Tessera Solar
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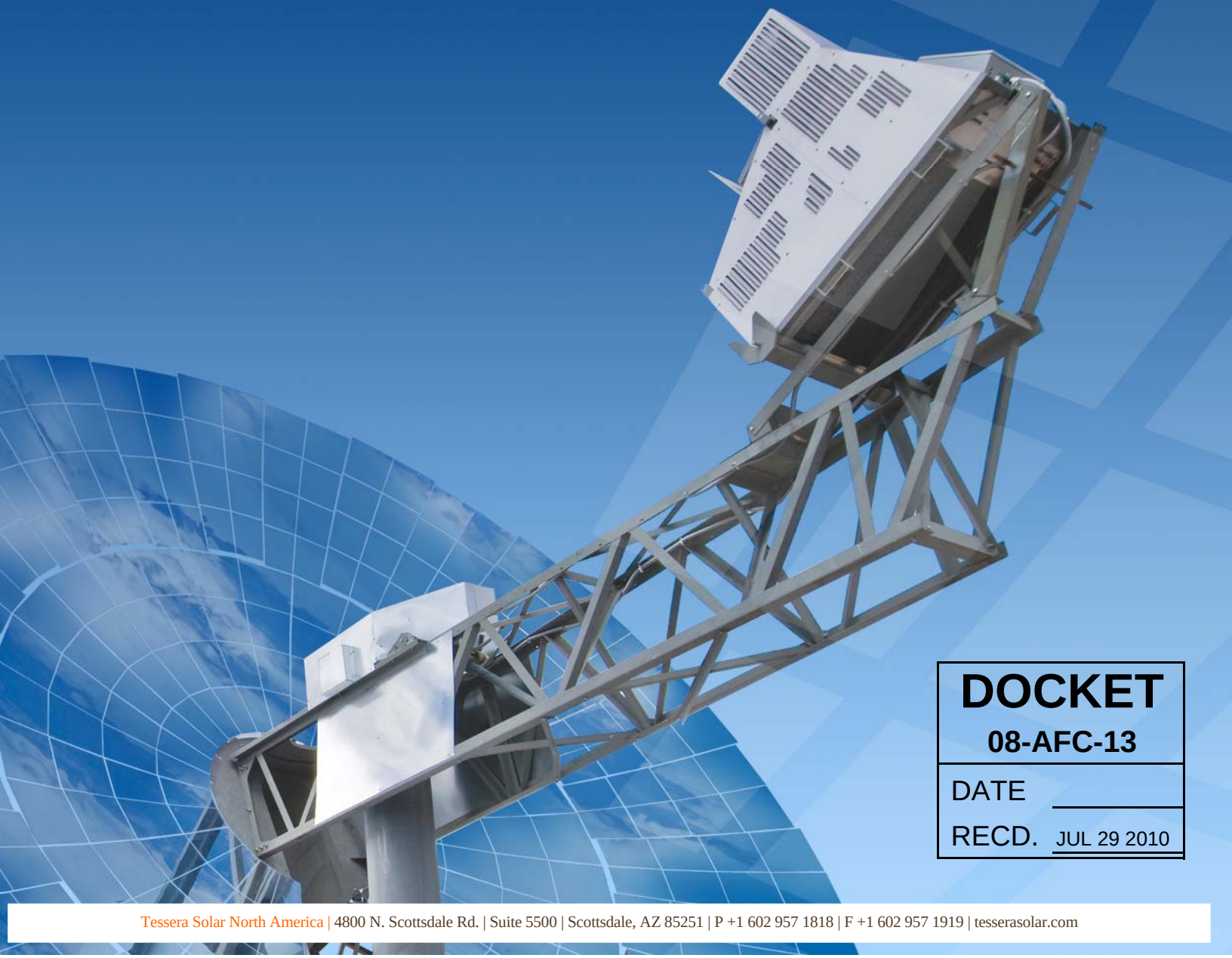
SES Stirling Energy Systems
PURE POWER :: MADE SIMPLE

Applicant's Submittal of Prehearing Conference Statement

Calico Solar, LLC



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Tessera Solar
power from stirling energy systems

July 29, 2010

Mr. Christopher Meyer
CEC Project Manager
Attn: Docket No. 08-AFC-13
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Calico Solar (formerly Solar One) Project (08-AFC-13)
Applicant's Submittal of Prehearing Conference Statement

Dear Mr. Meyer:

Tessera Solar hereby submits the Applicant's Prehearing Conference Statement. I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge.

Sincerely,

Felicia L. Bellows
Vice President of Development

Tessera Solar | 4800 N. Scottsdale Road | Suite 5500 | Scottsdale, AZ 85251 | P +1 602 535 3576 | F +1 602 535 3617 | tesserasolar.com

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

Application for Certification for the Calico Solar Project (formerly Known as SES Solar One Project) Calico Solar, LLC	)))))	Docket No. 08-AFC-13

Applicant's Prehearing Conference Statement

July 29, 2010

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STATE OF CALIFORNIA
Energy Resources Conservation and Development Commission

Application for Certification for the Calico Solar Project (formerly Known as SES Solar One Project Calico Solar, LLC	)	Docket No. 08-AFC-13

On July 23, 2010, CEC Staff issued a "Staff Assessment and Draft Environmental Impact Statement and Draft California Desert Conservation Area Plan Amendment". Applicant has reviewed this document and has certain comments and suggestions to make to the agencies. The Applicant also has reviewed the testimony submitted by the intervenors and is prepared to respond to their comments and concerns.

Please note that Applicant has also submitted testimony on the elements necessary for an "override" determination by the Commission. Despite the best efforts of the parties, and conditions of certification which diminish the project's impacts, it may be impossible to mitigate all of the potential impacts to a less than significant level.

Applicant's response to the questions requested to be addressed in the prehearing conference statement are discussed below:

1. The topic areas that are complete and ready to proceed to evidentiary hearings.

   All topic areas are ready to proceed to evidentiary hearings other than Cultural Resources, for which the SSA chapter has not yet been released and hearing is scheduled on August 18. The Transportation chapter of the SSA also has not been released, but the Applicant will be prepared to address that topic at the August 4-6 hearing. .

2. The topic areas that are not complete are not yet ready to proceed to evidentiary hearings and the reasons therefore.

There are no topics except for Cultural Resources that are not ready for hearings.

3. The topic areas that remain disputed and require adjudication, and the precise nature of the dispute for each topic.

   The Applicant believes the following topics are in dispute:

   (a) Biological Resources. The SSA and intervenors testimony raise concerns regarding the biological impacts from construction and operation of the project. The Applicant disagrees with the CEC staff's conclusion that the project represents a cumulatively considerable unavoidable, significant adverse impact to the fringe toed lizard The CEC staff also propose mitigation requirements that the applicant believes are unreasonable in terms of their cost. The Applicant will also address these issues and suggest revisions to the Conditions of Certification. The Applicant will also recommend an approach to phasing the mitigation payments consistent with the timing of project development.

   (b) Geology/Soils and Water. The Applicant will testify to the reliability of its water supply. The Applicant will also recommend changes to suggested monitoring requirements and clarify the detention basins.

   (c) Noise. The SSA contains restrictions on the project work day and work week. Applicant believes these restrictions are unnecessary and will result in a needless restriction on construction of this renewable resource.

   (d) Visual Resources. The SSA proposes conditions that the Applicant believes are unnecessary. The Applicant will present testimony on these issues and propose alternate condition language. The Applicant will also present testimony on glint and glare from the project. Finally, the Applicant believes that a Commission override should be considered as a project of this magnitude is anticipated to result in unavoidable and unmitigatable visual impacts.

   (e) Worker Safety and Fire Protection. The SSA proposes conditions that Applicant believes are excessive in cost and will present testimony including alternative language for the conditions.

   (f) Reliability and Facility Design. The Applicant will discuss project reliability, based, in part on the Maricopa Solar experience.

(g) Land Use/Recreation. The SSA states that the project will contribute to significant cumulative adverse impacts resulting from land conversion. The applicant will discuss this conclusion and request an override on this issue.

(h) Alternatives. Some of the intervenors have raised issues with alternatives to the project. The Applicant will address these concerns.

(i) Override. The applicant will address the reasons it believes an override is appropriate for this project.

4. The identity of each witness sponsored by each party (note: expert witnesses must demonstrate professional expertise in their area(s) of testimony; the topic area(s) which each witness will present; a brief summary of the testimony to be offered by each witness; qualifications of each witness; and the time required to present direct testimony by each witness.)

Witnesses:

- Project Overview, Project Description, Policy and Alternatives - Felicia Bellows and Sean Gallagher (60 minutes)
- Facility Design - Felicia Bellows, Mike Alhalabi and Bob Byall (60 minutes)
- Water Supply and Hydrology – Robert Scott, Joe Liles, Matt Moore and Bob Byall (60 minutes)
- Biology - Pat Mock, Theresa Miller, and Shawn Johnston (120 minutes)
- Efficiency and Reliability - Rick Reiff and Waymon Votaw (30 minutes)
- Visual Resources - Felicia Bellows, Angela Leiba and Jason Pfaff (30 minutes)
- Traffic and Transportation - Noel Casil (15 minutes)
- Air Quality and Public Health and Safety - Julie Mitchell (15 minutes)
- Hazardous Materials, Waste and Worker Safety – Mike Alhalabi, Tariq Hussain, and Tricia Winterbauer (60 minutes)

Testimony by attestation:

- Socioeconomics - Matt Dadswell
- Soils and Geology - Mike Hatch
- Paleontology - Joe Stewart
- Noise -- Mark Storm
- Land Use - Angela Leiba

Attachment A contains resumes for all Applicant witnesses.

5. Topic areas which a party desires to cross-examination witnesses, a summary of the scope of such cross-examination, and the time desired for such cross-examination.

   Applicant reserves the right to cross-examine witnesses for the CEC Staff and intervenors in topics raised by these parties in their rebuttal testimony. At this time Applicant anticipates the following:

Overview/Policy	Project changes, critical conditions and override	60 minutes
Alternatives	Viability of alternatives	60 minutes
Biological Resources	Required buffer zone and impacts	180 minutes
Geology	Impacts and level of mitigation	60 minutes
Hazards/Worker Safety	Hydrogen system and fire protection	60 minutes
Soil/Water Resources	Water supply and hydrology/sedimentation	120 minutes
Noise Resources	Work day and work week restrictions	20 minutes
Visual Resources	Necessity of proposed mitigation	60 minutes
Land Use	Recreation impacts	60 minutes

6. A list identifying exhibits and declarations that each party intends to offer into evidence and the technical topics to which they apply;

   Attachment B hereto lists Applicant's proposed exhibits.

7. Briefing dates (if needed) and other scheduling matters:

   The dates proposed by the Committee for briefs (August 18) are appropriate. Applicant proposes that the Committee discuss briefing topics on the final day of hearings.

   Mr. Scott will be testifying in the area of water supply. He is currently in Europe and will call into the teleconference number. Due to the time difference Applicant requests that Mr. Scott be scheduled for 9:00 am on Thursday, August 5, 2010

8. For all topics, the parties shall review the Proposed Conditions of Certification listed in the Supplemental Staff Assessment (SSA) for enforceability, comprehension, and consistency with the evidence, and submit any proposed modifications.

   Exhibit 82, Attachment A will be submitted with the applicant's rebuttal testimony that will propose specific changes to the proposed Conditions of Certification.

Attachment A

FELICIA L. BELLOWS

Tel: 202-615-0551
felicia@feliciabellows.com

PROFILE

Multi-lingual senior business development and private equity executive with extensive experience identifying and capitalizing on new opportunities for global energy companies in both regulated and unregulated markets. Adept at negotiating, financing and managing complex acquisitions, project developments and divestitures for a variety of renewable energy projects, including hydroelectric and wind, as well as non-renewable energy and carbon credit-based projects. Expertise in managing the entire business development cycle, including strategic planning, financing, pipeline development, due diligence, marketing communications, joint ventures and partnerships. Dedicated to building relationships with government and business executives and motivating diverse, high-performing teams to consistently improve performance in investment portfolios.

EXPERIENCE

TESSERA SOLAR, Phoenix, AZ **March, 2009 -- today**

A firm that develops, builds, owns and operates solar power plants using Sterling Energy Systems' SunCatcher technology

Vice President of Development

Responsible for developing new projects and investments from development to construction

- Working on Tessera Solar's existing project in the Mojave Desert, the Calico Project (Solar I)
- Submitting various proposals in response to RFP's in various states
- Managing a team of senior developers and experienced permitting people to move Tessera Solar's projects to completion

ECONERGY INTERNATIONAL CORPORATION, Washington, DC **2006 – February, 2009**

A firm that develops, builds, owns and operates renewable power plants in the Americas

Executive Vice President, Development

Responsible for investing the proceeds of the IPO in projects and companies throughout the Americas and managing investments from acquisition until operational

- Completed a $23.6 million investment in two hydroelectric projects in Brazil within three months of joining the firm
- Invested $24 million in a hydroelectric project in Chile and a wind project in Brazil within six months with the company
- Closed a $20 million investment in a wind project after less than a year with the company
- Ramped up investment significantly within a year, closing five projects, beginning construction on four of them and generating a steady pipeline of future opportunities
- Established business development strategies for investments to meet the IPO's target returns
- Negotiated with private equity, government and commercial lenders to obtain international financing for renewable energy and carbon credit-based projects
- Promoted rapidly from Senior Vice President to an Executive Vice President role

ALLIANT ENERGY CORPORATION, Cedar Rapids, IA & Rio de Janiero, Brazil **1999 – 2006**

Various subsidiaries of a public utility holding company

President, Alliant Energy Holdings do Brasil

Managing Director, Latin America, Alliant Energy International

Responsible for establishing the firm's activities in Latin America through targeted investments, acquisitions and divestitures

- Negotiated and closed the $347 million acquisition of Cataguazes/Energisa and the $110 million acquisition of Saelpa, Brazilian electric power distribution companies
- Developed and operated a non-utility-owned $40 million gas-fired electric power generation facility in Juiz de Fora, Brazil and several sustainable energy investments in small hydro facilities

- Divested Brazilian investments after a contentious shareholder battle with the firm's local partner before Brazilian courts, securities and energy regulators, and the International Chamber of Commerce Court of Arbitration
- Managed the $1 billion tender offer for Escelsa, a Brazilian electric power distribution company, during the two months after joining the firm
- Represented the firm on the board of directors for nine Brazilian operating and holding companies

SOUTHERN COMPANY, Brazil, Argentina & Atlanta, GA **1990 – 1999**
Various subsidiaries of one of the largest energy companies in the U.S., with $37 billion in assets
***President,* Southern Energy do Brasil**, *Rio de Janiero, Brazil* (1997 – 1999)
***Director, Project Development, South America*, Southern Energy**, *Buenos Aires, Argentina* (1996 – 1997)
***Director of Finance & Project Manager,* Southern Energy**, *Buenos Aires, Argentina* (1993 – 1996)
***Project Finance Specialist, Corporate Finance,* Southern Energy**, *Atlanta, GA (1990 – 1993)*
Responsible for identifying and capitalizing on business development and investment opportunities in emerging markets, including Brazil, Poland, Czechoslovakia, India and Mexico

- Spearheaded a successful $1 billion bid to acquire a 33% stake in CEMIG, one of the largest successful integrated electric companies in Brazil, in collaboration with two other industry partners, in a series of complex equity and debt transactions.
- Collaborated with AES, the U.S.-based partner, to devise and implement a restructuring program at CEMIG to improve revenues and profit margins
- Led the greenfield development of a $250 million gas-fired electric generation facility in Brazil
- Conducted due diligence and negotiated with a Belgian energy company for a proposed joint bid for the privatization of 3,688 MW of electric power capacity in southern Brazil
- Managed the Argentinean subsidiary's corporate management team as CFO and lead executive and drove business development initiatives, including a unique proposal to export energy to Brazil
- Monitored the financial performance of subsidiaries in Argentina, Chile, Trinidad and the Bahamas

NATIONSBANK, Tampa, FL **1988 – 1990**
One of the largest banking corporations in the U.S., now operating as Bank of America
Profit Center Reporting Manager

- Led a team of analysts in completing reports on the bank's profitability in numerous areas
- Conducted financial and acquisition studies using corporate finance expertise

SOUTHERN COMPANY, Atlanta, GA **1984 – 1987**
One of the largest energy companies in the U.S., with $37 billion in assets
Financial Analyst

- Analyzed bond re-financing and the financial aspects of regulatory issues that impacted the company to provide executive management with data for business decision-making

EDUCATION

Bachelor of Science, Industrial Management, 1984
Georgia Institute of Technology, Atlanta, GA

PROFESSIONAL

Advisor, IMTrust (1/2010 – present)

Senior Advisor, Claren Power (2007 – present)

Treasurer, Argentine Association of Power Generation (1996 – 1997)

President, Foundation for Security of Dams (1994 – 1997)

Fluent in English, Portuguese, Spanish and Greek

Sean Gallagher

805 Contra Costa Avenue
Berkeley, CA 94707
510 525 5493
sean.gallagher@tesserasolar.com

Education

University of California, Berkeley (Boalt Hall), J.D.
University of California, Berkeley (Boalt Hall), M.A. Jurisprudence & Social Policy

University of Virginia, B.A. (High Honors), Philosophy; B.A. (High Honors), Psychology

Experience

2008 – present **Tessera Solar North America & Stirling Energy Systems,** Berkeley, CA
Vice-President, Market Strategy & Regulatory Affairs

- Responsible for creating an effective representation of TSNA & SES in particular and the CSP industry in general in the appropriate governmental, regulatory and public affairs forums
- Set and execute on legislative, regulatory and public affairs objectives
- Oversee public and media relations and marketing

1998 – 2008 **California Public Utilities Commission,** San Francisco, CA

2005 – 2008 *Director, Energy Division*

- Advised Commissioners, the Legislature, the Administration, and other public and private officials on high-level policy development and strategic issues
- Implemented California's Energy Action Plan, developed energy policy and rates, and planned infrastructure
- Directed the strategic response to Commission-sponsored initiatives on Energy Efficiency, Demand Response, Solar, and Renewable Energy
- Lead a staff of over 100 analysts, auditors, accountants, and engineers

1998 – 2004 *Senior Attorney*

- Prosecuted the California energy crisis refund cases at the Federal Energy Regulation Commission (FERC) and in the courts; negotiated energy crisis settlements worth billions of dollars to California ratepayers; and articulated California Public Utility Commission (CPUC) policy on California electricity market redesign
- Advised Commissioners, Administrative Law Judges, and staff on electricity policy and litigation
- Represented the CPUC in regulatory proceedings in the U.S. Courts of Appeals, and before the state Legislature, with a focus on market structure, resource adequacy, market redesign, and market power issues

1997 – 1998 **Arter & Hadden,** San Francisco, CA
Senior Associate

- Prepared for and tried civil actions

1991 – 1997 **Sedgwick, Detert, Moran & Arnold,** San Francisco, CA
Senior Litigation Associate

- Represented plaintiffs and defendants in employment, insurance, and environmental litigation matters, through jury trial

Julie A. Mitchell

Air Quality Scientist

Areas of Expertise

Air Quality Impact
Health Risk Assessment
Air Quality Modeling
Visibility Modeling
Greenhouse Gas Studies
Meteorological Analysis
Hazardous Materials Risk Analysis
Computer Programming

Years of Experience

With URS: 11 Years
With Other Firms: 6 Years

Education

BSc/Atmospheric Sciences/ University of British Columbia/ 1994

BSc/Mathematics and Computer Science/McGill University/ 1993

Chronology

URS Corporation, Air Quality Scientist, San Diego, California, 1999–present

Scripps Institute of Oceanography, Center for Clouds, Chemistry and Climate, Science Support, San Diego, California, 1998–1999

Levelton Engineers, Air Quality Scientist, Vancouver, British Columbia 1994–1998

Overview

Ms. Mitchell has worked in the air quality consulting field since 1994. Ms. Mitchell is responsible for technical oversight of air quality work which includes permitting and compliance support for government and industrial facilities, air quality impact assessments, air toxics evaluations, and air quality and meteorological monitoring, primarily for industrial facilities in the US and abroad. Her technical specialties include operation and assessment of air dispersion models for air quality and health risk impact assessments, evaluation of greenhouse gas emissions, meteorological data analysis, and computer programming to process data or modify air dispersion models.

Project Specific Experience

Air Quality Impact and Health Risk Assessment Studies:

- Air and public health manager for the Hydrogen Energy California (HECA) Project, an Integrated Gasification Combined Cycle (IGCC) 250 MW power plant near Bakersfield, California. HECA plans to gasify petcoke and/or coal to create hydrogen gas to power a combined cycle combustion turbine. 90% of the project CO_2 will be sequestered in a nearby oil field. AFC, ATC and PSD applications were prepared for CEC, SJVAPCD and EPA, respectively. The applications provided estimations of criteria pollutants, toxic air pollutants and greenhouse gases. Local criteria impacts were assessed using the AERMOD model and air toxics with AERMOD/HARP. Class I impacts were analyzed using CALPUFF. Visible plume modeling for CEC was conducted with the SACTI model for cooling towers and CSVP for the CTG/HRSG.

- Prepared the air section of the EIR for the Lost Hills Solar Project. The development consists of two adjacent solar photovoltaic projects on a single land parcel in western Kern County for a combined electric generating capacity of 32.5 MW. Analyses included quantifying construction and operational emissions using the EMFAC and OFFROAD models and emission factors from EPA and CARB. As the region is endemic for coccidioidomycosis (valley fever), a detailed discussion of its transmission and prevention were included.

- Air quality and public health technical manager for the San Joaquin Solar 1 & 2 Hybrid Project near Coalinga, California. The project consists of two collocated plants, each sized for a nominal 53.4 MW net of solar generation, complemented by 40 MW net of biomass-generated production, fueled with agricultural wood waste and municipal green wastes. Prepared the public health and air quality sections of the Application for Certification for the California Energy Commission and the Air Permit Application for the SJVAPCD. The air quality analysis examined the impacts from criteria pollutants

against the NAAQS, CAAQS, and SJVAPCD standards. Health risk impacts were analyzed using the HARP model. Short-term effects from constructing the power plant were also analyzed. Greenhouse gas emissions were calculated using EMFAC, OFFROAD and CCAR protocols for both operational and construction phases.

- Air quality and public health technical manager for the Solar Two Project near El Centro, California. The project consists of approximately 30,000 solar collectors capable of producing 750 MW of electricity. Prepared the public health and air quality sections of the Application for Certification for the California Energy Commission. Also prepared the application to construct for ICAPCD. The air quality analysis examined the impacts from criteria pollutants against the NAAQS, CAAQS and ICAPCD standards. The air permit and HRA modeling were conducted with SCREEN3 then toxicity factors were applied to determine health risks. Potential impacts from the mobile sources during the operation and construction phases of the power plant were also analyzed using AERMOD. Project related greenhouse gas emissions were estimated for both operational and construction phases from stationary and mobile sources, on- and off-site.

- As air quality technical manager, prepared the air quality section for two Environmental Assessments for the Naval Hospital Camp Pendleton Project and Marine Corps Exchange Retail Complex Project at Marine Corps Base – Camp Pendleton. Analyzed the construction and operational emissions using URBEMIS and EMFAC2007. Conducted a CO Hotspots analysis using CAL3QHC and EMFAC. Prepared the general conformity analysis and the RONA (Record Of Non-Applicability) form.

- Air quality technical manager for the Interstate 805 North Corridor Manage Lane Expansion for Caltrans, in San Diego. Prepared the air technical report, which included determination of federal conformity, conducting CO Hotspots, PM Hotspots, and Mobile Source Air Toxics analyses. Models used in these analyses included EMFAC, CALINE4 and CT-EMFAC.

- Prepared the air impact analyses for an Environmental Impact Manifest (MIA) for the expansion of the Chihuahua pipeline system. Calculated emissions associated with the construction and operation of the pipeline. Impacts were examined using the SCREEN3 model. Outlined the applicable Mexican air quality and equipment emission standards and demonstrated project compliance.

- Air quality technical manager for the Teledyne Ryan Demolition Project next to the San Diego Airport. Prepared the air technical report for the EIR. Analyzed criteria pollutant and greenhouse gas emissions from demolition activities, including haul and delivery truck emissions, using URBEMIS. Conducted a CO Hotspot analysis using EMFAC and CALINE4.

- Air quality and public health technical manager for the Mt Signal Solar and Biomass Power Station, near El Centro, California. Prepared the air technical report for an EIR. Emissions were estimated using the EMFAC and OFFROAD models for construction, source test data for the operation of the biomass combustor for criteria pollutants and air toxics, and CCAR protocols for greenhouse gases. Operational impacts were modeled with AERMOD and HARP. Potential offsite odors were assessed qualitatively. Estimated the greenhouse gas emissions and reductions using CCAR protocols.

- Public health and hazardous materials technical lead. Analyzed the air quality, public health and hazardous materials impacts from the addition of the Willow Pass (500 MW) and Marsh Landing (830 MW) Generating Stations at the Pittsburg and Contra Costa Power Plants, respectively, for AFC and PSD applications. The air quality analysis examined the impacts from criteria pollutants against the NAAQS, CAAQS, BAAQMD and PSD standards. Health risk impacts were analyzed using the HARP model. Greenhouse gas emissions were calculated using the CCAR protocols. The offsite consequence analysis of the aqueous ammonia was conducted using SCREEN3 with EPA and CalARP impact estimations.

- Public health and air quality technical lead for the City of Anaheim Canyon Power Plant, a proposed 200 MW simple cycle gas turbine power plant. Prepared the required air quality and public health analyses in support of an Application for Certification to the California Energy Commission and prepared the air quality permit application to the South Coast Air Quality Management District for the Canyon Power Plant in Anaheim, California.

- Public health and air quality technical lead for the City of Colton Agua Mansa Power Plant expansion from a 50 MW simple cycle facility to a 63 MW combined cycle facility. Developed CEQA Mitigated Negative Declaration and prepared SCAQMD air permit. Conducted and assessed all air quality and health risk modeling.

- Prepared the air quality and public health analyses in support of an Application for Certification to the California Energy Commission and prepared the air quality permit and PSD application to the San Joaquin Valley Air Pollution Control District for the Kern Front Project, a new 700 MW base load natural gas combine cycle generating station near Bakersfield, California for BP Alternative Energy. Air quality modeling was conducted with AERMOD and the health risk assessment was conducted with HARP.

- Air quality and public health technical manager for the Sentinel Energy Project (850 MW peaker plant) near Palm Desert, California. Prepared the public health and air quality sections of the Application for Certification for the California Energy Commission. The air quality analysis examined the impacts from criteria pollutants against the NAAQS, CAAQS, and SCAQMD standards. The near field visibility was analyzed using VISCREEN and PLUVUE II. Health

risk impacts were analyzed using the HARP model. Short-term effects from constructing the power plant were also analyzed. Greenhouse gas emissions were calculated using the CCAR protocols.

- Public health technical lead for the 177 megawatts solar thermal Carrizo Energy Solar Farm near Simmler, California. Prepared the public health and air quality sections of the Application for Certification for the California Energy Commission, and the application to construct for SLOAPCD. The air quality analysis examined the impacts from criteria pollutants against the NAAQS, CAAQS and SLOAPCD standards. The HRA modeling was conducted with SCREEN3 then toxicity factors were applied to determine health risks due to diesel particulate. Potential criteria pollutant impacts from the mobile sources during construction and stationary sources during operations were analyzed using AERMOD. Project related greenhouse gas emissions were estimated from the operational sources.

- Public health technical lead. Prepared the public health and air quality sections of the Application for Certification for the San Gabriel Generating Station (615 MW) expansion of the Etiwanda Generating Station near Ontario, California. The air quality analysis examined the impacts from criteria pollutants against the NAAQS, CAAQS, SCAQMD and PSD standards for Class I and II areas. The air quality related values analyzed were deposition, regional haze, and visibility. The CALPUFF model was utilized for the far field regional haze and deposition modeling. VISCREEN was used for the near field visibility analysis. Health risk impacts were analyzed using the HARP model. Short-term effects from constructing the power plant were also analyzed.

- Prepared the EFSEC and PSD air permit applications for the Pacific Mountain Energy Center (PMEC), an Integrated Gasification Combined Cycle (IGCC) 600 MW development, at the Port of Kalama, WA. The PMEC would gasify petcoke and/or coal to create synthesis gas to power two combined cycle combustion turbine electric power generating plants. The applications provided estimations of criteria pollutants, toxic air pollutants and greenhouse gases. Local impacts were assessed using the AERMOD model. A regional haze analysis was performed to determine whether the visibility in the nearby Class I area would be degraded due to the emissions from the facility. The analysis was conducted using the air quality dispersion model CALPUFF in screening mode per the recommendation of the Washington State Department of Ecology and the FLAG and IWAQM guidance documents. Carbon sequestration was analyzed for phase two of the project.

- Public health technical lead. Prepared the Small Power Plant Exemption Application for the California Energy Commission and Imperial County Air Pollution Control District for the Niland Gas Turbine Plant, a 90 MW peaking power plant. The application involved operational and construction air quality impact analyses using

ISCST3, Class I regional haze, deposition and criteria pollutant analyses using CALPUFF, and air toxics health risk assessment using HARP.

- Public health technical lead. Evaluated the air quality and air toxics health risk impacts from re-powering the Unit 3 boiler with a new turbine/HRSG with new pollution controls for the El Centro Generating Station for a Small Power Plant Exemption Application for the California Energy Commission and Imperial County Air Pollution Control District. The application involved operational and construction air quality impact analyses using ISCST3, Class I regional haze, deposition and criteria pollutant analyses using CALPUFF, and air toxics health risk assessment using HARP. The potential impacts from an accidental release of anhydrous ammonia were evaluated with the dense gas model SLAB.

- Conducted the public health and air quality modeling for the Colusa Generating Station (660 MW) Colusa, California, for the AFC and PSD applications. The air quality analysis examined the impacts from criteria pollutants against the NAAQS, CAAQS, CCAPCD and PSD standards for Class I and II areas. Health risk impacts were analyzed using the HARP model.

- Prepared the air quality and public health sections of the AFC for CEC and ATC for SJVAPCD for the Starwood Power–Midway Peaking Project facility near Fresno, California which consists of two FT8-3 SwiftPac simple cycle turbines (120 MW).

- Prepared the air quality and public health analyses in support of an Application for Certification to the California Energy Commission and prepared the air quality permit application to the San Joaquin Valley Air Pollution Control District for the Panoche Energy Center, a new 400 MW peaking generating station near Firebaugh, California. Air quality modeling was conducted with ISCST3 and the health risk assessment was conducted with HARP.

- Construction and operational emissions of air toxics were calculated for the expansion of the Frank R Bowerman Landfill in Orange County, California. The potential health risks associated with the expansion were estimated using the HARP model. A CO hotspot analysis was conducted using the model CALINE4. Potential offsite odors were assessed with ISCST3. All results were incorporated in the EIR document.

- Technical reviewer. Review EIR air quality studies for the County of Riverside. Most studies include quantification of project and construction emission using a combination of URBEMIS, EMFAC and SCAQMD CEQA emission factors. Impacts from these emissions are analyzed with the air dispersion model ISCST3 or AERMOD and the CO hotspot model, CALINE4.

- Air quality project manager. Determined the potential health risks associated with the diesel particulate matter during the construction of

the Redlands Commons/Trojan Grove Development, in Redlands, California using ISCST3 and SCAQMD recommended HRA techniques for inclusion in an EIR.

- Air quality project manager. Determined the potential health risks associated with the diesel particulate matter during the construction and operations of the Santa Anita Park Development, in Arcadia, California using ISCST3 and SCAQMD recommended techniques for inclusion in an EIR. Operational impacts from delivery and consumer vehicles on- and off-site were analyzed at sensitive and grid receptors.

- To determine the significance, under CEQA, of the new extraction project at Hansen Aggregate's Channel Road facility in Lakeside, California, fugitive dust and criteria pollutant emissions were estimated for each phase of the project. A cumulative analysis was also conducted including a neighboring proposed project.

- To prepare applications for the Federal Energy Regulatory Commission, Coast Guard, U.S. EPA and Texas Commission on Environmental Quality, for two LNG projects proposed in the Gulf of Mexico for ExxonMobil, emissions were calculated for the construction and operational phases of the projects. Screening level modeling was conducted to determine potential impacts from the offshore LNG terminal using CALPUFF. Refined modeling using ISCST3 assessed potential criteria pollutant and air toxics impacts from operations.

- Assessed the potential impacts from the ChevronTexaco Escravos Gas to Liquids Project in Nigeria on neighboring villages using the air quality model ISCST3. Calculated particulate emissions from the construction and pipe laying activities for the West Africa Gas Pipeline (WAGP) Project that runs through Nigeria, Benin, Togo and Ghana.

- Modeled air quality impacts from the ExxonMobil Chad Export Project, which includes the development of an oil field and crude oil pipeline connecting the oil field in Chad to a marine loading terminal in Cameroon. The results of this modeling were compared with applicable World Bank standards to ensure that there would be insignificant health impacts.

- Created an emissions inventory for the Cabinda Gulf Oil Company in Angola for numerous offshore oil production platforms and the supporting onshore facility. These emissions were used in the ISCST3 model to predict the air quality impacts on the surrounding area from these facilities.

- Prepared an Authority to Construct permit application for the anticipated stationary sources of air pollutants at the Ivanpah Valley Airport in Clark County, Nevada. This included creating an inventory of the NO_2, PM_{10}, SO_2, CO, VOC, and HAPs emissions and modeling the NO_2, PM_{10}, SO_2 and CO emissions with ISCST3.

- Conducted a dispersion modeling analysis as part of a site constraints evaluation for a new power generation plant near Baker, California to compare predicted air quality impacts against the NAAQS, CAAQS and PSD increments for Class I and II areas. Also conducted a visibility analysis for a Class I area that spans across the near and far field.

- Prepared the public health section of the Application for Certification to the California Energy Commission for the Salton Sea Unit 6 Geothermal Power Plant in Imperial County, California. This included conducting the health risk assessment by modeling the air toxics using the ISCST3 and ACE2588 models. The risks from radionuclides contained in the geothermal fluid were included in the ACE2588 modeling and validated with CAP88. Risks from electro-magnetic fields were also examined.

- Conducted the dispersion modeling for the air quality section of the Application for Certification for the Ocotillo Power Plant (450 MW) near Palm Springs in Riverside County, California for Intergen North America. The air quality impact analysis examined the impacts from PM_{10}, NO_2, SO_2 and CO against the NAAQS, CAAQS, SCAQMD and PSD standards for Class I and II areas. The air quality related values analyzed were deposition, regional haze, and visibility. All three EPA levels for near field visual effects were examined using the VISCREEN and PLUVUE models. The CALPUFF model was utilized for the far field regional haze and deposition modeling. Health risk impacts were analyzed using the ACE2588 model. Short-term effects from constructing the power plant were also analyzed.

