be conducted for the maximum level. If that analysis indicates noise would constitute a significant impact, noise analysis based upon quieter machines must be conducted to determine the effectiveness of quieter machines to mitigate noise impacts.

Task 2.8 – Air Quality

The air quality analysis will focus primarily on construction impacts (fugitive dust and vehicle emissions), although vehicle emissions during operation will be addressed as well. Specific subtasks to be performed include:

- Review of applicable regulations and information on the attainment status of the local and regional area.
- Obtain information regarding existing meteorological and air quality conditions from Santa Barbara County Air Pollution Control District (APCD).
- Analyze potential project construction and operation emissions by using the URBEMIS2002 (Version 8.7) model.
- Compare emissions with APCD New Source Review thresholds to assess significance, as well as the County Environmental Thresholds and Guidelines Manual.
- Identity mitigation measures, as needed, that are consistent with APCD CEQA Guidelines.

Assumptions

- County staff will coordinate with the applicant to obtain specific clarification on required to complete URBEMIS analysis of construction emissions. CH2M HILL will provide a list of data needs.
- Background air quality, climatological and meteorological information representative of site conditions is available from APCD.
- No ambient air quality dispersion modeling or meteorological modeling or monitoring will be required or performed.

Task 2.9 – Land Use

Project consistency with federal, state, regional, and local land use plans and regulations, including agricultural land designations, will be considered, as will the compatibility of the project with the existing and planned land uses in the vicinity. To perform this assessment, relevant data will be obtained from federal, state, and county agencies with land use jurisdiction in the vicinity. Specific subtasks to be performed include:

- Identify and review documents, plans, policies, and other information sources for applicable federal, state, and local land use regulations.
- Summarize relevant land use goals, policies, standards, codes, ordinances, etc., and any land use approvals that would be required.
- Describe the existing land use situation at each project location, including current and planned zoning, current land uses, and land use trends.
- Describe the pending height ordinance amendment and include the County's analysis of this in the land use section from the County's current Negative Declaration that addresses this issue. Also address the applicant's proposed height ordinance amendment for this project. County staff will provide all materials in an electronic format.
- Contact the Federal Aviation Administration (FAA), local airports, and VAFB to informally to describe project and identify potential conflicts with other uses. (Scope does not include filing "notice of construction" with FAA.) County staff will provide information from the applicant's discussions with VAFB regarding consistency of the project design with VAFB missions.

Task 2.10 – Agriculture

The analysis will address whether the project would result in the conversion of prime agricultural land to non-agricultural use, impairment of agricultural land productivity (whether the land is prime or non-prime), conflict with agricultural preserve programs, or otherwise affect Unique Farmland or Farmland of State or Local Importance. Based on the RFP and site visit, it is anticipated that the agricultural land that would be affected is grazing land. Based on the County's Agricultural Preserve Advisory Committee's review of the project, it is assumed that the project would be a compatible use under the existing Agricultural Preserve contracts and that grazing would be able to continue, but the reasons will be explained in the EIR. Potential beneficial impacts to agricultural resources (e.g., improvement of ranch roads, increased access by fire protection equipment, and supplementary income to the land owners), will be addressed as well.

Specific subtasks to be performed include:

- Identify whether the wind energy site and transmission corridor are located on lands that are considered Important Farmland under the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP). This will be determined by using GIS to overlay the project footprint on FMMP maps.
- Describe the wind energy site's agricultural zoning, existing Agricultural Preserve contracts, and use for cattle grazing; the use of portions of the transmission corridor for grazing will be described, as well.
- Identify whether the project would result in the conversion of prime agricultural land to non-agricultural use, impairment of agricultural land productivity (whether the land is prime or non-prime), conflict with agricultural preserve programs, or otherwise affect Unique Farmland or Farmland of State or Local Importance.
- Confirm the amount of Farmland acreage that would be affected through the use of GIS.

- Assess the significance of any conversion of Important Farmland in light of the amount of acreage that would be converted in relation to the total amount in the project area.

Task 2.11 – Energy/Electric Utilities

This section will address the project's contribution to PG&E power supplies. Impacts are assumed to be beneficial. Specific subtasks to be performed include:

- Describe California's Renewable Portfolio Standard program, which calls for utilities to deliver 20 percent of their power from qualified renewable resources by the year 2010, and PG&E's efforts to obtain renewable power.
- Describe the amount of electrical power that could be generated by the project and the number of residences that could be served, based on the application submitted to the County and information from PG&E, the ISO, the California Energy Commission, the Public Utilities Commission, and the Community Environmental Council to describe this program as well as to support the analysis in this section. Describe the project's role in helping to meet regional power needs.

Task 2.12 – Fire Protection and Emergency Services

This section will note that the project site is located within a high fire hazard area and that construction activities could result in increased fire risks. The long-term potential for increased fire risks from human and vehicular presence, substation and power lines, and increased sightseers will be discussed qualitatively, as well.

Specific subtasks to be performed include:

- Describe the potential for construction activities to cause a fire.
- Contact the County Fire Department to identify requirements for performing construction activities in high fire hazard areas; operational requirements; and whether increased fire protection/emergency medical services would be required.

Task 2.13 – Risk of Accidents/Hazardous Materials/Safety

This section will address:

1. Potential accidents associated with (i) blade failure or thrown wind turbine blade, (ii) fire, and (iii) structural failure of a wind turbine tower.
2. The potential for spills from hazardous materials use during construction and refueling.
3. Safety concerns regarding the potential exposure of persons to electromagnetic energy or frequency (EMF) associated with the proposed power line.

Specific subtasks to be performed include:

- Identify the spatial extent of hazard zones associated with blade throw, blade fragment throw, and tower collapse, and assess the risks to persons, animals, and facilities (including residences) located within the delineated hazard zones.
- Identify specific turbines that pose a potential health and safety risk, especially regarding proximity to roadways open to the public such as San Miguelito Road. Consider the elimination or repositioning of turbines.
- Assess the potential impacts of closing sections of specific roads (Miguelito Canyon Road and Sudden Road) to public access.

