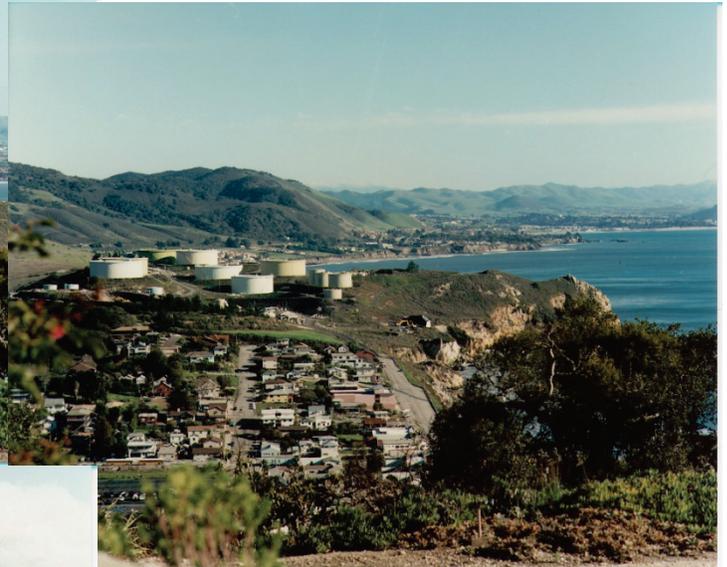


**Proposal for Preparation of the
Avila Point Project
Specific Plan Amendment/Coastal Plan Amendment/
Development Plan/Remediation
Environmental Impact Report**



**Prepared By:
Marine Research Specialists
SWCA Environmental Consultants**

May 23, 2013

**Prepared For:
County of San Luis Obispo
Department of Planning and Building**

County of San Luis Obispo ED12 129 (DRC2012-00048; LRP2012-00003)

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1.0 Introduction

Marine Research Specialists (MRS) is pleased to submit this proposal to the County of San Luis Obispo to prepare an Environmental Impact Report (EIR) for the Avila Point Project. This proposal was written to comply with all requirements specified in the Request for Proposals (RFP).

This section includes an overview of the proposed project, a summary of the proposed scope of work, a summary of MRS's qualifications, an introduction to the subcontractors included on the team, and an explanation of the proposal structure.

1.1 Summary of Proposed Avila Point Project

The proposed project is a 95 acre site within the Industrial land use category and is located at 1717 Cave Landing Road, in the Community of Avila Beach. The property is adjacent to the southern side of downtown Avila Beach and extends south up to Cave Landing Road. The site is in the San Luis Bay Coastal planning area, and Avila Beach Specific Plan area.

The proposed project includes three distinct phases where the County will approve or process the appropriate actions associated with each phase. Project phases include:

- Remediation - A Development Plan is necessary for the cleanup of the tank farm property. A Remedial Action Plan (RAP) has not been submitted by Chevron at this time, but is anticipated in the future, most likely by the end of 2013. The Development Plan would be approved by the County (Planning Commission and/or Board of Supervisors), and is appealable to the California Coastal Commission.
- Future Development – Two separate actions/phases are involved with the re-use and development of the Avila Tank Farm:
 - Local Coastal Plan/Specific Plan Amendment - The site is currently designated Industrial. This land use category needs to be changed to a new designation that would accommodate re-use and re-development of the site (Recreation is requested). This rezoning requires a Specific Plan amendment/Local Coastal Plan Amendment to identify future appropriate development and uses, including development standards for future development. A Local Coastal Plan/Specific Plan Amendment would be considered by the County Planning Commission, and approved by the Board of Supervisors and the California Coastal Commission.
 - Development Plan – A Development Plan is required to develop and construct the new uses (allowed under the new land use designation) consistent with the amended Specific Plan.

Chevron has submitted a project “vision package” which includes the rezoning and clean-up. Entitlements for redevelopment of the property will be included as part of the proposed project, but actual development would be done by an outside developer. The “vision” submitted by Chevron includes rezoning the property from Industrial to Recreation and construction of a resort which includes a restaurant, spa, shops, cottages, hotel rooms and related facilities (some of which may be fractional ownership). Included in the project is a coastal bluff trail and other trails throughout the site, remote parking areas (idea is for the site to remain car free if possible), and golf cart facilities for use on site. Water and wastewater facilities may be obtained by the Avila Beach Community Services District, however Chevron has informed the County that wastewater may remain on-site. This, along with several other details of the project would be refined through development of the EIR project description, or explored through EIR alternatives. Remediation of the site will include clean up of previous contamination from the industrial use of the property per all state and federal standards using a risk-based approach, as well as demolition of existing buildings and remaining industrial facilities on the site.

1.2 Summary of the Proposed Scope of Work

The objective of the project is to prepare an EIR that meets all of the requirements of the County and complies with all the requirements of the California Environmental Quality Act (CEQA). The EIR also needs to be written to be easily understood by the public and the decision makers, and at the same time be legally defensible.