- Prepared the Application for Certification for the California Energy Commission for the Indigo Energy Facility, a 135 MW peaking power plant in Riverside County. Licensing for this project was conducted under the Governor's Executive Order for a 21-day accelerated approval process for peaker power plants, and a Permit to Construct application for the project was prepared for the South Coast Air Quality Management District. The application involved air quality impact analyses using ISCST3, near-field Class I visibility analyses using VISCREEN, far-field Class I regional haze analyses using CALPUFF, and air toxics health risk assessment using ISCST3 and software I designed to implement the SCAQMD recommended calculation methods.

- Evaluated the air quality impacts from retooling two 50-year-old boilers (450 MW total) with new pollution controls for the Huntington Beach Generating Station in southern California. The project involved evaluating the impacts of the refurbished units' emission of criteria pollutants against NAAQS, CAAQS, and SCAQMD standards using ISCST3 for inland areas and SCREEN3 to examine areas affected by shoreline fumigation. Impacts from construction were examined using the SCAQMD CEQA emission factors and ISCST3. Class I area visibility and regional haze impacts were evaluated with VISCREEN and CALPUFF respectively. The

project included fast-track licensing of the new units with the California Energy Commission and obtaining a Permit to Construct/Permit to Operate from the South Coast Air Quality Management District during the energy crisis of 2000/2001.

- Estimated the potential air quality impacts from the Big Horn Generating Station in Arizona for comparison with NAAQS and PSD increments. Modeled the ammonia slip to demonstrate impacts were below the ammonia significant health risk level. Also examined the potential air quality impacts and Air Quality Related Values in the Grand Canyon (Class I area) and Lake Mead National Recreation Area (Class II area).

- To acquire an authority to construct permit for the Silver State Waste Management Center, Nevada, PM_{10}, NO_x, SO_2, CO, VOC, and HAPs were modeled and compared with the NAAQS and the PSD standards for the region. Visibility and criteria pollutant impacts were analyzed in the Grand Canyon and Lake Mead Recreation Areas.

- Conducted an indoor air quality study targeting mold spores, bacteria and dust for H.G. Fenton Company to determine potential health nuisances.

- Conducted a detailed environmental assessment for the planned construction and operation of Westcoast Energy Inc.'s new Tumbler Ridge Gas Plant in British Columbia, Canada. Potential areas of impact addressed as part of this assessment included air, water, soil, vegetation, wildlife, noise, odor, acidic deposition, and emergency response. As part of the study, dispersion modeling using the ISC and CTDM models with site-specific meteorology was performed.

- To assess vehicle emission dispersion in the West End of Vancouver, a portable CO monitoring system was created for the Ministry of Transportation and Highways, Lions Gate Crossing Project. These data were compared to the results from a typical rush hour scenario modeled with CAL3QHC.

Air Quality Modeling:

- Provided technical support for the development of Chevron's Air emissions environmental performance standard (the Standard) for upstream operations worldwide. This Standard consists of a series of procedures for upstream facility operators to use in evaluating whether current or future pollutant emissions cause an acceptable impact on local air quality. It consists of several elements, including: (1) a user-friendly calculation tool to generate a facility emissions inventory; (2) minimum emission control requirements for criteria and hazardous air pollutant emissions from specific equipment at upstream facilities; and (3) a screening analysis based on dispersion modeling to evaluate whether the facility emissions would cause impacts above certain ambient pollutant levels. Feedback loops within the Standard require re-evaluation of emission control requirements based on the results of the other analyses. The standard

is intended to provide a self-evaluation procedure that can be readily used by operators of any upstream operation, but at a minimum compliance with locally applicable regulatory is mandatory where they exist.

- Conducted air quality, air toxics and odor modeling assessments for the Nursery Products Composting Facility, in San Bernadino County, California, Environmental Impact Report, 2006. The Project was expected to receive approximately 400,000 wet tons per year of biosolids and green material to produce Class A compost by means of a combination of windrow and modified static pile composting techniques. Important air quality issues included potential generation of odors in the handling of incoming waste streams and in the composting process, as well as emissions from large trucks delivering biosolids and green material to the site and removing finished compost. A full evaluation was conducted of applicable federal, state and local air regulatory requirements and potential mitigation measures for the proposed project and alternatives.

- Prepared the air impact analyses for an Environmental Impact Manifest (MIA) for the ChevronTexaco Puerto Coronado offshore LNG regasification facility in Mexico. This involved modeling, using ISCST3 and AERMOD utilizing the PVMRM option, the potential impacts from airborne pollutants during construction and operation of the facility and assessing the potential impacts to the local population. To determine the most appropriate model to estimate an accidental release of LNG, a comparative analysis of the models ALOHA, SLAB, ISCST3 and CHARM was conducted. The CHARM model was then used to assess the possible impacts from an accidental release of LNG. Conducted a study of ambient ozone and nitrogen dioxide concentrations collected at upwind onshore monitoring stations and downwind island stations in the Los Angeles basin, to estimate appropriate ambient concentrations on Coronado Island.

- Prepared an application to modify the existing Covered Source Permit for installation of a new combined gas turbine cogeneration plant and two new steam generating boilers to replace existing boilers at the Chevron Hawaii Refinery on Oahu. Determined the emission increases and decreases from replacing existing boilers with new turbines and conducted air quality modeling using ISCST3.

- A comparative study of three dense gas models, DEGADIS, CHARM and ALOHA, was conducted to determine the potential impacts from an accidental release of anhydrous ammonia at the Calpine Corporation Pastoria Energy Center.

- Conducted air quality impact analyses to evaluate potential effects of a proposed new heavy industrial park in the Apex Valley northeast of Las Vegas, Nevada. The assessment included an extensive air quality modeling study to estimate the quantities of emissions that could be located within the proposed development without resulting in exceedances of the applicable ambient air quality standards and

Prevention of Significant Deterioration increments. The study was performed in the context of an Environmental Assessment on the transfer of land from the Bureau of Land Management that would enable the proposed industrial park to be developed.

- The dense gas models SLAB and DEGADIS were run and compared to determine the potential impacts from a spill of anhydrous ammonia from a stationary tank for Contra Costa Power Plant operated by Mirant Corporation.
- Assessed the potential impacts from a variety of accidental release scenarios from the tank farm at the Chevron Burnaby Refinery using the dense gas model SLAB. The study was used to determine if there was potential to negatively impact neighbors and to identify safe locations for personnel in the event of an accidental release.
- Completed air quality modeling assessments for the proposed expansion of six mainline gas compressions stations in British Columbia for Westcoast Energy. Assessed the effects of local meteorology on dispersion of pollutants in an airshed and investigated options for emission trading.
- For Westcoast Energy conducted an air dispersion modeling study to establish a monitoring framework to evaluate the potential vegetation impacts resulting from continuous stack and intermittent flaring emissions of SO_2 from the proposed expansion of the Pine River gas plant.
- Conducted an air dispersion modeling analysis to determine the possible magnitude of air quality impacts due to the expansion of Kelowna Industrial Plastics in British Columbia, Canada. The study used available meteorological data for the ISC model and was submitted for permitting.
- Confirmed an indoor airflow and CO dispersion problem in a private home using the model CONTAM96, and evaluated potential solutions.

Visibility Modeling

- A regional haze analysis was performed to determine whether the visibility in the nearby Class I area would be degraded due to the emissions from a new coal gasification power plant near Kalama, Washington. The analysis was conducted using the air quality dispersion model CALPUFF in screening mode per the recommendation of the Washington State Department of Ecology and the FLAG and IWAQM guidance documents.
- For Mammoth Pacific, conducted a modeling study to estimate cooling tower visible moisture plume frequency statistics for the proposed Casa Diablo 4 geothermal power plant near Mammoth Springs, California. The SACTI plume model developed by the Electric Power Research Institute was used with a three-year record of local meteorological data to develop frequency statistics on visible

plume lengths, widths and heights to be included in the Environmental Impact Report for the Casa Diablo 4 project.

- Analyzed the plume visibility from the Reliant Energy Colusa Power Plant heat recovery steam generator and auxiliary boiler. A number of different meteorological conditions were examined in the Combustion Stack Visible Plume (CSVP) model. The results were presented as part of the Application for Certification for the California Energy Commission.

- Analyzed the plume visual, fogging and icing effects from cooling towers for a number of proposed power plants in Wisconsin, California and Illinois for Mirant. The cooling tower plume model SACTI was used for these analyses, in each case incorporating local meteorological data and facility-specific cooling tower design information.

Greenhouse Gas Studies

- Air technical manager. Estimated the greenhouse gas emissions and reductions associated with the Mt Signal Solar and Biomass Power Station, near El Centro, California using CCAR protocols.

- Project Manager. Created a greenhouse gas inventory for the Calpeak facilities in California to comply with AB32 reporting requirements.

- Calculated the greenhouse gas emissions from a new coal gasification power plant near Kalama, Washington. Emissions presented in the PSD permit reviewed by the Washington State Department of Ecology and EPA. Carbon sequestration was analyzed for phase two of the project.

- Calculated greenhouse gas emissions from numerous projects for inclusion in EIS, EIR or CEQA documents and applications to construct for air permits for local air districts and the California Energy Commission. Emissions are calculated from both primary and secondary sources.

- Developed greenhouse gas and pollutant emissions data for the West Africa Gas Pipeline (WAGP) project proposed by Chevron Overseas Petroleum, Inc. The project would process and transport natural gas recovered at crude oil production sites offshore Nigeria to existing and planned power plants and industrial facilities in Togo, Benin and Ghana. The gas is currently flared due a lack of local markets and infrastructure. The difference between future regional emissions with and without the WAGP project were calculated and used as a portion of the argument for certifying the project as a Clean Development Mechanism project, as defined by the Kyoto Protocol.

- Developed a spreadsheet-based system to calculate the annual greenhouse gases emissions inventories for Unocal worldwide facilities for 1999 through 2002. This system used facility activity data provided by each business unit that was gathered in a questionnaire

developed by URS. Refinement of the questionnaire and calculations of the greenhouse gases emissions continued for numerous years.

Meteorological Analysis

- Created AERMOD ready meteorological data files for numerous facilities in California and Hawaii, using AERMET and AERSURFACE.
- Prepared the air impact analyses for an Environmental Impact Manifest (MIA) for two facilities in Mexico, the Cantarell Nitrogen Plant Expansion in Campeche, and the Valladolid III Power Plant in Yucatan. Conducted ISCST3 modeling and prepared the technical impact report for each facility. Created ISCST3 ready meteorological input files from nearby Servicio Meteorologico Nacional station data by writing a Fortran program to process the data, as typical meteorological processing programs would not work on the available Mexican meteorological data.
- Advised ExxonMobil on the appropriate meteorological monitoring equipment to install at three remote stations in Chad and Cameroon to obtain data for dispersion modeling. Created programs to process the meteorological data for input into the air quality model ISCST3.
- Developed specifications for a multi-station network of meteorological monitoring stations to support air quality dispersion modeling to evaluate onshore impacts of the ChevronTexaco oil production concessions offshore Cabinda, Angola and the associated onshore facilities.
- Analyzed wind data collected for the South Coast Ozone Study with National Center for Environmental Prediction ETA model data to identify the predominant wind flow for 50 miles offshore from Point Conception to San Diego for the Port of Long Beach to determine the shipping route that would have the least onshore impact from ship emissions.
- Inspected and quality controlled a meteorological station and numerous precipitation stations and the accompanying data for an herbicide testing facility for Bayer in California.
- INDOEX – Indian Ocean Experiment – An international study of natural and anthropogenic climate forcing by aerosols and feedbacks on regional and global climate. As part of the research team, Ms. Mitchell retrieved, assessed, presented, and archived atmospheric data from the remote site Kaashidhoo Climate Observatory (KCO), Maldives. Coordinated aircraft and ship inter-comparisons with KCO. Proposed, procured, shipped and installed the remote power system and computer facility.
- Designed, installed, monitored and maintained a remote meteorological monitoring station for the proposed expansion of the Pine River Gas Plant for Westcoast Energy Inc. Prepared detailed site specifications and operating protocols to ensure high-quality data

capture. Then used the meteorological data in the air pollution dispersion models ISC and CTDM as part of the Environmental Assessment.

Hazardous Materials Risk Analysis

- A Program 1 Risk Management Plan (RMP) was prepared for aqueous ammonia unloading, storage and handling facilities for a NOx control retrofit project at the Encina Power Station operated by Cabrillo Power, LLC in Carlsbad, California (San Diego County). The RMP was developed pursuant to Section 112(r) of the Clean Air Act and state CalARP regulations. Completion of the RMP involved interacting with the local Administering Authority (San Diego County Health Services Department) and the Carlsbad Fire Department to determine specific Plan requirements and demonstrate compliance with local and CalARP regulations. Although not required for a Program 1 RMP, a Process Hazard Analysis was conducted to ensure the safe design and operation of the aqueous ammonia systems at the Encina Power Station. Additionally, a transportation risk study was conducted for the City of Carlsbad to show the statistical probability of an accident occurring with an ammonia truck bound for the Encina plant.

- A Program 2 Risk Management Plan was prepared for the aqueous ammonia facilities associated with the required Selective Catalytic Reduction (SCR) emission controls at the El Segundo Power Station operated by NRG. The RMP included a worst-case and alternative scenario offsite consequence analysis. Producing the RMP involved interacting with the local Administering Authority (El Segundo Fire Department) to ensure compliance with CalARP and US EPA regulations. Along with the extensive documentation compiled for a Program 2 RMP, a Process Hazard Analysis was conducted to identify and rectify possible problems with the design or operations associated with the aqueous ammonia system for the SCR system.

- A Program 2 Risk Management Plan (RMP) was prepared for the aqueous ammonia unloading, storage and handling facilities at the Pittsburg Power Plant operated by Mirant Corporation in Contra Costa County, California. Development of the RMP involved close interaction with the local Administering Agency (Contra Costa County Health Services Department) to ensure conformance with local, CalARP and EPA requirements. A Process Hazard Analysis was conducted to ensure safe design and operation of the aqueous ammonia systems at the plant. Additionally, an analysis of the health risks resulting from the ammonia slip emissions associated with the retrofit Selective Catalytic Reduction controls on the facility boilers was conducted.

- To assess the risk from hazardous materials associated with the expansion of the Contra Costa Power Plant operated by Mirant Corporation in Contra Costa County California, URS conducted an offsite consequence analysis for the Hazardous Materials Handling section for the Application For Certification to the California Energy

Commission for a new 500 MW combined cycle generating unit. The offsite consequence analysis was also used by URS in developing a Program 1 Risk Management Plan to address aqueous ammonia unloading, storage and handling facilities associated with the proposed new unit, as well as SCR retrofits on three existing utility boiler units. The preparation of the RMP involved close interaction with the local Administering Agency (Contra Costa County Health Services Department) to ensure that the Plan was compliant with local and CalARP requirements. A statistical transportation analysis was also conducted to determine the potential risk of an accident associated with trucks transporting aqueous ammonia to the plant. Additionally, a plume visibility analysis from the turbine stacks with the CSVP model and an analysis of the health risks due to the ammonia slip associated with the SCR on the turbines were performed.

- Conducted an analysis of hazardous materials handling that was submitted with Mirant's Application for Certification to the California Energy Commission for the expansion of the Potrero Power Plant in the City of San Francisco. This assessment included evaluation of the off-site consequence associated with the stationary aqueous ammonia tanks and a transportation risk study to estimate the expected number of accidents that could occur with a truck delivering aqueous ammonia to the plant for use as a reagent in the plant's pollution control equipment. Additionally, a plume visibility analysis from the turbine stacks with the CSVP model was conducted. Assisted with the preparation of a Risk Management Plan for the ammonia systems associated with the new combined cycle unit and SCR retrofit on existing boiler Unit 3.

Computer Programming

- Designed a Microsoft Access database to manage wetland data and proposed best management practices. Created forms for remote data input on Handheld PCs with detailed instruction regarding synchronization between the desktop computer and the handheld device.
- Created a Microsoft Access database for TABC to manage their VOC emissions inventory for compliance with South Coast Air Quality Management District regulations. Created to allow easy data entry through numerous user-friendly window interfaces, manipulated extensively with hidden MSBasic programs.
- Wrote programs for Cariboo Pulp & Paper Company mill personnel to evaluate the impact from emergency releases of SO2.
- Designed and maintained a company webpage for Levelton Engineering.

Professional Societies/Affiliates

Air and Waste Management Association

Publications

Presented "A Case Study of Building Envelopes to Examine the Indoor Airflow and Contaminant Dispersion using CONTAM96," at the PNWIS Conference in Vancouver, 1997

Languages

English – Fluent
Spanish – Conversational

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Robert K. Scott

Principal Geologist

Areas of Expertise

Project Management
Phase I ESAs
Phase II ESAs
Remedial Investigations/ Feasibility Studies
Hydrogeology/Geochemistry
Laboratory QA/QC

Years of Experience

With URS: 19 Years

With Other Firms: 2 Years

Education

Graduate Course Work, Hydrogeology, Syracuse University
MS, Geology, Pennsylvania State University
BS, Geological Sciences (summa cum laude), State University of New York at Albany

Registration/Certification

Hydrogeologist/California, C.Hg. # 734
UST Consultant/Arizona, # 1218
Geologist/California, R.G. # 5334
Geologist/Arizona, R.G. # 29659

Overview

Mr. Scott is a California-Registered Geologist (PG) and Certified Hydrogeologist (CHg) who has been involved in a variety of environmental projects in San Diego, Southern California and Arizona for over 15 years. He has successfully provided consulting services to government and private clients. Mr. Scott's management style has been effective in developing project teams, as well as being a key player on them. Some of his relevant experience related to groundwater is detailed below.

Project Specific Experience

Goodrich Aerospace (Rohr, Inc.), Chula Vista, CA. Mr. Scott is the Program Manager providing environmental consulting services for a large aerospace manufacturing facility. Responsibilities include managing budgets, client and regulatory interfacing (DEH & RWQCB), coordinating investigative activities and providing hydrogeological expertise. Developed sampling programs to investigate many releases that have affected both soil and groundwater as part of RWQCB directives and due diligence for property transactions with the Port of San Diego. Responsible for developing a hydrogeologic conceptual model for the site under the oversight of the RWQCB and U.S. Department of Fish and Game. Conducted a deep drilling program to characterize geologic conditions in the San Currently investigating the vertical and lateral extent of TCE in groundwater and its potential to affect possible drinking water sources and San Diego Bay. Also evaluating the extent of metals-impacted sediment downgradient of its storm water conveyance system. He successfully negotiated an alternate approach to addressing potential ecological risk to receptors when compared to the local shipyards.

ITT Cannon, Santa Ana, CA. Registered geologist responsible for developing and conducting on- and off-site investigations at a 34-acre aerospace facility to delineate of TCE and PCE contaminant plumes in soil and groundwater. Program has included the installation of well clusters screened in three water-bearing zones to characterize the subsurface geology and develop a hydrogeologic conceptual model for contaminant migration. Assisted in the development of feasibility study and remedial alternatives. Provided hydrogeologic input to placement of wells for a bioremediation pilot-scale program and a dual-phase extraction system.

Manzanita Indian Reservation, San Diego County, CA. Managed a well installation and rehabilitation project to improve water supplies and quality. Evaluated groundwater resources, nitrate source identification, installation of two potable supply wells, preparation of a wellhead protection plan and recommendations for replacement and rehabilitation of existing water wells at the Reservation. An additional phase of work is currently underway to prepare bids and specifications, design and install four new and rehabilitate

four water supply wells, abandon out-of-service wells and conduct additional aquifer testing.

Meadow Valley Generating Project, Meadow Valley, NV. Assisted with peer review and evaluation of groundwater resources related to alluvial and Tertiary-age basin-fill aquifers as a potential water source for a proposed power generating facility. The project involved aquifer testing and evaluation of possible affects groundwater extraction would have on springs, riparian habitat and connection to the regional carbonate aquifer.

National City Well Field, National City, CA. Provided hydrogeologic peer review for the design of two deep test wells in the San Diego Formation at the well field. Reviewed geologic and aquifer test data, and downhole geophysical logs.

Superfund Site Remedial Investigation, City of Industry, CA. Served as Assistant Project Manager for remedial investigations conducted by a major principal responsible party (PRP) in the Puente Valley Operable Unit of the San Gabriel Valley Superfund Site. The site was formerly occupied by a circuit-board manufacturer. Installed monitoring well clusters over multiple screen intervals using hollow-stem-auger and mud-rotary drilling techniques. Performed aquifer testing. Supervised drilling programs. Evaluated field and laboratory data and interpreted geophysical logs. Performed stratigraphic evaluation and correlation, and prepared reports. Reviewed approximately 100 regulatory agency files to identify other major PRPs in the operable unit for the client.

Noah Webster Burn Site, San Diego Unified School District. SDUSD requested our assistance on a project based on our experience with historical burn sites, and we prepared a Preliminary Endangerment Assessment (PEA) work plan and implemented it during a three-day weekend two weeks later. All stakeholders met several times for a roundtable discussion and negotiated scope of work with regulators. Our work plan included the investigation of concerns specific to DTSC, the City Local Enforcement Agency (LEA), RWQCB and SDUSD. Managed multiple field teams on site that conducted trenching, drilling, soil gas and surface soil sampling at about 60 locations. Samples were collected and results were provided via an electronic deliverable (EDD) that enabled us to prepare a PEA report by late December, ahead of SDUSD's deadline. We are assisting SDUSD in preparing a remedial action work plan (RAW) and preparation of public participation documentation.

City of San Diego Burn Sites, San Diego, CA. Program manager for the development of sampling programs and assessments for burn sites located throughout the City. Activities have involved the investigation of three burn dumps that operated in the 1920s and 30s. The projects received local press coverage and involved considerable public involvement. Two of the sites are in residential areas and one is at a school site. Following investigation, we evaluated health risk and developed a Remedial Action Plan for each site. One site has been remediated and closure granted by VAP for some of the residential properties. DTSC granted closure following the partial removal and capping of burn ash at the other site.

Pacific Steel Inc., National City, CA. Managed the installation of groundwater monitoring wells, evaluated tidal influences to groundwater and evaluated remedial costs for a 9-acre site affected by hydrocarbons, metals, PCBs and solvents, under a Cleanup & Abatement Order with the RWQCB.

Preliminary Assessment Screening, U.S. Army Corps, Barstow-Daggett Airport, Yermo, CA. Provided peer review of a preliminary assessment screening for the redevelopment of the facility by the U.S. Army which included recommendations for further site investigation.

Shell Oil Company, Southern CA. Managing and performing Phase II site assessments to evaluate the extent of petroleum hydrocarbon and/or volatile organic compound contamination in soil and groundwater. Work has included conducting records reviews, installation of monitoring wells and geologic logging of borings, well design, well development, water sampling, and preparing Corrective Action Plans (CAPs) in accordance with San Diego DEH guidelines. Also successfully negotiated a reduction in monitoring requirements with the DEH for several sites.

Hofer Property, Tijuana Valley, San Diego, CA. Assistant Project Manager responsible for conducting RI/FS for a property with historical use as a disposal site under the oversight of the USACE. Project involved extensive soil sampling for metals, PCBs, and hydrocarbons, identifying source areas, estimating affected volumes of soil, and developing remedial alternatives.

Range 313, Camp Pendleton Marine Corps Base, CA. Provided peer review expertise related to the investigation and remediation of a firing range affected by lead. Assisted in conducting a preliminary evaluation of remedial alternatives and unit costs.

Professional Societies/Affiliates

San Diego County Department of Environmental Health, Brownfields Technical Work Group

Awards

Phi Beta Kappa

Languages

English

Basic Spanish

Basic German

Basic Italian

Basic French

Joseph Liles, PG, CHG

Senior Project Geologist

Areas of Expertise

Hydrogeology

Soil/Groundwater Investigations

Years of Experience

With URS: 9 Years

With Other Firms: 1 Year

Education

BS/Geology/2000/California State University of Fullerton

Registration/Certification

Professional Geologist/CA/#8297

Registered Geologist/AZ/#45430

Certified Hydrogeologist/CA/#889

Overview

Mr. Liles is a Senior Project Geologist in the Site Assessment and Remediation Division (Hydrogeology Practice Group) at URS Corporation. He has 9 years experience in the environmental field managing soil/groundwater investigations, developing regulatory negotiation strategy.

Mr. Liles has managed numerous soil/groundwater investigations conducted at gasoline service stations, Naval bases, manufacturing facilities, and current/former retail properties. His regulatory experience includes personal interaction with California Regional Water Quality Control Boards (Santa Ana and Los Angeles,), Department Toxic Substances Control (DTSC), Los Angeles Department of Public Works (LADPW), Alameda County Environmental Health Services(ACEHS), Orange County Health Care Agency (OCHCA), and various members of the Certified Unified Program Agency (CUPA).

Project Specific Experience

Project Manager, (Confidential Client) Distribution Center Buena Park, CA: Project Manager of soil and groundwater investigation activities for a national retail shipping facility located in Buena Park, California. Tasks consist of coordinating field activities including oversight of quarterly groundwater sampling, aquifer testing, injection of potassium permanganate, soil borings, monitoring well installation and sampling, and preparation of reports.

Project Manager, (Confidential Client) Six Former Gasoline Service Stations Located Throughout Central and Southern California. Sears: Project management of groundwater sampling, site assessment and remediation of multiple former underground storage tank sites throughout California owned by a national retail company. Responsibilities include; project budgeting and cost tracking, setup and scheduling of fieldwork, agency interaction, conducting fieldwork, data interpretation and report writing.

Project Manager, (Confidential Client) Distribution Center La Habra, CA: Project Manager of Compliance, and groundwater investigation activities for a national retail shipping facility located in La Habra, California. Tasks consist of coordinating field activities including oversight of quarterly groundwater sampling, compliance related activities, and preparation of reports.

Project Geologist, Property Redevelopment – Pier A West, Wilmington, CA. Port of Long Beach: Project Geologist conducting a soil and groundwater investigation of multiple former waste oil sumps and subsequent impacted groundwater. The soil investigation was to determine the area and quantity of soil to be excavated for offsite disposal. The groundwater plume delineation was conducted to assist in the design on a multi-phase extraction system to dewater the sump areas

during excavation activities. The investigation includes a historical literature review, interpretation of a previous consultant work, subsurface investigation to determine lithology, and monitoring well installation. This project is challenging due to the fast-track schedule and agency requirements.

Project Geologist, Soil and Groundwater Remediation, (Confidential Client), Anaheim, CA. Project Geologist for soil and groundwater investigation activities for a site impacted with TCE for a confidential client in Anaheim, California. Responsibilities include; project budgeting, setup and scheduling of fieldwork, agency interaction, overseeing fieldwork, data interpretation, and report writing.

Project Geologist, Soil and Groundwater Remediation, (Confidential Client), Anaheim, CA. Project Geologist for soil and groundwater investigation activities for a site impacted with PCE, TCE, DCE, and 1,1,1-TCA for a confidential client in Anaheim, California. Responsibilities include; project budgeting, setup and scheduling of fieldwork, agency interaction, overseeing fieldwork, data interpretation, and report writing.

Project Geologist, Aquifer Testing for Multiple Sites, Ca. Los Angeles Department of Public Works: Project Geologist conducting, well installation, slug testing, step and constant rate pumping tests. Aquifer testing at North Haiwee Dam located in Olancha, Ca. was conducted to determine pumping rate required for dewatering large excavation area to retrofit dam to meet current seismic codes. Slug testing was conducted at multiple sites in Los Angeles to determine local aquifer properties during a tunnel construction project.

Project Geologist; High-Rise Development Dewatering Assessment, (Confidential Client), San Diego, CA. Project Geologist conducting, well installation, slug testing, step and constant rate pumping tests. The planned project includes the development of a 1.4 acre property into a high rise (30+ stories) commercial building with five levels of subterranean parking. Challenges to the project include the fact that groundwater is shallow and there is potential for high recharge from the San Diego Bay less than one block from the site. For purposes of assessing potential construction dewatering, URS utilized information from a detailed geotechnical study and implemented a series of aquifer pumping tests. Results of the study were used to propose a dewatering program in conjunction with the shoring and excavation plans. Project construction is scheduled to begin in 2008.

Staff Geologist, Research, Development , and Distribution Facility, Tustin, CA. (Confidential Client): Staff Geologist for a RCRA site closure project. Responsibilities included, project setup, fieldwork including phase I site investigation, phase II soil investigation, soil and concrete sampling, and report preparation.

Technical Resource – Drilling Methods, Numerous Projects, Southern California: He is utilized as a technical resource providing

drilling guidance to many professionals within his company throughout Southern California. He provides guidance with monitoring well design, installation, development, and rehabilitation. He is responsible for mentoring junior staff during fieldwork implementation. His drilling experience is well rounded having conducted subsurface investigations using direct push, hollow stem auger, mud rotary, rotary sonic, Air rotary casing hammer, cable tool, and bucket auger.

Technical Resource – Aquifer Testing, Numerous Projects, Southern California: He is utilized as a technical resource providing aquifer testing guidance to many professionals within his company throughout Southern California. He provides guidance with defining testing methods, logistical planning, test implementation, data acquisition, and analysis of testing.

Field Manager, Water Supply Well 38-4, Lake Los Angeles, California, Los Angeles County Department of Public Works, 0.5-years, $0.15MM (labor only): Field Manager responsible for training a team of geologists/engineers that installed a water supply well capable of producing 1,000-gpm (completed to 420 ft bgs). The well installation oversight activity included installing a sanitary seal conductor casing, logging cuttings during the pilot boring, geophysical logging, isolation testing at discrete depths, well design, installation of well casing/screen, well development, aquifer testing/analysis, and pump design. A DWSAP was provided in the final documentation report. This fast-tracked project was successfully completed within three months.

Field Manager, ASR Well 4-71, Lake Los Angeles, California, Los Angeles County Department of Public Works, 0.5-years, $0.15MM (labor only): Field Manager responsible for training a team of geologists/engineers that installed a water supply well capable of producing 500-gpm (completed to 660 ft bgs). The well installation oversight activity was similar to Water Supply Well 38-4. LACDPW will also use this well for Aquifer Storage Recovery (ASR).

Professional Societies/Affiliates

National Ground Water Association (NGWA)

Specialized Training

2000/40-Hour OSHA Health & Safety Certification (29 CFR 1910.120)
2001–2007/8-Hour OSHA Health & Safety Annual Update Certification
2001/8-Hour OSHA Site Supervisor's Certification
2000–2007/First Aid/CPR Certifications

Chronology

2000–Present: URS Corporation, Project Geologist, Santa Ana, CA
1998: Orange County Water District, Geologist, Fountain Valley, CA

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Matt Moore, PE, CPESC, CPSWQ

Senior Project Engineer

Areas of Expertise

Surface Hydrology
Hydraulic Modeling
Drainage Design
Floodplain Modeling
Sediment Transport and Scour Analysis
Erosion and Sediment Control
Stormwater Quality BMP Design

Years of Experience

With URS: 4 Years
With Other Firms: 10 Years

Education

MS/Civil Engineering (Water Resources), Virginia Tech
BS/Civil Engineering, Virginia Tech

Registration/Certification

Registered Civil Engineer, CA #56780
Certified Professional in Erosion and Sediment Control #3497
Certified Professional in Stormwater Quality #486

Overview

Mr. Moore is a Registered Civil Engineer and Certified Professional in Erosion and Sediment Control (CPESC) with 14 years of experience with hydrologic and hydraulic engineering for urban drainage facilities, flood control improvements, and erosion control facilities. His work has included preliminary and final engineering design phases, as well as FEMA and NPDES documentation. He has extensive experience evaluating riverine erosion processes related to the analysis, design, and preparation of bridge and levee lining scour investigations and erosion control remediation documents, and preparation and review of stormwater quality BMP design and documentation including technical assistance/review of the San Diego County Low Impact Development Manual. Mr. Moore is skilled using HEC-1, HEC-2, HEC-RAS, HEC-6, Los Angeles County computer programs, Ventura County VCRAT, WSPG, Civil-D, and PondPack.

Project Specific Experience

Hydrology and Hydraulic Analysis and Drainage Design

Interstate 805 Preliminary Design, San Diego County, California - Drainage Design Lead
The overall project consists of preliminary drainage design for widening of the I-805 along nearly its entire length. URS responsibilities include approximately 10 miles of preliminary freeway widening design including: redesign of the drainage and water quality systems; preparation of water quality reports; roadway drainage reports; Location Hydraulic Studies, and preliminary Structure Hydraulic (scour) Reports for bridge crossings and floodplain encroachments all consistent with Caltrans standard requirements.

San Diego County Regional Airport Authority, RON Apron Design, San Diego, California - Water Resources Engineer
Project consisted of preparing the 30% Design Drainage Report including preliminary level hydrology and hydraulics calculations and stormwater quality design for a proposed Remain-Over-Night Apron. Work included preparation of the drainage report; research and design of a StormFilter stormwater quality treatment vault, and porous pavement section. Continued work includes 70% design of the drainage facilities and update of the drainage report and stormwater quality treatment facility design.

Los Angeles County World Airports (LAWA), LAX Terminals 1, 2, and 3 Expansion Stormwater Quality BMP Design
Project consisted of preparing the 100% stormwater quality BMP design sheets for retrofit of storm drain inserts and construction of a new stormwater quality hydrodynamic separator. Duties included hydrologic

and hydraulic design of the post-construction BMPs; coordinationg with BMP vendors, Project Architect, and LAWA.

Marine Corps Logistics Base Barstow, Storm Drain Study, Barstow, California - Water Resources Engineer
Assisted in conducting a storm drain study for MCLB Barstow, CA at Nebo Main Base, Yermo Annex, and the Rifle Range. The Study included the following tasks: 1) Inventory existing storm drainage system; 2) Determine which stormwater outfalls are subject to the Industrial Storm Water General Permit; 3) Prepare DD1391 forms for locations of the storm drainage system that require maintenance, repair or replacement; 4) Develop hydrology and hydraulic design criteria for the design of new storm drainage systems.