- Confirm the types of hazardous materials that would be used during construction and assess impacts qualitatively.
- Confirm the required elements of the Hazardous Materials Business Plan with the County Fire Department.
- Identify proximity of residences to power lines and EMF exposure based on typical field strengths reported in the published literature.
- Describe relevant standards (e.g., IEEE-ANSI C95.1-1992) and studies addressing impacts from EMF exposure.

Key Assumptions

- Calculation of EMF will not be required.

Task 2.14 – Other Issue Areas

Potential impacts to recreation, mineral resources, public services, utilities/service systems, population/housing; and historic resources will be evaluated. Based on the RFP and our initial review of project information, these impacts are not expected to be significant. Any impacts that could occur will be identified briefly, and the reasons why the impacts are not significant will be described in relation to the County's ETGM.

Specific subtasks to be performed include:

Recreation

CH2M HILL will inventory and summarize potentially affected recreational areas and opportunities in and around the project area and will describe any impacts on identified recreational areas and opportunities, including change of recreational opportunities, noise, traffic, etc.

Mineral Resources

Based on the RFP, it is assumed that important mineral resources are not present in the area that would be disturbed by the project. This will be confirmed by review of County or State documents identifying the locations of mineral resources.

Public Services

It is anticipated that the project will not be found to be growth inducing and that the limited number of employees would not generate a significant demand for public services.

Utilities/Service Systems

Impacts to utilities/service systems will be evaluated qualitatively given the relatively small labor force involved (it anticipated that population growth would not be a direct or indirect impact of the project).

Population/Housing

The project would not directly require the construction of new housing, displacement of housing, or require the influx of construction workers or permanent employees. The potential for the project to remove an obstacle to growth and thereby cause an indirect increase in population will be addressed under Growth Inducement and referenced in this section.

Historic Resources

Based on the RFP and site visit, it is not anticipated that historic resources would be affected. This will be confirmed as part of the archeological field survey and discussed in this section.

Task 2.15 – Other CEQA Sections

CEQA requires a discussion of the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly. The evaluation of growth–inducing impacts will focus on California's population trends and the status of the energy production industry in the entire state. The analysis will address whether the project would remove and obstacle to growth in light of its ability to improve the reliability of the larger PG&E system and help PG&E meet the requirements of California's Renewable Portfolio Standard program. Important issues to be considered are current supplies and demand of the region, general plan population projections, and the recent reliability problems of supplies currently serving the region and state.

CEQA also requires that EIRs addressing the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency identify significant irreversible environmental effects.

An analysis of the cumulative impacts associated with the pending height ordinance amendment will be included in this section. Discussion from the County's analysis from the current Negative Declaration will be used to address this issue. County staff will provide all materials in an electronic format for use in the EIR.

Task 3 – Alternatives Analysis

Detailed environmental review will be conducted on reasonable range of alternatives including the proposed project, a no project alternative, an alternative site, and up to two alternatives that will focus on an alternate solution, as well as alternative power line routes, to meet project objectives and present environmental benefits (i.e., reduced impacts). The analysis will include alternatives' screening criteria, a thorough analytical discussion of alternatives, and a discussion of discarded alternatives. Unless new information is developed in the CEQA NOP process, some alternatives are anticipated to be reviewed but eliminated from further consideration. We assume the alternatives to be addressed will conceptually include the following:

- No Project – Increased emissions from fossil fueled power generation facilities.
- Up to four alternatives that meet the specified project objectives and purpose for the proposed project, but with reduced environmental impacts, including alternative turbine corridor locations, configurations, number of turbines, and alternative power line routes.
- Those alternatives that were considered but rejected from further review.
- The environmentally superior alternative.

Task 4 – Preparation of Administrative Draft EIR

Based on information developed in preceding tasks, input from lead and cooperating agencies (as applicable), the County, and the CH2M HILL Team's professional experience, CH2M HILL will prepare an administrative draft EIR that identifies, evaluates, and analyzes potential environmental impacts of the proposed project and alternatives.

This task includes the activities required for document production, including internal CH2M HILL team revisions and technical review and editing to provide a consistent and technically accurate product. CH2M HILL will assemble, synthesize, and summarize all supporting documentation and the results of fieldwork and submit a series of deliverable draft and final products to the County.

The administrative draft EIR will be prepared in accordance with provisions of CEQA, the County's CEQA Guidelines, guidance from the County as CEQA Lead Agency, and will include the sections identified below.

I. Introduction

The Introduction of the Draft EIR will include project background information; objectives of the proposed project; environmental documentation and permits required for the proposed project; consultation and coordination with the public agencies; and a description of the wind energy and power line process. Information regarding the objectives of the proposed project will be derived from the Project Definition Task.

II. Project Description

We will use the project description materials provided by the applicant to develop a CEQA-compliant project description in consultation with County staff. We will use the refined project description prepared as part of Task 1, described above.

Assumptions

- The Project Description completed by CH2M HILL and the County in Task 1 will contain sufficient detail to analyze potential impacts of the proposed project.
- All existing applicant prepared materials will be provided to CH2M HILL electronically editable as MS Word, Excel, or GIS/CADD files.

III. Environmental Setting

The Environmental Setting will describe the affected environment in the vicinity of the project. The CH2M HILL team will identify and discuss the existing environment of the area(s) likely to be impacted by the proposed project. The Environmental Setting chapter will include a description of the applicable laws, ordinances, and regulations that apply to each resource area.

Assumptions

- Work on the Environmental Setting section will commence immediately upon CH2M HILL receiving authorization to proceed from the County.

IV. Environmental Impacts and Mitigation

The Environmental Impacts and Mitigation section will include a discussion of standards of significance, potential environmental impacts from the proposed project, and proposed mitigation measures.