The scope of work for the EIR will involve the following major tasks:

- Prepare a Project Description;
- Prepare a list of cumulative projects;
- Develop a baseline environmental setting for the study area via document review and field work;
- Assess the impact of the project and develop mitigation measures as needed;
- Assess the cumulative project impacts and develop mitigation measures as needed;
- Develop an alternatives analysis that contains a range of alternatives and a detailed analysis of select alternatives;
- Evaluate and determine the Environmentally Superior Alternative;
- Prepare a Mitigation Monitoring Plan;
- Prepare the Administrative and Public Draft EIR;
- Prepare the Administrative and Final EIR that include responses to comments;
- Assist the County with various public meeting and hearings; and
- Assist the County with the preparation of CEQA Findings and staff reports.

In addition to the EIR tasks, MRS is proposing to assist the County in pre-EIR tasks in order to facilitate the preparation of a defensible EIR. One of the unique aspects of this project is the

interaction between the remediation and development phases of the project. Chevron Land and Development Company has submitted an “initial application” on behalf of the land owner, Union Oil Company of California, to begin the process through the County of obtaining an EIR consultant very early in the scoping process. The intent is that the selected consultant would work with the County in development of a formal project description as well preparation of CEQA documentation for this complex permit process. An initial project application was submitted to the County for processing on December 7, 2012 which includes applications for a Local Coastal Program/Specific Plan/General Plan amendment to rezone the site from Industrial to Recreation, a “Development Plan/Coastal Development Permit” application for site remediation, and a “Development Plan/Coastal Development Permit” application for future re-development activities (final site layout not yet complete). It is anticipated that the selected EIR consultant would partner with the County for all initial public workshops and scoping meetings, notice of preparation completion, and other CEQA process completion for the requested entitlements.

As we have learned from the Chevron Tank Farm EIR project, the decision about the future land use at a site drives the type and extent of remediation at the site. Decision about the type and extent of remediation are typically driven by ecological and human health risk levels, which in turn are based upon the type of land use development that will occur at the site. The results of the ecological and human health risk assessments will tend to serve as the basis for the design of the RAP, which details the remediation activities. The RAP typically serves as the basis for the remediation project description used in the EIR. Therefore, assuring that the ecological and human health risk assessments and RAP are complete and accurate is critical to the preparation of a complete and defensible EIR. This requires a close working relationship with the RWQCB, who is responsible for approval of the human health risk assessment and the RAP.

MRS is committed to working closely with the County on this project and assuring that the final scope of work meets all of the County requirements. MRS is also committed to the public process, an integral part of CEQA. One of the main objectives of the EIR process is to ensure that all relevant issues raised by the public are thoroughly evaluated in the EIR.

1.3 Summary of MRS Qualifications

MRS will provide the County with a group of highly qualified technical experts who understand complex oil and gas development. This knowledge is coupled with a strong understanding of CEQA. Together these skill sets enable MRS to produce high-quality EIR for petroleum remediation and development projects.

MRS staff has prepared more than 80 environmental reviews for petroleum, remediation and development projects. In particular, MRS has provided specialized services in the areas of system safety and risk of upset, air quality, water quality, noise, land use, aesthetics, and fire protection. MRS specializes in preparing CEQA documents for complex, controversial projects.

No CEQA document prepared by MRS staff members has ever been found inadequate by a court of law.

MRS staff has a long history of providing specialized services to local, state, and Federal government agencies covering development projects. MRS staff has also provided environmental review services to a number of private companies. MRS is currently providing environmental review services for the County of Los Angeles, County of San Luis Obispo, Santa Barbara County, California State Lands Commission, California Coastal Commission, City of Morro Bay, City of Whittier, and the Bureau of Ocean Energy Management (BOEM).

1.4 The MRS Team

Given the unique nature of the project site and the need for local knowledge to assess environmental impacts, MRS assembled a team of highly qualified professionals. MRS selected SWCA Environmental Consultant in San Luis Obispo, a local firm with extensive knowledge of the local areas and County land use regulations and policies. SWCA has strong local skills in the areas of Biological Resources, Cultural Resources, and Land Use and Recreation. MRS also selected SAIC, a company with extensive experience, to conduct work on Water Resources and Geology issues associated with oil and gas development projects. MRS selected the highly qualified firm Central Coast Transportation, who is based in San Luis Obispo, to prepare the Traffic and Circulation section of the environmental document. MRS selected these firms for their knowledge and expertise in their specific issue areas and their proven ability to produce extremely high quality work that will meet the requirements of the County and CEQA.

1.5 Proposal Structure

Our proposal includes a comprehensive discussion of our approach to this project. The proposal has been divided into eight major sections.

Section 1 – Introduction: This section briefly discusses the project and the team’s approach to the project. This section also introduces the firms on MRS’s proposed team.

Section 2 – Qualifications and Experience: This section recognizes the capabilities of the firms on the project team. It provides a brief history of the firms, their relevant experience, and their organizational structure. Appendix B contains additional qualifications for each firm.

Section 3 – Personnel and Project Management: This section details the proposed organizational structure for the project team. The section discusses the project management team, as well each of the key staff members. Brief resumes of the key staff are provided in this section. Appendix A provides detailed resumes of the key staff. This section also discusses MRS’s approach to managing EIR projects, including management team roles and responsibilities, program management and control systems, communication, and management of subcontractors.