BNSF Cajon Main Third Track, San Bernardino County – Water Resources Senior Project Engineer
Project consisted of preparation of EIR/EIS documentation and final engineering construction drawings for 15 miles of proposed third main heavy rail track from Summit to Keenbrook. Duties included preparing pre- and post-project hydrology and hydraulic analyses of over 70 culverts/bridges using Rational Method, USGS Regression Equations, CulvertMaster, WSPG-W, HEC-RAS, and HEC-18 Scour Analysis. Analyzed and mapped 10- and 100-year floodplains for over 10 stream miles using HEC-RAS. Provided preliminary design of proposed culvert extensions, energy dissipation, and bridge scour countermeasures. Prepared EIR/EIS Hydrology Technical Report, EIR/EIS impacts and mitigation measures discussion, and Final Engineering Hydrology and Hydraulic Reports.

State Route 76 Widening and Realignment, San Diego County – Water Resources Senior Project Engineer
Project consists of preparing final engineering construction drawings for a 2.3 kilometer widening and realignment of an existing rural state route along San Luis Rey River and bridge widening along a River tributary. Duties included the preparation of hydrology and hydraulic analyses, reports, and storm drain design for final engineering construction drawings including: Rational Method and Unit Hydrograph Method hydrology calculations, culvert, ditch, and inlet design and analysis using CulvertMaster, WSPG-W, and FlowMaster (HEC-22) software; hydraulic floodplain calculations and mapping using HEC-RAS; bridge scour analysis using HEC-18; sediment transport and scour protection design along San Luis Rey River using HEC-6 and HEC-23, and FEMA and Caltrans plan/report preparation and processing.

Plum Canyon Tract 31802, Los Angeles County, Water Resources Project Engineer
Project consisted of preparation of final engineering construction drawings for backbone improvements (grading, street, and utilities) for a 500-lot subdivision adjacent to the City of Santa Clarita. Duties included: storm drain system layout; L.A. County hydrology and hydraulic analyses

(MODRAT and WSPG-W) including sediment yield (debris) calculations; CDS Unit sizing and analysis; hydrology and hydraulic report preparation and processing; floodplain analysis, mapping and Conditional and Final Letters of Map Revision (CLOMR/LOMR) preparation and processing through FEMA.

Bressi Ranch Development, Carlsbad – Water Resources Project Engineer
Project consisted of preparation of a tentative map and final engineering construction drawings for backbone improvements (grading, street, and utilities) for a 620-unit, 585-acre mixed use development. Duties included: storm drain layout and preliminary design, hydrology and hydraulic analysis of storm drain system and CDS Units; detention pond design; erosion and sediment control plans, two construction SWPPPs, and final post-construction water quality implementation plans.

Kelly Ranch Residential Development, Carlsbad – Water Resources Project Engineer
Project consisted of preparation of tentative map and final engineering construction drawings for backbone improvements (grading, street, and utilities) for a 1600-unit, 433-acre residential development. Duties included: final engineering hydrology and hydraulic storm drain analysis and reports; detention basin analysis; post-construction water quality BMP concept plans and facility sizing; and sediment yield/erosion calculations using MUSLE and RUSLE for a 170-acre portion of the development.

Bishop's School Redevelopment, La Jolla, San Diego – Water Resources Project Engineer
Project consisted of preparation of tentative map level redevelopment engineering plans for a private high school located in a developed urban area. Duties included: Rational Method hydrology and WSPG-W hydraulic analysis of large offsite surface and underground storm drain system, concept plans and modeling for surface routing of offsite flows through site, preparation and processing of hydrology and hydraulic reports through City of San Diego.

Big Sky Ranch Residential Development, Ventura County – Water Resources Project Engineer
Project consisted of tentative map preparation and processing for a large residential development in Simi Valley. Drainage related work included preparation of a Modified Rational Method hydrology study utilizing VCRAT to determine existing and developed runoff, street and inlet hydraulic capacity calculations, debris storage and bulk flow analysis utilizing Scott's Method for estimating debris potential, HEC-RAS floodplain analysis, water quality basin sizing utilizing Ventura County methodology, and detention basin analysis utilizing PondPack and VCHYDRO.

Santa Fe Depot Redevelopment, San Diego – Water Resources Project Engineer

Project consisted of planning phase redevelopment of Santa Fe Depot in downtown San Diego. Duties included: Rational Method and Unit Hydrograph Method hydrology and WSPG-W hydraulic analysis of the 'B' Street Flume (Box Culvert) and tributaries which drain over a square mile network of storm drains within Balboa Park and downtown San Diego.

California Terraces North Residential Development, San Diego – Water Resources Project Engineer
Project consisted of preparation of tentative map and final engineering construction drawings for backbone improvements (grading, street, and utilities) for a 50 lot residential development. Duties included: final engineering hydrology and hydraulic storm drain analysis and reports; detention analysis; post-construction water quality BMP concept plans and facility sizing.

Floodplain Modeling and FEMA Processing

State Route 76 Widening and Realignment, San Diego County – Water Resources Project Engineer
Prepared pre- and post-project hydraulic floodplain calculations and mapping for San Luis Rey River using HEC-RAS. Prepared and processed FEMA CLOMR.

BNSF Cajon Main Third Track, San Bernardino County – Water Resources Senior Project Engineer
Prepared, analyzed and mapped pre- and post-project conditions 10- and 100-year floodplains for over 10 stream miles using HEC-RAS including 8 existing bridge crossings and 4 widened bridge structures.

Plum Canyon Tract 31802, Los Angeles County - Water Resources Project Engineer
Prepared pre- and post-project floodplain analysis and mapping. Prepared and processed Conditional and Final Letters of Map Revision (CLOMR/LOMR) submittals through FEMA.

Loma Alta Creek, Oceanside – Water Resources Project Engineer
Prepared a FEMA flood map revision for the City. Performed creek survey oversight, hydraulic modeling and floodplain mapping for creek and flood map processing through FEMA.

Erosion and Sediment Control and Stormwater Quality

Rancho Santa Fe Village Presbyterian Community Church, Porous Pavement Design - Water Resources Engineer
Provided hydrology, hydraulic, and porous pavement storage layer thickness to provide stormwater quality and detention for increased peak runoff flows for a small redevelopment project.

Port of San Diego SUSMP Review and Preparation– Water Resources Senior Project Engineer

Project consists of the review and preparation of selected Standard Urban Stormwater Mitigation Plans (SUSMP) for tenant and capital projects within the Port's jurisdiction. Duties include review and preparation of the project SUSMP documents to ensure compliance with the Port's requirements including analysis of the receiving water quality, pollutants of concern, and proper implementation of site design, source control, and treatment control BMPs. URS is also providing support in updating the Port's SUSMP Manual to reflect a new Municipal Stormwater Permit.

Caltrans Roadside Vegetated Treatment System (RVTS) Stormwater Quality Monitoring - Task Order Manager
Project consists of monitoring, sampling, and analysis along Interstate 5 in San Onofre and along State Route 91 in Yorba Linda as part of on ongoing Caltrans stormwater quality monitoring effort. Duties include supervising field crews, installation of monitoring equipment, preparation of technical memos, and project financials.

Caltrans SWPPP/WPCP Templates and Preparation Manual Updates – Assistant Task Order Manager
Caltrans Headquarters tasked URS to update their Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) templates and Preparation Manual to address comments received over the last several years. Specific role includes providing response to comments, quality assurance and quality control on template revisions, and coordination with Caltrans Headquarters.

Caltrans Cellular Confinement System Research – Task Order Manager
This project consisted of assisting Caltrans Headquarters to determine the suitability of use and application guidelines for Cellular Confinement Systems (CCS) as a temporary construction storm water BMP. Duties included investigating existing literature, websites, and manufacturers to conduct research and determine applicable uses of CCS as a temporary construction BMP.

Marine Corps Air Station (MCAS) Miramar –Senior Project Engineer
Project consisted of field erosion assessments, evaluation, and prioritization of active erosion sites on the undeveloped areas of MCAS Miramar. Work included landscape level inventories of soil erosion sites on the undeveloped portions of the station; evaluation of these sites for potential restoration; documentation of these sites using digital photography, Global Positioning Systems (GPS) and Geographic Information Systems (GIS) mapping technology; recommendations for soil stabilization and long-term erosion minimization of the sites; and prioritization of erosion site restoration suggestions.

CingularWireless Site, City of Moorpark, California – Water Resources Senior Project Engineer

Project consisted of the preparation of final engineering construction drawings for the grading and placement of two unmanned cellular communication facilities on an existing steep hillside. Duties included the preparation of erosion and sediment control plans and WPCP in compliance with the Ventura County municipal stormwater permit.

Mission City North, City of San Diego – Water Resources Project
Engineer Prepared construction SWPPP, Erosion Control Plan, and Water Quality Technical Report including post-construction BMP design for a 120-acre multi-family residential development.

Bressi Ranch Development, Carlsbad – Water Resources Project Engineer
Prepared hydrology and hydraulic analysis of storm drain system and CDS Units; detention pond design; erosion and sediment control plans, two construction SWPPPs, and final post-construction water quality implementation plans.

Santa Fe Depot, City of San Diego – Water Resources Project Engineer
Prepared Water Quality Technical Report, construction SWPPP, Erosion Control Plan, and drainage design and report for a downtown high-rise building.

Professional Societies/Affiliates

American Society of Civil Engineers, Associate Member
American Public Works Association
International Erosion Control Association

Robert G. Byall, P.E.

Professional Profile

Sr. Civil Engineer with more than 32 years of experience in heavy construction, government and private land development.

- Development of permits and improvement plans for thousands of acres of master planned communities
- Overseeing the maintenance and improvements for thousands of miles of county roads
- Development of permits and improvement plans for regional shopping centers

Professional Experience

Stirling Energy Systems, Inc., Phoenix, Arizona
Sr. Civil Engineer - EPC

Achievements:

- Development of civil plans for a 10,500 acre solar plant
- Development of civil plans for a 6,500 acre solar plant
- Development of civil plans for a 13 acre solar demonstration plant

Responsibilities

- Responsible for overseeing the development of Civil Engineering Development Plans
- Responsible for the development of legal descriptions for the various projects
- Coordination with Public Agencies for permitting of the various solar sites

David Evans and Associates, Inc., Phoenix, AZ
Client Manager

Achievements:

- Development of a 25,000 acre master planned community
- Development of a 10,000 acre master planned community
- Reconstruction of a 480 acre regional shopping mall

Responsibilities:

- Responsible for the development of budgets for commercial and Residential land development projects
- Responsible for the preparation of development plans for the permitting and construction of commercial and residential subdivisions
- Responsible for the preparation of hydrological and hydraulic investigations for land development projects

Education

Northern Arizona University, Flagstaff, AZ
Bachelor of Science, Civil Engineering

Patrick J. Mock, PhD

Principal Scientist/Sr. Project Manager

Areas of Expertise

Wildlife Biology
Biological Impact Assessment
ESA/Wetlands Permitting
Habitat Conservation Planning
Wildlife Corridor Assessment
Habitat Restoration Planning and Monitoring
Biology Group Management

Years of Experience

With URS: 12 Years
With Other Firms: 19 Years

Education

PhD, Biology, University of California, Los Angeles
CPh, Biology, University of California, Los Angeles
BS, Wildlife Biology, University of California, Davis

Registration / Certification

Certified Senior Ecologist/Ecological Society of America
Certified Wildlife Biologist®/The Wildlife Society
Training in ACOE Wetland Delineation Methods & Regulatory Policy
OSHA Hazardous Waste Operations and Emergency Response Training/Section 1910.120
Training in Use of ArcView and Auto Cad R14 Software

Overview

Dr. Mock has over 30 years of professional experience as a wildlife biologist and environmental consultant. He has served as principal investigator for studies of endangered wildlife, directing and participating in field investigations, data analysis, and preparation and review of technical reports and mitigation plans. Dr. Mock has extensive national and international experience in the assessment of impacts on biological resources, especially in relation to wetland ecosystems, coastal sage scrub, and endangered species. Dr. Mock has produced environmental impact assessments of various development projects throughout western US and the Pacific Rim in conformance with NEPA, CWA, and ESA. His specific area of expertise is in the ecology, management, and monitoring of vertebrate populations. He has conducted investigations of several sensitive bird species, including California least tern, brown pelican, least Bell's vireo, California gnatcatcher, coastal cactus wren, and bald eagle. He is experienced in landscape scale habitat evaluation modeling, preserve design, wildlife corridor assessment, and population viability analysis. He is certified as a Senior Ecologist by the Ecological Society of America and as a Certified Wildlife Biologist® by The Wildlife Society. Dr. Mock participates in all aspects of project management, including client liaison, budgeting, field investigations and research, supervision of field biologists, regulatory permitting assistance, agency liaison, report preparation and review, public presentations, and expert testimony. Dr. Mock has also served as a Lecturer at the University of San Diego and University of California, San Diego, where he has taught courses on biological assessment, principles of ecology, and wildlife management. Dr. Mock has thirteen publications in peer-reviewed science journals related to wildlife ecology, ornithology, and habitat conservation topics.

Project Specific Experience

Ecological Research

Ecological Studies of California Gnatcatcher (*Polioptila californica*), Home Capital Corporation, Weingarten, Siegel, Fletcher Group, Inc., and Skyline Wesleyan Presbyterian Church. Served as project manager/principal investigator for a comprehensive ecological study of over 40 pairs of California gnatcatchers in the Rancho San Diego area in order to document home range size, habitat preferences, dispersal behavior, breeding/population biology, and effects of development.

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

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

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

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

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

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

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

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

Cavallo Farms Wildlife Corridor Study, City of San Diego, CA. Sr. biologist for a wildlife corridor assessment of an 21-acre horse farm/training property located within an presumed MSCP wildlife corridor linkage in Del Mar, California. Study monitored 24 passive tracking stations and 5 camera stations within and surrounding the property for 8 weeks to identify tracks and scat of large mammal species, including mountain lion, bobcat, coyote, and southern mule deer.

California gnatcatcher protocol surveys and identified territories were conducted throughout study area. (2006)

Raptor Ecology and Management Study on Otay Ranch, City of Chula Vista, CA. Project director responsible for documenting nesting, roosting, and foraging areas of sensitive bird-of-prey species using radio telemetry methods. Species studied included golden eagle, northern harrier, black-shouldered kite, Cooper's hawk, and burrowing owl.

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

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

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

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

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

Regional Natural Resource Planning

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

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

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

California Gnatcatcher Management Plan for Fallbrook Detachment, Seal Beach NWS, U.S. Navy. Dr. Mock participated in the development of a management and research plan to aid in the relative valuation of habitat areas and assignment of habitat management priorities within the study area.

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

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

Desert Lands Habitat Conservation Plan, Metropolitan Water District. Project Manager for HCP and CEQA/NEPA process to address potential incidental take associated with the operation and maintenance of the Colorado River Aqueduct. Program included sample plot assessments across 97,000 acres of MWD owned lands.

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

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

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

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

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

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

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

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

supports California gnatcatcher, Pacific pocket mouse and several rare plants. Developing & implementing the habitat management, mitigation and restoration plans.

Otay Mountain/Kuchamaa Cooperative Planning Area Biological Monitoring Plan, GIS Database Development, and Cultural Resources Study, BLM. URS prepared a complete GIS Database, Biological Monitoring Plan, and Cultural Resources Study for the Otay/Kuchamaa Cooperative Planning Area managed by the Bureau of Land Management in San Diego County, Ca. The objective of this task order was the development of the baseline database – developed as GIS data layers – needed to conduct the planning process and EIS analysis, including development of a reasonable range of land management alternatives. The focus of the baseline conditions was related directly to the biological and cultural resources for the management area. This project received a Merit Award from the San Diego AEP.

BLM Resource Management Plan Revision, and EIS, and Biological Assessment, Socorro, NM. Biology task manager for impacts analyses on special status species, vegetation, wildlife and livestock grazing sections for an EIS and BA.

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

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

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

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

The Oasis Project, U.S. Air Force, Air Combat Command. Senior wildlife biologist involved in landscape level evaluation of biodiversity on

two Air Force training ranges (in Idaho and North Carolina) compared to adjacent areas where land use patterns differ from the training ranges.

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

San Elijo Hills Open Space Management, San Marcos, CA. Oversaw implementation of habitat management plan for 1000 acres of natural open space in the San Elijo Hills community. Monitored fire fuel management task, invasive weed removal, habitat restoration, and prevention of unauthorized dumping. Included a population census of California gnatcatcher to measure success of the conservation effort. Prepared yearly summary reports.

FEMA/CDF and FEMA/City of San Bernardino Prescribed Burn Program. Prepared Programmatic Biological Assessments for proposed prescribed burns in San Bernardino County.

FEMA/City of San Diego Vegetation Management Program. Sr. Reviewer of Biological Assessment for proposed $3M vegetation reduction projects in San Diego.

Biological Assessment/Mitigation

Department of Defense

SEA for MCAS Miramar Housing Project, U.S. Navy. Sr. Biologist overseeing the biological impact assessment for a SEA document. Provided technical support to ESA Section 7 consultation through the delineation of historically occupied gnatcatcher habitat.

USMC BEQ Housing Siting Studies – NEPA and Operational Constraints, MCB Camp Pendleton. US Navy. Provided senior technical review of biological constraints assessments.

EA/BA for New Hospital and Exchange projects at Camp Pendleton,
US Navy. Sr. Biologist overseeing biological assessment of proposed new facilities. Issues include California gnatcatcher and vernal pool habitat.

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

Biological Assessment/EIS of BRAC Actions at NAS Miramar, U.S. Navy. Senior Biologist overseeing biological assessment of realigning NAS Miramar as MCAS Miramar. NEPA/EIS documents that focused

on potential adverse effect to vernal pool habitat and associated sensitive species, wetlands, California gnatcatcher, and regional wildlife corridors.

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

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

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

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

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

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

Transportation Projects

Mammoth Lakes Airport Expansion EIS, FAA, Mammoth Lakes, CA. Senior biologists overseeing the biological assessment of new commercial service at regional airport. Issues included indirect impacts to breeding grounds of sage grouse.

Teledyne-Ryan Demolition EIR, Port of San Diego/Airport Authority, San Diego, CA. Biology Task Manager for the EIR for the proposed demolition of existing aviation manufacturing facilities located on North harbor Drive in San Diego, CA. Wildlife agency coordination, and least tern nesting BMP measures are key issues.

Mitigation Credit Valuation and Biological Assessments, San Diego County Regional Airport Authority, San Diego, CA. Project

Manager assisting airport staff in the valuation of mitigation credits assigned to wildlife refuge lands being restored with Airport Authority funds. Biological assessments associated with least tern breeding and foraging areas at the airport.

Natural Environment Study, Interstate 805 Widening Project, SANDAG. Task Manager overseeing NES assessment, vegetation mapping, and T&E species surveys for 25-mile freeway widening project. Species included least Bell's vireo, San Diego fairy shrimp, and California gnatcatcher.

On-call Environmental Services, County of San Diego Public Works. Biology Task Manager for numerous public works (road and utility) projects.

Coastal Rail Trail EIR/CE, San Diego, CA. Biology Task Manager for an EIR/CE for a proposed trail that would start near Del Mar and run south to connect to the existing Rose Canyon bike path. Three proposed Class I bike path areas are the focus: Sorrento Valley Road between Carmel Valley Road and Carmel Mountain Road, Roselle Street to Eastgate, and Genesee (Nobel Drive) to Gillman Drive. The project includes multiple agency review including Caltrans/FHWA, City of San Diego and others.

Mira Sorrento Place Extension EIR, City of San Diego, CA. Project Manager and Biology task manager. ASCE award-winning project.

Carmel Valley Road Improvement Project EIR, City of San Diego, CA. Biology task manager.

Construction Monitoring and Burrowing Owl Removal Program for SR-7, Caltrans, El Centro, CA. Project Manager.

Exotic Predator Removal Program, San Mateo Creek and Lagoon, Caltrans. Project Manager for an exotic predator control program at San Mateo Creek in San Diego County. Removed exotic species including bullfrogs, crayfish, and mosquito fish using gigs and seines to benefit native rare tidewater gobies and arroyo toads.

Natural Environment Study (NES) of SR-11, East Otay Mesa Border Crossing, Caltrans. Project manager for biological assessment of a 1,000-acre study area.

Endangered Species Surveys for Interstate 5 Widening Project, Caltrans.

I-5/SR-56 Interchange Improvement Project EIR/EIS, Caltrans and City of San Diego, CA. Project manager for biological assessment and CEQA process.

Biological Surveys for SR 52 Widening Project, Caltrans. Project manager for biological assessment.

Construction Monitoring for SR-73 Water Quality Facilities Upgrade Project, Caltrans.

Biological Assessment, Cajon Pass Triple Track Project, BNSF Railroad.

Construction Monitoring and Burrowing Owl Mitigation Program for Union Pacific Track Removal Project, Union Pacific Railroad.

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

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

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

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

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

Sorrento Valley Road Improvement Project EIR, City of San Diego, CA. Senior biologist providing biological assessment for road project directly adjacent to Los Peñasquitos Lagoon. Sensitive resources included saltmarsh and riparian wetlands, clapper rail, Belding's Savannah sparrow, and California gnatcatcher and two regional wildlife corridors.

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

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

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

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

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

Energy Projects

Wind Implementation Monitoring Program (WIMP IV), County of Riverside Planning Department, CA. Biology Task Manager and lead consultant for the Planning Department to evaluate the ongoing and potential future impacts of Wind Farm Development within the San Gregornio Wind Resource Area. Document assessed visual, noise assessment, air quality, communication systems, navigation element study, fire protection, police services, retrofit and biological resources elements of an ongoing monitoring program.

Phase I Avian Risk Assessment of Wind Energy Projects, RES America Developments, Brisco County TX. Provided technical peer-review of consultant siting assessment for risk to avian mortality.

Horizon Wind Energy Project, Barstow CA. Biology task manager overseeing biological surveys for rare plants and desert tortoise within a 43,000-acre study area.

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

Kinder Morgan CalNev Pipeline. Principal Scientist supporting Biology Task Manager for 233-mile fuel pipeline project from Colton, CA to Las Vegas, NV. Task includes vegetation, jurisdictional waters, sensitive species surveys, impact assessments, and permitting.

Niland Proposed Power Plant, Small Power Plant Exemption (SPPE), Imperial County, CA. Imperial Irrigation District Peaker Development Project. Biological Construction Monitoring Task Manager for a 30-acre generating station, Imperial County.

Starwood Midway Peaker Power Plant AFC, Kern County, CA. Senior biologist overseeing biological assessment and ESA permitting of power plant project in Kern County.

Panoche Peaker Power Plant AFC, Kern County, CA. Senior biologist assisting in biological assessment and ESA permitting of power plant project in Kern County.

Ausra Solar Thermal Energy Project AFC, San Luis Obispo County, CA. Senior biologist overseeing biological assessment and ESA permitting of solar thermal power plant project in San Luis Obispo County. Project involved intensive surveys for blunt-nosed leopard lizard on a 1000-acre project area.

SES Solar One Energy Project AFC, San Bernardino County, CA. Senior biologist overseeing biological assessment and ESA permitting of power plant project in San Bernardino County. Project involved intensive surveys for desert tortoise and Mohave ground squirrel on a 16,000-acre project site and 100-mile transmission line.

SES Solar Two Energy Project AFC, Imperial County, CA. Senior biologist overseeing biological assessment and ESA permitting of power plant project in Imperial County. Project involved intensive surveys for flat-tailed horned lizard on an 8,000-acre project site and 8-mile transmission line.

Bethel Solar Thermal Hybrid Power Project, Niland, Imperial County, CA. Senior biologist overseeing biological assessment of solar thermal and biofuels hybrid power plant project.

San Joaquin Solar Hybrid, Coalinga CA AFC. Senior biologist overseeing biological assessment of solar thermal and biofuels hybrid power plant project.

CalEnergy Salton Sea Unit 6 Geothermal Power Plant AFC. Project manager overseeing AFC document preparation. The California Energy Commission processed the licensing for construction and operation of the Salton Sea Unit 6 Geothermal Power Project, a proposed 185 net megawatt power plant in Imperial County, near the southern extent of the Salton Sea. Geothermal projects from the Salton Sea Known Geothermal Resource Area rarely come to the commission for action as most of these are much smaller, ranging from 10 to 45 megawatts, not requiring Energy Commission licensing. The Salton Sea Unit 6 project was unique based upon the size of the proposed plant, the location of the project near environmentally sensitive habitat, and the Sonny Bono Salton Sea National Wildlife Refuge. In addition, Imperial County has unique socioeconomic and geographic conditions. These factors provide the complex context within which this project was evaluated. Most CEC technical staff were not initially familiar with the area, or the unique aspects of a geothermal power facility deriving steam flashed directly from produced hot brine. The AFC document prepared by URS for the project provided an excellent platform for the CEC analysis, clearly presenting the necessary technical information. The complex information was presented in a format and context that highlighted the unique aspects of geothermal power production, and the environmental and socioeconomic conditions of the project area and this region. Notably, the CEC deemed the AFC "data adequate" within nine months of initial project application.

Meadow Valley Generating Plant EIS, Southern NV. Biology Task Manager overseeing desert tortoise and rare plant surveys and biological assessment for a 1,000 MW gas-fired combined cycle power plant proposed north of Las Vegas.

Larkspur Power Facility AFC Amendment, San Diego County, CA. Sr. Biologist for the Post-Certification Amendment to modify the Existing Larkspur Energy Facility in Otay Mesa, San Diego, to add a third generator.

Infrastructure Facility Projects

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

Miramar Landfill Capacity Increase EIR, City of San Diego Environmental Services, San Diego, CA. Assisted with the preparation of the EIR document for the proposed increased capacity of the landfill by increasing the landfill height by 20 feet and extend the landfill life span by 4+years. This document won the top AEP San Diego Chapter environmental document award in 2007.

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

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

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

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

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

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

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

SMUSD Administration Office Complex, San Marcos Unified School District. Senior biologist overseeing biological assessment of vernal pool site proposed for a school district office complex.

Nursery Products Composting Facility Initial Study (IS)/Mitigated Negative Declaration (MND)/Environmental Impact Assessment (EIR), San Bernardino, CA. Biology Task Project for the CEQA assessment development of a 160-acre biosolids/green waste composting facility near Hinckley, San Bernardino County.

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

Residential Development Projects

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

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

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

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

- OLC Otay River Parcel C EUC Soil Storage Project
- OLC Otay River Parcel C Development Project
- OLC Otay River Parcel B Development Project

- OLC Proctor Valley Parcel D Sensitive Resource Surveys

Skeet Range Redevelopment Project, Flat Rock Land Company, Chula Vista, CA. Project manager for the biological assessment and ESA Phase I reports.

Otay River Parcel A Development, Flat Rock Land Company, Chula Vista, CA. Project manager for the biological assessment report.

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

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

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

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

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

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

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

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

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

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

Santa Fe Valley/4S Ranch Biological Assessment, County of San Diego, CA. Participated in the biological assessment of two specific plans

areas encompassing about 6,000 acres. Developed a habitat evaluation model to aid in the relative valuation of habitat areas.

Coastal Development, Recreation Projects

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

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

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

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

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

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

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

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

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

Other Relevant Experience

Habitat Restoration

Dr. Mock has produced habitat restoration plans and overseen the monitoring of plan implementation and maintenance for several projects, including Dana Point Headlands, San Elijo Hills, San Elijo Road, Twin Oaks Valley Road, Mira Sorrento Place, San Marcos Universal Boot, MCAS Miramar erosion control.

Teaching

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

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

Biological Assessment, University of San Diego. Dr. Mock taught a course on Biological Assessment that emphasized the requirements of CEQA, NEPA and ESA. Project case histories were used to provide students with real world examples of the types of environmental issues, which typically need to be addressed in a biological assessment.

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

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

Technical Peer Reviewer

Dr Mock provided peer review for manuscripts submitted to *Conservation Biology, The Auk, Ecology, Condor, Ecological Monographs, Western Birds, Ornis Scandinavica.*

- Proceedings of Symposium on Wildlife Habitat Restoration and Management
- Proceedings of a Symposium on Wildlife Habitat Restoration
- Proceedings of the Wildland Interface II Symposium
- Reviewer of Partners-in-Flight Conservation Plan for Southern California shrubland habitats
- Core Group Reviewer, Natural Communities Conservation Planning (NCCP) Research Agenda

- Reviewer for selected sections and species accounts of *San Diego Bird Atlas*
- Reviewer of draft CDFG report on Bird Species of Special Concern
- Reviewer of abstracts submitted for The Wildlife Society National 2009 Meeting in Monterey, CA

Professional Societies/Affiliates

Ecological Society of America
The Wildlife Society
Pacific Seabird Group, past Southern California Representative
Society for Conservation Biology
Association of Field Ornithologists
California Native Plant Society

Publications

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

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

Eastern brown pelicans: what does sixty years of banding tell us? Journal of Field Ornithology 59: 171-182, 1988. R.W. Schreiber co-author.

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

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

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

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

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

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

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

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

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

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

Contact Information

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Theresa Miller, CE

Senior Biologist

Areas of Expertise

Listed Species Surveys, Monitoring, Habitat Assessment and Research
Habitat Conservation Planning
Wildlife Corridor Assessment
Biological Impact Assessment
ESA/Wetlands Permitting
Vegetation Mapping and Botanical Surveys
NEPA/CEQA Permitting and Environmental Analysis
FEMA/NISTAC Hazard Mitigation Program NEPA Analysis
Risk Assessment and Hazard Mitigation Planning
Task Management
Marine Mammal Acoustic Analysis

Years of Experience

With URS: 9 Years
With Other Firms: 2 Years

Education

BA, Biology, Marine Science

Registration/Certification

Certified Ecologist, Ecological Society of America
U.S. Fish and Wildlife Service Recovery/Permit No. TE-135968-1
-California Gnatcatcher (Presence/Absence Surveys)
-California Fairy Shrimp
Blunt-nosed leopard lizard - Level II Surveyor

Overview

Ms. Theresa Miller is a USFWS-permitted wildlife biologist with more than 11 years of experience and expertise in California sensitive species, especially in southern and central California. She conducts biological surveys with a focus on birds, reptiles and amphibians, and mammals, and develops technical reports and planning documents. Specializing in environmental projects, she has participated in and managed many aspects of focused wildlife and habitat surveys and written many biological resources evaluations for NEPA/CEQA and FEMA documents. Her project experience has involved task management, agency coordination, GIS/GPS analyses, GIS modeling, database development, and risk assessments for hazard mitigation planning for numerous public and private agencies.

Project Specific Experience

NEPA/CEQA ENVIRONMENTAL PLANNING PROJECTS

NRG Energy El Segundo Generating Station, Los Angeles County, CA. Performed site visit and prepared marine mammal small take exemption permit application and sea turtle habitat conservation plan for operations and maintenance of power plant in Los Angeles County along Pacific Coast.

NRG Energy Encina Power Station, San Diego County, CA. Prepared marine mammal small take exemption permit applications and sea turtle habitat conservation plan for continued operation of the power plant located in San Elijo Lagoon and along Pacific Ocean in San Diego County.

EIS and Biological Assessment, Resource Management Plan Revision and EIS, Socorro, NM. Technical writer responsible for impacts analyses on special status species, vegetation, wildlife and livestock grazing sections for an EIS and BA for the Socorro BLM Field Office Resource Management Plan Revision. (2006)

Range Management Plan Amendment/EIS, McGregor Range, Socorro, NM. Technical writer responsible for alternatives and environmental consequences analyses for special status species, vegetation, wildlife, and livestock grazing sections for an EIS for the McGregor Range Management Plan Amendment. The RMPA/EIS determined impacts based on a forecast of 15 years of range management and improvements. (2005)

Metropolitan Water District, Upper Feeder-Santa Ana River Embankment Protection, Riverside County, CA. Biology task leader to assist FEMA with NEPA compliance. Conducted least Bell's vireo surveys along the Santa Ana River in Riverside County to determine impacts from project implementation as part of FEMA HMGP mitigation/restoration project. (2006)

Whitewater Mutual Water Company, Irrigation Water Intake/Storage Structure Repair. Biology task leader to assist FEMA with NEPA compliance. Conducted arroyo southwestern toad and southwestern willow flycatcher surveys to determine biological impacts of restoring the irrigation water intake and water storage facilities to pre-disaster condition. Part of FEMA HMGP program. (2006)

Nursery Products Composting Facility Initial Study (IS)/Mitigated Negative Declaration (MND)/Environmental Impact Assessment (EIR), San Bernardino, CA. Biology Task Manager for the proposed development of a 160-acre biosolids/green waste composting facility in San Bernardino County. Coordinated and lead field team for USFWS protocol desert tortoise surveys and rare plant surveys, and prepared biotechnical report as well as biology section of EIR (2006)

Solar One Energy Facility AFC and EIS, San Bernardino County, CA. Biologist/team leader on survey team in support of an Application for Certification for an 800MW thermal generating facility located within San Bernardino County. The project will cover 15,000 acres and will include over 36,000 solar dishes. Desert tortoise, Mohave ground squirrel, Mojave fringe-toed lizard, vegetation mapping, and rare plant surveys were conducted over majority of project area.