Significance Criteria

The identifiable, quantifiable, qualitative, and performance-based standards from the County's Thresholds of Significance will be used as the primary basis for determining impact significance standards. In the absence of County criteria, the CEQA Guidelines and recent EIRs for similar projects will also be reviewed for significance criteria. The significance criteria will be used to develop the methodology for evaluating the impacts of the proposed project and alternatives.

Project Impacts

The CH2M HILL Team will identify and discuss the environmental consequences of the proposed project and the alternatives under consideration. CH2M HILL will also identify and disclose the direct, indirect, and cumulative impacts and identify adverse impacts that cannot be avoided.

Mitigation Measures

CH2M HILL will identify specific mitigation measures proposed to reduce the impacts of the proposed project on the appropriate resource area. CH2M HILL will also review the applicant proposed mitigation measure for effectiveness of minimizing project impacts to acceptable levels. CH2M HILL will also

explain how the mitigation measures will reduce the impact of the project and evaluate the extent to which they will reduce effects of the project.

Deliverables

- Administrative draft of the Draft EIR sections for County review and comment – 15 copies

Task 5 – Preparation of Public Draft

This task includes the activities required to incorporate comments from the County on the Administrative Draft and prepare the document for reproduction and subsequent distribution to County Departments, interested agencies, including City of Lompoc and VAFB, and other interested parties.

Key Assumptions

- County staff will provide CH2M HILL one set of consolidated comments and/or edits on the administrative Draft EIR.
- One screencheck review of the draft EIR will be prepared before is it is accepted as a final version for distribution to the public.
- The Draft EIR will be made available for a 45-day public review and comment period that will be coordinated through the State Clearinghouse.
- One public hearing will be held on the adequacy of the Draft EIR, at which time public comments will be heard – this task is described below.
- The County will be responsible for issuing the Notice of Availability/Notice of Completion for the Draft EIR, with assistance as needed from CH2M HILL.
- County will provide mailing list for Notice of Availability/Notice of Completion of DEIR.
- CH2M HILL will handle mailing notices.

Deliverables

- Screencheck draft for review and comment by County Division staff – 1 copy
- Final version of the Draft EIR for public distribution – 1 camera-ready copy and 100 copies and 50 CDs. One version will be provided in electronic format, in MS Word and PDF for County staff use in preparing staff reports and use for uploading document on the Energy Division website.
- The County will maintain the project mailing list. The County will provide a list of agencies, organizations, and persons requiring a copy of each Draft EIR. Copies of all relevant agency correspondence and scoping letters will also be provided. CH2M HILL will handle all mailings.

Task 6 – Public Workshop/Public Comment Hearing on Draft EIR and Planning Commission Hearing Attendance

This task will involve CH2M HILL's assistance to the County with the Public Workshop scheduled to be held in advance of the Public Comment Hearing, the Public Comment hearing on the Draft EIR and participation at the Planning Commission Hearing, including the following:

- Coordinate with County staff on the presentation for the hearings.
- Provide input for visual aids to be used at the hearings.

- Present information about the project and conclusions from the DEIR, as directed by County staff at the Public Workshop and Public Comment Hearing.
- Provide staff person to take notes during the Public Workshop and Public Comment Hearing and prepare meeting notes for distribution to County staff.

Assumptions

- County will handle all meeting logistics, including arranging for a meeting room and all associated rental fees, and providing for any required sound or visual equipment.
- County will prepare meeting notice and newspaper advertisement and advertising fees.
- County will provide mailing list for public notices.
- CH2M HILL will handle mailing notices.
- County will cover any associated Court Reporter fees.
- Project Manager and one staff person to attend the Public Workshop.
- Project Manager and one staff person to attend the Public Comment Hearing.
- Project Manager, one staff person, the Biological Resources Task Leader, Avian Collision specialist, and Visual Resources Task Leader to attend the Planning Commission Hearing.

Task 7 – Preparation of Administrative Final EIR and Response to Public Comments

Provided below are the primary tasks associated with preparing the Administrative Final EIR.

- Coordinate receipt of comments received during the public review period.
- Review transcripts from Public Comment Hearing.
- Number all letters and comments and prepare a comment tracking matrix.
- Meet with County staff to confirm approach to addressing substantive comments.
- Prepare draft responses to each comment. Review draft Responses to Comments with County staff; finalize Response to Comments.
- Coordinate with County staff to distribute responses to comments submitted by responsible public agencies back to those agencies for review prior to consideration of the Final EIR by the Santa Barbara County
- Prepare Final EIR document to County standards, including copies of public comments on the Draft EIR and responses to those comments, and revisions to the Draft EIR text that are required based on the responses to public comments.

Deliverables

- Administrative Final EIR, including Responses to Comments, for County staff review– 15 copies

Assumptions

- Two meetings with County staff to review comments received and draft responses.
- Due to the difficulty in predicting the number and complexity of comments that could be received, it is expected that the scope and cost for this task will be reviewed and finalized when the draft EIR public review is complete and all comment letters and public hearing transcripts have been received

and reviewed. This Task and the associated costs assume that no more than 60 public comment letters are received and that no more than 30 unique comments will require significant evaluation to develop appropriate responses.

- County staff will provide CH2M HILL one set of consolidated comments and/or edits on the administrative Draft EIR.
- Preparation of the Final EIR will not require conducting additional technical studies or field survey work, including biological, archaeological, paleontological, visual, traffic, etc.

Task 8 – Preparation of Final EIR

This task includes the activities required to incorporate comments from the County on the Administrative Final EIR and prepare the document for reproduction and subsequent distribution to County Departments, interested agencies, including City of Lompoc and VAFB, and other interested parties.