Section 4 – Study Methodology: The first part of this section provides an overview of MRS’s technical approach to preparing an EIR and addresses the development of the project description, alternative analysis, preparing issue area baselines, impact assessments, cumulative impacts, mitigation measures, mitigation monitoring plans, and residual impact analyses. The second part of this section discusses in detail MRS’s approach to each of the issue areas reviewed in the EIR.

Section 5 – Document Preparation: This section discusses the tools that MRS has developed to prepare and coordinate all document production activities.

Section 6 – Schedule: This section presents a detailed schedule for the project, which identifies the key tasks, deliverable dates, County and public reviews, and public hearings and workshops.

Section 7 – Cost Quotation and Budget Summary: This section presents the detailed cost estimate for the project by issue area and task. This section also identifies the assumptions used to develop the cost estimate. Information on objectivity and acceptance of contractual provisions is provided in this section.

Section 8 – References: This section provides a list of references for the proposed project manager.

2.0 Qualifications and Experience

This section of the document provides a summary of the team's qualifications and experience. Additional team qualifications are provided in Appendix B. This section also presents information on each firm's organizational structure, capabilities, history, and recent relevant experience.

2.1 Marine Research Specialists

Marine Research Specialists (MRS) is a small environmental consulting firm based in Ventura, California. MRS has a board of directors; a team of senior staff including the president/chief executive officer and the chief financial officer who manage day-to-day operations. The Project Manager reports to the president of the firm.

MRS is exceptionally qualified to assist the County of San Luis Obispo (the County) with this project. MRS staff has an outstanding record of success in preparing California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents for complex and often controversial industrial permitting projects in central and southern California. MRS staff has prepared more than 90 Environmental Impact Reports (EIR) and/or Environmental Impact Statements (EIS) and related technical studies during the past 25 years.

MRS is very experienced in managing large, contentious projects. MRS staff has logged more than 2,000 hours in public hearings in support of local and state agencies in California. MRS's local staff is well known and respected by many decision makers in Southern California. Most of MRS's staff came from the Environmental, Safety and Risk Practice of Arthur D. Little, Inc., where they worked for as many as 23 years.

Since 1984, MRS staff has worked with local agencies in California to support industry and the regulatory community with major permitting projects. Since that time, the major focus of their work in southern California has been assessing environmental impacts for industrial development projects. We have been able to combine the very broad range of MRS's Land Use, Environmental, Health, and Safety (EHS) and technological expertise with a strong local presence to address the complex issues often associated with these types of projects. MRS consistently works for both industry and regulators, making us uniquely qualified to assist with complex permitting projects. MRS is well known for expertise in atmospheric sciences, land use, system safety, risk of upset, air quality, health risk assessment, noise, aesthetics and fire protection. In fact, MRS staff has conducted most of the offshore oil and gas development safety assessments done for Santa Barbara County, where a significant amount of offshore oil and gas development has occurred in the last 100 years.

MRS staff is currently in the process of completing the Chevron Tank Farm Road EIR for SLO County and City. This is a very similar project to the proposed Avila Point Project in that would

involve remediation of a site followed by some level of development. MRS staff have also worked on a number of remediation project for SLO County. MRS staff managed the Field Investigation Conducted to Assess the Extent of Contamination at Avila Beach, the Avila Beach Cleanup Project EIR/EIS, and the Environmental Monitoring of Unocal's Avila Beach Cleanup Project (Project Avila). Our extensive work in Avila Beach provides us with unique perspective of local issues. MRS also prepared the EIR for the Guadalupe Oil Field Remediation and Abandonment EIR, and continues to support the County in monitoring the ongoing cleanup efforts.

MRS staff has a long history of providing specialized services to state and local agencies covering energy projects. MRS has never had a CEQA document found inadequate by a court of law, despite the fact that a number of the CEQA documents we prepared were for controversial projects subject to challenge. MRS's specialization in preparing CEQA documents for complex, controversial industrial projects has included: for the County of Los Angeles, updating the regulatory framework of the Inglewood Oil Field; for Santa Barbara County, focusing on oil and gas development projects handled by the Energy Division; and for San Luis Obispo County, focusing on the controversial Excelaron Project, Avila Beach and Guadalupe Oil Field cleanup projects, the complex Chevron Tank Farm Rod remediation and development project, as well as the Nacimiento Water Pipeline Project and the Diablo Canyon Independent Spent Fuel Storage Installation Project.

MRS has also provided valuable services to the City of Carson, City of Carpinteria, the California Coastal Commission, the California Energy Commission, the Regional Water Quality Control Board, the South Coast Air Quality Management District, the City of Adelanto, Contra Costa County, and the Bureau of Land Management.

2.2 SWCA Environmental Consultants

SWCA is an employee-owned company, specializing in natural and cultural resources, environmental planning, and geographic information services. Since 1981, SWCA has grown into a large business with more than 500 employees and 23 offices throughout the western United States, Hawaii, and Guam, including three offices in California. Since 1984, SWCA's San Luis Obispo office (formerly known as Morro Group, Inc.) has completed hundreds of environmental documents for local, state, and private projects, with a focus on the preparation of a wide range of California Environmental Quality Act (CEQA) and technical environmental documents for local agencies throughout central California. These documents include mitigated negative declarations (MND), environmental impacts (EIR), Environmental Assessments (EA), and mitigation monitoring and restoration plans.