SHAWN C. JOHNSTON

Staff Botanist

Areas of Expertise	Rare plant and general botanical surveys Vegetation/habitat mapping Ecological habitat restoration Federal and state waters and wetland determinations and delineations Section 404 Permitting and Section 1600 Streambed Alteration Agreements
Total Years of Experience	
URS	< 1 year
Other Firms	10 years
Education	B.S., Biology; Emphasis in Evolution and Systematics, San Diego State University
Overview	Shawn Johnston has over 10 years of experience conducting rare plant and botanical surveys throughout the southwest region of the U.S. in such diverse habitats as Sonoran and Mojave desert scrubs, Joshua tree woodlands, Juniper and pinyon woodlands, chaparrals, coastal sages, and vernal pools. He is also accomplished restoration biologist who has lead or assisted in numerous successful arid lands and wetland restoration projects.
Project Experience	**Energy Projects** **Calico Solar Project** Lead botanist for a proposed solar energy project located near Calico, California. Duties include field and technical lead for the 2010 rare plant surveys of a 8,600 ac. site within Mojave desert scrub, and chenopod scrub. February 2010 – Present Tessera Solar **Rare Plant Survey and Wetland Assessment for Centinela Transmission Corridors** Conducted vegetation mapping, rare plant surveys, and wetland/waters assessment of 500 acres for potential transmission corridors in Sonoran Desert habitats in Imperial County. May, 2009. LS Power **Rare Plant Survey for SDG&E Sunrise Powerlink Proposed and Alternative Alignments** Lead Botanist for the rare plant surveys and reporting for the SDG&E Sunrise Powerlink project. A 300 mi. transmission alignment through diverse habitats e.g. desert scrubs and dunes, coastal sage, vernal pools, chaparrals. January 2007 – October 2008. San Diego Gas & Electric (SDG&E) **SDG&E Sunrise Powerlink Northern Proposed Alignment Wetland and Waters Delineation** Wetland scientist for wetland/water determination and delineation for the proposed SDG&E Sunrise Powerlink transmission line, and associated access roads. 2007 San Diego Gas and Electric **Biological Survey of the Homestead Wind Energy Project**

Lead Botanist and wetland scientist for botanical and wetland assessment for a proposed 1200 ac. wind energy site within Mojave Desert Scrub Habitat near Mojave, California. March 2006 through October 2006
Horizon Wind Energy

Pine Tree Wind Development Biological Studies
Conducted rare plant surveys and vegetation mapping for diverse desert Habitat, e.g. Mojave desert scrub, Joshua tree woodlands, and Juniper and Pinyon woodlands for a 8,000 ac. wind energy project located in Tehachapi, California. March 2004 – May 2005.
Los Angeles Department of Water and Power

Transportation Projects

SR 76 Middle Segment Wetland Determinations and Delineation (2006).
Client:
Assisted with wetland delineation and reporting of the SR 76 middle segment expansion. May, 2006 – September 2007
Caltrans, District 11/Dokken Engineering

Biological Impact Assessment for Proposed Reconstruction and Extension of Runway 14/32 and Associated Taxiway "E" at Reno Stead Airport (2006).
Conducted rare plant surveys and biological impact assessments for airport expansion.
Reno Stead Airport/FAA

SR 125 Quino Checkerspot Butterfly/ Vernal Pool Creation/Restoration
Position/tasks: lead Restoration Ecologist and Botanist for the implementation of a 126 ac. vernal pool creation and restoration project in Otay Mesa, California. March 2004 through October 2006.
Caltrans District, 11

Land Management Projects

Land Management Plan Hollenback Canyon Wildlife Area (2007).
Assisted with vegetation mapping, invasive plant assessment and rare plant surveys for a regional state park near Jamal, California.
California Department of Fish Game

Amargosa Valley Plant and Water Study
Lead botanist for a BLM supposed study on the Demographics and Ecology of the Amargosa Niterwort (*Nitrophila mohavensis*) and Ash Meadows Gumplant (*Grendelia fraxino-pratensis*) and the effects of ground and surface water on the plant populations. 2002.
Bureau of Land Management

Waymon Votaw, Tessera Solar, Senior Director and Head of Asset Management

Professional Profile

- More than 20 years experience in the energy sector
- Managed multiple site generation operations including operations, outage execution, maintenance management, EHS, and reliability engineering.
- Expertise implementing and managing world class operations and maintenance capabilities, practices and procedures guided by Lean and Six σ.
- Expertise in portfolio optimization including fuel and power supply strategies, dispatch planning, maintenance scheduling and causal analysis.
- Managed pricing, structuring and origination activities for multiple markets including product structuring, valuation, pricing and analytics.
- Experience in managing risks inherent in leading technologies (e.g., serial number 1 for GE 9FA ++ enhanced turbines and the Siemens annular combustors, fluidized bed generation, etc.).
- Expertise in international trade execution to include power and fuel supply strategy execution, real time market analytics, scheduling & logistics and ISO/RTO interface.

Professional Experience

Tessera Solar NA, Houston, TX
Senior Director and Head of Asset Management
Responsibilities

- Developing and implementing O&M capabilities, practices, and procedures for the pipeline of Tessera projects
- Support development activities with structuring, valuation and estimation for commercial and O&M activities

Booz & Company (formerly Booz Allen Hamilton), Houston, Texas
Energy, Chemicals and Utilities; Operations Consulting
Responsibilities:

- Apply Lean principles to develop tools to assist energy and utility clients with capital allocations, operational excellence, maintenance and project optimization, cost restructuring, process redesign / transformation, and operating model design

Achievements:

- Migrated a domestic generator from a state of low facility and equipment utilization, low productivity, frequent capital and operating budget overruns and lack of commercial control of their assets to a state of 1st quartile performance in all strategic and operational performance indicators
- Assessed and redesigned the service model for a large domestic IPP portfolio to align facility service demands with central support supply. Results simultaneously reduced costs and improved performance

Prisma Energy International, Houston, Texas
Director, Europe and Asia Region
Responsibilities:

- Manage all financial, operational, commercial, regulatory and governance aspects of power generation facilities in Turkey, Poland and Italy, and guide the success of the organization as a Director on the project level Boards of Directors

Achievements:

- Proactive mitigation of identified Value at Risk – Strategic divestiture of an asset to eliminate risks impacting cash flows to shareholders, and defended an international asset from threatened government seizure of $300 million of in-country assets.

SK-Enron, Seoul, South Korea
Executive Vice President, Operations
Responsibilities:

- Managed all company operational, regulatory, marketing and governance aspects within a 50:50 South Korean JV
- Assets included 9 local gas distribution companies, an LPG import / wholesale company, and coal-fired cogeneration

Achievements:

- Centralized and led the joint venture's regional capital projects resources (engineering and construction) with annual budgets ranging from $88 to $136 million. Increased bargaining power, economies of scale, and marketing to design linkages increased project rates of return by 7% on average
- Instilled a safety culture that reduced Lost Workday Severity Rate from 6.01 to zero, LTI Frequency Rate from 1.12 to zero, Total OSHA Recordable Incident Rate from 0.39 to 0.08, and Vehicle Accident Frequency Rate from 4.32 to zero

Education

Bachelor of Science, Civil Engineering, 1988, United States Military Academy at West Point, NY
Master of Business Administration, 1997, Rice University in Houston, TX
Master of Environmental Engineering, 1997, Rice University in Houston, TX

Resume

Overview

Mr. Reiff, a Senior Project Manager with R. W. Beck, has been with the firm for over 24 years and is involved with the Independent Engineering practice. With over 30 years in the power industry, he has a wide range of experience in the design, construction, start-up, performance testing, and operation of waste-to-energy, biomass, coal-fired, nuclear, and combined-cycle power plants. His review and testing of power-producing technologies includes gas-fired combustion turbines, fluidized bed combustion, wood waste, pulverized coal, and waste-to-energy plants.

He has attended various power plant conferences and seminars and has worked on numerous power plants, both in the U. S. and overseas. Mr. Reiff has reviewed and tested a wide range of power producing technologies including fluidized bed combustion, gas fired combustion turbines, biomass, pulverized coal, and waste-to-energy plants. Mr. Reiff also has operation and maintenance experience regarding marine power plants, which he gained during his six years of service in the U.S. Navy's nuclear power program.

Independent Engineering Reviews

Mr. Reiff is an experienced project manager of both power and non-power projects financed through commercial lending or bond financing. He manages all activities associated with independent engineering reviews which include coordinating the design review, monitoring construction, reviewing payment requisitions, and overseeing start-up and performance testing.

He began his operation and maintenance activity with marine power plants, which he gained during his six years of service in the U.S. Navy's nuclear power program. His broad assessment experience includes addressing facility condition and operation, capacity factor, planned and preventative maintenance program, spare parts inventory, and conducting interviews with key plant personnel. His Independent Engineering project experience includes:

- Abound Solar – Abound Solar; Longmont, Colorado; Independent Engineering report includes the design and build of a large-scale manufacturing facility to deliver 195 MW/yr. of PV panel capacity
- Abengoa Solar – Abengoa Solar; Phoenix, Arizona; Independent Engineering report for 280 MW concentrating solar power trough plant, Solana, the world's largest solar plant; Provided support to the company on their Department of Energy loan guarantee
- Abengoa Solar – Abengoa Solar; Barstow, California; Power purchase agreement with Pacific Gas & Electric for their new solar plant, Mojave Solar; 250 MW of concentrating solar
- Stirling Energy Systems – Stirling Energy Systems; Empire Valley, California; SunCatcher dish engine technology; three commercial plants with 750 MW and 30,000 units
- La Paloma – 4-unit, 1,000-MW GT24 combined-cycle gas turbine power plant
- Harquahala – 3-unit, 1,100-MW 501G combined-cycle gas turbine power plant
- Gregory Project – ING Capital Corporation; Gregory, Texas; two GE F7A combustion turbines with 401-MW of net output (including O&M phase services)
- De Pere Cogeneration Project – ABN-AMRO Bank; De Pere, Wisconsin; 180-MW net output plant utilizing a GE 7231-FA combustion turbine
- Smithfield Cogeneration Project – Toronto Dominion Australia Ltd; Smithfield, New South Wales, Australia; 160-MW GE Frame 6 combined-cycle gas turbine power plant (including O&M phase services)
- La Paloma Project – Citibank; Kern County, California; 1,022-MW natural gas-fired facility utilizing four ABB GT24 combustion turbines (including O&M phase services)

- MACH Gen Portfolio Project – Société Générale; independent engineering, including O&M phase services, for sale of generating assets, including Harquahala Generating Company in Arizona and New Covert Generating Company in Michigan
- Southdown Power Projects – Barclay's Bank, BZW and Mercury Energy, Ltd; Southdown, Auckland, New Zealand; gas-fired combustion turbine facility rated at 114 MW
- Stratford Power Project – Bank of New Zealand; New Zealand; 354-MW, GT 26 gas-fired combustion turbine project
- Island Cogeneration Project – Royal Bank of Canada; British Columbia, Canada; 254-W, GT 2A, gas-fired combined-cycle facility
- Cardinal Cogeneration Facility – Mutual Life Assurance Company of Canada; Cardinal, Ontario; 150-MW natural gas-fired, combined-cycle power generating
- Iroquois Falls Cogeneration Project – Iroquois Falls, Ontario; 100-MW natural gas-fired combined-cycle power generating station
- Midsun Power Project – Prudential Insurance; California; LM2500 combustion turbine gas-fired power project
- La Plata Refinery Power Project – Chase Manhattan and OPIC; Buenos Aires, Argentina; Frame 9, 127-MW combustion turbine facility
- Orroville Cogeneration Project – Bank of Boston; Oroville, California; 8-MW diesel cogeneration power plant
- Springerville Generating Station Expansion Project – Credit Suisse First Boston; Springerville, Arizona; construction of two new 400 net MW coal-fired electric generation facilities (including O&M phase services)
- Yallourn W Power Project – Yallourn Energy, Ltd; Melbourne, Australia; 1,450-MW brown coal-fired thermal power station including four brown coal-fired steam generating units divided into two stages which are operated independently from one another

Mr. Reiff has a Bachelor of Science degree in Mechanical Engineering and is a licensed Professional Engineer.

Mohamad (Mike) Alhalabi, P.E.

Professional Profile

Sr. Engineer with more than 29 years of professional mechanical engineering design and construction experience. Work covered more than 18 years with the Utilities industry and more than 9 years with the State of Missouri's Department of Natural Resources and other industries, such as ConAgra Foods, USA and others**.**

- Design, install & commission HVAC equipment.
- Design & install sewage treatment equipment.
- Design & install waste water treatment equip.
- Design & install demineralizers for steam plants.
- Design & install coal handling systems.
- Design & install steam equipment systems.
- Design & install pumps, compressors & piping systems
- Commissioning & De-commissioning - Power Plants.
- Design & install office buildings and equipment.
- Design & install fuel storage & dispensing facilities.
- Design & install fire protection & ventilation systems.
- Manage Tech. & Admin staff, as a Regional Director.

Professional Experience

Jacobs Engineering / ConAgra Foods, St. Louis, Missouri
Projects Manager

Achievements:

- Completed the refrigeration system upgrades, commissioning and equipment validation.
- Automated Robotics Palletizing System design, layout, construction and installation.
- Warehouse Racking System and Storage facilities design & construction.

Responsibilities

- Collect field measurements, data and details to facilitate equipment sizing, layout & installation.
- Coordinate with owner, equipment supplier and general contractor to complete work on time.
- Provide daily and weekly updates to all parties involved and document progress electronically.
- Manage all field work, general contractor and all subcontractors to insure proper installation.
- Review all invoices for proper billing and issue changes to scope of work where necessary.
- Conduct and manage telephone and web conferencing related to all active projects.

Ameren Corporation, St. Louis, Missouri
Power Plant Design Engineer

Achievements:

- Completed the design, construction and commissioning of all mechanical HVAC equipment.
- Completed the design, construction and commissioning of steam generating equipment.
- Completed the design, construction and design of water & waste water treatment systems.

Responsibilities:

- Investigate available options to design, construct, maintain and operate the needed equipment.
- Prepare trade studies and economic evaluation of various options and submit for approvals.
- Coordinate work with drafting, purchasing, construction, contractors, permitting and others.
- Prepare all bid documents, manage the bid process, construction, startup and commissioning.
- Prepare operating and maintenance manuals for the plant to use as their reference material.

Education

The University of Tulsa, Tulsa, Oklahoma
Bachelor Degree in Mechanical Engineering
Licensed Professional Engineer, Mechanical

S. Tariq Hussain

Environmental/Chemical Engineer

Areas of Expertise

Risk Analysis and Management, Process Safety Management, PSM/RMP Audits, Process Engineering, Storm water Pollution Prevention Plans, Spill Prevention and Countermeasures Plans, OPA-90 Plans, Spill Training, TableTop Spill Exercises, Risk of Upset Studies, Engineering Evaluation and Cost Analysis, Water Wastewater Treatment Technologies, Waste Minimization Plans, Waste Water Studies, Water Chemistry Analysis and Treatment., Engineering Evaluation/Cost Analysis (EE/CA), and Project Management.

Years of Experience

With URS: 20 Years

With Other Firms: 6 Years

Education

MS/1987/Chemical Engineering/University of Kansas, Lawrence KS

MS/1981/Petroleum Refining and Petrochemical Engineering/Institute of Petroleum and Gas, Ploiesti, Romania

Registration/Certification

1994/Registered Environmental Assessor/California

Overview

Mr. Hussain is a chemical engineer with over 26 years of experience specializing in process risk analysis and hazardous chemical handling. His experience in heavy industries includes regulatory compliance projects for the oil, power, water and food sectors. His experience in the field of process engineering is expansive and diverse and includes projects such as estimating the risk of chemical release from a power plant, a high pressure nitrogen plant and from the refrigeration process involving anhydrous ammonia.

Project Specific Experience

Risk Analysis, Solar Energy Plants, California

Performed risk analysis for several proposed solar power project in California. These plants use hydrogen gas in small bottles associated with each solar panel and also store these bottles in bulk at a centralized depot. For the AFC we calculated the nature of the risks posed by hydrogen cylinders individually and in bulk storage. The modeling scenario was set for the release and subsequent explosion of the whole content of one hydrogen bottle. In a latter study it was proposed to generate on-site and store hydrogen gas in bulk tanks. The risk associated with such a scenario was also estimated and presented to the CEC in a supplementary filing.

Senior Consultant, RMP Review, Multiple Locations, for the Marine Corp Station in Camp Pendleton

MCB Camp Pendleton operates multiple water waste water treatment plants at the base in California. Each of the nine plants was equipped to handle Chlorine injection for disinfection, both 155 pound and 1ton chlorine cylinders were used. The quantity of chlorine stored at each site exceeded the threshold for both federal and State risk management programs (RMP/CalARP). The existing RMP program required a five year review that was the focus of the project. Tasks completed included an audit of the program, some revisions in the Process Hazard Analysis (PHA), a review of the Off-site Consequence Analysis (OCA) and a Seismic Evaluation. Significant changes in the treatment process required the update and review of the safety plans.

Section Writer: Hazardous Material, Risk Analysis, Hydrogen Energy Plant, California

Hydrogen Energy proposed an Integrated Gasification Combined Cycle power plant for Kern County in California. It was an unique project that proposed to gasify 100% petroleum coke to produce hydrogen to fuel a combustion turbine operating in a combined cycle mode. The uniqness of the project included the use of chemical not usually used in a power

plant project. This called for the risk analysis of these chemicals for the AFC in a precedent setting mode. In addition the proposed plant is unique because it proposes to store generated carbon dioxide in depleted underground oil reservoirs as part of the carbon sequestration process. The risk posed by the transportation and storage of carbon dioxide gas was calculated and submitted to the CEC as part of AFC.

Lead Consultant, RMP/CalARP for Aqueous Ammonia, Magnolia Power Project, Burbank, California. A new Power unit was being added on to the existing plant at the Magnolia Power Plant located in Burbank California. Aqueous ammonia was required for emission control from the turbine. Tasks included a PHA, OCA and a seismic evaluation. The RMP was approved before the deadline for project startup.

Project Manager for several RMP projects for new power plants. Wildflower Energy LP installed several peaked units in San Diego County and Riverside. All the plants used aqueous ammonia for emission controls. As part of the permitting program the RMP/CalARP had to be completed prior to the issuance of the permit to operate. URS successfully managed this task and the RMP was completed and approved in record time.

Risk Analysis for an Operating Refinery: Evaluated the environmental risks presented by an operating oil refinery located in Long Beach California for an insurance underwriter. A separate study included the environmental risk evaluation for a pipeline used in the transfer of petroleum products from the refinery to a marine terminal. This evaluation included a study of past problems, existing concerns and an evaluation of future risk based on these evaluations. Consideration of age of equipment safety measures, operating and maintenance procedures was required for the study.

Section Writer for Several Proposed Power Plant AFC (Fresno): The Panoche Energy Center (PEC) project is a Peaking and or Load Shaping project proposed for Fresno California. The AFC for the project was prepared for evaluation by the California Energy Commission (CEC) and the process is being assisted by a URS team of experts including Mr. Hussain. One of the major objectives of the PEC project is to respond to Pacific Gas & Electric's (PG&E) Long term Request for Offers (RFO) for Power Purchase. The load shaping products, such as the proposed PEC, provides purchasers with the ability and flexibility to deviate from their forecasted purchases of electricity caused by deviations between forecasted and actual retail load. Load Shaping products such as the PEC project typically have low annual capacity factors as they are only on-line at times of high electricity demands. Because of the nature of the project it is important that the economic model of the project be protected in our discussions with CEC. For this project, Mr. Hussain's role includes hazardous materials and water wastewater issues each part playing a significant part role in the overall economic model of the proposed plant.

Prepared the hazardous material section for the AFC for the Bullard Energy Center (BEC) project. The AFC is currently under review by the CEC. The section included an analysis of the use of $NH_4(OH)$ for the SCR. An Offsite Consequence Analysis (OCA) was conducted to determine the footprint of the hazard in the event of a worst-case accidental release from the ammonia storage tank. The OCA defined that a 0.1 mile circular area would be affected in the event of a worst case release scenario, in which all contents of the storage tank are accidentally released. In an effort to determine the potential for cumulative impacts, several facilities within the 0.1 mile vulnerability zone defined by the OCA were contacted to determine their use of hazardous materials onsite to develop a cumulative impact assessment for the BEC project. It should be noted that only the facilities within the 0.1 mile zone have the potential to provide cumulative impacts to the project. However as an added measure, additional establishments (located outside the vulnerability zone up to a 1 mile radius from the site of the BEC) were identified and contacted. None of the businesses identified through this investigation handle hazardous substances in quantities that would create a potential cumulative impact in combination with the BEC.

Application for Emergency Power Plant Installation: As part of the California Energy Commission's 21-day emergency approval process for peaker plants Wildflower Energy LP (Wildflower) proposed to install multiple units of a simple cycle peaking electric generation facility at various locations in California. Mr. Hussain was the principal consultant for hazardous material issues for Wildflower. The Indigo project was located in the city of Palm Springs. In Riverside County. The facility consisted of three LM6000 Enhanced Sprint gas turbine engines with a combined rating of 135 Megawatt (MW). The Indigo Energy Facility was one of the first such facilities to be approved for construction under the emergency program.

The Larkspur Energy Facility located in the Otay Mesa area of San Diego, California was the second such project completed by Wildflower. The County of San Diego Department of Environmental Health – Hazardous Materials Division (HMD) permits and approval was an essential component of the project approval project. Wildflower's planned effort to manage and minimize the risks associated with the storage and use of 10,000 gallons of aqueous ammonia, less than 20 % concentration by weight, at the Larkspur Energy Facility. Aqueous ammonia is the only CalARP-regulated substance to be used at the proposed Facility. The proposed Facility qualifies for a state-only RMP since more than 500 lbs. of aqueous ammonia will be stored on-site. The Facility does not qualify for the federal U.S. Environmental Protection Agency (USEPA) RMP (40 CFR 68). The federal RMP aqueous ammonia usage threshold is 20,000 lbs, which is greater than the aqueous ammonia amount that will be stored on-site. In addition, the federal RMP does not require an Offsite Consequence Analysis (OCA) for aqueous ammonia with a concentration less than 20% by weight.

Expert Witness, McColl Site, Fullerton CA, Multiple Oil Companies: Served as an expert witness on the McColl superfund site in California for two major oil companies. The opinions formed were regarding the origins of the McColl waste and the various chemical reactions taking in the pits, where refinery wastes were deposited over forty year ago. We took what was the chemical composition of the original waste and compared with what existed today. Modeled the chemical reactions taking place over 40 years and their interaction with soil conditions and came to the present day chemical compositions. This analysis confirmed what was discharged from the refineries and traced their origin. For another oil company conducted research on the possible chemical reactions taking place in the waste material deposited at the McColl Superfund site in California. The waste deposited in the pits originated from refinery operations during the second world war. Research was based on the type of refinery operations from which the waste could have originated and the nature of chemical reaction that could have taken place in the pits over a span of forty years. Other factors contributing to the nature and types of reactions were also considered.

Contact Information

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Santa Ana, CA 92705

Tricia Winterbauer

Senior Environmental Specialist

Areas of Expertise

Environmental Regulatory Compliance and Permitting
NEPA/CEQA
Energy Development Projects
Occupational Health & Safety
Phase I & II Environmental Site Assessments

Years of Experience

With URS: 13 Years

Education

BA/Environmental Studies/1992

Overview

Ms. Winterbauer has 13 years of experience in environmental regulatory compliance and permitting projects, NEPA/CEQA, energy development projects, occupational health and safety projects, hazardous waste soil and groundwater investigations and individual and multi-site Phase I and Phase II Environmental Assessments.

Project Specific Experience

NEPA/CEQA/Energy Development Projects

Ms. Winterbauer has conducted Environmental Impact Reports (EIRs), Environmental Impact Statements (EISs) and Environmental Assessments (EAs) through the NEPA/CEQA process, as well as the permitting of power generating facilities through the California Energy Commission's Application for Certification (AFC) permitting processes for new power generation facilities. She has also assisted existing power generation facilities with the development of environmental and health and safety compliance plans and documentation.

- **Stirling Energy Systems Solar One Generating Facility**. Served as task leader for Hazardous Materials, Hazardous Waste, and Worker Safety for the AFC of a 850 MW solar power generating facility in San Bernardino County. The AFC was submitted to the CEC in December, 2008.

- **San Joaquin Solar 1&2 Hybrid Solar Thermal Generating Facility.** Served as the task leader for Hazardous Materials, Hazardous Waste, and Worker Safety for the AFC of a 106.8 MW solar power generating facility in Fresno County. The AFC was submitted to the CEC in November, 2008.

- **Stirling Energy Systems Solar Two Generating Facility**. Served as task leader for Hazardous Materials, Hazardous Waste, and Worker Safety for the AFC of a 750 MW solar power generating facility in Imperial County. The AFC will be submitted to the CEC in June, 2008

- **Carrizo Solar Power Generating Facility Project**. Served as task leader for Hazardous Materials, Hazardous Waste, and Worker Safety for the AFC of a 163 MW solar power generating facility in San Luis Obispo County. The AFC was submitted to the CEC in October, 2007.

- **Anaheim Municipal Power Station**. Served as task leader for Hazardous Materials, Hazardous Waste and Worker Safety for the AFC of a 200 MW energy facility in Anaheim, Orange County. The AFC was be submitted to the CEC 2008.

- **Larkspur 3 Energy Facility Project**. Served as task leader for Hazardous Materials, Hazardous Waste, and Worker Safety for the AFC Amendment for the facility located in San Diego. The AFC Amendment was submitted to the CEC in May, 2007.

- **Panoche Energy Center**. Served as task leader for Hazardous Materials, Hazardous Waste and Worker Safety for the AFC of a 400 MW energy facility in Fresno County. The AFC will be submitted to the CEC July, 2006.

- **Bullard Energy Center**. Served as task leader for Hazardous Materials, Hazardous Waste and Worker Safety for the AFC of a 200 MW peaking energy facility within Fresno County. The AFC was be submitted to the CEC November, 2006.

- **Magnolia Power Project**. Served as task leader for Hazardous Materials, Hazardous Waste, and Worker Safety for the AFC of a 250 MW energy facility within the City of Burbank. The project was licensed in 2003. Assisted in the management of condition compliance activities from 2003-2005. Developed construction and operations Hazardous Materials and Hazardous Waste Management Plans, Stormwater Pollution Prevention Plans, A Health & Safety Program and a Risk Management Plan for the facility.

- **Agua Mansa Power Project**. Assisted in the preparation ad processing of an application to develop a 49 MW power facility in Colton, California. Project was constructed in 2003. Assisted in environmental compliance activities from 2003-2004. Developed Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, a Spill Prevention Countermeasures and Contingency Plan, the operations Health & Safety Program and a Risk Management Plan for the facility.

- **Duke Energy Moapa Power Project**. Assisted Duke Energy of North America in environmental permitting and construction compliance activities for a power plant in Clark County, Nevada from 2000-2002. Prepared and submitted compliance documents to various local, state and federal agencies. Prepared a permit matrix to track the completion of each of the permits required prior to construction, during construction, and prior to operations. Also assisted with NEPA compliance and coordination with the Bureau of Land Management for the power plant and project linears.

- **AES Southland**. Prepared an Occupational Health & Safety Program to comply with Cal-OSHA requirements for 5 California AES power plants in 2004. Safety Plans and Programs included Injury Illness Prevention Program, Hazard Communication Program, Industrial Hygiene Program, Hearing Conservation Program, Respiratory Protection Program, Confined Space Entry Program, Hot Work Program, Elevated Work and Fall Protection Program, Lockout/Tagout

Program, Emergency Action/Fire Prevention Plans, Personal Protective Equipment Program, and Training Programs.

Environmental Regulatory Compliance

- Ms. Winterbauer has provided regulatory compliance assistance to various industrial and commercial facilities. Has developed and updated regulatory compliance documentation including hazardous waste management programs, hazardous materials management programs, Form R evaluations, hazardous material business plans, risk management plans, storm water pollution prevention plans, spill prevention control and countermeasure plans risk management plans and training programs.
- Has completed numerous Environmental Compliance Audits for industrial, commercial, and medical facilities.
- Has provided daily and weekly onsite regulatory compliance assistance for various industrial and commercial businesses. Activities included, weekly inspections of hazardous waste areas, development and daily implementation of a hazardous management and hazardous waste programs, assistance with storage requirements for hazardous materials, development of a chemical spill prevention programs, and assistance with air permit compliance documentation and training of employees.

Occupational Health and Safety

- Has provided occupational health and safety compliance assistance to various industrial and commercial facilities. Has developed health and safety programs that include all required Cal-OSHA plans and programs.
- Conducted occupational health and safety audits for the numerous industrial and manufacturing facilities to determine compliance of the Occupation Safety and Health Administration standards.

Phase I and Phase II Site Assessments

- Managed and conducted more than 200 Phase I Site Assessments of industrial and commercial facilities in Northern and Southern California. Investigations have focused on the potential for soil and groundwater contamination resulting from past and present site use. Specific tasks have included proposal preparation, budget tracking, site reconnaissance, historical land use investigation, topographic map and aerial photo review, and review of regulatory agency records concerning site compliance issues. Additional tasks have included collection of drinking water samples for analysis of lead content, and visual inspections and characterization of possible asbestos containing materials.
- Has Performed groundwater and soil sampling, at hazardous waste sites throughout California. Responsibilities have included well purging, sample collection, measurement of field parameters, report preparation and recommendations for further sampling analysis and remediation

activities. Has assisted on large Phase II projects conducting field work and preparing reports of findings.

Contact Information

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Noel Casil, PE, TE, PTOE

Senior Traffic Engineer

Areas of Expertise

Traffic Engineering,
Transportation Planning,
ITS Planning

Years of Experience

With URS: 9 Years
With Other Firms: 18 Years

Education

BS/1982/Civil Engineering

Registration/Certification

Registered Professional Civil Engineer/CA/65179
Registered Professional Traffic Engineer/CA/2391
Certified Professional Traffic Operations Engineer/ITE/2143

Professional Affiliations

Institute of Transportation Engineers (Fellow)
Society of American Military Engineers (Member)
Transportation Research Board (TRB) AHB40 - Highway Capacity and Quality of Service Committee, User Liaison Group (Member), Research Subcommittee (Member), Active Traffic Management Task Force (Member)

Publications

Casil, N.V. and Chapman, J., "The Bakersfield Systems Study - A Long Awaited Solution Rises to the Forefront". Institute of Transportation Engineers District 6 Annual Meeting, July 16, 2002, Palm Desert, CA

Overview

Mr. Casil has over twenty years of civil and transportation engineering experience in California and overseas. He is actively involved in the field of traffic engineering, highway engineering and transportation planning. He has performed responsible office and field engineering work including surveys, data collection, traffic signal timing utilizing PASSER II and TRANSYT 7-F, signal timing, fine tuning of 170 controllers, traffic signal/detection system installation, cost estimates, ramp metering installation inspection, and design of freeway surveillance. In addition, Mr. Casil has extensive experience in transportation planning projects including impact studies utilizing TRAFFIX, Synchro and HCM software. He has also served as traffic study task leader for projects ranging from stand-alone traffic studies to multi-discipline project study, design, planning and environmental documentations.

Project Specific Experience

Transportation Planning Projects

- Pasadena Soccer Academy TIA (City of Pasadena)
- Vault Self Storage (3 Sites) Facilities TIA (City of Pasadena)
- Pasadena AMF 300 Parking Study (City of Pasadena)
- Empire Center Burbank Traffic Analysis (City of Burbank)
- Palmdale Airport Master Plan (LAWA)
- LAX/South (Orange County) High-Speed Ground Access Study (SCAG)
- City of Fullerton General Plan Update (City of Fullerton)
- Ontario Agricultural Preserve Sphere of Influence Study (City of Ontario)
- City of El Segundo Circulation Element Update (City of El Segundo)
- City of Santa Monica Master Environmental Assessment (City of Santa Monica)
- West Haven Specific Plan EIR (City of Ontario)
- City of Chico Growth Feasibility Study (City of Chico)
- Moonridge Corridor Specific Plan EIR (City of Big Bear Lake)

- Bakersfield Systems Study (Kern Council of Governments)
- Los Angeles County Park and Ride Master Plan (LACMTA)
- UCLA-Santa Monica Hospital EIR (UCLA Capital Improvements)
- Santa Monica Zoning EIR (City of Santa Monica)
- Arboretum EIR Analysis (Arboretum Development Partners)
- Metro Red Line Eastside Extension FEIS/FEIR (LACMTA)
- Santa Monica Bayside District EIR (City of Santa Monica)
- Los Angeles Zoo Master Plan EIR Traffic Study (City of Los Angeles)
- Griffith Observatory EIR (City of Los Angeles)
- Fullerton Impact Fee Study (City of Fullerton)
- House of Blues Traffic Study (City of West Hollywood)
- Los Amigos School EIR (Santa Monica-Malibu Unified School District)
- Ritter Ranch Specific Plan (Ritter Ranch Associates)
- Santa Monica/Doheny/Melrose Improvement Study (City of West Hollywood)
- MCB Camp Pendleton New Hospital Project EA (NAVFAC)
- MCB Camp Pendleton Main Exhange Project EA (NAVFAC)
- Seal Beach Naval Station BEAP (NAVFAC)
- Long Beach Naval Shipyard Reuse EIR (Port of Long Beach)
- MCAGCC Twentynine Palms Master Plan (EDAW)
- TRAFFIX Modeling Training (various city staff)

Traffic Operations and Signal Systems

- Hollister Corridor Signal Coordination Project (County of Santa Barbara)
- Sacramento FETSIM Project (City of Sacramento)
- South Bay Traffic Signal Improvements and Communication Design (LACMTA)
- City of Mission Viejo Interconnect PS&E (City of Mission Viejo)
- Palmdale “On-Call” Signals (City of Palmdale)

- Fuel Efficient Traffic Signal Management (FETSIM) (City of Anaheim)
- "On-Call" Traffic Engineering, Ramp Metering/Surveillance (Caltrans, District 7)
- 15th Street Signals Progression (City of Lancaster)
- Olympic Boulevard Traffic Signals (City of Beverly Hills)

Traffic Engineering Projects

- I-5 Far North Widening (OCTA)
- SR-22 Design Build HOV Project (OCTA)
- Central County Corridor Study (OCTA)
- I-5/SR-134 Congestion Management Study (Cities of Burbank, Glendale, Los Angeles and Caltrans District 7)
- I-15/I-40 Interchange Reconstruction Project Report/PS&E (DMJM)
- Atlantic/Bandini/I-710 Interchange PSR (City of Vernon, Caltrans Dist. 7)
- Katella Avenue Superstreet Project Study (OCTC)
- SR-73/Moulton-La Paz Interchange Design (Transportation Corridor Agencies)

Energy Sector Studies, Licensing and Support Services

- Tehachapi Renewables Transmission Project (SCE)
- Antelope Valley Solar Ranch 1 Traffic Study (NextLight)
- Watson Cogen Expansion AFC (BP Alternative Energy)
- Niland Energy Center AFC (Imperial Irrigation District)
- El Centro Generating Center Expansion (IID)
- Salton Sea Unit 6 Power Project AFC (CalEnergy)
- SES Solar One AFC (Sterling Energy Systems Inc)
- SES Solar Two AFC (Sterling Energy Systems Inc)
- Larkspur Energy Center AFC Amendment
- Otay Mesa Energy Center AFC (Calpine)
- Carizo Energy Solar Farm (Ausra Inc.)
- Canyon Power Station AFC (SCPPA – City of Anaheim)
- Starwood Energy Center AFC (Starwood Energy Group)

- CPV Sentinel Energy Project AFC (CPV Sentinel, LLC)
- San Gabriel Generating Station AFC (SGPG LLC)
- Granite Wind Farm Project (Granite Wind LLC)
- Rancho Santa Margarita Peaker (Wellhead)
- Los Angeles Department of Water & Power (LADWP)
- Colton Energy Facility (City of Colton)
- Magnolia Power Project (SCPPA- City of Burbank)
- Roseville Energy Facility AFC (Enron)
- Bighorn Generating Project – Primm Nevada (Reliant)
- Tracy Peaker Plant AFC (GWF Energy LLC)
- Bullard Energy Center AFC
- Panoche Energy Center AFC (Panoche Energy Center, LLC)
- Kinder Morgan Carson Facility Expansion (Kinder Morgan)
- Bigwest Refinery Clean Fuels EIR (Flying J Corporation)
- Colton Phase II Expansion Project (Kinder Morgan)
- 7-11 Store and Gas Station Traffic Study (City of Vista)
- Luvs - Lost Hills Project Traffic Study (Pilot Corporation)
- Speedy Fuel Diesel Station Project Peer Review (BNSF)

Angela Leiba, GISP, Vice President

Senior Project Manager / GIS Manager/Visual Specialist

Areas of Expertise

Environmental Permitting and Analysis
Energy Projects
Project Permitting/Agency Coordination
Emergency Response/Emergency Planning
GIS Modeling/Analysis, Database Application Design, Website Design
Visual Resource Studies/Aesthetics/Simulations
Military Planning Projects
Flood Modeling Projects

Years of Experience

16 Years

Education

MS Program/1994/Computer Graphics/University of California, Los Angeles
BA/1992/Computer Graphics/San Diego State University
ESRI ArcGIS 9.0, 2005
ESRI Spatial Analysis, 3-D Analysis, Palomar College, 1999
ESRI ArcView Avenue Programming, SD Data Processing Center 1999, 1997

Registration/Certifications

Certified GIS Professional (GISP), GIS Certification Institute, 2006
Certified County of San Diego Visual Resource Specialist

Overview

Ms. Angela Leiba is a Vice President and Senior Project Manager with more than 16 years of experience. Ms. Leiba oversees the Environmental Management Group (consisting of approximately 70 specialists). Her project management expertise focuses on environmental projects, energy/power projects, emergency response/planning studies, visual resource assessments, and GIS projects/programs. She has helped prepare over 30 major environmental impact reports (EIRs), more than 100 environmental assessments (EAs) or technical studies, over a dozen Application for Certifications (AFCs), and dozens of environmental impact statements (EISs). She has also Project or Task managed environmental, traffic, water resource, biological, cultural, social impact, noise, air, environmental compliance, military, and planning efforts for numerous public and private agencies. She has served as Project Manager and/or Task Manager on hundreds of projects for local, state, federal, and private agencies.