- Prepare Final EIR document to County standards, including copies of public comments on the Draft EIR and responses to those comments, and revisions to the Draft EIR text that are required based on the responses to public comments. The Final EIR will be comprised of the complete EIR with changes from the DEIR noted by margin bars, comment letters, and responses. The comments will be numbered, and responses will be keyed to those numbers.
- Assist with preparation of public notices related to the CEQA process
- Assistance to County staff to prepare for two public hearings**.**

Assumptions

- One screencheck review of the draft EIR will be prepared before is it is accepted as a final version for distribution to the public.
- Final version of the Final EIR for public distribution – 1 camera-ready copy and 100 copies and 50 CDs. One version will be provided in electronic format, in MS Word and PDF for County staff use in preparing staff reports and use for uploading document on the Energy Division website.
- The County will maintain the project mailing list. The County will provide a list of agencies, organizations, and persons requiring a copy of each Final EIR. CH2M HILL will handle mailing of the Final EIR.
- The County will be responsible for issuing the Notice of Completion for the Final EIR, with assistance as needed from CH2M HILL.

Task 9 – Project Management

The objective of this task is to provide task integration and management necessary to complete the analyses and permitting on schedule. This task includes internal project set-up, management, and project management meetings with Energy Division staff and other County staff, as needed to complete the environmental review. This task will include developing and maintaining an overall schedule for completing the environmental review efforts for the proposed project. For purposes of estimating this task, we assume the EIR process will require approximately 10 months, from September 2006, through Spring 2007.

Other Elements of project management will include the following:

Project costs at CH2M HILL are accumulated through weekly electronic submittal of timesheets and periodic electronic submittal of expense sheets. This information, along with subconsultant invoices, is continuously tracked by our management information system. Each project and task manager can access

this information from his or her personal computer, thereby obtaining a real-time snapshot of project financials that allows our managers to track costs on a real-time basis.

The project manager will prepare monthly progress reports that will be discussed with County staff during regular team meetings. Project invoices will be sent to the County consistent with the payment terms based upon deliverables. The monthly progress reports will include status of assignment(s), a brief description of activities completed during the reporting period versus milestones, action items that require immediate attention and discussion, cumulative costs incurred, and anticipated activities.

Document Production System

Through our previous experience providing the requested services, we understand the importance of a functional and responsive document production system. CH2M HILL maintains a complete document production group in each of our major offices that is staffed with full-time editors, word processors, and graphics specialists. This staff is augmented during peak periods with specialists who know our systems and equipment, and with whom we have established relationships. The group is committed to providing high-quality, technically sound reports according to formats established by the County. A production manager will be designated at the onset of the document production and will communicate with our task managers regularly to plan the work assignments of the remaining document production staff.

Subtasks

Attend team kick-off meetings with Energy Division and other County staff responsible for CEQA compliance, and any key subcontractors doing analysis. The CH2M HILL project manager will attend two meetings at the County.

Provide a status report memorandum on each Task to the County each month. These could be meetings, teleconferences, emails, or written reports depending on the County staff preference.

Prepare and maintain a schedule for completion of the environmental review. Updates to the schedule will be provided to the Energy Division during monthly status reports or as necessary.

Coordinate with County staff on the County's proposed comprehensive plan and zoning ordinance updates.

CH2M HILL will hold an internal team chartering meeting with all key project staff, including subcontractors, at the start of the project to review goals, objectives, schedules, and commitments. A set of Project Instructions will be provided to all task leaders that will include guidance to the project team about the scope, process, budget, and schedule of the environmental analyses, and permitting.

Project management budget assumes a 10 month project.

Key Assumptions

County staff will coordinate with the applicant to arrange permission to enter and do studies on lands within the project boundaries. If access to lands adjacent to the project area is necessary, permission to enter, if required, will be attained by person(s) needing access, with assistance from County staff if necessary.

Coordination with regulatory agencies (i.e., US Fish and Wildlife Service, Tribes, cultural resource authorities, etc.) other than that described elsewhere in this scope of work is not included.

The CH2M HILL project manager for this project will be Jennifer Scholl.

Deliverables

- Project Instructions
- Monthly status reports
- Project schedule updated monthly

Section 5
Schedule

Exhibit 5-1 presents CH2M HILL's preliminary schedule identifying all pertinent tasks, time required to complete each task, and the tentative completion of each task. CH2M HILL has reviewed the RFP and the information presented at the Public Scoping Meeting and acknowledges that this schedule is aggressive. CH2M HILL is looking forward to reviewing this schedule with the County and as shown throughout our project experience, our team is accustomed to working on expedited projects and has a proven track record of success. As noted in the table below, completion dates are approximate and are consistent with the County's schedule presented in the RFP.

EXHIBIT 5-1
Preliminary Schedule for Preparation of the Lompoc Wind Project EIR

Item	CH2M HILL Corresponding Tasks	Expected Completion Date	Calendar Days from NTP (approximate)
CH2M HILL submits bid proposal to County	N/A	July 21, 2006	N/A
Notice to Proceed (NTP)[a]	N/A	September 5, 2006	0
Project description, environmental setting, and description of alternatives	Task 1, part of Task 2, and Task 3	October 10, 2006	35
Administrative Draft EIR (ADEIR)	Balance of Task 2 and Task 4	December 4, 2006	90
County Consolidated Comments on ADEIR	N/A	December 22, 2006	108
Draft EIR	Task 5	January 9, 2007	125
End of Public Comment Period (Public Comment Hearing held during 45 public comment period)	Task 6	February 13, 2007	170
Administrative Final EIR	Task 7	March 9, 2007	184
County Consolidated Comments on FEIR and responses to comments	N/A	March 23, 2007	198
Final EIR	Task 8	April 9, 2007	215
Planning Commission	N/A	May 8, 2007	244
Board of Supervisors, if necessary	N/A	July 6, 2007	303

Section 6
References

The County of Santa Barbara will require a team with extensive experience and understanding of the Lompoc Wind Energy Project. Our team brings the commitment of professionals who have developed successful working relations with the County and other project stakeholders that are built on trust and respect. Our team has acquired an unmatched body of relevant experience on similar projects that directly relate to your project needs.