SWCA's planners and natural resource specialists provide an extensive background in the assessment of coastal and inland resources in the state of California, including 29 years in San Luis Obispo County. SWCA's project experience demonstrates a thorough knowledge of and

strict adherence to federal, state, and local regulations. SWCA's San Luis Obispo office has demonstrated a high level of competency in preparing all levels of CEQA determinations and has consistently produced quality deliverables in a timely manner for public agencies throughout San Luis Obispo County.

SWCA has a wide variety of experience relating to the issue areas that they will be contributing to in this EIR, including, but not limited to, Local Coastal Plan Amendments, hotel/resort projects, developments in the area:

- Arroyo Grande Creek Waterway Management Program and EIR
- Bob Jones Pathway, Phase II – San Luis Obispo to Ontario Road CEQA/NEPA Studies
- Bob Jones Pathway Segment IS/MND and Coastal Development Permit Staff Report
- Cave Landing Phase I Archaeological Survey
- Chevron Tank Farm Restoration and Development Plan EIR, as County Project Manager
- City of Soledad Downtown Specific Plan EIR
- Coalinga General Plan EIR
- DeVincenzo General Plan Amendment and Development Plan EIR
- Glen Ivy Resorts (San Luis Bay Inn) Development Plan EIR
- Grover Beach Beachfront Lodge and Conference Center EIR
- Grover Beach Land Use Element Update and Master EIR
- Growth Management Ordinance (Title 26) Amendments EIR
- Guadalupe Oil Field Remediation and Restoration EIR, as County Project Manager
- Kiessig (Sycamore Mineral Springs) Development Plan EIR
- Laetitia Agricultural Cluster, Tract Map, and Development Plan EIR
- Ontario Road Bridge Replacement Expanded IS/MND
- Port San Luis Lighthouse Biological Services
- San Luis Bay Drive Bridge Replacement Project Biological, Cultural, and Visual Studies and IS/MND
- San Luis Bay Estates Phases 4, 5, and 6 Subsequent EIR
- San Miguelito Partners Local Coastal Plan Amendment EIR

2.3 Albion Environmental, Inc.

Incorporated in 1997, Albion Environmental, Inc. (Albion) has built a strong reputation for successfully executing cultural resource projects under complex regulatory contexts, and is well-versed in every stage of federal and state environmental compliance. The Principals proposed for the this project, Clinton Blount and Jennifer Farquhar have 40 and 25 years' experience

respectively in cultural resource management in California. Albion's 25 member team of senior archaeologists, technicians, and administrative support staff has extensive experience throughout northern and central California, many with field and compliance experience in San Luis Obispo County. For example, the team is currently completing assignments at the DANA Adobe site (Nipomo) and the proposed Eagle Ranch development (Atascadero). We also recently completed a nearly three year assignment to conduct all phases of cultural resource management at the Nacimiento Water Project in North County.

Albion specializes in:

- Prehistoric and historical archaeological inventory, significance evaluation, data recovery mitigation, preservation planning, and compliance monitoring
- Native American consultation, negotiation, and project participation.
- Active participation in the environmental review process including section 106, Traditional Cultural Property studies, Senate Bill 18, CEQA, NAGPRA, and numerous local regulations, particularly the cultural resource elements of the newly adopted San Luis Obispo County General Plan.
- In-house analysis including flaked stone and faunal studies, as well as curation preparation and management.

Albion's client list includes the Department of the Army, Department of the Air Force, California National Guard, Pacific Gas and Electric Company, California Department of Parks and Recreation, Santa Clara University, among many others. Albion has worked directly for, or supplied data for regulatory documents for San Luis Obispo, Monterey, San Benito, Santa Cruz, and Santa Clara Counties, demonstrating strong commitment to clients in California's coastal region.

Albion's recent work in the region includes:

- Nacimiento Water Project Cultural Resources and Native American coordination
- Dana Adobe Nipomo EIR Cultural Resources and Native American consultation
- Los Osos Wastewater Treatment Project Native American Participation Coordination
- Eagle Ranch Atascadero EIR Cultural Resources and SB 18 Consultation
- U.S. Department of Defense at Fort Hunter Liggett Cultural Resource Investigations
- Nipomo Mesa Archaeological Data Recovery
- Santa Ysabel Ranch Cultural Resources Inventory

Camp Roberts Army National Guard Training Facility Cultural Resources archaeological investigations, preparation of regulatory agreements, and a Traditional Cultural Property study

Albion maintains offices in Santa Cruz and recently opened an office in downtown San Luis Obispo. Albion uses a comprehensive project and financial management system, Deltek Vision, to ensure seamless execution of all contract assignments. Albion is a California Small Business (General Services Small Business #16451) and is PICS certified, (PICS Contractor ID: 41446).