Project Experience

Energy Projects

Ausra, Inc. 180MW Concentrated Solar Power (CSP) Solar Power Plant AFC, San Luis Obispo County, CA. Project Manager for the Application for Certification for an 180MW solar thermal generating facility located within San Luis Obispo County. Ausra uses a proprietary type of solar trough called a Compact Linear Fresnel Reflector. Once licensed, this project will likely be the first utility-scale solar power project under the CEC in California. The project covers two sections of land within the Carrizo Plain area in San Luis Obispo County. Project will include agency consultation and coordination including with the California Energy Commission (as lead CEQA agency) and ACOE, USFWS, CDFG, to name a few. **($1.5M) 2006-2009**

Stirling Energy Systems Concentrated Solar Power (CSP) Solar Two Solar Power Plant AFC/EIS, Imperial County, CA. Project Manager for the 750MW solar thermal generating facility located within Imperial County. The project will cover approximately 6,500 acres and will include 12,000–36,000 solar dishes. Managed joint CEQA/NEPA documentation preparation under joint thresholds of the California Energy Commission (CEC) and Bureau of Land Management (BLM). Facilitated project-level MOU between the CEC and BLM to help expedite joint process. MOU later became a State and Federal mandate. Managing all aspects of project permitting including technical resource analysis, agency review and consultation, public involvement and scoping and post-construction monitoring, once constructed. This project will be one of the largest solar power plant projects in the world, once built. **($3.5M) 2006-2009**

Spinnaker Energy (Martifer/Bethel Energy) 106MW San Joaquin 1 & 2 Solar/Bio-Fuel Power Plant AFC, Imperial County, CA. Principal-in-Charge and permitting support for the Application for Certification for hybrid design solar thermal electric generating plants, comprising a solar field and biomass facility for each plant. The two plants will each produce up to a nominal 53.4 MW net of renewable energy. The California Energy Commission will act as lead CEQA agency for the project. **($350K) 2006-2007**

Caithness (Solenergis) PhotoVoltaic (PV) Solar Permitting, San Bernardino, CA. Provided peer review and other support for solar energy project lead by Caithness Soda Mountain, LLC (Caithness). Caithness has requested a right-of-way grant to construct and operate a 350 megawatt (MW) solar electric power generating facility on federal lands managed by the U.S. Department of the Interior, Bureau of Land Management (BLM) located in San Bernardino County, California. Assisted URS team in providing comprehensive environmental and technical support services to assist Caithness in the permitting process with the BLM and other Federal and State agencies and assisting in the land use planning for the project. **($150K) 2008-2009.**

Solar Power Plant Siting/Fatal Flaw Studies, Nautilus Energy/Starwood Power, Western US. Task Manager for GIS analysis and mapping relating to helping Nautilus Energy locate a solar power plant location in the western US. GIS siting criteria and weighed modeling were used to identify key sites based upon siting criteria that included, but were not limited to, the following: solar intensity, slope, acreage, land ownership, distance to transmission, distance to gas, and distance to reclaimed water. Fatal Flaw studies were also performed for a variety of sites that were narrowed down from the GIS siting studies performed above. **($35K) 2007-2009**

Granite Wind, LLC - Granite Mountain Wind Energy Project, San Bernardino, CA. Ms. Leiba was the visual resources task leader for this Project. Granite Wind, LLC is proposing to construct the approximate 84-MW Granite Mountain Wind Energy Project, which will be located approximately 6 miles east of Apple Valley in San Bernardino County, California, comprised of 28 turbines. The proposed project will be located on private lands and on lands administered by the BLM. Ms. Leiba authored a Visual Impact Assessment (VIA) including an interim Visual Resources Management Classification and impact analysis combining methodologies and guidelines from the BLM, US Forest Service, Federal Highway Administration, CEQA, San Bernardino County and other local agencies. This visual resource methodology and the VIA is now being used by the BLM as an agency "template" for other wind projects in the Southwest. Additionally, Ms. Leiba oversaw the preparation of the visual resources section of the Project's EIS/EIR. **($52K) 2008-2009**

AES Somerset Coal Power Plant Unloading Project, AES, Niagra County, New York. Task Manager for Visual Resource Analysis and Visual Impact Assessment (VIA) review and updates. Provided peer review and updates to the Visual Impact Assessment performed for the New York Somerset Lake Unloading Project. The AES Somerset Power Plant (Plant), in operation since 1984, is a single 675 megawatt (MW) coal-fired electrical generating unit located on the south shore of Lake Ontario in the Town of Somerset, Niagara County, New York. The project added a loading and unloading dock to the existing power plant facility. The project looked at potential visual impacts to neighboring historic landmarks. **($25K) 2008**

Visual Resource Assessment for the Lower Deschutes Wild and Scenic River, Maupin, Oregon. Visual Resource Task Reviewer for the Lower Deschutes River upgrade project. The project was on Bureau of Land Management (BLM) lands and included a proposed pipeline crossing over the river. The Deschutes River is a federal and state designated Wild and Scenic River. Visual Resource management (VRM) BLM guidelines had to be adhered to while conducting the analysis. In addition a Visual Resource Inventory and Interim Resources Management Classification had to be conducted according to federal BLM VRM policy for the project. **($25K) 2008**

Otay Mesa Generating Station Power Plant Construction Monitoring, Calpine, San Diego County, CA. Project Manager for the Construction monitoring for a 510-MW gas-fired power facility located within San Diego County. Managing all oversight for multi-year construction phasing for project including agency consultation, managing and scheduling for compliance with conditions of certification, managing sub-consultants and monitoring field efforts – and being available for on-call services whenever the Project Compliance Manager needs assistance. **($800K) 2006-2009**

Solar Power Plant Siting Study, Edison Mission Energy, Western US. Task Manager for the GIS analysis and mapping relating to helping Edison Mission Energy locate a solar power plant in the western US. GIS siting criteria and weighed modeling were used to identify key sites based upon siting criteria that included, but were not limited to, the following: solar intensity, slope, acreage, land ownership, distance to transmission, distance to gas, and distance to reclaimed water. **($35K) 2007-2008**

Bethel Energy 100MW Solar/Bio-Fuel Power Plant CEQA Documentation, Imperial County, CA. Assistant Project Manager for the Application for Certification. Small Power Plant Exemption or Environmental Impact Report (depending on project configuration). Advised client on schedules and budgets for each of these alternatives as they move forward to try and permit their facility. Project in early stages currently. The California Energy Commission or the County of Imperial will act as lead CEQA agency. **($35K) 2006-2007**

Larkspur Power Facility AFC Amendment, San Diego County, CA. Project Manager for the Post Certification Amendment for Diamond Generating Corporation (a subsidiary of Mitsubishi) to the California Energy Commission to modify the Existing Larkspur Energy Facility in Otay Mesa, City of San Diego, to add a third 45MW LM6000. The normal power plant rating will be 135MW. Facilitated all technical resource area peer review, project facilitation with the California Energy Commission and oversaw regulatory oversight from various technical resource area agency involvements. **($350K) 2007**

Starwood Midway Power Facility AFC, Fresno County, CA. Project Manager for the Application for Certification for a simple-cycle electric generating facility located within Fresno County. The facility will include two FT8-3 Swift Pac Gas Turbine Generator (CTG) units installed in a simple cycle power plant arrangement. The normal power plant rating will be 120MW. Facilitated all technical resource area peer review, project facilitation with the California Energy Commission and oversaw regulatory oversight from various technical resource area agency involvements. **($350K) 2006-2007**

Stirling Energy Systems Concentrated Solar Power (CSP) Solar One Solar Power Plant AFC/EIS, San Bernardino County, CA. Project Management team and peer reviewer for the 800MW thermal generating facility located within San Bernardino County, CA. The project will cover approximately 15,000 acres and will include over 36,000 solar dishes. Facilitated all technical resource area peer reviews, project oversight and overall guidance on joint documentation preparation, technical resource evaluation and analysis, agency input and permitting requirements, and public involvement oversight. **($2.5M) 2007-2009**

Solar and Wind Power Plant Siting Study, BP Energy, Western US. Task Manager for the GIS analysis and mapping relating to helping BP Energy locate a power plant location in the western US. GIS siting criteria and weighed modeling were used to identify key sites based upon siting criteria that included, but were not limited to, the following: solar intensity/wind generation, slope, acreage, land ownership, distance to transmission, distance to gas, and distance to reclaimed water. **($35K) 2007-2008**

Panoche Energy Center AFC, Fresno County, CA. Task Manager for several components of the Application for Certification for the Permitting of the Panoche Energy Center in Fresno County, CA. Panoche Energy Center, LLC was the applicant to the California Energy Commission. Evaluating impacts of four LMS100 natural gas-fired combustion turbine generators was part of this simple-cycle power generation project. **($35K) 2007-2008**

Bullard Energy Center AFC, City of Fresno, CA. Task Manager for the visual resources components of the Application for Certification for the Permitting of the Bullard Energy Center in the City of Fresno, CA.

Bullard Energy Center is a proposed simple-cycle electrical generating facility occupying twelve acres. Bullard Energy Center, LLC is the project applicant to the California Energy Commission. **($35K) 2007-2008**

Solar Power Plant Fatal Flaw Studies, LightSource Renewables, California/Arizona. Task Manager and Client Manager for Fatal Flaw studies relative to five sites that were previously chosen (3 in CA, 2 in AZ). A complete GIS analysis and subsequent desktop review by a variety of specialists (including water, geotechnical engineering/geology, cultural resources, biological resources, and land use) were performed. A write-up of potential fatal flaws and conclusions by each resource area, in addition to the environmental constraints map generated by the GIS system were included in the deliverables. **($125K) 2008-2009**

Gaviotta Coast Wellhead Power Project, LMS100. Task Manager for the visual resources studies for the potential permitting of a Wellhead LMS100 power project along the Gaviotta coast. Scenic highway issues were of primary concern, since the energy project location was in viewshed of the local scenic highway. Viewshed analyses and visual simulations were completed as part of these initial environmental, specifically visual resource issues for the proposed project. **($25K) 2007-2008**

NextLight, AV Solar Ranch One Project, Los Angeles, CA. Ms. Leiba was the visual resources task leader for this Project. NextLight Renewable Power, LLC is proposing to construct the approximate 230-MW Photovoltaic Solar Ranch One Project, which will be located on a 2,100-acre site in Antelope Valley, in unincorporated Los Angeles County, approximately 20 miles northwest of the City of Lancaster. The proposed project will be located on private lands and on lands administered by the County of Los Angeles. Ms. Leiba oversaw the preparation of the visual resources section of the Project's EIR consistent with CEQA, Los Angeles County and other local agencies. **($25K) 2009**

Solar and Liquid Natural Gas (LNG) Power Plant Siting Study, Chevron/Texaco, West Coast, US. Task Manager for Geographic Information System, Visual Resource, Social Economic and other analyses relating to siting potential solar and LNG power plants within the western united states. Worked directly with the Program Director to help with early environmental constraint issues. **($35K) 2006**

Starwood Power Plant Construction Monitoring, Fresno County, CA. Project Manager for the Construction monitoring for a 120MW gas-fired power facility located within Fresno County. Program Manager for compliance with all Conditions of Certification proposed in the CEC's Final Commission Decision. Documentation of all certification was included in these efforts. Managing all oversight for multi-year construction phasing for project including scheduling, reporting of conditional compliance, additional permitting, agency consultation, managing sub-consultants and monitoring field efforts – and being

available for on-call services whenever the Project Compliance Manager needs assistance. **($800K) 2008-2009**

Carson Hydrogen Power Project, Long Beach, CA. Task Manager for Visual Resources permitting relating to the proposed project. This project in a major initiative by BP Alternative Energy (in partnership with Edison Mission Energy) to use gasification technology to gasify petroleum coke (a low value refinery waste product) to produce a hydrogen-rich gas that will then be combusted in next-generation turbines to be developed by GE in order to produce electric power. **($55K) 2007**

Niland Proposed Power Plant, Small Power Plant Exemption (SPPE), Imperial County, CA. Imperial Irrigation District Peaker Development Project. Visual Resources Task Manager for SPPE Visual Resource Section. Also developed visual simulations and public meeting materials for the proposed development of a 30-acre generating station, Imperial County. **($55K) 2007**

El Centro Generating Station, Small Power Plant Exemption (SPPE), El Centro, CA. Visual Resources Task Manager for SPPE Visual Resource Section for the Imperial Irrigation District Project. Also developed visual simulations and public meeting materials for the proposed project. Development included an 80-acre treatment pond (160 acre area) and the addition of an additional generator adjacent to an existing generating station in Imperial County. **($55K) 2007**

Chevron Liquid Natural Gas (LNG) Environmental Assessments, West Coast, U.S. Task Manager for Visual Resource, Social Economic and Geographic Information System analyses for this highly controversial proposed off-shore liquid natural gas platform. Worked directly with the Program Director to help with early environmental constraint issues. **($55K) 2006**

Wind Implementation Monitoring Program, County of Riverside, California. Project Manager for the County of Riverside to evaluate the ongoing and potential additional impacts of Wind Farm Development within the region. Managed visual assessment, noise assessment, air quality study, communication systems assessment, navigation element study, fire protection study, police service element, retrofit element and biological resources components. **($136K) 2006**

San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 Steam Generator Replacement Project. Task Managed preparation of a Proponent's Environmental Assessment for the California Public Utilities Commission, and participated in other aspects of project permitting, including NEPA compliance on Marine Corps Base Camp Pendleton and permitting through the California Coastal Commission. **($350K) 2003**

Cal Energy Geothermal Power Plant, California Energy Commission, California. Served as Task Manager for preparation of an

application for certification (AFC) for submittal to the California Energy Commission (CEC) for construction and operation of the Salton Sea Unit 6 (SSU6) geothermal plant power-generation facility in Imperial County, California. The SSU6 is a proposed, nominally rated, 175-megawatt (MW) merchant power plant. Ancillary facilities and three transmission line alternatives were analyzed. A complete visual resource assessment, including several visual simulations of the plant and corresponding transmission lines, were included in this effort. Over 120 GIS exhibits analyzing over a dozen technical disciplines were also created. **($350K) 2006**

Oak Valley Substation & Transmission Line Project, Southern California Edison, Riverside County, California. Visual Resources Task Manager for the installation of a new substation, re-conductoring of several transmission lines and new installation of several transmission lines in Riverside County (including the cities of Beaumont, Banning, and Calimesa). Visual simulations showing potential transmission line alternatives and the substation were included as part of this effort. Visual assessment included reviewing potential visual impacts relating to highly populated areas where new transmission lines were to be installed, including a freeway over-crossing. **($55K) 2006**

Powerplant Siting Study, ENPEX Development, Marine Corps Air Station, Miramar, CA. Task manager for GIS components of powerplant siting study. Worked to develop model of environmental and man-made constraint information, compiled GIS model and mapping elements to show areas with potential for site development. Coordinated with Air Station, agency, ENPEX and sub-consultants to identify, gather and reconcile relevant GIS data for project. **($55K) 2006**

GIS Solar Power Plant Siting Study, US Renewables Group, Western US. Task Manager for the GIS analysis and mapping relating to helping US Renewables Group locate a solar power plant in the western US. GIS siting criteria and weighed modeling were used to identify key sites based upon siting criteria that included, but were not limited to, the following: solar intensity, slope, acreage, land ownership, distance to transmission, distance to gas, and distance to reclaimed water. **($35K) 2007-2008**

Kinder Morgan Concord-to-Sacramento Pipeline, **Northern California**. Task Manager for pipeline project from Concord, CA to Sacramento, CA. **($55K)**

Kinder Morgan California-to-Nevada Pipeline, **Northern California**. Task Manager for pipeline project from Colton, CA to Las Vegas, NV. I complete environmental and man-made constraint analysis was completed as part of this project. **($160K)**

Meadow Valley Generating Project EIS, **Southern Nevada**. Task Manager for 1,000 MW, gas-fired combined cycle power plant proposed in Southern Nevada. **($115K)**

Imperial County Gas Pipeline, Pacific Gas & Electric/Foster & Wheeler, Imperial County, California. Task Order Manager in support of archaeological services for the transmission line project. **($145K)**

South Bay Power Plant Land Use/Soil/Economic Studies, EDAW/Duke Engineering, San Diego County, California. Oversaw analysis of land use, soil, and economic issues related to relocation of a power plant. **($35K)**

InterGen Transmission Line, Imperial County, California. Analyst for constraints and possible impacts as related to the project corridor. Archaeological and biological impact maps were produced for the entire corridor. **($105K)**

All-American Conversion Line 1903, ENSR, San Bernardino County, California. Analyst for possible impacts as related to archaeological resources along the project corridor. **($75K)**

Bi-National Pipeline Study, Del Mar Land Management, San Diego County, California. Task Managed constraints analysis for possible impacts as related to archaeological resources along the project corridor. **($55K)**

Valley-Rainbow Transmission Line, Power Engineering, San Diego and Riverside Counties, California. Task Manager for several alternative routes for a 500-kilovolt transmission line corridor. Biological, environmental, archaeological, and social impacts were the focus. **($135K)**

AEP Constraints and Permitting, Energy Management and Services Co., Imperial County, California. Task Manager to help analyze and identify possible environmental, biological, archaeological, and social impacts related to transmission line corridor. **($55K)**

AT&T China, US Cable Network, California State Lands Commission, China to U.S. Task Manager overseeing GIS/CAD mapping, database development, and analysis of social impacts as related to fiber optic cable networking along seafloor. GIS seafloor modeling was conducted as part of the project. **($45K)**

Imperial Irrigation District L-Line, Imperial Irrigation District, Imperial County, California. Extensive analysis and mapping was conducted to help evaluate potential cultural impacts from a proposed transmission line. **($115K)**

Environmental Projects

Port of San Diego/Airport Authority Demolition EIR, San Diego, CA. Project Manager for the EIR for the proposed demolition of existing aviation manufacturing facilities located on North harbor Drive in San Diego, CA. The project includes removal of approximately 50 existing

structures; removal of asphalt and other paving materials; removal and disposal of all hazardous and contaminated construction materials; removal and disposal of chlorofluorocarbons; cutting, capping and removal of all underground piping and utility systems, and capping storm drain and sanitary sewer laterals. Multiple agency coordination, potential historic building demolition, least tern nesting mitigation, hazardous material coordination, and coastal zone permitting required. **($415K) 2008-2009**

County of San Diego On-Call Environmental Services, San Diego, CA. 2006-2007. Project Manager for on-call environmental contract. Task orders not to exceed $500K. Environmental projects include capital improvement projects, highway projects, and other miscellaneous county-improvement projects. Over a dozen projects managed focusing on road improvement projects. Majority of projects included either biological or cultural resource tasks. Projects were typically quick-burn – received notice within a day, had resources allocated within 2-3 days, work completed in a week or two, tops. All projects completed on-time/on or under budget. **($500K) 2006-2007**

County of San Diego On-Call Environmental Services, San Diego, CA. 2008-2009. Project Manager for on-call environmental contract. Task orders not to exceed $500K. Environmental projects include capital improvement projects, highway projects, and other miscellaneous county-improvement projects. Projects included: Viejas Bridge Replacement, Summit Drive Upgrades, Woodside Drive Upgrades, Fallbrook Airport Improvements, Moosa Creek Upgrades, Lone Star Road Improvements, Tavern Road Culvert Replacement, Pauma Road Bridge Replacement, SV Bonita Road Upgrades, to name a few. **($500K) 2008-2009**

Coastal Rail Trail EIR/CE, San Diego, California. Project Manager for an EIR/CE for a proposed trail that would start near Del Mar and run south to connect to the existing Rose Canyon bike path. Three proposed Class I bike path areas are the focus: Sorrento Valley Road between Carmel Valley Road and Carmel Mountain Road, Roselle Street to Eastgate Map, and Genesee (Nobel Drive) to Gillman Drive. The project includes multiple agency review including Caltrans/FHWA, City of San Diego and others. A coastal zone permit will also be included. **($294K) 2006-2009**

El Cajon Redevelopment District GIS Webserver Project, El Cajon, San Diego County, CA. Project Manager for GIS project. Oversaw development of webserver developed in-house. Site was designed to manage real estate, environmental and other redevelopment district information in one cohesive public website. The project included meeting with the District to review needs of users and the public. Information was gathered, reviewed, updated and integrated into an on-line mapping viewer program that was linked to the District's existing website. Staff training and a step-by-step guide to usage was included in the project. **($75K) 2006-2007**

High Speed Rail EIR/EIS, Los Angeles, CA. Task Manager for preparation of visual impact assessment (VIA) and subsequent Visual Resources section for the EIR/EIS. The VA required Federal Highway Administration and Caltrans aesthetic guideline adherence. Responsible for analysis relating to the portion of the project covering Los Angeles Union Station (North end of the Station) to the Palmdale Transportation Center in Palmdale, CA. **($85K) 2006-2009**

Placer Parkway Tier I EIR/EIS, Counties of Placer, Sutter and Sacramento, CA. Task Manager for preparation of visual impact assessment (VIA) and subsequent Visual Resources section for the Tier 1 EIR/EIS. The VA required Federal Highway Administration and Caltrans aesthetic guideline adherence. Five current project alternatives were assessed as part of this proposed parkway connecting major State Highways in northern California. **($65K) 2006-2007**

SANDAG On-Call Environmental Services/I-805 Widening Project, San Diego County, CA. Ms. Leiba is serving as the Principal GIS Manager and Visual Resource Task Manager for all relevant studies under this on-call contract. All projects are transportation related within San Diego County. Presently working on study for expansion of I-805 from the Mexican Border to the 805/I-5 merge. **($85K) 2006-2009**

State Route 56/Interstate 5 Interconnections, City of San Diego, California. Deputy Project Manager and Visual Resources Task Manager for environmental and preliminary engineering tasks relating to the "connectors" project for Interstate 5 and State Route 56. Connections from southbound Interstate 5 to eastbound State Route 56 as well as the connection from westbound State Route 56 to northbound Interstate 5 were not completed as part of the initial State Route 56 project. Also managed the visual assessment relating to the project. **($300K)**

Nursery Products Composting Facility Initial Study (IS)/Mitigated Negative Declaration (MND)/Environmental Impact Assessment (EIR), San Bernardino, CA. Assistant Project Manager and Visual Resources Task Manager for the proposed development of a 160-acre biosolids/green waste composting facility, San Bernardino County. **($350K)**

San Simeon Bridge Widenings Visual Impact Assessment (VIA), San Luis Obispo, CA. Visual Resource Task Manager for preparation of visual impact assessment (VIA) for two bridge widenings in San Luis Obispo. Oak tree removal and mitigation was also a key component addressed in this assessment. The VA required Federal Highway Administration and Caltrans aesthetic guideline adherence. Visual simulations and coordination with project engineer were also included as parts of the assessment. **($35K)**

San Diego Unified School District GIS Webserver Project, San Diego County, CA. Project Manager for GIS project. Oversaw development of webserver refined in-house. Site was developed to manage school site information, environmental factors and other district information in one cohesive private/public website. The project included meeting with the District to review needs of users and the public. Information was gathered, reviewed, updated and integrated into an on-line mapping viewer program that was linked to the District's existing website. Staff training and a step-by-step guide to usage was included in the project. **($50K)**

Coastal Rail Trail Phase I Studies, City of San Diego, CA. Environmental Project Manager responsible for development of the second-half of the Coastal Rail Trail. The project is tasked with completing a bicycle/pedestrian multi-use trail from Del Mar south to the Santa Fe Depot. Helped manage project oversight, budgeting, environmental overview, public meeting support, and sub-consultant oversight. An environmental assessment and 30% engineering were the products of Phase I of the project. Phase II will consist of Final engineering and Design, once funding becomes available. **($150K) 2002**

Soil Erosion Surveys, GIS/GPS Database Collection and Plan Development, Marine Corps Air Station, Miramar, San Diego, CA. Project Manager responsible for as aspects of the project including field surveys, GIS/GPS data collection, soil survey collection, soil erosion modeling, PH soil testing, Best Management Practices (BMP) restoration, and methodology oversight for both GIS-related and Soil Survey-related data. After being devastated by the 2003 San Diego Wildfires, the Base was concerned with erosion, runoff and potential for restoration for the lands burned. The project covered 14,000ac. of soil. **($150K)**

Native Plant Restoration, Marine Corps Air Station, Miramar, San Diego, CA. Project Manager responsible for as aspects of the project including field surveys, data collection, native plant restoration oversight, and implementation oversight of Best Management Practices (BMP) for two highly eroded sites on Miramar. After being devastated by the 2003 San Diego Wildfires, the Base was concerned with erosion, runoff and potential for restoration for the lands burned. These two sites were the focus of restoration due to their proximity to highly used training areas. Managed all five years of project maintenance including oversight of subconsultant, Native Landscapes. **($100K) 2007-2011**

State Route 76 Improvements, San Diego County, CA. Task Manger for the State Route 76 improvements. Geographic Information Systems were utilized to calculate potential constraints and potential impacts for various resource areas affected by the improvements. **($50K)**

Carmel Valley Bike Feasibility Study, San Diego County, CA. Environmental Manger for the Carmel Valley Bikeway Feasibility Study.

Topics covered included traffic, noise, visual, biology and other potentially affected resource areas. **($100K)**

Southwest Division (SWDIV) Navy Facility Assessment, San Diego County, CA. Task Manger for Geographic Information System mapping and analyses for tracking progress of asset evaluation. Project included GIS conversions from AutoCAD of over 1200 facilities. Geodatabases were created including such things as, asset use, square footage, age of building and more. **($150K)**

On-call Consulting Services for Otay Land Company, Otay Land Co., LLC. Task Manager for on-call consulting services contract for 4,800-acre ownership within Otay Ranch planning area. Biological surveys and GIS analyses and mapping were major task orders for the client. **($85K)**

San Bernardino County General Plan Update, Environmental Impact Report (EIR), San Bernardino County, CA. Visual Resources Task Manger for Aesthetic/Visual Resource Issues associated with updating the county general plan. Complete EIR section and relevant write-ups were included as part of this project. **($50K)**

Unexploded Ordnance (UXO) Assessment for San Diego Unified School District, San Diego County, CA. Task Manger for Geographic Information System mapping and analyses for tracking progress of unexploded ordnance studies relating to the potential re-use of these areas for proposed school sites. **($40K)**

Miramar Landfill Raise EIS/EIR, City of San Diego, California. Task Manager for the Visual Assessment and supporting EIS/EIR. The Miramar Landfill is being evaluated for potential impacts relating to the eventual raise of twenty feet in order to accommodate additional landfill capacity. Miramar Landfill sits on land leased to the City of San Diego. Ms. Leiba also managed several efforts relating to public outreach/public meetings. Visual simulations with and without mitigation were important pieces of this evaluation. NEPA and CEQA determinations were also included as part of this effort. **($350K) 2006-2008**

State Route 46/Highway 101 West Interchange Project, Paso Robles, San Luis Obispo County, California. Visual Resources Task Manager for the VIA for interchange project. Managed oak tree mitigation and scenic highway elements as part of the project. Handled all coordination with agency leads and client to assure project was in compliance with the San Luis Obispo County Council of Governments and the Regional Transportation Plan. This was a precursor to the next phase of improvements in the region, the East interchange. **($50K) 2006-2007**

State Route 46/Highway 101 East Interchange Project, Paso Robles, San Luis Obispo County, California. Visual Resources Task Manager for the VIA for controversial interchange project. Dealt with oak tree

mitigation and scenic highway elements as part of the project. Handled all coordination with agency leads and client to assure project was in compliance with the San Luis Obispo County Council of Governments and the Regional Transportation Plan. **($45K) 2005**

Santa Barbara Ranch EIR, County of Santa Barbara, California. Visual Resources Task Manager for the EIR for the development of the Santa Barbara Ranch development. Undeveloped coastline along the scenic highway 101 was evaluated for potential impacts relating to development of a project consisting of several mansions, an equestrian farm and other ranch-style complex facilities. Undeveloped coastal bluffs, night lighting, scenic highway, and coastal zone issues were several factors that played into the visual resource/aesthetic impact determinations. Several visual simulations were also incorporated into the visual resource documentation showing various development alternatives. **($45K) 2005**

Newhall Ranch EIS/EIR, Los Angeles County, California. Visual Resource Task Manager for development project in Los Angeles County. Seven development alternatives were equally analyzed for potential visual impacts for this project. This tiered EIS/EIR document included assessing 21,000 residential units and accompanying components including several bridges. The project is highly controversial and includes Army Corps of Engineer issues relating to wetland impacts. **($65K) 2005**

North Spring Street Bridge Widening EA/EIR, County of Los Angels, California. Visual Resource Task Manager for the widening of a historic bridge within the urban core of Los Angeles County. With several potential sensitive resources in the area, the widening included several key visual resource issues including: historic structures, public art removal, oak tree removal, park area takes, train/light rail transit viewers and more. Since the widening affected several densely populated and highly unique community groups, ensuring development was handled in compliance with each community plan was also a key component of this project. **($55K) 2006-2009**

Interim Improvements for the Interstate 5-State Route 56 Interconnections, City of San Diego, California. Project Manager and Visual Resources Task Manager for initial environmental clearance and preliminary engineering for the Interim Improvements relating to the interconnection project for Interstate 5 and State Route 56. Interim Improvements included road widening, restriping, retaining wall, additional drainage/bioswale installation, and replantings. Oversaw Noise, Traffic, Biology, Water Resource and Visual Resource Technical Write-ups. Managed coordination with FHWA, Caltrans and the City of San Diego. **($85K) 2002-2003**

Cathedral City Transfer Station EA, Waste Management, Riverside County, California. Visual Resource Task Manager for preparation of an EA evaluating the proposed waste management facility in Riverside County, California. New project components included construction of a

transfer building, recycling drop-off, office, weigh station, and parking area. Specific City visual guidelines, as well as County of Riverside aesthetic standards, were of concern for this new facility. **($35K)**

Price Canyon Road Widening Visual Impact Assessment/EA, County of San Luis Obispo, California. Visual Resource Task Manager for preparation of visual impact assessment (VA) and subsequent Visual Resources section for the EA. The VA required Federal Highway Administration and Caltrans aesthetic guideline adherence. Simulations were also generated for inclusion in the documents. **($35K) 2004**

Black Mountain Water Treatment Plant EIR, County of San Diego, California. Task Manager for visual simulations and visual resource assessment assistance for an EIR for a proposed 42-acre water treatment plant within Black Mountain Ranch Subarea I boundaries. Interactive 3-D model of the water treatment plant in addition to simulations were prepared for use with the environmental documentation relating to the project. Viewshed modeling was also conducted as part of the project. **($25K) 2001**

Mariposa Composting Facility EA/EIR, Mariposa County/U.S. Forest Service, California. Visual Resource Task Manager for preparation of an EA/EIR evaluating the expansion of a landfill facility in Mariposa County, California. New project components included construction of a composting facility and lighted parking area. Lighting and glare studies were completed to comply with the area night-sky ordinance. Because of the project's rural nature and its proximity to Yosemite National Forest, visual character mitigation was also included in the assessment. Because the U.S. Forest Service was partially funding the project, an EIR was also completed incorporating several visual simulations.
California Environmental Policy Act/National Environmental Policy Act. **($35K)**

Port of Long Beach, Piers J South Marine Terminal Projects, Long Beach, CA. Task manager for three separate EIS/EIRs and Application Summary reports for a 385-acre marine terminal project to be located on Pier J South. The Project features associated with all development scenarios included landfilling (from 52 to 115 acres) submerged land, dike and wharf construction, and inter-modal rail. Additionally, the project entailed the demolition of 15 acres of terminal on Pier F to allow for Pier J The U.S. Army Corps of Engineers was the federal lead agency. **($500K) 2003**

Metropolitan Water District Habitat Conservation Program (MWD HCP), Southern California, US. Task Manger for the Geographic Information Systems (GIS) component of the project. GIS was utilized to map and analyze environmental constraints for the Water District's owned properties. Since the project area was huge, sample areas were

chosen using the GIS and each area was analyzed then compiled to form the basis for potential habitat conservation in the area. **($50K)**

Pier T Terminal Modification, Port of Long Beach, CA. As the on-call consultant to the Port of Long Beach, Ms. Leiba helped prepare the Addendum to the Long Beach Complex Environmental impact Report. The Addendum assessed the 20-acre site within the greater Pier T complex for a change from development as a ship repair facility to an expansion of adjacent container terminal facilities. **($150K) 2003**

Piers G and J Terminal Development, Port of Long Beach, California. As the on-call consultant to the Port of Long Beach, California, Ms. Leiba helped prepare of the EIR and Application Summary Report for this 315-acre marine terminal redevelopment project. The EIR evaluated the four-phased project that would be constructed over an 11-year period. Project features included landfilling 53 acres of submerged land, dike and wharf construction, inter-modal rail. **($150K) 2003**

Vegetation Management EA, Federal Emergency Management Agency, San Bernardino, California. Visual Resource Task Manager for preparation of an EA evaluating several burn sites in San Bernardino. A viewshed assessment was completed to help with overall analysis. The managed burn sites were mapped in GIS in relation to any area sensitive viewers, which helped with overall assessment of the project. **($25K)**

Edom Hill Transfer Station EA, Cathedral City, California. Task Order Manager for the Visual Resources section for Waste Management of California, Inc./Waste Management of the Desert to design and construct a 35,000-square-foot, enclosed transfer station and an adjacent 2,500-square-foot office building on 27.5 acres east and south of Edom Hill Road, near the west side of the Edom Hill Landfill in the Coachella Valley. **($35K)**

Sorrento Valley Road EIR, City of San Diego, California. Task Manager for the equal evaluation of three distinct alternatives for a 3-mile segment of Sorrento Valley Road which is closed and in disrepair since 1994, while a new pump station and a major Caltrans intersection at I-5 was constructed. The project borders the Los Peñasquitos Lagoon, which is managed by State Parks and under the joint coastal jurisdiction of the City of San Diego and the State Coastal Commission. All CEQA issues were evaluated and mapped in GIS with special emphasis on traffic and noise impacts as well as biological permitting and mitigation. Plan and Final Report were generated as part of this project. **($350K)**

Mira Sorrento Place Road Extension, City of San Diego, California. Task Manager for the civil design and environmental compliance studies associated with this road extension. Principal issues for evaluation included soils and slope stability, surface water hydrology, construction impacts, and cultural resources. Also helped prepare land use analysis

technical report. This project won an Association of Environmental Professionals (AEP) award for environmental documentation. **($85K)**

Miramar Hills Curve Realignment/Second Main Track EIR, North County Transit District (NCTD), San Diego, California. Task Manager for preparation of an Environmental Impact Report for proposed realignment and second main track through Soledad Canyon in San Diego, California. Served as task leader for land use impacts analysis and helped coordinate preparation of the Environmental Impact Report. **($85K)**

SONGS Unit 1 Reactor Pressure Vessel Transport Project. Task Managed preparation of a NEPA EA on Marine Corps Base Camp Pendleton and in other aspects of project permitting, including permitting through the California Coastal Commission. **($85K) 2002-2003**

Carmel-Valley Road Improvements, City of San Diego/Caltrans, California. Task Manager for the CEQA compliance for the controversial Carmel Valley Road Project. After extensive coordination with permitting agencies and the community, an EIR was prepared to evaluate the effects of improving Carmel Valley Road between Interstate 5 and the Pacific Coast Highway. Oversaw mapping which included potential wetland impacts due to the expansion of the roadway. **($300K) 2000**

State Route 56 EIR, City of San Diego, California. Task Manager for the State Route 56 (SR-56) EIR and associated studies. The project involved working closely with the City on preparation of biological and land use constraints analyses consistent with the MSCP and City MSCP Subarea Plan, which were finalized during the SR-56 study process. Using GIS background data, a database was updated through focused biological surveys, including surveys for sensitive chaparral plant species, the California gnatcatcher, vernal pools and San Diego fairy shrimp, and wetlands delineations. Assisted in an analysis using GIS MSCP data to facilitate a potential MSCP boundary adjustment for a parcel near the Camino Ruiz interchange. Section 404/401 and 1601 permit applications were performed using the updated MSCP dataset, and mitigation ratios were based on City MSCP plans. **($400K) 2000**

Miramar Road Pipeline Project, San Diego County, California. Task Manager for evaluating potential project impacts to noise levels, vegetation, and sensitive species in the project area. Also incorporated a VISTA (site assessment and remediation) database to evaluate hazardous materials sites in and around the project location.