Exhibit 6-1 presents references from clients that have experience with the performance of CH2M HILL team members. Additionally, we have provided two references for Jennifer Scholl, for her work as a Project Manager prior to joining CH2M HILL in March 2006. We hope that you will contact these individuals to obtain their appraisal of our performance, responsiveness, and ability to work within established budgets and schedules. We also hope that you will contact the references for Jennifer Scholl to obtain their appraisal of her work as a Project Manager on two projects that are relevant to this proposal – Ellwood-Devereux EIRs – this project demonstrates her clear understanding of Santa Barbara County policies and procedures for working with staff on preparing complex environmental documents; and Pastoria Energy Facility, a power generation facility and transmission line project – this project demonstrates her clear understanding of the issues associated with reviewing the environmental impacts associated with a project located on grazing lands near the foothills of the Tehachapi Mountains in Kern County.

EXHIBIT 6-1
CH2M HILL Team References

Client References	Service
TY DAUL PPM Energy Director, Business Development 503.796.7117	CEQA Documentation and Local Permitting for New Wind Energy Generation Facility, Confidential Client, Southern California - Fairmount
GARY W. JOHNSON The Santa Rosa Group, Principal 760.772.2055 74924 Country Club Drive Suite 150, PMB #170 Palm Desert, CA 92260	Teayawa Energy Center
FRED MITRO BP Alternative Energy Business Developer 281.366.8859 501 Westlake Blvd. Houston, TX 77079 Fred.mitro@ppmenergy.com	Enron Due Diligence work

EXHIBIT 6-1
CH2M HILL Team References

Client References	Service
PETER D. MOSTOW Attorney at Law Stoel Rives LLP 503.294.9338 900 SW Fifth Avenue, Suite 2600 Portland, OR 97204 pdmostow@stoel.com	Stateline Wind Project
CHRISTOPHER M. TAYLOR Manager of Community Relations Horizon WInd Enegy 503222.9400, ext: 103 210 SW Morrison Street, Suite 301 Portland, OR 97204 ctaylor@zilkha.com	Wildhorse Wind Project
ANNE WALSH (formally of FPL Energy) 509.540.9226	Stateline Wind Project
COLLIE POWELL FPL Energy 561.691.7171 P.O. Box 14000 Juno Beach, FL 33408-0420	Stateline Wind Project
GREGG WHEATLAND Ellison, Schneider and Harris 2015 H Street Sacramento, CA 95814-3109 916.447.2166	Pastoria Energy Facility
DIANNE MEESTER County of Santa Barbara Planning and Development Department 123 East Anapamu Street Santa Barbara, CA 93101 805.569.2086	Ellwood-Devereux EIRs

COST PROPOSAL

CH2M HILL
610 Anacapa Street
Santa Barbara, CA 93101
Tel 805.568.0650
Fax 714.424.2083

CH2MHILL

July 31, 2006

County of Santa Barbara
Planning and Development Department
Energy Division
Attn: John Day, Planner
123 East Anapamu Street
Santa Barbara, CA 93101-2058

Subject: Cost Proposal – Environmental Impact Report for the Lompoc Wind Energy Project

Dear Mr. Day:

Please find attached the CH2M HILL Cost Proposal to prepare an Environmental Impact Report (EIR) for the Lompoc Wind Energy Project.

The Cost Proposal contains the CH2M HILL team's detailed cost estimate to complete this project. We developed our estimate based on the requirements provided in the Request for Proposal (RFP), which includes an itemized budget breakdown by task and issue area of cost and estimated hours.

As requested the attached materials and this cover letter comply with the requirements of the RFP for the Cost Proposal. Table 1 details costs by tasks, including staff type, subcontractor fees, travel, and expenses. Table 2 includes include staff listed in the organization chart, and Table 1, including their staff type and labor rates. As calculated in Table 1, our cost to prepare this EIR is $427,999.80. As requested, we have also shown a 15% contingency of $64,199.97, for a total cost plus contingency of $492,199.77. Additionally, with respect to the request to provide administrative costs, overhead, expenses, profit and indirect expenditure information, CH2M HILL has commercially audited overhead rates. Our billing rates are based on direct cost, which is raw salary plus fringe, plus the audited overhead hourly rate. We would be happy to discuss these further should you have additional questions.

Thank you again for this opportunity to propose on this project. We look forward to the opportunity to discuss our assumptions and the estimate contained in this Cost Proposal. If you need any clarifications on our level of effort, we would be happy to address these either through telephone or e-mail correspondence, in person, or as part of a "Best and Final" proposal refinement. Should you have any questions, please don't hesitate to contact Jennifer Scholl, our team's proposed Project Manager, at (805) 568-0650, ext. 374 or by email at Jennifer.Scholl@ch2m.com.