2.4 Russell Consulting

Russell Consulting is owned by Mr. Russell who has 26 years of experience as a geologist, including 17 years preparing technical sections for CEQA documents. Technical sections completed by Mr. Russell include geological resources, water resources, wastewater, hazardous materials, and safety, related to a number of development and oil and gas projects, including the Santa Maria Energy Orcutt Oil Field Expansion Project, the Venoco Paredon Project, the Matrix Oil Whittier Main Oil Field Project, the PXP Inglewood Oil Field Expansion Project, the Venoco Line 96 Project, the Venoco Ellwood Marine Terminal Abandonment Project, the Tranquillon Ridge Offshore Drilling Project, and the Molino Gas Development Project.

He also prepared sections for the Plains All American Pipeline, L.P., Pier 400, Berth 408 Project, in the Port of Los Angeles. Development related documents included the Rice Ranch Specific Plan Supplemental EIR, which was an addendum to the Orcutt Community Plan EIR, and the Hunters Point Naval Shipyard Project (EIS), in the City of San Francisco, which was a highly contaminated shipyard proposed to be converted to residential, commercial, industrial, and recreational uses. Mr. Russell has also completed several projects in San Luis Obispo County, including an EIR associated with a proposed temporary storage facility for radioactive waste at the Diablo Canyon Nuclear Power Plant.

Mr. Russell is a California Professional Geologist and California Certified Engineering Geologist, and has experience in geotechnical engineering, petroleum geology, and soil/groundwater site assessment/remediation. Most of the latter involved oil and gas related facilities, including an extensive site assessment at the former Chevron-Carpinteria oil and gas processing plant; a major soil remediation (dig and haul) project associated with abandonment of the Phillips Petroleum gas processing facility in Gaviota, California; site assessment/soil remediation activities associated with abandonment of approximately 15 oil wells and 6 tank batteries in an area of proposed development in Ventura County; and auditing of a portion of Texaco's oil production facilities (approximately 40 well sites, production facilities, and pipeline corridors) in the rain forest of Ecuador. In addition, he contributed to a sea cliff retreat study at Long Point, on the Palos Verdes Peninsula, in association with establishment of a geologic setback for a proposed resort development (current site of the Terranea Resort).

2.5 CCTC

Central Coast Transportation Consulting (CCTC) provides transportation planning and traffic engineering services with extensive local experience in traffic impact analysis and traffic

operations. CCTC is based in San Luis Obispo County, and was founded in 2011. CCTC's services include:

- Transportation impact studies
- Transportation data collection
- Travel demand forecasting
- Traffic signal and lighting design
- Signing and striping plans
- Traffic control plans
- Safety studies
- AB 1600 transportation impact fee studies
- Parking studies
- Project management and peer review
- Traffic operations analysis, including micro-simulation
- Multi-modal level of service calculations
- Signal warrant studies
- On-site circulation studies
- Traffic calming plans

Following is a partial list of relevant projects completed by CCTC staff:

- Chevron Tank Farm Road EIR (project with MRS);
- Laetitia Agricultural Cluster EIR (project with SWCA);
- Orcutt Area Specific Plan EIR;
- Seaside West Broadway Specific Plan and EIR;
- Menlo Park El Camino Real/Downtown Specific Plan and EIR;
- San Luis Obispo Chinatown Mixed Use Project EIR;
- River Oaks II Transportation Impact Analysis, Paso Robles;
- City of Paso Robles Travel Model Development and Circulation Element Update;
- Promenade II Retail Center Transportation Impact Analysis, San Luis Obispo;
- Shandon Constraints Analysis;
- The Alameda Parking Study, San Jose;
- SLOCOG Transportation Modeling Support.

3.0 Key Personnel and Project Management Program

This section of the proposal presents a summary of the key personnel who will work on the Project and provides an overview of the Project management program.

3.1 Key Personnel

MRS selected a specialized team for this assignment based on the project type, location, affected resources, and the key issues concerning the public. To complement MRS's expertise, team members from MRS will manage the work for this assignment from their Ventura office:

Marine Research Specialists
3140 Telegraph Road, Suite A
Ventura, CA 93003
805.289.3920

All MRS staff members can be reached at this location.

Figure 3.1 is the organizational structure for managing this Project and identifies key team members and their areas of responsibility. Brief biographical sketches of the key team members highlight their relevant experience working on similar environmental review projects. More detailed resumes for the key staff are located in Appendix A.

Mr. John Peirson, MRS, will serve as the Principal in Charge for this project. His primary responsibility will be to oversee the project and to work closely with the Project Manager on the day-to-day management of the project. Mr. Peirson's expertise includes managing of large complex environmental review projects to comply with the requirements of CEQA and NEPA. His CEQA and NEPA work primarily focuses on oil and gas development projects, as well as other large complex industrial projects. He has also worked extensively in engineering, risk assessment, and environmental studies of various oil and gas development projects in California. His professional work emphasizes major environmental and energy assignments with state and local governments as well as industry. He has managed many EIR/EIS assessments, which include some of the most complex and controversial projects evaluated on the South and Central Coast of California. These projects include:

- Excelaron Project EIR
- Tank Farm Road Remediation and Development EIR
- Guadalupe Restoration Project EIR
- Diablo Canyon EIR
- Baldwin Hills Community Services District EIR

Mr. Peirson began working on CEQA/NEPA permitting activities in 1983. Since then he has prepared CEQA/NEPA documents for more than 63 major projects within California. Most of these projects were controversial and involved considerable work in developing permitting strategy. All EIRs and/or EISs in which Mr. Peirson was manager have been upheld in court proceedings.