Pacific Street Bridge, City of Oceanside, Oceanside, California. Task Manager for review of potential impacts relating to three proposed bridge alternatives in Oceanside California. Very controversial as bridge was within the coastal zone and above wetlands. Presented paper and won

technical symposium award on behalf of the City of Oceanside for use of innovative GIS modeling to calculate past wetland impacts.

GIS Database Development and Support, San Diego Unified School District, California. Project Manager responsible for creating a complete geospatial GIS database for ongoing analysis and Phase I environmental site assessments for 30 proposed school sites. Over 30 environmental and manmade constraint layers were incorporated. A complete historical survey of potential hazardous sites was also researched and mapped into the GIS. Over 120 exhibits were generated for ongoing environmental, Phase I, and public-outreach efforts.

McClellan Palomar Airport Noise Compatibility Study, County of San Diego, California. GIS Manager responsible for creating existing, 5-year, and 10-year projected GIS land use databases. The databases were then used to help evaluate noise conditions and help in GIS/noise modeling efforts. Over 400 GIS man-hours were used to create, update, and generate these all-encompassing databases and complete analysis for preparation of the supporting Part 150 FAA document. The final product was also converted to Global Environment Management System format for use at the airport facility. GIS models, exhibits, and materials were focal points for community planning meetings/forums.

GPS Survey and GIS Database Development, Port of San Diego, California. Project Manager responsible for overseeing field crew collection of drain, inlet, and pipe information in GPS format. A complete version of the populated data was entered into a personal geodatabase format for delivery to the client. An FGDC-standard data dictionary and complete metadata were also included in the deliverable. GPS training of Port of San Diego staff was also included so that in-house staff could make necessary future updates to the GIS database.

Otay/Kuchamaa GIS Database Development, Biological Monitoring Plan, and Cultural Resource Study, Bureau of Land Management, California. GIS Manager responsible for creating a geospatial, FGDC-standard GIS database. GIS data from over 30 private and public agencies were integrated. Over 130 data layers were compiled, reviewed, corrected, and integrated to form one consolidated, easy-to-use database for planners, biologists, archaeologists, and other specialists within the Bureau of Land Management (BLM). A complete data dictionary, including complete FGDC standard metadata, was completed for the project. Also managed installation and training for all staff at three BLM offices. Following completion of the database, a biological monitoring plan and cultural resource document were prepared. This project won the Association of Environmental Professionals' 2002 "Outstanding Environmental Solution" award.

County Trails Assessment, County of San Diego, California. Project Manager for the San Diego Trails Assessment assisting the County of San Diego (County) with preparation of a long-range strategy for non-

motorized recreational trails. The effort included completion of a comprehensive trails system assessment. The County's existing, planned, and proposed trails were documented, along with types of trails (hiking, equestrian, and biking), user groups, and frequency of use. An opportunities and constraints analysis was conducted documenting existing physical and environmental constraints, including land uses, recreation, Multiple Species Conservation Program (MSCP) lands, sensitive ecosystems, and public lands. The environmental approach describing required National Environmental Policy Act and California Environmental Quality Act documentation was also included. Alternative trail systems were evaluated with regard to environmental, public demand, and financial conditions. All conditions were mapped with GIS.

Black Mountain Water Treatment Plant EIR, County of San Diego, California. Task Manager for an EIR for a proposed 42-acre water treatment plant within Black Mountain Ranch Subarea I boundaries. The proposed site is adjacent to and partially within the Multi-Habitat Planning Area (MHPA). MSCP GIS data layers for regional vegetation, sensitive species, and the MHPA boundaries were used as baseline information for the project analysis. Imported MHPA boundaries from regional data were incorporated into project GIS maps. Findings relevant to a boundary adjustment analysis were presented in the Biological Resources section of the EIR and in the biology technical report.

Environmental Services for Emergency Storage Project, San Diego County Water Authority, California. Task Order Manager for visualization and related project components of the first five-year phase of the $760 million contract. The Authority's proposed 24,000-acre-foot reservoir and dam are key components to solving regional water-storage needs. One task was to create a "dynamic" model that could incorporate data layers from over 20 different consultants. Built this three-dimensional geospatial model in GIS for resource specialists to analyze impacts to environmental resources, including biology, cultural resources, and water quality. Won several technical/GIS awards for work on this project.

East Otay Mesa Specific Plan, San Diego County, California. Task Manager assisting the County in its efforts to amend the Specific Plan for the 3,300-acre East Otay Mesa Specific Planning Area as documented on the County's MSCP Subarea Plan. The proposed amendment would modify previously approved land use designations and conservation areas within the SPA. Analyses conducted would also be used to process a minor amendment to the County's MSCP Subarea Plan, as well as a boundary adjustment to MHPA boundaries. MSCP GIS data layers for regional vegetation, sensitive species, and MHPA boundaries were analyzed as baseline information to plan current biology field survey needs and for project analysis. The regional GIS vegetation database is being updated via ongoing surveys, and all past and current data will be assessed to revise conservation boundaries and development constraints and opportunities within the SPA.

Hopewell National Historic Park Ethnographic Overview, National Park Service, Chillicothe, Ohio. Task Order Manager for the document prepared to address park ethnography. The document focused on the park's dedication to preservation and interpretation of the Hopewell culture. The park contains nationally significant archeological resources, including large earthwork and mound complexes that provide an insight into the social, ceremonial, political, and economic life of the Hopewell people. All aspects of the project were mapped, analyzed, and presented in the document in GIS format.

Biscayne National Park Ethnographic Overview, National Park Service, Biscayne National Park, Florida. Task Order Manager providing a complete ethnographic overview of Biscayne National Park, which is in Biscayne Bay and the offshore waters along the Atlantic Coast south of Miami in Miami-Dade County, Florida. The park encompasses almost 173,000 acres and has relatively pristine estuarine and marine environments. Several off-shore GIS databases were compiled, analyzed, integrated, and exhibited for this project.

City of San Diego As-Builts Project, San Diego, CA. Project Manger for the compilation for final As-Built drawings and files for water/wastewater resource projects completed by URS over ten years ago. Tracked all final CAD fines and drawings down, updated as necessary via engineering mark-ups and presented all to City of San Diego for final processing.

Pelagic Fisheries EIS, National Marine Fisheries Service, Hawaii. Task Order Manager analyzing impacts on the human environment resulting from management of U.S. pelagic fisheries under the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region (Pelagic FMP). Analyzed environmental impacts caused by fisheries managed under the FMP. The EIS provided a comprehensive overview of pelagic fisheries conducted under the FMP and their effects, as well as described management actions that would mitigate such negative effects. All fisheries information was cataloged, integrated into database format, and loaded into GIS for ongoing efforts.

Raising of the Ehime Maru, U.S. Navy, Southwest Division, Honolulu, Hawaii. Created the visual simulation to show the raising of the Ehime Maru, the Japanese fishing vessel sunk by a nuclear submarine in Hawaii. Worked with the Navy to help visualize raising the ship from a 6,000-foot depth to an approximately 150-foot depth to recover those that perished in the accident. Created visual simulations to show how the Ehime Maru, barge, and subsequent equipment would be positioned once the move occurred.

Salton Sea Geotechnical Study, Imperial County, CA. Task Manger for the Geographic Information Systems (GIS) component of the Salton Sea geotechnical evaluations. GIS was used to help map boring locations and track resources within the area.

Midcoast Transportation Study, San Diego County, CA. Task Manger for the traffic and transportation study of the Midcoast transportation corridors. Geographic Information Systems were utilized to help review potential constraints including slope issues and other environmental and manmade constraints potentially affecting the project.

Agua Caliente New Casino Project EA, Agua Caliente Indian Reservation, San Diego County, California. Managed the visual component for the Casino, as well as the subsequent signage components for the project. GIS and aerial images were combined to produce a base. CAD and GIS files were incorporated and extruded adding the Casino, subsequent parking structure, and later signage components to the overall assessment. Key observation points were identified and photographs from each of these points taken. The models were eventually placed in these photographs for realistic representation. **(2001)**

San Diego Unified School District Administrative Space Study, San Diego, CA As GIS and CAD Manager, provided analysis and graphics of the buildings for conducting a Space Utilization Study, development of Space Requirement Report, Alternatives and Cost Estimates, and the final report describing methodology, information obtained, alternatives considered, and preferred alternatives.

Emergency Response/Emergency Planning Projects

City of San Diego Flood Mitigation Plan, San Diego County, CA. Project Manager for the Flood Mitigation Plan (FMP). Coordinated with the City of San Diego, State Office of Emergency Services, and FEMA to coordinate a risk assessment, vulnerability analysis and complete mitigation measures for the Plan. Planning efforts also included managing public outreach measures, including hosting public meetings, flyer generation and website development with the City of San Diego. The project will allow the City of San Diego to continue to receive mitigation funding for flood-related mitigation projects from FEMA.

County Hazard Mitigation Implementation Plan, San Diego County, CA. Project Manager for the Implementation of the San Diego County Multi-Jurisdictional Hazard Mitigation Plan (HMP). Coordinated with the County Office of Emergency Services and all eighteen incorporated cities to implement mitigation strategies identified in the HMP. Responsible for press releases, county- and jurisdictional-level working group meetings and public notices, information flyer development and GIS updates relating to the county-wide efforts.

Multi-Jurisdiction All Hazard Mitigation Plan, Municipal Water District of Orange County, CA. Deputy Project Manager for the for the preparation of a confidential hazard mitigation plan for all natural and man made hazards for 20 water districts in Orange County. Oversaw GIS coordination of assets and hazards information, Hazard analysis and write-up,

risk assessment, vulnerability assessment, and mitigation strategy preparation. Coordinated working group and district-level meetings.

San Diego Gas & Electric Seismic Study, San Diego County, CA. Task Manger for the Geographic Information Systems (GIS) component of the project. CAD and GIS were utilized to map and analyze seismic issues within right-of-ways for the San Diego Gas & Electric transmission systems and owned facilities. Geotechnical data was input into GIS and distributed to agency following the project.

Multi-hazard Mitigation Plan, Viejas Band of Mission Indians, San Diego County, CA. Deputy Project Manager for the preparation of the tribe's Hazard Mitigation Plan (HMP). Coordination of GIS efforts and write-up of Planning document. Also facilitated tribal council meetings, public and inter-agency workshops. Helped develop risk assessment, vulnerability analysis and tribe's mitigation strategy, and provided general oversight of preparation of the HMP. **(2001)**

Multi-hazard Mitigation Plan, Oregon Tribal Hazard Mitigation Plans, OR. Task Manager for the preparation of three tribal Hazard Mitigation Plans. Oversaw GIS elements for project which included a Hazard Analysis, Risk Assessment, and Vulnerability Assessment. Coordination of GIS efforts and write-up of GIS-related sections of planning document. Provided QA/QC of all GIS efforts.

US Postal Service Landslide Susceptibility Studies, Western US. Project Manager for the preparation of landslide susceptibility studies for all postal offices within the western United States. Working under an on-call contract with FEMA, URS helped evaluate potential at-risk post office locations following torrential rains in California. Focusing on California, and then moving toward the western United States, Ms. Leiba worked directly with USPS and FEMA to help with this evaluation.

Multi-hazard Mitigation Plan, Concow Maidu (Mooretown Rancheria), Sacramento Area, CA Deputy Project Manager for the preparation of the tribe's Hazard Mitigation Plan (HMP). Oversaw GIS elements for project which included a Hazard Analysis, Risk Assessment, and Vulnerability Assessment. Coordination of GIS efforts and write-up of GIS-related sections of planning document. Provided QA/QC of all GIS efforts.

Federated States of Micronesia (FSM) Multi-State Hazard Mitigation Plan, Federal Emergency Management Agency (FEMA), Government of FSM/National Emergency Management Office (NEMO). Project Manager for the multi-state FSM Hazard Mitigation Plan. As a recognized county who is eligible under compact with the U.S. for FEMA funding, the FSM government hired URS to help prepare the Plan. The FSM is made up of four states, Pohnpei, Kosrae, Chuuk, and Yap covering over 1,000,000 miles of ocean including over 605 islands. Managed extensive public outreach efforts held throughout the islands during the project. Prepared Public Participation Plan

including federal website uploads, press releases, public meeting materials/preparation/and presentations, working group participation and data collection, agency and interested party site visits and interviews and more. The Plan included a complete risk assessment, vulnerability analysis, and separate mitigation strategies for each State. **(2005)($150k)**

Guam Hazard Mitigation Plan, Federal Emergency Management Agency (FEMA), Guam. Task Manager in support of planning and GIS-related efforts for the Guam Multi-Hazard Mitigation Plan. Helped with QA/QC of Plan, GIS analysis and HAZUS-99/HAZUS-MH modeling, input to public outreach efforts, and general planning team support. The Plan included a complete risk assessment, vulnerability analysis, and mitigation strategy.

Multi-Jurisdictional Hazard Mitigation Plan, Federal Emergency Management Agency (FEMA), Office of Emergency Services (OES), County of San Diego, CA. Deputy Project Manager for San Diego County's Multi-Jurisdictional Multi-Hazard Mitigation Plan. Oversaw Plan preparation, GIS analysis and HAZUS-99/HAZUS-MH modeling, public outreach efforts, and individual jurisdiction support. The Plan (including a separate "For Official Use Only" attachment for manmade hazards) was over 750 pages, included production of over 100 maps for 18 jurisdictions and the County, and covered 4,264 square miles. Riskbasilo9 assessment, vulnerability analysis, and mitigation strategies were generated for each jurisdiction. Coordinated all working group meetings, encompassing public officials/staff, fire/police/emergency personnel, public/private organizations and citizens; over two dozen individual jurisdictional meetings, and all public meetings held over the two-year project life. Project won two awards including Outstanding Environmental Document from the Association of Environmental Professionals and a National Award through the National Association of Counties. **(2004)($250k)**

Twenty-seven (27) Single Jurisdiction Hazard Mitigation Plans, Federal Emergency Management Agency (FEMA)/Office of Emergency Services (OES), Individual Jurisdictions within County of Maricopa, AZ. Provided peer review for the twenty-seven (27) separate single-jurisdictional DMA 2000 plans for the cities within Maricopa County, Arizona. GIS review included analysis of GIS HAZUS 99/HAZUS-MH modeling results. Reviewed compilation of results for risk analysis/loss estimation portions of document.

Statewide Hazard Mitigation Plan, Federal Emergency Management Agency (FEMA)/Office of Emergency Services (OES), State of Arizona. Provided peer review for the State-wide Plan. GIS Peer review included GIS HAZUS 99/HAZUS-MH modeling results. Peer reviewed compilation of all results for risk analysis/loss estimation portions of document preparation. **(2004)**

Urban Area Security Initiative, City of San Diego/Federal Emergency Management Agency (FEMA). Participated in the analysis and compilation of a wide-variety of complex, highly confidential source data for the completion of the Urban Area Security Initiative (UASI). This project included analysis of potential hazardous materials release/weapons of mass destruction analysis, including morbidity, mortality, and damage assessments. The preparation of mitigation measures was also a component of this project.

California Firestorm 2003 Modeling/Mapping, Federal Emergency Management Agency (FEMA)/California Office of Emergency Services (OES), Los Angeles, San Bernardino, Ventura, Riverside, San Diego Counties; California. Project Manager responsible for floodplain assessment, database generation of reaches affected, and mapping of approximately 770,000 acres of presidential declared disaster burn areas in Southern California. Emergency reaches were identified and tabulated. HEC-GEORAS hydraulic models were then generated and incorporated into GIS for 5- and 100-year flood zones. Data for over 5 counties were analyzed, field verified, H&H modeled, and mapped for upload onto the Federal Emergency Management Agency website in 3 weeks. Over 100 maps were generated in only 2 days. **(2003-2004).**

Flood Modeling Projects

Digital Flood Insurance Rate Map (D-FIRM) Mapping; Federal Emergency Management Agency (FEMA), Map IX-Mainland Joint Venture, Napa County, San Mateo County, Alameda County, Marin County, Sacramento County, Sonoma County, Tulare County, Monterey County, and Solano County CA; Maui County, HA,. Project Manager for the Joint Venture Project with URS Corp. and Dewberry. FEMA is undertaking a nationwide effort to update and convert hard-copy flood maps for the entire nation to digital geographic information system (GIS) electronic data. FEMA has tasked the partnership with creating these "geodatabases" containing over fifty layers of updated flood information per County. After compiling local, state and federal data, each database was converted to federal standards and detail checked for accuracy. Once complete, quad-scale maps were produced for each county (100-200 maps per county). Each map was then quality assured/quality checked for accuracy. Agencies, local governments, and the public will utilize the geodatabases and corresponding maps to help analyze flood risks in their communities. **(2005).**

Federal Emergency Management Agency Post-Fire Floodplain Mapping, San Diego, Riverside, San Bernardino, Los Angeles, and Ventura Counties, California. Task Manager responsible for floodplain assessment, database generation of reaches affected, and mapping of approximately 770,000 acres of presidential declared disaster burn areas in Southern California. Emergency reaches were identified and tabulated. HEC-GEORAS hydraulic models were then generated and incorporated into GIS for 5- and 100-year flood zones. Data for over 5 counties were analyzed, field verified, H&H modeled, and mapped for upload onto the

Federal Emergency Management Agency website in 3 weeks. Over 100 maps were generated in only 2 days. **(2003-2004).**

Floodplain Management Study and Plan, Viejas Indian Reservation, California. Task Manager responsible for floodplain modeling, mapping, and drainage system assessment. The contract also required storm water management support, reporting, and data presentation. Floodplain modeling included historical flood information, complete topographic survey, and computer simulations/models of studied flood classes, calibrating and verifying the hydrological model to historic floods, and establishing a design flood behavior. HEC-GEORAS hydraulic models were generated through GIS.

Chollas Creek Wetlands Management Plan, San Diego County, California. Task Manager responsible for obtaining GIS data overlays, including data mapped for the MSCP study purpose and updated information. Worked with biologists to create a GIS database that included creek conditions, existing wetlands and sensitive biological resources, parcels and ownership, and planned development projects. With a HEC2 model created for this project and through intensive GIS modeling, sites along the creek needing wetlands management were identified. Also participated in development of presentation material for three community meetings using GIS/HEC-RAS three-dimensional models and information.

Rio de Flag Flood Control Study, Los Angeles Army Corps of Engineers, Rio de Flag, Arizona. Task Manager responsible for GIS modeling/mapping for the Los Angeles Corps of Engineers (LACOE) for impacts relating to possible flooding of the lower Rio de Flag drainage. Erosion-control issues were incorporated into the analysis. Three-dimensional modeling in GIS was performed using the LACOE's HEC-RAS extension. Special attention was also given to manmade alterations of the stream's channel made in the early 1900s.

Murrieta Creek Flood Control BCR and EIS/EIR, LACOE, Los Angeles, California. Working with the LACOE, Task Managed modeling to help determine possible impacts associated with the Murrieta Creek Flood Control project. Some major modifications assessed were (1) removing the B Street bridge, (2) constructing a bridge over Ivy Street, (3) replacing the Washington Avenue bridge, (4) modifying detention/collection basins, (5) assessing equestrian trails, (6) assessing bicycle/pedestrian trails, and (7) replacing the Main Street bridge. Using HEC-RAS and GIS, environmental impacts associated with these studies were mitigated. **(2000) (Task $300k)**

San Timoteo Creek EIR/EIS, Riverside, California. Complex GIS analysis and mapping was conducted to help evaluate biological, cultural, social, and other potential environmental impacts from proposed enhancements for flood control at San Timoteo Creek, which drains a watershed of approximately 126 square miles of the San Bernardino Mountains and foothills in eastern Riverside and San Bernardino counties.

The San Timoteo Creek study area falls within several small communities, including Redlands, Colton, Loma Linda, and San Bernardino, California. The study area, which includes the 100-year floodplain of San Timoteo Creek, extends along San Timoteo Creek from a short distance downstream of Alessandro Road west to the confluence with the Santa Ana River in San Bernardino.

Military Planning Projects

Naval Base San Diego Asset Evaluation, Department of the Navy, San Diego, CA. Project Manager responsible for the oversight of the drafting of the floor plans and the GIS conversion process of data into SDSFIE compliant GIS forma for updating of Property Record Cards and Facility Planning Documents of the floor plans and space utilization data for more than 800 buildings in the metro San Diego Area spread across Naval Bases Point Loma and San Diego.

Naval Special Warfare Group 1(NSWG-1), Naval Amphibious Base (NAB, Department of the Navy, Coronado, CA
As GIS and CAD Manager, provided oversight for analysis and graphics of the buildings on NAB for Asset Evaluations (AE), development of Basic Facility Requirements (BFR), and preparation of a Facilities Development Plan to support future development of NSWG-1. This project includes development of Special Project or MILCON projects to eliminate existing facility deficiencies.

Naval Base Point Loma AOP, Department of the Navy, San Diego, CA
As GIS and CAD Manager, provided oversight for analysis and graphics of the buildings on NBPL. The goal of the RSIP (Regional Shore Infrastructure Plan) was to develop a program of capital improvements which alleviate deficiencies through adaptive reuse, consolidations, facility expansions and new construction, and to reduce shore infrastructure costs associated with excess and underutilized facilities. The Overview Plan will also include recommendations for improvements to meet DoD standards for Anti-Terrorism/Force Protection.

Naval Base San Diego AOP, Department of the Navy, San Diego, CA
As GIS and CAD Manager, provided analysis and graphics of the buildings on NBSD. The goal of the RSIP (Regional Shore Infrastructure Plan) was to specifically address regional land and facility requirements from a functional point of view for Naval Base San Diego. Development included conducting data collection through site visits, questionnaires, interviews, and a visioning workshop with NBSD tenants. The RSIP identifies and aligns future infrastructure investment strategies with CNO guidance and Navy regional planning objectives of reducing footprints and costs, increasing existing capabilities and sustainability, and maximizing efficiencies.

Naval Base Coronado Asset Evaluation, Department of the Navy, San Diego, CA. As GIS and CAD Manager, provided oversight of the CAD and GIS conversion process of data into SDSFIE compliant GIS format for updating of Property Record Cards and Facility Planning Documents of the floor plans and space utilization data for more than 2,000 buildings in the metro San Diego Area.

Powerplant Siting Study, ENPEX Development, Marine Corps Air Station, Miramar, CA. Task manager for GIS components of powerplant siting study. Worked to develop model of environmental and man-made constraint information, compiled GIS model and mapping elements to show areas with potential for site development. Coordinated with Air Station, agency, ENPEX and sub-consultants to identify, gather and reconcile relevant GIS data for project.

Basilone Road Realignment, Marine Corps Base Camp Pendleton, CA. Task Manager for realignment of Basilone Road. Oversaw GIS database development, GIS mapping and analysis and all electronic database development in support of the Environmental Assessment. Oversaw coordination with Base and agency GIS contacts. **(2005) (Approx $350k).**

Advanced Amphibious Assault Vehicle, MCAS Camp Pendleton, California. Task Manager for an EA/BA and subsequent EIS. Oversaw creation of a suitability model to break down the 125,000-acre-plus military area into military maneuver suitability classes. The model analyzed slope restrictions, incorporated seasonal habitat information, and added over two-dozen environmental and manmade constraint layers. **(2000) (Approx $350k).**

Flood Repair-MCAS Camp Pendleton, MCAS Camp Pendleton, California. Task Manager overseeing extensive GIS mapping and modeling. Several environmental constraint, developmental, and flood-related layers were entered into a GIS/HEC-RAS model to help determine flood repair areas on base. Drainage information, precipitation information, and slope were just a few such entries. The model and data layers were installed at the base upon completion of the project so that the MCAS Camp Pendleton GIS department could analyze and use the data results for its ongoing future planning efforts. Specialized training was provided to the base to help with future flood-related potential impact assessments. **(2004) ($100k).**

San Clemente Island Ranges Environmental Assessment, Los Angeles County, CA. Task Manager responsible for analysis, and map preparation for the environmental assessment and Coastal Consistency Determination for Small Arms, Demolition Ranges, and Training Areas, including biological resource survey mapping/analysis and cultural resource investigation support services. **(2000) (Approx $150k)**

Regional Shore Infrastructure Plan, San Diego County, California. Task Manager responsible for analysis and mapping support for investigating three complexes. Also prepared analysis/modeling/and support mapping for natural resources, biological, cultural and historical data inventory.

Long Beach Naval Complex EIS/EIR, Los Angeles County, California. Task Manager responsible for analysis and mapping in support of the preparation of an EIS/EIR to evaluate the future environmental consequences of three alternatives for reuse of the 1,229-acre site, including an adaptive use feasibility study for the Roosevelt Base Historic District. The adaptive use feasibility study received an award for cultural resource reports from the California Preservation Foundation. **(1998)(Approx $300k)**

Conforming Storage Facility Environmental Assessment, MCB Camp Pendleton, San Diego County, California. Analyst involved in analysis and mapping for preparation of an environmental assessment that analyzed the environmental consequences associated with three alternative sites for a proposed conforming storage facility for hazardous wastes and hazardous materials.

Tomahawk Land Attack Missile Program, San Clemente Island, Los Angeles County, California. Task Manager responsible for modeling/analysis, database compilation, and mapping relating to the preparation of an environmental assessment in support of the Tomahawk Land Attack Missile Program to consider effects of proposed test flights of land and sea launches at San Clemente Island.

MCAS Camp Pendleton Airfield Environmental Assessment, San Diego County, California. Analyst responsible for analysis relating to the preparation of an addendum to a 1988 environmental assessment for airfield improvements. The project included mapping sensitive species, calculating impacts to wetlands, and preparation of maps in support of the Corps of Engineers Section 404 Permit application and the Regional Water Quality Control Board Section 401 water quality certification and waiver request.

Others:
Miramar Landfill Reuse Plan, San Diego, California. Task Manager for landfill reuse plan. Sub-consultant to Onyx Group.
MCAS El Toro Closure EIS, Santa Ana, California. Oversaw analysis related to preparation of the environmental impact statement relating to the closure of MCAS El Toro. **(1996) (Approx $500k)**
MCAS Yuma EIS, Yuma, Arizona. Analyst for the preparation of the environmental impact statement relating to MCAS Yuma.
NAB Coronado EA, BA, and OTMMP, San Diego, California. Analyst for the preparation of several environmental documents for NAB Coronado.
Long Beach Shipyard EIS, Long Beach, California. Analyst for the preparation of the environmental impact statement.

Wire Mountain Housing EA, San Diego, California. Analyst for the preparation of the environmental assessment.
San Clemente Island OMP, Los Angeles, California. Oversaw analysis related to preparation of an operations management plan.
MCAS Camp Pendleton P-633 and 527B Archaeological Testing and Surveys, San Diego, California. Task Manager for archaeological mapping component.
Santa Margarita Complex Archaeological Surveys, San Diego, California. Task Manager for archaeological mapping component. Extensive historical modeling/mapping of the area was included.
Chocolate Mountain Aerial Gunnery Range, California. Task Manager for mapping related to archaeological surveys/reports.
NAVSTA Pier 10/11 EIS, California. Analyst for the preparation of the EIS. Sub-consultant to SAIC.
Deluz Housing EA, SWDIV, California. Analyst for the preparation of the environmental assessment of proposed new housing.
Yermo Test Track EA, SWDIV, California. Analyst for the preparation of the environmental assessment for the Yermo Test Track.

JASON PFAFF

VISUAL SIMULATIONS SPECIALIST

YEARS OF EXPERIENCE
16

EDUCATION
> B.S., Landscape Architecture, University of Idaho, 1993

SEMINARS
> AIA Luncheon Series, Guest Lecturer, 2007
> Idaho Transportation Department, Road Builders Conference, Guest Lecturer, 2006
> Virtual Fire Training Lecturer, Long Distance Learning Center, Boise, ID
> University of Idaho Department of Landscape Architecture, Guest Lecturer "Applications for Virtual Technology in Planning," 2005
> IHEEP (International Highway Engineering Exchange Program) "Applications in visualization technology," 2004
> EPA Collaborative Communities Conference, Guest Lecturer, 2004
> International Highway Engineering Exchange Program, Guest Speaker, 2004
> Applications in Graphic Communication, 2003
> Idaho AICP Planning Conference Guest Lecturer - Planning Technology, Presented to Idaho AICP, 2002
> Civil Engineers Work Session, Applications in Visualization Technology, 2001
> 4th District Bar CLE, Applications of Simulation Technology in the Courtroom, 2000
> AutoCAD/3-D Studio Applied in Landscape Architecture, Assistant Instructor, 1991-1992

EXPERIENCE SUMMARY

Mr. Pfaff is an expert in the creation of visual solutions relating to planning, engineering, architecture and litigation. He specializes in scenic inventory, agency visual management systems, visual analysis reporting, visual simulations, data visualization, and public presentation and graphics. Mr. Pfaff has extensive experience in the field of visualization technology, environmental planning, GIS development and marketing. His responsibilities include overall project development, project management, client correspondence, GIS visualizations, video and DVD authoring, and 3-D modeling and rendering.

URS, Wind Study, Idaho

Visualization Specialist preparing and managing the development of 8 photosimulations of a proposed wind farm located in southern Idaho (location withheld). The photosimulations were developed to aid planners in mitigating the visual impacts. Additionally, photosimulations were used during the regulatory process.

URS, Cotterel Wind Study, Idaho

Visualization Specialist for a proposed wind farm located along the Cotterel Mountains in Idaho. Visualizations were developed to support the public input and regulatory review process. Information was well received, and aided in the approval of this controversial project.

NorthWestern Energy, Mountain States 500 kV Transmission Intertie Montana Major Facility Siting Act Application and Environmental Report, Multiple States

Visualization Specialist responsible for developing animations for a proposed 400-mile, 500 kV transmission line in Montana and Idaho. Animations described the purpose of the project and general routing. Micro-scale animations described the visual impacts in areas where the transmission line is crossing residential land uses. POWER is supporting the client in obtaining federal, state and local permits and approvals for a 400-mile, 500 kV transmission intertie from Montana to southern Idaho. POWER prepared a Montana Major Facilities Siting Application and an Environmental Report to facilitate the environmental review processes under NEPA and MEPA, and is now providing support for development of the EIS by the third-party contractor. The BLM and Montana Department of Environmental Quality are lead agencies for the process, which will analyze alternative routes and select a preferred route and substation sites for the project. The environmental analysis includes land use, visual, cultural, biological, water, and earth resources. POWER's scope includes development of cost estimates for line route alternatives, design criteria, equipment specifications, and design documents to support the environmental analysis.