Most sincerely,

John W Caldwell

John Caldwell
Vice President

Crystal Taylor for

Jennifer Scholl
Project Manager

Lompoc Wind Energy EIR

Labor Hours/Price

Description	Bill Rate	Hours	Amount
Task 1 - Project Definition			
Principal Consultant	180	3	540
Sr Consultant/Project Management/ Sr. Engineer	160	48	7,680.00
Associate Engineer/Scientist	125	4	500
Staff Engineer II	95	46	4,370.00
Senior Technician	110	30	3,300.00
Subtotal for Labor		**131**	**16,390.00**
Total Other Direct Expenses			50
Subtotal for Other Direct Expenses			**50**
Total Travel			128.4
Subtotal for Travel			**128.4**
Subtotal for Costs		**131**	**16,568.40**
Subtotal for Task 1 - Project Definition		**131**	**16,568.40**
Task 2.1 - Aesthetics			
Sr Consultant/Project Management/ Sr. Engineer	160	10	1,600.00
Sr Consultant/Project Management/ Sr. Engineer	166	1	166
Project Engineer/Scientist	140	16	2,240.00
Project Engineer/Scientist	145	4	580
Associate Engineer/Scientist	125	2	250
Staff Engineer II	95	4	380
Senior Technician	110	4	440
Senior Technician	115	2	230
Administrative Services	70	2	140
Subtotal for Labor		**45**	**6,026.00**
Total Subcontract			27,800.00
Subtotal for Subcontract			**27,800.00**
Subtotal for Costs		**45**	**33,826.00**
Markups on Subcontractors			1,390.00
Subtotal for Markups			**1,390.00**
Subtotal for Task 2.1 - Aesthetics		**45**	**35,216.00**
Task 2.2 - Biological Resources			
Sr Consultant/Project Management/ Sr. Engineer	160	3	480
Sr Consultant/Project Management/ Sr. Engineer	166	7	1,162.00
Project Engineer/Scientist	140	40	5,600.00
Project Engineer/Scientist	145	6	870
Associate Engineer/Scientist	130	2	260
Staff Engineer II	95	28	2,660.00
Staff Engineer II	99	16	1,584.00
Staff Engineer I	80	78	6,240.00
Staff Engineer I	84	10	840
Senior Technician	110	4	440
Senior Technician	115	2	230
Administrative Services	70	2	140
Subtotal for Labor		**198**	**20,506.00**
Total Other Direct Expenses			700
Subtotal for Other Direct Expenses			**700**
Total Subcontract			12,500.00
Subtotal for Subcontract			**12,500.00**
Total Travel			1,089.00
Subtotal for Travel			**1,089.00**
Subtotal for Costs		**198**	**34,795.00**
Markups on Subcontractors			625
Subtotal for Markups			**625**
Subtotal for Task 2.2 - Biological Resources		**198**	**35,420.00**

Description	Bill Rate	Hours	Amount
Task 2.3 - Archaeology/Paleo			
Principal Consultant	180	8	1,440.00
Sr Consultant/Project Management/ Sr. Engineer	160	11	1,760.00
Sr Consultant/Project Management/ Sr. Engineer	166	6	996
Project Engineer/Scientist	140	68	9,520.00
Project Engineer/Scientist	145	8	1,160.00
Associate Engineer/Scientist	130	2	260
Staff Engineer II	95	20	1,900.00
Staff Engineer II	99	4	396
Staff Engineer I	80	56	4,480.00
Senior Technician	115	4	460
Administrative Services	70	2	140
Subtotal for Labor		**189**	**22,512.00**
Total Other Direct Expenses			700
Subtotal for Other Direct Expenses			**700**
Total Travel			1,089.00
Subtotal for Travel			**1,089.00**
Subtotal for Costs		**189**	**24,301.00**
Subtotal for Task 2.3 - Archaeology/Paleo		**189**	**24,301.00**
Task 2.4 - Geology/Soils			
Sr Consultant/Project Management/ Sr. Engineer	160	60	9,600.00
Sr Consultant/Project Management/ Sr. Engineer	166	13	2,158.00
Associate Engineer/Scientist	125	2	250
Staff Engineer II	95	11	1,045.00
Staff Engineer II	99	4	396
Staff Engineer I	80	28	2,240.00
Staff Engineer I	84	4	336
Senior Technician	110	4	440
Administrative Services	70	2	140
Subtotal for Labor		**128**	**16,605.00**
Subtotal for Costs		**128**	**16,605.00**
Subtotal for Task 2.4 - Geology/Soils		**128**	**16,605.00**
Task 2.5 - Water Resources			
Sr Consultant/Project Management/ Sr. Engineer	160	1	160
Sr Consultant/Project Management/ Sr. Engineer	166	1	166
Project Engineer/Scientist	140	8	1,120.00
Project Engineer/Scientist	145	2	290
Staff Engineer II	95	4	380
Staff Engineer II	99	2	198
Staff Engineer I	80	20	1,600.00
Staff Engineer I	84	4	336
Senior Technician	110	4	440
Administrative Services	70	2	140
Subtotal for Labor		**48**	**4,830.00**
Subtotal for Costs		**48**	**4,830.00**
Subtotal for Task 2.5 - Water Resources		**48**	**4,830.00**
Task 2.6 - Transportation			
Sr Consultant/Project Management/ Sr. Engineer	160	8	1,280.00
Sr Consultant/Project Management/ Sr. Engineer	166	4	664
Associate Engineer/Scientist	125	2	250
Staff Engineer II	95	22	2,090.00
Staff Engineer II	99	9	891
Senior Technician	110	6	660
Administrative Services	70	2	140
Subtotal for Labor		**53**	**5,975.00**
Subtotal for Costs		**53**	**5,975.00**
Subtotal for Task 2.6 - Transportation		**53**	**5,975.00**