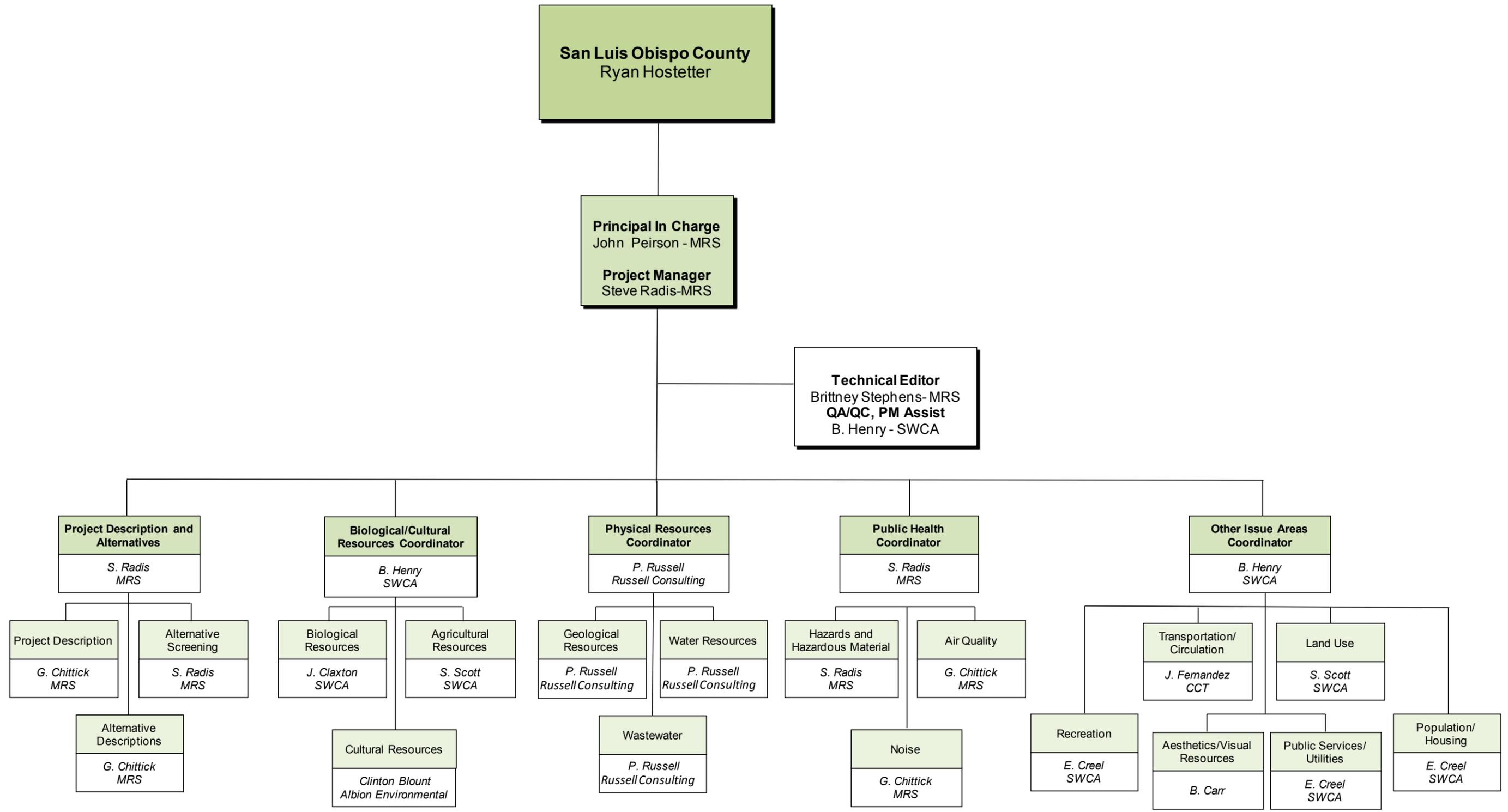
Mr. Peirson has provided over 750 hours of testimony to local and state decision makers including Planning Commissions, Boards of Supervisors, the State Lands Commission, and the California Coastal Commission. He also has extensive experience in working with local and state government staff in developing permit conditions and findings associated with oil development projects.

Mr. Steve Radis, MRS, will serve as the Project Manager and Principal Investigator for Hazards and Hazardous Materials. His expertise includes meteorological modeling and analysis, physical oceanographic modeling and analysis, consequence and risk analysis, fire and explosion dynamics, hazard evaluation, external events analysis, fault tree analysis, and model development. Mr. Radis has worked on a wide variety of studies for utilities, commercial, and government clients involving meteorological modeling, quantitative risk assessments, health risk assessments, consequence analysis, risk management, air quality modeling (inert/photochemical pollutants, toxic air contaminants), and EIRs and EISs. Mr. Radis was the Project Manager for the Field Investigation Conducted to Assess the Extent of Contamination at Avila Beach, the Avila Beach Cleanup Project EIR/EIS, the Environmental Monitoring of Unocal's Avila Beach Cleanup Project (Project Avila), and is the Principal Investigator for Hazards and Hazardous Materials for the Chevron Tank Farm Road EIR.