AREAS OF EXPERTISE

> Visualization technology
> Federal agency visual management systems and methodology
> Environmental planning (visual resources)
> Public involvement
> Public hearings
> Litigation support

PacifiCorp, Gateway West 500 kV and 230 kV Lines, Multiple States

Visualization Specialist responsible for producing simulated videos for the public involvement program for the 500 kV Gateway West transmission project. Separate videos depicted a flyover of the full length of the more than 1,100 miles of alternatives considered for the lines, details to explain the selection of certain segments, and the line's impacts to timber removal and agricultural operations. The project will result in the construction of approximately 920 miles of 500 kV and 230 miles of 230 kV transmission line segments from a new substation at Glenrock, Wyoming, to a new substation southwest of Boise, Idaho. POWER is assisting in the process of obtaining required environmental permits and is completing the initial engineering for the project.

Idaho Power Company, Boardman to Hemingway Transmission Line EIS, Idaho and Oregon

Visual Simulation Manager to develop a series of animations for the regulatory compliance and public involvement process for the environmental review of a 230 kV transmission lines. The animations described the purpose and need, existing conditions, opportunities and constraints and subsequent project mitigation that will be described in the 260-mile project's EIS with the BLM as the federal lead agency.

Progress Energy, Inglis Island Transmission Line, Florida

Visual Simulations Manager for the development of a 10-minute animation of the Inglis Island transmission line project. The animation served as a project summary for public involvement and regulatory review. Inventory, opportunities and constraints, alternatives analysis and final route description was conveyed in the video.

Central Maine Power, Farnum Substation, Maine

Visual Simulation Manager for the development of a full 3-D model of the Farnum Substation. The 3-D model was developed into an animation to describe vehicle circulation and equipment maintenance operations.

Alabama Power, Grelot Transmission Project, Alabama

Visual Simulation Manager for the development of a four-minute animation of the Grelot transmission line project in response to public concerned with the right-of-way and its proximity to existing neighborhoods. The animation served as a project summary for public involvement and regulatory review. Inventory, opportunities and constraints, alternatives analysis and final route description was conveyed in the video.

EXPERIENCE SUMMARY

Mr. Dadswell has 17 years experience managing and conducting social and economic studies and impact analysis. Specific project experience includes transmission lines, power plants, and pipelines; hydroelectric facilities; timber sales; land exchanges; military base closures; and port development. Mr. Dadswell has served as Social Science lead on projects located in California, Wyoming, Washington, Alaska, Oregon, Idaho, Montana, and Colorado, and elsewhere in the United States.

EDUCATION

PhD Candidate, Economic Geography, 1995 to 1997, University of Washington
MA, Economic Geography, 1990, University of Cincinnati
BA, Economics and Geography, 1988, Portsmouth Polytechnic, England

TRAINING

BLM Training Course No. 1610-12: Social and Economic Aspects of Planning. Denver, CO. 2005
Introduction to ArcView GIS. Seattle, WA. 2002
NEPA Economic Analysis Tool (NEAT) Training, USDA Forest Service. Juneau, AK. 2002
How to Manage the NEPA Process, The Shipley Group. Seattle, WA. 2001
NEPA: EA/EIS Preparation and Documentation Workshop. Albuquerque, NM. 1993

PROJECT EXPERIENCE

Senior Social Scientist, 2010
Southeast Conference and USDA Forest Service, Kake-Petersburg Intertie Transmission Line Project EIS, AK. Deputy project manager and Interdisciplinary Team Leader for a NEPA EIS to evaluate a proposed 40-mile-long 500-kV transmission line project in Southeast Alaska. Technical responsibilities include socioeconomics, subsistence, recreation, and visual resources.

Senior Social Scientist, 2009 to Present
Bonneville Power Administration, Central Ferry-Lower Monumental 500-kV Transmission Line Project EIS, WA. Project manager for a NEPA EIS to evaluate a proposed 40-mile-long 500-kV transmission line project in Columbia, Garfield, and Walla Walla counties, Washington. Prepared the socioeconomic analysis for the project, and evaluated potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, 2009-2010
National Park Service, Wrangell-St. Elias National Park and Preserve, Nabesna Off-Road Vehicle EIS, AK. Worked with the National Park Service on the EIS to assess the impact of off-road vehicles (ORV) within the Nabesna district of the Wrangell-St. Elias National Park and Preserve. Responsibilities include assessing the potential socioeconomic and subsistence impacts of Off-Road Vehicle use on nine trails in the Nabesna District of Wrangell-St. Elias National Park and Preserve.

Senior Social Scientist, 2009
Genesis Solar LLC, Genesis Solar Energy Project, Riverside County, CA
Prepared the socioeconomic analysis for a proposed 250 MW solar generating facility in the Sonoran desert, west of the city of Blythe, California. This analysis addressed the availability of labor for the construction and operation phases of the proposed facility, the potential for workers to temporarily or permanently relocate to the project area, and the impacts this would have on housing and other local and regional socioeconomic resources. Assessed the regional economic impacts of the project using an input-output model developed using IMPLAN modeling software and data. Developed estimates of the property and sales and use taxes associated with construction and operation of the proposed facility. Assessed potential environmental justice impacts.

Senior Social Scientist, 2009
Ketchikan Public Utilities, USDA Forest Service, and U.S. Coast Guard, Proposed Line Extension to the U.S. Coast Guard LORAN Station Shoal Cove EA, Revilla Island, Tongass National Forest, AK. Conducted public scoping for a proposed 10.5 mile extension of an existing 115-kV electric transmission line to the U.S. Coast Guard Long Range Navigation (LORAN) Station Shoal Cove.

Senior Social Scientist, 2009-2010
USDA Forest Service and Western Pacific Timber, Upper Lochsa Land Exchange EIS, ID
Senior Social Scientist responsible for evaluating the impacts of a proposed public/private land exchange between the Forest Service and Western Pacific Timber on social and economic resources and recreation. This exchange involves approximately 68,000 acres spread over three national forests and seven Idaho counties. The social and economic analysis evaluated the impacts of the proposed exchange alternatives on employment and the economy, traditional uses and lifestyles, government taxes and revenues, and land management administrative costs. Potential impacts to employment and the economy included potential effects to the lumber and wood products, recreation and tourism, and agricultural sectors. The tax analysis addressed potential impacts to Federal 25 Percent Fund payments, Payment in Lieu of Taxes (PILT) payments, and Idaho property tax revenues. Estimated changes in administration costs included changes associated with property boundary surveys, resolution of boundary disputes, road maintenance, easement acquisition, and Forest Service Special Use Permit administration. Assessed potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, 2008-2009
USDA Forest Service, White Chuck Road Repair EA, Mt. Baker-Snoqualmie National Forest, WA.
Prepared the recreation, social and economic, and environmental justice assessments for this project, which evaluated road repair alternatives for White Chuck Road. White Chuck Road was damaged by severe flood events in 2003 and 2006.

Senior Social Scientist, 2008
Stirling Energy Services (SES), Solar One, San Bernardino County, CA
Prepared the socioeconomic analysis for a proposed 850 MW solar generating facility in the Mojave desert, east of Barstow, California. This analysis addressed the availability of labor for the construction and operation phases of the proposed facility, the potential for workers to temporarily or permanently relocate to the project area, and the impacts this would have on housing and other local and regional socioeconomic resources. Assessed the regional economic impacts of the project using an input-output model developed using IMPLAN modeling software and data. Developed estimates of the property and sales and use taxes associated with construction and operation of the proposed facility. Assessed potential environmental justice impacts.

Senior Social Scientist, February 2008 to Present
USDI Bureau of Land Management, USDA Forest Service, Wyoming Industrial Siting Council, Idaho Power, and Rocky Mountain Power, Gateway West Transmission Line Project, WY and ID
Evaluated the social and economic impacts of a 1,000 mile, 500-kV electric transmission line extending from close to Casper, Wyoming to south of Boise, Idaho. Compiled and analyzed data for Albany, Carbon, Converse, Lincoln, Natrona, and Sweetwater counties in Wyoming. Worked with federal, state, and local agencies with jurisdiction over the project area. Assessed the availability of labor for the construction and operation phases of the proposed facility, the potential for workers to temporarily or permanently relocate to the project area, and the impacts this would have on housing and other local and regional socioeconomic resources. Assessed the regional economic impacts of the project using an input-output model developed using IMPLAN modeling software and data. Developed estimates of the property and sales and use taxes associated with construction and operation of the proposed facility. Assessed the potential for environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, 2007 to 2009
Public Utility District No. 1 of Chelan County and USDA Forest Service, Entiat 115 kV Transmission Line Program NEPA/SEPA EA, Chelan County, WA
Project manager for a NEPA EA to evaluate a proposed 115 kV transmission line project in Chelan County, Washington. This project was designed to meet the requirements of the USDA Forest Service and BLM, as well as the analysis required under SEPA and the requirements of the Washington DFW and Washington DNR. Managed public scoping, preparation of the EA, response to public comments, and wrote the Finding of No Significant Impact for the USDA Forest Service. Prepared the socioeconomic, land use, and visual resources analyses for the project, and evaluated potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, October 2006 to 2009
Jordan Cove Energy LNG Terminal and Williams Pacific Gas Connector Pipeline Project, Third Party FERC Services, Coos, Douglas, Jackson, and Klamath counties, OR
Provided third party review of draft socioeconomic and transportation resource reports prepared on behalf of the project proponents for the proposed Jordan Cove Liquefied Natural Gas (LNG) Terminal and Pacific Connector Gas Pipeline Projects in Oregon, on behalf of the Federal Energy Regulatory Commission (FERC). Prepared the social and economic and transportation sections for the EIS based on the draft resource reports. Evaluated potential environmental justice impacts.

Senior Social Scientist, April 2008 to Present
Palomar Gas Transmission Project, Third Party FERC Services, Wasco, Clackamas, Marion, Yamhill, Washington, Columbia, and Clatsop counties, OR
Provided third party review of draft socioeconomic, recreation, land use, and aesthetics resource reports prepared on behalf of the project proponents for the proposed Palomar Gas Transmission Project in Oregon, on behalf of the Federal Energy Regulatory Commission (FERC). Prepared the social and economic, transportation, land use, recreation, and visual resource sections for the Draft EIS based on the draft resource reports. Evaluated potential environmental justice impacts.

Senior Social Scientist, 2008
Suncadia LLC, No. 4 Mine Site, Master Planned Development EIS, Kittitas County, WA
Assessed the potential impacts of a 31 acre master planned development in the city of Roslyn on aesthetics and parks and recreation.

Senior Social Scientist, 2008
USDA Forest Service, Review and Evaluation Report on the 2003 to 2007 Helicopter Landing Tours on the Juneau Icefield Final EIS and ROD, Tongass National Forest Service, AK
Prepared the recreation and social and economic components of this analysis, which assessed whether conditions have changed sufficiently to warrant revisions to the 2002 Final EIS and ROD for helicopter landing tours on the Juneau Icefield.

Senior Social Scientist, June 2006 to January 2008
USDA Forest Service, Tongass National Forest Land and Resource Management Plan Amendment, Tongass National Forest Service, AK
Prepared the economic and social, recreation, subsistence, roadless area, and wilderness analyses for a NEPA Draft EIS that evaluated seven alternatives for managing the Tongass National Forest. This project was generated by a Ninth-Circuit Court decision mandating that the Forest redo their Forest Plan. The Court directed the Forest Service to consider a wider range of harvest alternatives and to consider the cumulative effects to wildlife habitat from harvest on private lands as well as on federal land. The Economic and Social analysis addresses the effects of the proposed plan alternatives on the regional economy and local communities, in terms of effects on the timber, recreation and tourism, and other

industries, as well as local land uses, subsistence, and resident recreation. Total (direct, indirect, and induced) impacts were estimated using IMPLAN. The analysis also addressed non-market values and ecosystem services, natural amenities, and quality of life. The economic analysis also assessed the economic efficiency of the proposed alternatives. The Recreation analysis assesses the effects of the proposed alternatives on future recreation supply and demand, in terms of the effects on the supply of types of recreation, recreation places, and developments and demand by residents, tourists, and outfitter/guide businesses. The Subsistence analysis evaluates the potential for the alternatives to affect subsistence resources and focuses on three key factors identified in Title VIII of the 1980 Alaska National Interest Lands Conservation Act (ANILCA): 1) resource distribution and abundance, 2) access to resources, and 3) competition for the use of resources. The Roadless Area analysis assesses the alternatives in terms of Land Use Designations and the portions of roadless areas that would be available for harvest under each alternative. None of the alternatives propose new wilderness, but there would be some variation in wilderness management under the alternatives. These variations are evaluated in the Wilderness analysis.

Senior Economic Analyst, August 2005 to January 2007
Washington State Department of Archaeology and Historic Preservation, Historic Preservation Economic Impact Study, WA
This study, co-authored with Dr. William Beyers of the University of Washington, measured the economic impacts of historic rehabilitation and heritage tourism on Washington State and provided separate assessments of these effects for King, Pierce, and Spokane counties. This analysis also estimated the economic impacts of investments in the nine Main Street communities in Washington State. These impacts were measured using the Washington State input-output model, with separate county-specific models developed to assess the impacts for each of the three counties. Impacts were assessed in terms of total output (sales), employment, labor income, and tax revenues. The analysis also assessed the effects of historic designation on property values for four single-family, residential Historic Districts in four cities: Bellingham, Ellensburg, Spokane, and Tacoma. These effects were assessed using a paired comparison approach that compared the values of properties within the subject Historic District with similar properties in other comparable neighborhoods that have not received historic district designation.

Senior Social Scientist, October 2005 to April 2008
Bonneville Power Administration, Rebuild of Libby (FEC) – Troy Section of Libby-Bonners Ferry 115-kV Transmission Line, NEPA EIS, Lincoln County, MT
Managed Tetra Tech's contract with BPA for various technical services related to the rebuild of 17 miles of existing 115 kV transmission line. Tasks included evaluating the social and economic, land use, and transportation impacts of the proposed alternatives, as well as conducting GIS analyses and wetland surveys along the existing and proposed transmission line corridors. The social and economic impact analysis addressed the concerns identified during public scoping for the project, including potential impacts to local employment and income, local businesses, housing, public facilities, and community values and concerns, such as property values and tax revenues. This analysis also assessed potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, August 2003-February 2007
Public Utility District No. 1 of Okanogan County and USDA Forest Service, Methow Transmission Project NEPA/SEPA EIS, Okanogan County, WA
Assistant project manager for a joint SEPA/NEPA EIS to evaluate a proposed 27.5-mile 115-kV electric transmission line and other reasonable alternatives, including the "hot" rebuild of an existing transmission line that crosses National Forest System lands. Managed public scoping, overall preparation of the EIS, and detailed response to public comments on the Draft EIS. The Final EIS was challenged in the Superior Court of the State of Washington by project opponents and the challenge was dismissed by the Judge on

all counts. Also responsible for preparing the social and economic, land use, and recreation impact analyses. The social and economic analysis addressed all social and economic concerns raised during public scoping for the project, including the economic impacts associated with construction and operation activities, improved electrical service reliability, and changes in tourism and regional visitation. The analysis also assessed the potential impacts of the alternatives on residential development and growth, property values, and electricity rates. The section also evaluated potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, January 2004-October 2006
USDA Forest Service and Clearwater Land Exchange - Oregon, Blue Mountain Land Exchange EIS, Malheur, Umatilla, and Wallowa-Whitman National Forests, OR
Senior Social Scientist responsible for developing the social and economic resource analysis and report for a 50,000-acre public/private, land exchange between the Forest Service and Clearwater Land Exchange-Oregon, a third party contractor representing more than 40 private landowners. This analysis evaluated the impacts of the proposed exchange alternatives on employment and the economy, traditional uses and lifestyles, government taxes and revenues, and land management administrative costs. Potential impacts to employment and the economy included potential effects to the lumber and wood products, recreation and tourism, and agricultural sectors. The tax analysis addressed potential impacts to Federal 25 Percent Fund payments, Payment in Lieu of Taxes (PILT) payments, State of Oregon property tax revenues, and Oregon Forest Products Harvest Tax revenues. Estimated changes in administration costs included changes associated with property boundary surveys, resolution of boundary disputes, road maintenance, easement acquisition, and Forest Service Special Use Permit administration. Assessed potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, September 2003-June 2006
USDI Bureau of Land Management, Butte Resource Management Plan and NEPA EIS, Butte Field Office, MT
Senior Social Scientist responsible for developing the social and economic resource analysis of proposed revisions to the Butte Field Office's Resource Management Plan, which involves more than 300,000 acres distributed over eight counties. The affected environment portion of the analysis incorporated data compiled for the BLM by the Sonoran Institute. The economic effects analysis used IMPLAN and the USDA Forest Service's recently-developed, IMPLAN-based Forest Economic Analysis Spreadsheet Tool (FEAST). Potential impacts include changes in employment and income, associated with potential effects to the agriculture, recreation, timber, mining, and government sectors. The analysis also evaluated the potential effects of the alternatives in terms of natural amenities, quality of life, non-use values, and ecosystem services. The social analysis assessed potential effects to specific geographic communities and potentially affected social/occupational groups. Potential effects on social/occupational groups—including ranchers, mill workers and loggers, and outfitter/guides—were assessed based on concerns and issues raised during public scoping for the project. This analysis also assessed potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, 2005
USDI Bureau of Land Management, Yuma Resource Management Plan and NEPA EIS, Yuma Field Office, AZ
Prepared the socioeconomic affected environment study for the NEPA EIS being prepared for proposed revisions to the Yuma Resource Management Plan. The BLM's YUMA Field Office manages more than 1.3 million acres spread over five counties. The affected environment analysis focused on potentially affected economic sectors and activities, including recreation, winter visitation, mining, agriculture, and timber. This analysis is based on data compiled from a variety of sources, including data compiled for the BLM by the Sonoran Institute.

Senior Social Scientist, 2003-2005
Washington Department of Natural Resources, NOAA-Fisheries, and US Fish and Wildlife Service, Federal Assurances NEPA EIS, WA
Assessed the social and economic, recreation, visual, and land use impacts associated with the current Washington Forest Practices Program and three alternatives. The purpose of the project was to provide Federal Assurances under the Endangered Species Act for the current Washington Forest Practices Program. Assessed potential environmental justice impacts in accordance with Executive Order 12898.

Senior Social Scientist, 2003-2005
Washington Department of Natural Resources (DNR), Sustainable Harvest SEPA EIS, Westside Counties, WA
Assessed the impacts of six sustainable timber harvest alternatives upon public utilities, including transportation impacts and payments to trust beneficiaries, recreation, and visual resources. The project assessed the impacts of management decisions for all DNR-managed lands in western Washington, approximately 1.5 million acres.

Senior Planner, 2003-2004
Columbia River Fish Mitigation System Flood Control Review Section 905(b) Analysis, Walla Walla District, WA, OR, ID, MT, BC
Participating in a 905(b) reconnaissance-level analysis that is being conducted to determine if there is a Federal interest in pursuing a more detailed feasibility analysis of modifying current system flood control operations to benefit endangered species, particularly salmon.

Senior Social Scientist/Economist, 2002-2004
USDA Forest Service, Couverden Timber Sale NEPA EIS, Tongass National Forest, AK
Analyzed the potential social and economic impacts of various timber sale alternatives. Examined current market demand for timber and southeast Alaskan forest products employment. Estimated changes in local employment and payments to the state associated with each alternative. Estimated the economic efficiency of the proposed alternatives using the Forest Service's NEPA Economic Analysis Tool (NEAT).

Senior Social Scientist/Economist, May 2002-September 2003
USDA Forest Service, Madan Timber Sale NEPA EIS, Tongass National Forest, AK
Updated the analysis of the potential social and economic impacts of various timber sale alternatives. Examined current market demand for timber and southeast Alaskan forest products employment. Estimated changes in local employment and payments to the state associated with each alternative. Estimated the economic efficiency of the proposed alternatives using the Forest Service's NEPA Economic Analysis Tool (NEAT).

Asst. Project Manager and Senior Social Scientist/Economist, August 2001-April 2003
USDA Forest Service, Tongass Land Management Plan Supplemental NEPA Environmental Impact Statement, Tongass National Forest, AK
Assistant Project Manager and lead Social Scientist for the Tongass Land Management Plan SEIS to evaluate roadless areas within the Tongass for recommendation as potential wilderness areas. Assisted in coordinating the evaluation of over 115 roadless areas (9.7 million acres) in the Tongass against the criteria for determining the potential for each roadless areas to be designated as wilderness. Responsible for the Economic, Social, and Recreation analysis of eight proposed alternatives including different proposals for areas of the Forest to be designated Wilderness. The Economic and Social analysis addressed the effects of wilderness designation upon the regional economy and local communities, in terms of effects on the timber, recreation and tourism, and other industries, as well as local land uses, subsistence, and resident recreation. Total (direct, indirect, and induced) impacts were estimated using

IMPLAN. The Recreation analysis addressed the effects of the proposed alternatives on future recreation supply and demand, in terms of the effects on the supply of types of recreation, recreation places, and developments and demand by residents, tourists, and outfitter/guide businesses. Duties included assisting with the coordination of the public participation process and oversight of the production and update of the public information web site.

Senior Social Scientist, March 2002-September 2002
USDA Forest Service, Tongass Roads Analysis, Tongass National Forest, AK
Assessed the social and economic effects of the existing road system on the Tongass National Forest, as well as the impacts of the roads on unroaded and road-related recreation.

Senior Social Scientist/Economist, July 2001-June 2002
Sierra Pacific Industries and USDA Forest Service, Silver Pearl Land Exchange NEPA EIS, El Dorado National Forest, Placer and El Dorado counties, CA
Senior Social Scientist responsible for developing the social and economic sections of the EIS to evaluate the impacts on the regional economy, government taxes and revenues, and land management administrative costs of a 6,100-acre land exchange between the Forest Service and Sierra Pacific Industries.

Lead Social Scientist, April 2001-August 2001
Calpine Corporation, Gilroy Power Plant Application for Certification, Gilroy, CA
Prepared the social and economic analysis for an Application for Certification for a proposed natural gas turbine power plant in Santa Clara County, California. Assessed the potential effects of construction and operation of the proposed facility on the local and regional economy, as well as potential impacts to fiscal resources and local services.

Lead Social Scientist, August 2001-September 2001
NASA, Marshall Space Flight Center, Propulsion Research Laboratory, NEPA Environmental Assessment, Huntsville, AL
Prepared the social, economic, and visual resources analysis for a proposed Propulsion Research Laboratory at Marshall Space Flight Center. Assessed the potential effects of construction and operation of the proposed facility on the local and regional economy, as well as potential impacts to fiscal resources and local services. Regional economic effects were assessed using multipliers developed by RIMS II.

Lead Social Scientist, April 2001-September 2001
USDA Forest Service, Moira Timber Sale NEPA Environmental Impact Statement, Tongass National Forest, AK
Analyzed the social and economic effects of a proposed timber sale on the Tongass National Forest. Addressed local and regional population and employment, timber supply, market demand, economic efficiency, payments to the state, and costs and benefits to the public.

Lead Social Scientist, January 1998-October 2001
U.S. Army Corps of Engineers, Walla Walla District, Lower Snake River Juvenile Salmon Migration Feasibility Study Report/NEPA Environmental Impact Statement, WA and ID
Served on the regional workgroup that oversaw and developed detailed technical analyses of the social and economic effects of four salmon recovery alternatives that included breaching four large federal dams on the lower Snake River. Coordinated and developed the detailed economics appendix from technical studies conducted by specialist workgroups. Total (direct, indirect, and induced) regional economic impacts were estimated using IMPLAN. Prepared the social resources, transportation, hydropower, water supply, recreation, cultural resources, Native American values, and environmental justice sections of the EIS.

Lead Social Scientist, September 2000-April 2001
U.S. Army Corps of Engineers, Lower Snake River Juvenile Salmon Migration Feasibility Study, Assessment and Evaluation of the Drawdown Regional Economic Workgroup Recreation Analysis Findings, WA and ID
Evaluated the findings of the recreation analysis developed by the Drawdown Regional Economic Workgroup for the Lower Snake River Juvenile Salmon Migration Feasibility Study. The original study projected visitation to the lower Snake River if the dams were removed and the associated economic costs and benefits to the region and the nation. This analysis conducted with Dr. Charles C. Harris of the University of Idaho assessed these findings by reviewing the methodology employed in the original analysis and comparing the findings with data for other free-flowing river stretches in the Pacific Northwest.

Social Scientist, April 2000-April 2001
USDA Forest Service and Weyerhaeuser Company, Huckleberry Land Exchange Supplemental NEPA Environmental Impact Statement, WA
Prepared the social and economic analysis of seven land exchange alternatives. The analysis addressed effects on local communities, the regional economy, government taxes and revenues, and land management administrative costs associated with a land exchange between the Forest Service and Weyerhaeuser involving 35,000 acres.

Social Scientist, May 2000-January 2001
USDA Forest Service, Upper South Platte Watershed Restoration NEPA Environmental Assessment, Pike National Forest, CO
Prepared the land use, transportation, and socioeconomic analysis for three alternatives designed to reduce fire risk and stream sedimentation. Potential impacts included those associated with logging and associated truck traffic.

Social Scientist, August 2000-March 2001
USDA Forest Service, Boundary Waters Canoe Area Wilderness Fuel Treatment Plan and NEPA Environmental Impact Statement, MN
Analyzed the social and economic effects associated with five fuel treatment alternatives designed to reduce fire risk in the Boundary Waters Canoe Wilderness Area. Impacts addressed included those associated with reductions in recreation use, fuel treatment costs, and an influx of temporary firefighters. Total (direct, indirect, and induced) regional economic impacts were estimated using IMPLAN-derived multipliers and coefficients.

Social Scientist, May 1999-October 1999
Confidential Client Report, Prudhoe Bay and other locations, AK
Developed detailed socioeconomic profiles for the state of Alaska, Anchorage, the North Slope, Kenai Peninsula, Fairbanks North Star, and Matanuska-Susitna boroughs, and the Valdez-Cordova Census Area. Assisted in estimating project impacts in terms of resident vs. nonresident employment, population change, distribution of new population, payroll and earnings, nonresident earnings spent in Alaska, and government employment and expenditures. Analyzed project impacts at the borough and community level. Prepared the associated confidential report.

Social Scientist, July 1998-March 1999
U.S. Army Corps of Engineers, Oakland Army Base Disposal and Reuse NEPA EIS, Oakland, CA
Assessed the potential regional economic impacts of various redevelopment scenarios using the U.S. Army Corps of Engineers Economic Impact Forecast System (EIFS). Modeled potential direct, indirect, and induced employment, population, income, and sales volume impacts for the construction and operation phases of each alternative.

Social Scientist, June 1998-June 1999
USDA Forest Service, Skipping Cow Timber Sale NEPA Environmental Impact Statement, Wrangell, AK
Developed economic and social resource reports to address the potential economic impacts of various timber sale alternatives. Examined current market demand for timber and southeast Alaskan forest products employment. Estimated changes in local employment and payments to the state associated with each alternative. Prepared the economics section for the Environmental Impact Statement.

Lead Social Scientist, August 1999-October 1999
National Park Service, NEPA Environmental Assessment for the Interim Management Plan, Elwha River Ecosystem Restoration, Clallam County, WA
Evaluated existing conditions and assessed the socioeconomic, recreation, and visual resource impacts associated with three management alternatives for 1,060 acres of land acquired to facilitate removal of the Elwha Dam.

Social Scientist, June 1998-July 1998
U.S. Army Corps of Engineers, Jackson Port Environmental Impact Statement, Jackson, AL
Evaluated the sociological and economic development effects of a proposed port facility in south-central Alabama. Assessed the economic, transportation, land use, aesthetic, and environmental justice impacts associated with construction and operation of the proposed project. Prepared the sociological and economic development sections for the Environmental Impact Statement.

Social Scientist, October 1998-October 1998
Calpine Corporation, Sutter Power Plant Application for Certification, Sutter County, CA
Reviewed socioeconomic, land use, and traffic and transportation sections, helped respond to agency comments, and developed written testimony for public hearings.

PREVIOUS EXPERIENCE

Dames & Moore, Cincinnati, OH, 1990-1995
Assistant Project Manager/Social Scientist, 1993-1994
Four Rivers Energy Partners, L.P, Pressurized Circulating Fluidized Bed Cogeneration Facility Environmental Information Volume, Calvert City, KY
Four Rivers Energy Partners proposed to build a Pressurized Circulating Fluidized Bed cogeneration facility jointly funded by the U.S. Department of Energy (DOE) as part of a federal Clean Coal Technology demonstration program. Assistant Project Manager responsible for production of an Environmental Information Volume for submission to the DOE. Conducted socioeconomic, land use, traffic and transportation, and visual resource analysis of potential project effects.

Assistant Project Manager/Social Scientist, 1991-1992
Dayton Power and Light Company, Natural Gas/Oil-Fired Generating Station, Dayton, OH
Assistant Project Manager responsible for production of an application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need. Participated in the detailed site selection process. Conducted socioeconomic, land use, and visual resource analysis for the selected preferred and alternate sites.

Assistant Project Manager/Social Scientist, 1991-1995
Cincinnati Gas & Electric Company; Dayton Power and Light Company, Ohio Edison Company, Toledo Electric Company and Cleveland Electric Illuminating Company. Electric Transmission Line Projects, North, Central, and Southwest OH
Assistant Project Manager for eight electric transmission line projects and one natural gas underground pipeline project located throughout Ohio and ranging in length from 9 to 30 miles. Proposed and evaluated alternate routings and evaluated potential economic, social, land use, and visual effects.

Project Manager and Principal Investigator, 1990-1995
Various Clients, Phase I Environmental Site Assessments
Project Manager and Principal Investigator for numerous Phase I Environmental Site Assessments, including a number of multiple, fast-track sites. Project sites were located throughout the United States and ranged from vacant land to industrial facilities. Site activities included limited asbestos surveys, radon testing, and lead paint testing.

Michael E. Hatch, RG, CEG

Principal Engineering Geologist

Areas of Expertise

Engineering Geology and Geotechnical Investigations
Siting and Permitting
Geologic and Fault Hazard Studies

Years of Experience

With URS: 26 Years
With Other Firms: 1 Year

Education

MS/1987/Geology/San Diego State University

BA/1976/Biology/University of California, San Diego

Registration/Certification

1995/Certified Engineering Geologist/California, No. 1925

1994/Registered Geologist/California, No. 5953

Overview

Mr. Hatch has 27 years of experience in engineering geology and geologic hazard studies relative to siting and permitting major municipal facilities, including outfalls, aqueducts, gas transmission pipelines, dams, power plants, substations, and electrical transmission lines. His experience includes project management, geologic hazard assessment, and general site evaluation and ranking for major power plant, pipeline, dam, and reservoir projects. Mr. Hatch is an expert in Quaternary and geomorphology studies relative to evaluating fault activity in diverse geologic settings. He is well versed in resource reporting for geology and soils in support of permitting power plants, electrical transmission lines, and pipelines.

Project Specific Experience

San Joaquin 1 & 2, Fresno County, CA:
Performed a geotechnical evaluation and prepared the geology and soils sections for the Application for Certification for a hybrid design solar thermal electric generating plant. The plant will comprise a solar field and biomass facility producing up to a nominal 53.4 MW net of renewable energy.

Solar Reserve, Imperial County, CA:
Performed fatal flaw analyses for multiple sites in Imperial County, elsewhere in California and in New Mexico under consideration for development of solar power plants. Researched the geotechnical, geologic and minerals settings that could impact site selection. Prepared written recommendations for site development and further study.

LightSource Renewables, CA and AZ:
Researched and summarized geotechnical and geologic related fatal flaws for 3 sites in California and 2 in Arizona for development of solar power plants.

Solar Two Energy Facility, Imperial County, CA:
Managed geological services for the design of up to 36,000 proprietary solar dish structure foundations. Coordinated the geotechnical investigation and seismic hazard evaluation, and prepared the geology and soils sections of the joint AFC/EIS (Environmental Impact Statement) document to comply with both NEPA and CEQA requirements.

Solar One Energy Facility, San Bernardino County, CA:
Coordinated the geotechnical and geologic hazards evaluation in support of the California Energy Commission and Bureau of Land Management NEPA compliance and permitting. Performed groundwater evaluation for project water needs. Proposed project encompasses approximately 27,000 acres of solar power facilities for up to approximately 2,700 MW of power electric generation.

Geology and Soils Resource Reports – SCE Tehachapi Renewables Transmission Project, San Bernardino, Riverside, and Los Angeles Counties, CA:
Managed geology and soils resource reports for AFC documents prepared for the extensive improvements to the SCE electrical transmission line system.

Geology and Soils Resource Reports for Starwood Power Plant, Fresno County, CA:
Managed geology and soils resource reports for AFC documents prepared for the proposed Starwood power plant.

Geology and Soils Resource Reports for Ausra Carrizo Solar Farm, San Luis Obispo County, CA:
Managed geology and soils resource reports for AFC documents prepared for proposed Solar project. Also provided senior management oversight and geologic hazards evaluations for the geotechnical investigations.

Notice of Intent (NOI) Preparation, SDG&E Combined Cycle Power Plant, San Diego and Imperial Counties, CA :
Managed the geosciences elements of an NOI document prepared for the CEC outlining five possible power plant sites. Sites were characterized relative to impacts and suggested mitigations for geologic resources, including minerals, paleontology, groundwater, soils, and geologic hazards.

SDG&E South Bay Repowering Project, San Diego, CA:
Managed the geologic and geotechnical tasks for SDG&E's licensing application to the CEC for a new electrical generator unit. The project included various alternative electrical transmission routes and their characterization relative to the impacts and suggested mitigations for geologic resources including minerals, paleontology, geologic hazards, groundwater and soils.

Teayawa Power Plant, Geotechnical Investigation and Geologic and Soil Resource Reports, Coachella Valley, CA:
Completed geotechnical investigations and prepared soil and geologic resource reports to support permitting for a proposed 40 acre power plant site and ancillary pipelines and transmission lines. Proposed ancillary structures cross the active San Andreas fault. Evaluated potential impacts from geologic hazards and discussed general mitigation measures.

Geology and Soils Resource Reports – Niland _IID Peaker Plant, Imperial County, CA:
Managed geology and soils resource reports for AFC documents prepared for proposed gas-fired peaker plant.

Otay Mesa Generating Project, San Diego, CA:
Managed the geologic and paleontological resource reports for this proposed power generating project. Also provided technical support for the environmental characterization of the plant site and the ancillary easements. Assisted the biological field surveys with characterization of sensitive habitat relative to geomorphology and soils.

El Secundo Power Redevelopment Project, El Secundo, CA:
Managed the geologic hazards and resource reports for the permitting of this redevelopment project. This existing power plant site is located in the coastal Los Angeles area and subject to coastal, seismic and slope related hazards.