Description	Bill Rate	Hours	Amount
Task 2.7 - Noise			
Sr Consultant/Project Management/ Sr. Engineer	160	20	3,200.00
Sr Consultant/Project Management/ Sr. Engineer	166	8	1,328.00
Associate Engineer/Scientist	125	2	250
Staff Engineer II	99	2	198
Staff Engineer I	80	32	2,560.00
Staff Engineer I	84	6	504
Senior Technician	110	8	880
Administrative Services	70	2	140
Subtotal for Labor		**80**	**9,060.00**
Subtotal for Costs		**80**	**9,060.00**
Subtotal for Task 2.7 - Noise		**80**	**9,060.00**
Task 2.8 - Air Quality			
Sr Consultant/Project Management/ Sr. Engineer	160	2	320
Sr Consultant/Project Management/ Sr. Engineer	166	1	166
Project Engineer/Scientist	140	4	560
Project Engineer/Scientist	145	4	580
Associate Engineer/Scientist	125	2	250
Staff Engineer II	95	32	3,040.00
Staff Engineer II	99	6	594
Senior Technician	110	6	660
Administrative Services	70	2	140
Subtotal for Labor		**59**	**6,310.00**
Subtotal for Costs		**59**	**6,310.00**
Subtotal for Task 2.8 - Air Quality		**59**	**6,310.00**
Task 2.9 - Land Use			
Sr Consultant/Project Management/ Sr. Engineer	160	12	1,920.00
Sr Consultant/Project Management/ Sr. Engineer	166	2	332
Associate Engineer/Scientist	125	18	2,250.00
Associate Engineer/Scientist	130	2	260
Staff Engineer II	95	4	380
Staff Engineer I	80	24	1,920.00
Staff Engineer I	84	6	504
Senior Technician	110	4	440
Administrative Services	70	2	140
Subtotal for Labor		**74**	**8,146.00**
Subtotal for Costs		**74**	**8,146.00**
Subtotal for Task 2.9 - Land Use		**74**	**8,146.00**
Task 2.10 - Agriculture			
Sr Consultant/Project Management/ Sr. Engineer	160	5	800
Staff Engineer II	95	16	1,520.00
Staff Engineer II	99	6	594
Senior Technician	110	4	440
Administrative Services	70	2	140
Subtotal for Labor		**33**	**3,494.00**
Subtotal for Costs		**33**	**3,494.00**
Subtotal for Task 2.10 - Agriculture		**33**	**3,494.00**
Task 2.11 - Energy/Electric Utilities			
Sr Consultant/Project Management/ Sr. Engineer	160	7	1,120.00
Sr Consultant/Project Management/ Sr. Engineer	166	2	332
Staff Engineer II	95	16	1,520.00
Staff Engineer II	99	4	396
Senior Technician	110	3	330
Administrative Services	70	2	140
Subtotal for Labor		**34**	**3,838.00**
Subtotal for Costs		**34**	**3,838.00**
Subtotal for Task 2.11 - Energy/Electric Utilities		**34**	**3,838.00**
Task 2.12 - Fire Protection/Emergency Services			
Sr Consultant/Project Management/ Sr. Engineer	160	8	1,280.00
Sr Consultant/Project Management/ Sr. Engineer	166	3	498
Staff Engineer II	95	16	1,520.00
Staff Engineer II	99	4	396
Senior Technician	110	2	220
Administrative Services	70	2	140
Subtotal for Labor		**35**	**4,054.00**
Subtotal for Costs		**35**	**4,054.00**
Subtotal for Task 2.12 - Fire Protection/Emergency Services		**35**	**4,054.00**

Description	Bill Rate	Hours	Amount
Task 2.13 - Risk/Hazards/Safety			
Principal Consultant	180	5	900
Sr Consultant/Project Management/ Sr. Engineer	160	8	1,280.00
Sr Consultant/Project Management/ Sr. Engineer	166	3	498
Associate Engineer/Scientist	125	16	2,000.00
Associate Engineer/Scientist	130	4	520
Senior Technician	110	6	660
Administrative Services	70	2	140
Subtotal for Labor		**44**	**5,998.00**
Subtotal for Costs		**44**	**5,998.00**
Subtotal for Task 2.13 - Risk/Hazards/Safety		**44**	**5,998.00**
Task Task 2.14 - Other Issue Areas			
Sr Consultant/Project Management/ Sr. Engineer	160	6	960
Sr Consultant/Project Management/ Sr. Engineer	166	3	498
Project Engineer/Scientist	140	1	140
Associate Engineer/Scientist	125	2	250
Staff Engineer II	95	20	1,900.00
Staff Engineer II	99	8	792
Senior Technician	110	2	220
Administrative Services	70	2	140
Subtotal for Labor		**44**	**4,900.00**
Subtotal for Costs		**44**	**4,900.00**
Subtotal for Task 2.14 - Other Issue Areas		**44**	**4,900.00**
Task 2.15 - Other CEQA Sections			
Sr Consultant/Project Management/ Sr. Engineer	160	15	2,400.00
Sr Consultant/Project Management/ Sr. Engineer	166	3	498
Associate Engineer/Scientist	125	2	250
Staff Engineer II	95	22	2,090.00
Staff Engineer II	99	8	792
Senior Technician	110	4	440
Administrative Services	70	2	140
Subtotal for Labor		**56**	**6,610.00**
Subtotal for Costs		**56**	**6,610.00**
Subtotal forTask 2.15 - Other CEQA Sections		**56**	**6,610.00**
Task 3 - Alternatives			
Principal Consultant	180	10	1,800.00
Sr Consultant/Project Management/ Sr. Engineer	160	28	4,480.00
Sr Consultant/Project Management/ Sr. Engineer	166	5	830
Project Engineer/Scientist	140	24	3,360.00
Associate Engineer/Scientist	125	8	1,000.00
Staff Engineer II	95	36	3,420.00
Staff Engineer II	99	7	693
Senior Technician	110	4	440
Administrative Services	70	2	140
Subtotal for Labor		**124**	**16,163.00**
Subtotal for Costs		**124**	**16,163.00**
Subtotal for Task 3 - Alternatives		**124**	**16,163.00**
Task 4 - Administrative Draft EIR			
Principal Consultant	180	6	1,080.00
Sr Consultant/Project Management/ Sr. Engineer	160	64	10,240.00
Associate Engineer/Scientist	125	16	2,000.00
Staff Engineer II	95	44	4,180.00
Senior Technician	110	36	3,960.00
Administrative Services	70	24	1,680.00
Subtotal for Labor		**190**	**23,140.00**
Total Other Direct Expenses			1,050.00
Subtotal for Other Direct Expenses			**1,050.00**
Subtotal for Costs		**190**	**24,190.00**
Subtotal forTask 4 - Administrative Draft EIR		**190**	**24,190.00**