Mr. Greg Chittick, MRS, will be the Principal Investigator for the Project Description, Alternatives and Cumulative Projects Description, Air Quality, and Noise. Mr. Chittick has more than 15 years experience in quantitative analysis of environmental impacts. He has conducted analysis of noise impacts, air quality impacts, and prepared computerized maps with geographical information systems related to a number of remediation and development projects including Avila Beach Remediation EIR, Chevron Tank Farm Road EIR, and Guadalupe Restoration Project EIR. Mr. Chittick also has conducted extensive noise modeling for remediation and development projects including the Chevron Tank Farm EIR. Mr. Chittick has also worked closely with the SLOAPCD on a number of remediation and development projects and is familiar with APCD CEQA requirements.

Bill Henry, AICP, M.C.R.P., SWCA, will serve as SWCA project director, and will be available on an as-needed basis in an advisory capacity to the SWCA project team should any uniquely challenging issues arise. Mr. Henry will also serve as one of the QA/QC reviewers of the EIR documents. As Office Director, Mr. Henry has been preparing environmental documents in

Figure 3-1 Proposed Organizational Chart



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California since 1988. Mr. Henry retains a diverse workload by working directly on the preparation and management of a wide array of environmental documents and projects in addition to performing management responsibilities that include client liaison, agency liaison, preparation of project budgets, administration and review of contracts, staff and project planning, and quality control for projects under his direction. Mr. Henry has managed or prepared several hundred environmental documents in San Luis Obispo County. This experience includes preparation, coordination, and processing of a wide variety of environmental documents, monitoring plans, revegetation plans, technical reports, resource agency permits, and resource protection and conservation studies. Recent and related projects include the acting as the County and City's assistant project manager for the Chevron Tank Farm Restoration and Development Plan EIR, acting as the County's assistant project manager for a variety of CEQA and other tasks associated with the Guadalupe Restoration Project, acting as the County's assistant project manager for the San Miguel Ranch General Plan Amendment EIR, EIR Project Manager for San Luis Bay Estates Phases 4, 5, and 6 Tract Map and Development Plan Subsequent EIR, the San Miguelito Partners Local Coastal Plan Amendment EIR, and and the Beachfront Lodge EIR (Grover Beach).

Shawna Scott, SWCA, will serve as the SWCA project manager, and quality assurance/quality control for SWCA. Ms. Scott specializes in implementing lead agency responsibilities under CEQA and NEPA, managing project teams, and writing environmental documents. Ms. Scott has over 13 years of experience in land use and environmental planning, and has prepared several types of documents including EIRs, MNDs, ExISs, preliminary environmental analysis reports, environmental constraints and opportunities analysis reports, Local Coastal Plan/Coastal Act policy analysis, staff reports, and findings. In addition, Ms. Scott's responsibilities include schedule and budget management, coordination with Lead Agency staff, consultation with federal state, and local agencies, assistance with Lead Agency correspondence to applicants, agencies, and interested parties, facilitation and support during in-house and public meetings, response to comments, preparation of conditions and findings, and presentation at public hearings. Ms. Scott's extensive public and private project experience includes: general plan and ordinance amendments; urban and rural land development; restoration projects; recreational facilities; open space management; wineries; energy generation and transmission; telecommunications, and fiber optic facilities and infrastructure; wastewater treatment, storage, and disposal; and, road and bridge improvements. Recent projects include the Nipomo Community Park Master Plan Program EIR, DANA Land Use Ordinance Amendment and Conditional Use Permit Initial Study and EIR, Laetitia Agricultural Cluster EIR, Excelaron (Mankins) Conditional Use Permit Huasna Valley Oil Exploration and Production Project EIR, San Luis Bay Drive Bridge Replacement Project IS/MND, and Bob Jones Bikepath Segment IS/MND. Ms. Scott has prepared environmental determinations for ordinance and general plan amendments, including the Agriculture (Minimum Parcel Size) Ordinance Amendments, Biosolids Interim Ordinance, San Miguel Urban Area General Plan Amendment, and Small Wind Ordinance Amendments.

Jon Claxton, SWCA, will prepare the Biological Resources section of the EIR. Mr. Claxton has 12 years of environmental consulting experience in California. As the Natural Resources Team Leader in the SWCA San Luis Obispo office, he oversees projects related to natural resources, providing management to eight in-house biologists and one archaeologist, and providing Quality Assurance and Quality Control (QA/QC) on various reports. Mr. Claxton's work has included management of environmental tasks for the County of San Luis Obispo Department of Public Works, and most notably, large on-call contracts with Caltrans Districts 5 and 10. Mr. Claxton has authored Caltrans NESs, CEQA/NEPA documents, biological constraints analysis, jurisdictional delineations, Endangered Species Act Section 7 Biological Assessments (BA), sensitive species survey reports, EIR sections, and mitigation and monitoring plans. Mr. Claxton also has proven experience with permitting in compliance with Clean Water Act Sections 401 and 404, Fish and Game Code Section 1602 Streambed Alteration Agreements, and the Coastal Act. Mr. Claxton is currently working on five bridge projects on the Central Coast. Mr. Claxton's recent projects include the Arroyo Grande Creek Waterway Management Plan EIR and the Brisco Road/Halecyon Road/Highway 101 Interchange project.