Geologic Hazards Study and Geotechnical Investigations of SDG&E Talega Trabuco Transmission Line, San Diego and Orange Counties, CA:
Managed geologic hazard and the geotechnical investigations for this transmission line extending from Camp Pendleton to Mission Viejo through landslide prone terrain.

Geotechnical Investigation of Rosarito Natural Gas Pipeline, Baja California, Mexico:
Managed the field and geologic portions of this investigation of natural gas pipeline from U.S.-Mexico border to power plant. Pipeline route crossed major roadways, railways, rivers, and landslides. Pipelines were analyzed for temporary and permanent slopes, and geotechnical engineering recommendations were made for pipeline design and construction.

Geology and Soils Technical Report and Geotechnical Investigations, BNSF Third Main Track, San Bernardino, CA:
Task manager and project geologist for technical report and geotechnical investigations to support this project that includes a 15 mile section of new commercial rail line through the Cajon Pass area. Steep terrain, complex geology and large cuts are evaluated as part of the permitting and design evaluations for the project.

Mojave Pipeline, Northward Expansion, FERC Application and Geologic Hazards Evaluations, Central and Northern CA:
Managed the geologic resources report task for the FERC Application for this natural gas transmission line planned from Blithe to the San Francisco Bay area. Subsequent geologic hazards and geotechnical investigations were performed for the 600-mile long alignment. Project challenges included considerable landslide prone terrain and multiple active fault crossings.

Joe D. Stewart

Principal Paleontologist

Areas of Expertise

Paleontology

Years of Experience

With URS: 1 Year
With Other Firms: 5 Years

Education

MA/1979/Systematics & Ecology/University of Kansas
Ph.D./1984/Systematics & Ecology/University of Kansas

Registration/Certification

Certified Paleontologist, Orange County

Overview

Joe Stewart is a vertebrate paleontologist with over 30 years of experience in paleontology and 22 years of experience in the geology and paleontology of California, particularly in Merced, Fresno, Kern, Santa Barbara, Los Angeles, Orange, Riverside, Imperial, and San Diego counties. Joe has been involved in the permitting or construction of four power plants, and has directed the paleontological monitoring and mitigation program for Path 15, a major transmission line project. He is also a certified paleontologist for the County of Orange. His publications include 30 peer-reviewed articles in books and journals. His research specialties are fossil fishes and Pleistocene vertebrate faunas.

Project Specific Experience

I-805 Managed Lanes South Project. Directed paleontological survey of 11.4-mile long project area in San Diego, National City, and Chula Vista and wrote the Paleontological Resource Assessment for SANDAG. **(2008-present)**

I-805 North Corridor Project. Directed paleontological survey of 4.4-mile long project area in San Diego and wrote the Paleontological Resource Assessment for SANDAG. **(2008)**

Calnev Pipeline Project. Directed paleontological survey of 234-mile long project area in San Bernardino County, California and Clark County, Nevada and wrote the paleontological assessment. **(2008-present)**

SES Solar One Application for Certification. Directed paleontological pedestrian survey of project area in San Bernardino County and wrote the paleontological resource section of the AFC. **(2008-present)**

San Joaquin One and Two Application for Certification. Directed paleontological pedestrian survey of project area in Fresno County and wrote the paleontological resource section of the AFC. **(2008)**

Willow Pass Generating Station Application for Certification. Participated in paleontological pedestrian survey of project area in Contra Costa County and wrote the paleontological resource section of the AFC. **(2008)**

Marsh Landing Generating Station Application for Certification. Participated in paleontological pedestrian survey of project area in Contra Costa County and wrote the paleontological resource section of the AFC. **(2008)**

SES Solar Two Application for Certification. Participated in paleontological pedestrian survey of project area and will edit the paleontology section of the AFC. **(2008-Present)**

IID Niland Gas Turbine Plant Phase III project construction. Oversaw the work of the paleontological resource monitors, made numerous site visits, and will write final report on paleontological resources. **(2007-2008)**

Carrizo Energy Solar Farm (Ausra) Application for Certification. Participated in paleontological pedestrian survey of project area and edited the paleontology section of the AFC. **(2007)**

Starwood Power-Midway, LLC Peaking Project Application for Certification. Participated in the responses to the CEC Provisional Staff Assessments. **(2007)**

BNSF Cajon Main Third Track Summit to Keenbrook permitting. Participated in the writing, editing, and production of the Paleontologic Resources Monitoring and Mitigation Plan and the Paleontological Resource Assessment. **(2007)**

Path 15 500-kV Power Transmission Line between Los Banos and Gates substations. Supervised paleontological resource monitoring, excavations, specimen preparation, specimen identification, and report writing for 80-mile power line. **(2003-2005)**

Professional Societies / Affiliates

Society of Vertebrate Paleontology

Mark C. Storm, INCE BD. CERT.

Senior Noise Control Engineer

Areas of Expertise

Mechanical Systems Noise Control
Architectural Acoustics
Environmental Noise Assessment

Years of Experience

With URS: 3 Years

With Other Firms: 15 Years

Education

BS, Aeronautics & Astronautics, Massachusetts Institute of Technology

Registration/Certification

INCE Board Certified, 08004

Overview

Mr. Storm's career in mechanical systems noise control and architectural acoustics spans over fifteen years, in various roles with established equipment manufacturers, consulting firms, and startup ventures. His market-proven skills and experience include noise analysis and sound attenuation projects for facilities, products and industrial equipment ranging from semiconductor "wafer fabs" to motorcycle exhaust mufflers.

Mark's current focus areas involve managing tasks for noise regulation and guidance review, field surveys, acoustical impact assessment, mitigation planning and compliance evaluation for various residential, commercial, municipal and industrial projects.

Project Specific Experience

Alternative Energy – Wind

Whistling Ridge Energy Project, **Skamania County, WA.** Noise Task Leader for EIR/EIS includes site surveys, noise models, impact assessments and mitigation recommendations. Proposed project is a 125-megawatt wind energy facility to be located in Skamania County, WA. (2008-2009)

Solano Wind Project Phase III, **Sacramento Municipal Utility District, Solano County, CA.** Noise Task Support for EIR/EIS includes noise models, impact assessments and mitigation recommendations. Proposed project involves eighty-four (84) 3-megawatt wind turbine generators (WTGs) in Solano County, CA. (2007)

Wind Implementation Monitoring Program Phase IV, Riverside County, CA. Noise Task Support for peer review and public workshop participant. Project located in Riverside County, CA. (2008)

Renewable Energy Systems, China Mountain Wind Power Project, Twin Falls County, ID. Noise Task Leader for EIR/EIS includes ambient noise estimates. Proposed project of 185 2.3-megawatt WTGs near the Idaho-Nevada border in Twin Falls County, ID. (2009)

BP Wind Energy, Mohave County Wind Project, Kingman, AZ. Noise Task Leader for EIR/EIS includes site surveys, construction and operation noise models, impact assessments and mitigation recommendations. Proposed 500-megawatt project involves WTGs near Kingman, AZ. (2009)

Fossil-fueled Power

Imperial Irrigation District, Niland Gas Turbine Plant. Noise Task Leader. Conducted post-construction noise measurement and analysis of peaker plant operations to demonstrate compliance with CEC conditions. The 94-megawatt project has a pair of simple-cycle gas turbines. (2008)

Starwood Power Midway Peaking Project, Fresno, CA. Noise Task Leader. Conducted post-construction noise measurement and analysis of peaker plant operations to demonstrate compliance with CEC conditions. Project has pair of 60-megawatt gas turbines near Fresno, CA. (2009)

Indiana Gasification. Noise Task Leader. Support for EIR/EIS includes screening-level construction and operation noise models, impact assessments and mitigation recommendations. Proposed project is a coal-fueled 300-megawatt plant to produce synthetic natural gas using General Electric gasification techniques. (2009)

Mississippi Gasification. Noise Task Leader. Support for EIR/EIS includes screening-level construction and operation noise models, impact assessments and mitigation recommendations. Proposed project is a petcoke-fueled plant that generates synthetic natural gas using Conoco-Phillips "E-Gas" technology and processes. (2009)

Alternative Energy – Solar

Starwood Solar I, Starwood Energy Group, Maricopa County, AZ. Noise Task Leader for Arizona Corporation Commission (ACC) Certificate of Environmental Compatibility, includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed project is a 290-megawatt solar-to-thermal power plant in Maricopa County, AZ. (2009)

Carrizo Energy Solar Farm, Ausra, San Luis Obispo County, CA. Noise Task Leader support for California Energy Commission (CEC) Application for Certification (AFC), includes site surveys, noise models, analysis, impact assessment, mitigation recommendations, and meeting/workshop participation. Proposed project is a 150-megawatt solar-to-thermal power plant planned for the Carrizo Plains area of San Luis Obispo County, CA. (2007-2009)

Solstice, Ausra, Yuma, AZ. Noise Task Leader support for Arizona Corporation Commission (ACC) Certificate of Environmental Compatibility, includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed project is a 240-megawatt solar-to-thermal power plant near Yuma, AZ. (2008-2009)

Tessera Solar/Stirling Energy Systems, Solar Two, Imperial County, CA. Noise Task Leader support for CEC AFC includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed Project is a 600-megawatt solar-to-thermal power plant in Imperial County, CA. (2008-2009)

Tessera Solar/Stirling Energy Systems, Solar One and Solar Three, San Bernardino County, CA. Noise Task Leader support for CEC AFC includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed solar-to-thermal power plant sites are located in San Bernardino County, CA. (2008-2009)

San Joaquin Solar 1 & 2, Spinnaker Energy, Inc., Coalinga, CA. Noise Task Leader support for CEC AFC includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed

project is a 106-megawatt solar/biomass hybrid solar-to-thermal power plant near Coalinga, CA. (2008-2009)

Mt. Signal Solar, Southwestern Power Group II, LLC, Imperial County, CA. Noise Task Leader support for EIR/EIS includes site surveys, construction and operation noise models, impact assessments and mitigation recommendations. Proposed project is a 49-megawatt solar/biomass hybrid solar-to-thermal power plant in Imperial County, CA.(2008)

Architectural Acoustics

Centex Homes, Montefaro, La Jolla, CA. Noise Task Leader. Tested floor/ceiling assembly impact isolation at vertically adjacent luxury condominiums in La Jolla, CA. (2007-2009)

San Jose Police Department, PAB Interview Rooms. Noise Task Leader. Evaluated speech privacy upgrades based on contemporary "speech security" risk assessment techniques. Reviewed bid documents and potential material specifications. (2008)

Qualcomm MediaFLO Server Expansion. Noise Task Leader. Assessed sound isolation impact resulting from expansion of cooling capacity, and the corresponding added plug-fan cooling units, at a San Diego campus building server room. (2008)

Brenson Communities, BC Christensen Ranch. Noise Task Leader. Reviewed inter-dwelling sound isolation measures and recommended upgrades to help a Menifee, CA residential development attain compliance with California Building Code. (2007)

Forrester Creek, Pacific Scene Development, El Cajon, CA. Noise Task Leader, 2008. Analyzed sound isolation of proposed commercial building shells with respect to nearby airport and highway traffic in El Cajon, CA. (2008)

Surface Transportation

Bluegrass Motorsports, Gallatin County, KY. Noise Task Leader. Predicted outdoor noise from a proposed private racetrack near the Kentucky Speedway in Gallatin County, KY in order to assess potential community impacts and expedite project permitting. (2007)

Placer Parkway, Placer County, CA. Noise Task Support. Noise analysis for highway alternative analysis study and Tier 1 EIR in Placer County, CA near Sacramento. Proposed project has five alignment alternatives for new highway section through agricultural lands programmed for residential development. (2006-2007)

Folsom Bridge, Folsom, CA. Noise Task Team Member. Supervised traffic noise modeling of proposed bridge entry ramps with respect to residential receivers for project in Folsom, CA. (2006)

Burlington Northern Santa Fe (BNSF), Tehachapi Rail Expansion. Noise Task Support. Conducted vibration measurements at potentially impacted residences along the Tehachapi to Bena corridor. (2009)

Industrial – Natural Gas

SourceGas, Oil Springs, Elk Mountain, WY. Noise Task Leader. Conducted ambient noise survey and predicted operation noise for a new compressor station near Elk Mountain, WY as part of Federal Energy Regulatory Commission (FERC) Resource Report 9 (RR9). (2007-2008)

SourceGas, Norwood, CO. Noise Task Leader. Directed operation noise prediction, existing ambient noise measurement, and impact assessment for a new proposed compressor station near Norwood, CO. (2008)

Fayetteville Express Pipeline, AK and MI. Noise Task Leader. Prepared FERC RR9 noise section for a new proposed compressor station, horizontal directional drilling (HDD) sites, and natural gas piping alignment that traverses Arkansas and Mississippi. (2008-2009)

Liquefied Natural Gas Storage Facility, Confidential Client. Noise Task Leader. Investigated gas compression process noise with onsite sound and vibration measurement techniques. Recommended mitigation measures were installed and deemed successful after confirmation measurements. (2007-2008)

Riverton Metering Station, Kern River. Noise Task Support. Predicted propagation of natural gas pipe flow noise and buried valve noise. (2009)

Bradwood LNG. Noise Task Support. Predicted potential noise impacts for a variety of facility and pipeline construction activities associated with a new liquefied natural gas importation and distribution center on the Oregon bank of the Columbia River. (2006-2008)

HVAC / Mechanical

Network Appliance, Building. 2, Sunnyvale, CA. Noise Task Leader. Designed configuration of noise attenuation for six-fan high-capacity exhaust units of a data center in Sunnyvale, CA. (2007)

Qualcomm, Building N. Noise Task Leader. Supervised before-and-after interior sound measurement surveys of hundreds of ceiling-mounted fancoil units. Surveys enabled assessment of acoustical improvement due to fan motor change-outs. (2007)

TSA Baggage Inspection Area, San Diego International Airport, San Diego, CA. Noise Task Leader. Measured and analyzed occupational noise levels from baggage handling equipment and associated systems. Recommended noise control and sound abatement options to permit OSHA-compliant overall levels. (2008)

Calabasas Library AHU Performance Tests, Energy Labs, Tijuana, Mexico. Noise Task Leader. Witnessed conduct of air handling unit (AHU) performance tests, conducted at client's laboratory in Tijuana, Mexico, that met Air Movement and Control Association (AMCA) standards 210-99 and 300-95. (2007)

Albertson's, Nadel Architects, Coronado, CA. Noise Task Leader. Conducted existing ambient noise measurement and predictive operation

noise analysis for rooftop HVAC and refrigeration plant associated with a supermarket re-model and mechanical upgrade. (2007-2008)

Other

Three Rivers Quarry Expansion, L&W Stone Corporation, Clayton, ID. Noise Task Support. Conducted noise analysis for expansion of existing dual-pit flagstone quarry operation near Clayton, ID that included prediction of noise impacts on residential areas and wildlife. (2006)

Teledyne-Ryan Site Demolition, Port of San Diego, San Diego, CA. Noise Task Leader. Noise and vibration analysis support for EIR associated with demolition of industrial building campus adjacent to San Diego International Airport. Impact assessment included wildlife considerations. (2008-2009)

Main Exchange & Hospital Replacement, U.S. Marine Corps Base, Cam Pendleton, CA. Noise Task Leader. Developing draft noise sections of the Environmental Assessments (EA) for each of these projects at Camp Pendleton, CA. (2009)

San Diego International Airport Terminal 2 SmartCurb, San Diego, CA. Noise Task Leader. Review development of transit center architectural design with respect to reverberation control and paging system intelligibility. (2009)

Professional Societies / Affiliates

Institute of Noise Control Engineering
Society of Automotive Engineers

Publications

U.S. Patent No. 7,581,619 – Movable Baffle Columns for Use with Air Handling Units.

U.S. Patent No. 6,571,910 – Method and Apparatus for Improved Noise Attenuation in a Dissipative Internal Combustion Engine Exhaust Muffler.

"Prediction of Sintered Fibrous Metal Liner Influence on Muffler Sound Attenuation Performance and Noise Emission for Single-Cylinder Motorcycle Engine Exhaust", NCAD2008-73022, Proceedings of NCAD2008, NoiseCon2008-ASME NCAD, Dearborn, MI.

"Apparent Trends in Wind Turbine Generator Noise Criteria and Regulation Guidance", 10935, submitted for Proceedings of InterNoise-2009, Ottawa.

Chronology

01/06 – present: URS Corporation, San Diego
06/04 – 03/07: Energy Labs Inc., San Diego
08/02 – 06/04: Acentech Inc., Cambridge
08/01 – 08/02: Quietstorm LLC, Phoenix
01/97 – 08/01: Metal Form Mfg. Inc. - Commercial Acoustics, Phoenix

Contact Information

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mark_storm@URSCorp.com

Attachment B

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814 - 1-800-822-6228 - WWW.ENERGY.CA.GOV

Docket Number: ***08-AFC-13*** Date: July 29, 2010

Project Name: **Application for Certification for the *CALICO SOLAR Project***

TENTATIVE EXHIBIT LIST

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
1.	**Application for Certification**, dated December 1, 2008, docketed December 2, 2008			
a.	1.0 Executive Summary			
b.	2.0 Project Objectives/Need			
c.	App A MOU			
d.	App C Property Owners			
e.	App D Burlington Northern Santa Fe Railroad ROW			
f.	3.0 Project Description and Location			
g.	App B Solar Stirling Engine			
h.	App F Mechanical and Fire Protection Design Criteria			
i.	App G USGS Project Maps			
j.	App H System Impact Study			
k.	App I Electric and Magnetic Field calculations			
l.	App J Water Balance Flow Diagrams			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
m.	App K Hydrogen System Design			
n.	App L Hazardous Materials Handling			
o.	App M Structural Engineering Design Criteria			
p.	App N Initial Drainage Report			
q.	App O Civil Engineering Design Criteria			
r.	App P Electrical Engineering Criteria			
s.	App Q Control Systems Design Criteria			
t.	App R Fuel handling Design Criteria			
u.	App S Materials Safety/Equipment			
v.	App T Phase I Environmental Site Assessment			
w.	App EE Environmental Summary Lugo-Pisgah			
x.	4.0 Alternatives			
y.	5.1 Introduction			
z.	5.2 Air Quality			
aa.	App V – Air Quality Data			
bb.	5.3 Geologic Hazards			
cc.	App E Preliminary Geotechnical and Geologic Hazards Evaluation			
dd.	5.4 Soils			
ee.	App W Soil loss calculations			
ff.	5.5 Water Resources			
gg.	5.6 Biological Resources			
hh.	App Y – Biological Technical Report			
ii.	5.7 Cultural Resources			
jj.	App Z Cultural Tech Report			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
kk.	5.8 Paleontological Resources			
ll.	App AA Paleontological Resources Tech Report			
mm.	5.9 Land Use			
nn.	5.10 Socioeconomics			
oo.	5.11 Traffic and Transportation			
pp.	App BB Traffic Counts			
qq.	5.12 Noise			
rr.	App CC Noise Measurements			
ss.	5.13 Visual Resources			
tt.	5.14 Waste Management			
uu.	5.15 Haz Mat Handling			
av.	5.16 Public Health and Safety			
ww.	App DD Public Health and Safety Data			
xx.	5.17 Worker Safety			
yy.	5.18 Cumulative Impacts			
zz.	6.0 Financial Information			
aaa.	7.0 List of Preparers			
2.	**Application to MDAQMD**, dated January 28, 2009, docketed January 28, 2009			
3.	**Data Adequacy Supplement**, dated April 6, 2009, docketed April 6, 2009			
a.	Responses 1-5 Air Quality			
b.	Response 6 Economic benefits of alternate site			
c.	Responses 7-11 Biology			
d.	Responses 12-23 Cultural			
e.	Responses 24-26 Land Use			

Exhibit	Brief Description Including Date of Document and Docketed Date		Admitted	Refused	CEC Use Only
f.	Responses 27-28	Noise			
g.	Responses 29	Project Overview			
h.	Response 30-32	Site ownership			
i.	Response 33	Transmission Line Route			
j.	Response 34-36	Socioeconomics			
k.	Response 37	Fill disposal location			
l.	Response 38	Soils			
m.	Responses 39	Traffic			
n.	Response 40-41	Agency contacts and other permits			
o.	Response 42-44	One-lines and agencies			
p.	Response 45-46	Visual			
q.	Response 47	Waste Management			
r.	Responses 48, 53-55	Surface Water			
s.	Responses 49-52	Groundwater			
t.	Response 50	Back-up water supply			
4.	**Additional Information**, dated April 29, 2009, docketed April 29, 2009 Pump Test Data				
5.	**CEC/BLM Data Responses 49-70, 74, 75, 80, 82-84, 88-91**, dated July 17, 2009, docketed July 17, 2009				
a.	Response 49	Alternate site map			
b.	Responses 50-52, 54-56, 82-84	Biology, U.S. and State Waters			
c.	Response 53	Evaporation Pond			
d.	Responses 57-60	Hydrogen system			

Exhibit	Brief Description Including Date of Document and Docketed Date		Admitted	Refused	CEC Use Only
e.	Response 61	Paleontology			
f.	Responses 62-63	Project boundary			
g.	Responses 64-67	Land use			
h.	Response 68	Noise			
i.	Responses 69-70,	Groundwater			
j.	Responses 74,75, 80	Water requirements			
k.	Responses 86-87	Waste management and ore processing			
6.	**CEC/BLM Response 55 – Raven Monitoring and Control Plan,** dated July 17, 2009, docketed July 17, 2009				
7.	**CEC/BLM response 50 – Report to Map Federal and State Waters**, dated July 17, 2009, docketed July 17, 2009				
8.	**CURE Data Request Responses 1-228**, dated July 27, 2009, docketed July 27, 2009				
a.	Responses 1-162, 165, 224-228	Biology			
b.	Responses 163, 164	SunCatcher washing			
9.	**Response to Public Comments**, dated July 30, 2009, docketed July 30, 2009				
a.	Response 4	Aquifer recharge			
b.	Responses 5, 6, 17	Public Information			
c.	Response 13	Land Purchases			
d.	Response 14	Siting			
e.	Responses 8-12, 16, 18	Biology			
f.	Response 15	Cumulative Impacts			
g.	Responses 19, 20, 23-26	Phasing, POD, Access			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
h.	Responses 21, 22, 24 Technology			
10.	**CURE data request responses 229-275**, dated August 13, 2009, docketed August 13, 2009			
	Responses 229-275 Interconnection, Overloads, Mitigation			
11.	**CEC/BLM Responses 113-127**, dated August 20, 2009, docketed August 20, 2009			
a.	Responses 113, 114 Economics and fire funding			
b.	Responses 115, 117, 123,127 Access, site spacing			
c.	Responses 120, 124-125 Visual			
d.	Responses 116, 118, 119, 121, 122,124,126 ROW			
12.	**CEC/BLM Responses 1-48, 81, 109-112**, dated August 31, 2009, docketed August 28, 2009			
a.	Responses 1-8, 10, 11, 13, 19, 22-29, 31-43, 45-48 Air			
b.	Responses 9, 12, 14-18, 20, 21, 30, 44, Engineering			
c.	Responses 109-112 Public Health			
13.	**CEC/BLM Response 81**, dated August 31, 2009, docketed August 31, 2009 Response 81 DESCP			
14.	**CEC/BLM Info Request Responses (9/16/09 workshop)**, dated October 15, 2009, docketed October 15, 2009			
a.	Soil stabilizer and County contacts			
b.	Use of private parcels			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
15.	**CURE DR Responses 276-380**, dated November 13, 2009, docketed November 12, 2009			
a.	Responses 276-282 Hydrogen			
b.	Response 283-285 BNSF water			
c.	Response 286 Soil testing			
d.	Response 287 Worker Safety			
e.	Responses 288-295 BNSF water			
f.	Responses 296-297, 283-285 MTBF, emergencies			
g.	Responses 298-303 SunCatcher testing			
h.	Responses 304-306 Delay			
i.	Responses 307-309 Funding			
k.	Responses 310-312 Land Use			
l.	Responses 313-359, 361-374, 377-379 Biology			
m.	Response 360			
n.	Responses 375, 376, 380 Project description			
16.	**CEC/BLM DR Responses, Set 1, part 2**, dated November 19, 2009, docketed November 19, 2009			
a.	Response 92, 93 Geomorphology			
b.	Response 94-108 Cultural			
17.	**CEC/BLM DR Responses 71-73, 76-79, 85, 128-141**, dated November 23, 2009, docketed November 23, 2009			
a.	Responses 71-73, 77-79, 85 Groundwater and aquifer data			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
b.	Response 76, 137, 138, 139 Well location			
c.	Responses 128 Geotextile			
d.	Response 129-131, 136, 140 Road assumptions			
e.	Response 132-134 Alternatives			
f.	Response 135 Biology impacts			
g.	Response 141 Traffic			
18.	**CURE DR Responses 378-402**, dated December 2, 2009, docketed December 3, 2009			
a.	Response 378-394 Biology			
b.	Response 395-402 DWMA ACEC Upper Johnson Valley			
19.	**DOW and BRW DR Responses**, dated December 4, 2009, docketed December 4, 2009			
	DOW Responses 6-8, 11 Alternative sites			
a.	DOW Responses 9, 10 Alternatives			
b.	DOW Responses 1-5 Biology			
c.	BRW Responses 1-3 Biology			
20.	**CEC/BLM DR Responses, Set 2**, dated December 4, 2009, docketed December 4, 2009			
a.	Response 142 Channel grading			
b.	Response 143 Research overview			
c.	Response 144-153 Groundwater			
d.	Response 154-161 Sediment, culverts			
e.	Response 162-166 PCU luminance/mirror visibility			
	Response 167-174 Oil storage, SPCC, waste streams			
21.	**Updated project map**, dated December 21, 2009, docketed December 21, 2009			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
	Project Map Biology			
22.	**Donated Parcel Study**, dated December 17, 2009, docketed December 17, 2009			
a.	Biology			
b.	Cultural Resources			
c.	Geology			
d.	Soils			
e.	Land Use			
f.	Noise			
g.	Public Health			
h.	Visual Resources			
23.	**Project Description for 275 MW Interconnection**, dated December 23, 2009, docketed December 23, 2009			
	SCE Description for 275 Interconnection			
24.	**Biological Resources Technical Report, Biological Resources Baseline Study, and Noxious Weed Management Plan**, dated December 23, 2009, docketed December 23, 2009			
25.	**Geotech Engineering Report**, dated January 6, 2010, docketed January 8, 2010			
26.	**Responses to CURE letter**, dated January 7, 2010, docketed January 7, 2010			
	DR 10, 379, 380, 382			
27.	**CAISO, Corridor Conflict Analysis**, dated January 6, 2010, docketed January 8, 2010			
	Corridor Conflict & BLM letter			
28.	**Response to CEC transmission questions**, dated January 8, 2010, docketed January 8, 2010			
a.	Items 1-3, 7 Biology			
b.	Items 4, 9 and 11 SCE transmission			
c.	Items 5-6 Cultural			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
d.	Items 8 & 10, 12, 14 Flood zones			
e.	Item 13 BMPs for Erosion			
29.	**Additional Alternatives Analysis**, dated January 7, 2010, docketed January 8, 2010			
a.	Introduction, Land Use			
b.	Biological Resources			
c.	Cultural Resources			
d.	Water Resources			
30.	**Additional Information on Water Supply**, dated January 15, 2010, docketed January 15, 2010			
	Field efforts and back-up water supply			
31.	**MDAQMD Final Decision**, dated January 27, 2010, docketed January 27, 2010			
32.	**Supplemental Information**, dated January 27, 2010, docketed February 3, 2010			
a.	Sections 1.0 & 1.2 Cadiz water supply			
b.	Section 2.1 Introduction			
c.	Section 2.2 Air Quality			
d.	Section 2.3 Geology			
e.	Section 2.4 Soils			
f.	Section 2.5 Water			
g.	Section 2.6 Biology			
h.	Section 2.7 Cultural			
i.	Section 2.8 Paleontology			
j.	Section 2.9 Land Use			
k.	Section 2.10 Socioeconomics			
l.	Section 2.11 Traffic			
m.	Section 2.12 Noise			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
n.	Section 2.13 Visual			
o.	Section 2.14 Waste Management			
p.	Section 2.15 Hazardous Materials			
q.	Section 2.16 Public Health			
r.	Section 2.17 Worker Safety			
s.	Section 2.18 Cumulative			
33.	**Response to January 5, 2010 workshop items**, dated January 29, 2010, docketed January 29, 2010			
a.	Items 1-4, 6-21, Biology 23-34			
b.	Item 5, 22 Evaporation ponds			
34.	**Drainage Layout**, dated February 12, 2010, docketed February 12, 2010			
	Drainage Layout			
35.	**Construction Milestone Schedule**, dated February 12, 2010, docketed February 12, 2010			
	Construction milestones			
36.	**Burrowing Owl Survey**, dated February 19, 2010, docketed February 13, 2010			
37.	**CEC/BLM Responses**, dated February 24, 2010, docketed February 24, 2010			
	Response 102 and 103			
38.	**LGIA**, dated February 26, 2010, docketed February 26, 2010			
39.	**Clean Water Act 401 Application and Notification of Lake or Streambed Alteration**, dated March 4, 2010, docketed March 4, 2010			
40.	**Revised Project Layout**, dated March 8, 2010, docketed March 8, 2010			
41.	**Existing and Future Access Roads**, dated March 8, 2010, docketed March 8, 2010			
42.	**Use of Rail to Transport Water**, dated March 26, 2010, docketed March 26, 2010			
43.	**2010 Burrowing Owl survey results**, dated March 26, 2010, docketed March 26, 2010			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
44.	**Biological Assessment**, dated April 1, 2010, docketed April 1, 2010			
45.	**Comments on SA/DEIS**, dated April 14, 2010, docketed April 14, 2010			
46.	**Construction Schedule**, dated April 21, 2010, docketed April 21, 2010			
47.	**Additional information from April workshop**, dated April 20, 2010, docketed April 20, 2010			
a.	Soils			
b.	Access			
c.	Worker Safety			
d.	Efficiency			
e.	Traffic			
48.	**Suggested Revised Biological Conditions**, dated April 27, 2010, docketed April 27, 2010			
49.	**Federal NO2 1-hour Modeling Analysis**, dated April 30, 2010, docketed April 30, 2010			
50.	**Results from Helicopter Surveys for Golden Eagle Nests/Bighorn Sheep**, dated April 30, 2010, docketed April 30, 2010			
51.	**Letter pertaining to Glint & Glare**, dated April 30, 2010, docketed April 30, 2010			
52.	**Additional information**, dated May 4, 2010, docketed May 4, 2010			
53.	**Department of Army Permit**, dated May 6, 2010, docketed May 6, 2010			
54.	**2010 Early Spring Botany Survey Results**, dated May 20, 2010, docketed May 20, 2010			
55.	**2010 Desert Tortoise Survey Results**, dated May 18, 2010, docketed May 18, 2010			
56.	**Supplement to AFC**, dated May 14, 2010, docketed May 14, 2010			
a.	Site boundary			
b.	Hydrogen system			
c.	Water Supply			
57.	**Site Layout Alternative #2**, dated June 2, 2010, docketed June 2, 2010			
58.	**Maricopa Construction and Operation**, dated June 11, 2010, docketed June 11, 2010			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
59.	**Information in Response to 6/4/2010 CEC email**, dated June 11, 2010, docketed June 11, 2010			
60.	**Additional Information in Response to 6/4/2010 CEC email**, dated June 16, 2010, docketed June 16, 2010			
61.	**2010 Late Spring Botany Survey Results**, dated June 16, 2010, docketed June 16, 2010			
62.	**Submittal of Microphyllus Species Distribution**, dated June 22, 2010, docketed June 22, 2010			
63.	**Opening Direct Testimony for Felicia Bellows**			
64.	**Opening Direct Testimony for Sean Gallagher**			
65.	**Opening Direct Testimony for Mike Alhalabi**			
66.	**Opening Direct Testimony for Robert Byall**			
67.	**Opening Direct Testimony for Noel Casil**			
68.	**Opening Direct Testimony for Matt Dadswell**			
69.	**Opening Direct Testimony for Michael Hatch**			
70.	**Opening Direct Testimony for Shawn Johnston**			
71.	**Opening Direct Testimony for Angela Leiba**			
72.	**Opening Direct Testimony for Julie Mitchell**			
73.	**Opening Direct Testimony for Patrick Mock**			
74.	**Opening Direct Testimony for Matt Moore**			
75.	**Opening Direct Testimony for Rachael Nixon**			
76.	**Opening Direct Testimony for Rick Reiff**			
77.	**Opening Direct Testimony for Robert Scott**			
78.	**Opening Direct Testimony for Joe Stewart**			
79.	**Opening Direct Testimony for Mark Storm**			
80.	**Opening Direct Testimony for Waymon Votaw**			
81.	**Opening Direct Testimony for Tricia Winterbauer**			

Exhibit	Brief Description Including Date of Document and Docketed Date	Admitted	Refused	CEC Use Only
82.	**Rebuttal Testimony for Felicia Bellows**			
82-A.	Applicant's Requested Changes to Conditions			
82-B.	Maps of Pre- and Post-Project Public Access Routes			
82-C.	Map of Biological Resources Avoided by Project Boundary Modification			
82-D.	Revised Project Base Map			
82-E.	July 1, 2010 BNSF letter			
83.	**Rebuttal Testimony for Julie Mitchell**			
84.	**Rebuttal Testimony for Robert Scott**			
84- A.	Map of Wells in the Vicinity of the Calico Solar Project			
85.	**Rebuttal Testimony for Joe Liles**			
86.	**Rebuttal Testimony for Robert Byall**			
87.	**Rebuttal Testimony for Patrick Mock**			
88.	**Rebuttal Testimony for Theresa Miller**			
89.	**Rebuttal Testimony for Waymon Votaw**			
90.	**Rebuttal Testimony for Tariq Hussain**			
90-A.	Map of Offsite Consequences Analysis for Two Independent Centralized Hydrogen Systems			
91.	**Rebuttal Testimony for Noel Casil**			

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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APPLICATION FOR CERTIFICATION
For the CALICO SOLAR (Formerly SES Solar One)

Docket No. 08-AFC-13

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(Revised 6/14/10)

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DECLARATION OF SERVICE

I, Jennifer Draper, declare that on July 29, 2010, I served and filed copies of the attached Applicant's Prehearing Conference Statement. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/solarone].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

_X_ sent electronically to all email addresses on the Proof of Service list;

____ by personal delivery;

_X_ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_X_ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-13
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original Signed By
Jennifer Draper

*indicates change