Description	Bill Rate	Hours	Amount
Task 5 - Public Draft EIR			
Principal Consultant	185	4	740
Sr Consultant/Project Management/ Sr. Engineer	166	32	5,312.00
Associate Engineer/Scientist	130	16	2,080.00
Staff Engineer II	99	68	6,732.00
Senior Technician	115	36	4,140.00
Administrative Services	75	48	3,600.00
Subtotal for Labor		**204**	**22,604.00**
Total Other Direct Expenses			15,700.00
Subtotal for Other Direct Expenses			**15,700.00**
Subtotal for Costs		**204**	**38,304.00**
Subtotal for Task 5 - Public Draft EIR		**204**	**38,304.00**
Task 6 - Public Hearings & Workshop Support			
Principal Consultant	185	16	2,960.00
Sr Consultant/Project Management/ Sr. Engineer	166	84	13,944.00
Project Engineer/Scientist	145	12	1,740.00
Staff Engineer II	99	38	3,762.00
Senior Technician	115	16	1,840.00
Subtotal for Labor		**166**	**24,246.00**
Total Other Direct Expenses			2,700.00
Subtotal for Other Direct Expenses			**2,700.00**
Total Travel			53.4
Subtotal for Travel			**53.4**
Subtotal for Costs		**166**	**26,999.40**
Subtotal for Task 6 - Public Hearings & Workshop Support		**166**	**26,999.40**
Task 7 - Administrative Final EIR			
Principal Consultant	185	7	1,295.00
Sr Consultant/Project Management/ Sr. Engineer	166	67	11,122.00
Project Engineer/Scientist	145	14	2,030.00
Associate Engineer/Scientist	130	41	5,330.00
Staff Engineer II	99	46	4,554.00
Senior Technician	115	56	6,440.00
Administrative Services	75	40	3,000.00
Subtotal for Labor		**271**	**33,771.00**
Total Other Direct Expenses			1,050.00
Subtotal for Other Direct Expenses			**1,050.00**
Subtotal for Costs		**271**	**34,821.00**
Subtotal for Task 7 - Administrative Final EIR		**271**	**34,821.00**
Task 8 - Final EIR			
Principal Consultant	185	8	1,480.00
Sr Consultant/Project Management/ Sr. Engineer	166	48	7,968.00
Project Engineer/Scientist	145	10	1,450.00
Associate Engineer/Scientist	130	15	1,950.00
Staff Engineer II	99	56	5,544.00
Senior Technician	115	48	5,520.00
Administrative Services	75	40	3,000.00
Subtotal for Labor		**225**	**26,912.00**
Total Other Direct Expenses			18,200.00
Subtotal for Other Direct Expenses			**18,200.00**
Subtotal for Costs		**225**	**45,112.00**
Subtotal for Task 8 - Final EIR		**225**	**45,112.00**

Description	Bill Rate	Hours	Amount
Task 9 - Project Management			
Principal Consultant	180	11	1,980.00
Principal Consultant	185	10	1,850.00
Sr Consultant/Project Management/ Sr. Engineer	160	87	13,920.00
Sr Consultant/Project Management/ Sr. Engineer	166	80	13,280.00
Project Engineer/Scientist	140	4	560
Associate Engineer/Scientist	125	1	125
Staff Engineer II	95	20	1,900.00
Staff Engineer II	99	16	1,584.00
Staff Engineer I	80	3	240
Administrative Services	70	46	3,220.00
Administrative Services	75	46	3,450.00
Subtotal for Labor		**324**	**42,109.00**
Total Other Direct Expenses			576
Subtotal for Other Direct Expenses			**576**
Subtotal for Costs		**324**	**42,685.00**
Subtotal for Task 9 - Project Management		**324**	**42,685.00**
Task 2.2.1 Additional/Optional Avian Surveys			
Total Subcontract			8,000.00
Subtotal for Subcontract			**8,000.00**
Subtotal for Costs			**8,000.00**
Markups on Subcontractors			400
Subtotal for Markups			**400**
Subtotal for Task 2.2.1 Additional/Optional Avian Surveys			**8,400.00**
Subtotal		**2,755**	**427,999.80**
Grand Total		**2,755**	**427,999.80**
15% Contingency			**64,199.97**
Grand Total Plus Contingency			**492,199.77**

TABLE 2
Lompoc Wind Farm Project Team

Name	Title	Hourly Rate
Bartholf, Todd R.	Principal Consultant	$180
Bastasch, Mark	Sr Consultant/Project Manager/Sr Engineer	$166
Clymo, Amelia Susanne	Staff Engineer II	$99
Eells, Brenda Grogg	Associate Engineer/Scientist	$130
Franck, Matthew M.	Project Engineer/Scientist	$145
Harris, Michelle L.	Staff Engineer I	$84
Helton, Clinton Jackson	Project Engineer/Scientist	$140
Hosley, Lynn P.	Sr Consultant/Project Manager/Sr Engineer	$160
Hunter, James M.	Principal Consultant	$180
Johnson, Heather L.	Staff Engineer II	$99
Kasparian, Maral A.	Staff Engineer I	$80
Madams, Sarah L.	Associate Engineer/Scientist	$125
Maric, Bojana	Staff Engineer II	$95
O'Kane, Stephen Mark	Project Engineer/Scientist	$140
Pappalardo, Michael E.	Sr Consultant/Project Manager/Sr Engineer	$166
Pearson, Robert L.	Principal Consultant	$180
Priestly, Thomas J.	Sr Consultant/Project Manager/Sr Engineer	$160
Rochlitz, Julie A.	Staff Engineer I	$80
Santolo, Gary M.	Project Engineer/Scientist	$145
Schmid, Andrea Nicole	Staff Engineer I	$84
Scholl, Jennifer	Sr Consultant/Project Manager/Sr Engineer	$166
Spaulding, W. Geoffrey	Principal Consultant	$180
Taylor, Crystahl Handel	Staff Engineer II	$99
Woodman, Lorraine	Sr Consultant/Project Manager/Sr Engineer	$160
Administrative Support		
Accounting	Administrative Services	$70
Senior Editor	Senior Technician	$115
GIS/Graphics Support		
GIS	GIS Developer Analyst	$95
Graphics	Graphic Designer Supervisor	$110
Graphics	Technical Publishing Specialist	$130