Emily Creel, J.D., SWCA, will prepare the Agricultural Resources, Population and Housing, Public Services and Utilities, Land Use, and Recreation sections of the EIR. Ms. Creel obtained her J.D. in 2005 and has been practicing in the field of environmental, property, municipal, and land use law in San Luis Obispo County for over six years. She has a specialized background in environmental and property law, and focused her J.D. studies on environmental law and policy, water law, land use controls, and public natural resources. As an Environmental Planner with SWCA for over three years, Ms. Creel has prepared or participated in the preparation of a variety of CEQA and NEPA documents, including numerous EIRs, NDs, CEQA findings, mitigation monitoring and reporting plans, all required noticing documents, and a number of technical reports in support of the NEPA process. Ms. Creel is well versed in state and federal environmental laws and regulations, legal research resources and interpretations, the formulation of case law precedence, the administrative process, and local county and municipal codes. Six years of legal practice have given Ms. Creel the ability to handle complex environmental and legal issues. Ms. Creel's EIR experience includes the Grover Beach Beachfrong Lodge and Conference Center EIR, Grover Beach Land Use Element Update and Master EIR, and City of Soledad Downtown Specific Plan EIR.

Robert Carr, SWCA, will prepare the Aesthetics section of the EIR. Mr. Carr is a licensed Landscape Architect specializing in visual impact analysis. He has over 24 years of professional landscape architectural experience, as a private consultant and in the public sector. Mr. Carr has been responsible for analyzing the aesthetic effects of a wide variety of proposed developments and programs. He has prepared visual impact assessments and reports for inclusion in more than 200 environmental impact reports, negative declarations and other environmental documents in accordance with CEQA and /or NEPA guidelines. The breadth of Mr. Carr's experience includes visual impact assessment and analysis for large energy development and communication

projects, utility infrastructure, mining and landfills, large-scale controversial residential subdivisions, commercial projects, resorts, multi-story apartment buildings, golf course development, public parks, wineries, and transportation facilities. He has extensive experience in preparing aesthetic studies for controversial projects involving high quality visual resources and sensitive viewer groups. Mr. Carr's experience includes working with citizen's advisory groups regarding visual issues, including development of community design guidelines and aesthetic mitigation strategies. The results of Mr. Carr's analysis have been presented at numerous public hearings, councils, boards and local and state commissions. Recent relevant projects include the Excelaron (Mankins) Conditional Use Permit Huasna Valley Oil Exploration and Production Project EIR, and Laetitia Agricultural Cluster EIR. Mr. Carr has prepared dozens of visual assessments for residential projects within San Luis Bay Estates.

Mr. Clinton Blount, Albion, will coordinate SB 18 consultation with Native American participants in concert with the project cultural resources investigation. Clinton Blount is President and cofounder of Albion Environmental, Inc. Trained as a cultural anthropologist, he specializes in Native American consultation, oral history ethnography, and cultural resource project management. Mr. Blount's recent anthropological work in San Luis Obispo County includes assignments as Native American consultation and participation coordinator for the Nacimiento Water project (north County), the Los Osos Wastewater Project (Los Osos), the DANA Adobe project (Nipomo), and the Eagle Ranch Development (Atascadero). Mr. Blount specializes in Section 106 driven Traditional Cultural Property Studies, NAGPRA process treatment of human remains, SB 18 consultation, and general consultation under the guidelines of the California Native American Heritage Commission. To date he has completed over 10 Traditional Cultural Property studies as part of the Federal Energy Regulatory Commission project relicensing process. He has also conducted major ethnographic inventories for Caltrans. Mr. Blount has a strong record of fostering positive working relationships between Native American groups, agencies, and project proponents. He works frequently with the Native American tribes and groups in San Luis Obispo County, and is fully conversant with specific tribal interests and the various ways in which these groups participate in the environmental review process.

Ms. Jennifer Farquhar, Albion, will be the Principal Investigator for Cultural Resources. With over 20 years' experience in California cultural resource management, Ms. Farquhar offers expertise in environmental review for a broad range of projects involving the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and Section 106 of the National Historic Preservation Act (NHPA). Ms. Farquhar is the Principal Investigator for Cultural Resources for the EIR at Dana Adobe, Nipomo. Recently, Ms. Farquhar led the Section 106 consultation for the Nacimiento Water Project (NWP) in San Luis Obispo County, serving a lead role in the consultation between the US Army Corps of Engineers, the National Guard Bureau, the California National Guard, and the California State Historic Preservation Officer. She also led several projects at Camp Roberts and has extensive experience in San Luis

Obispo County dating back over 15 years. Between 1998 and 2007, Ms. Farquhar served as Project Manager and Senior Archaeologist for a range of cultural resource projects conducted for the Cultural Resources Management Program at Fort Hunter Liggett (FHL) in Monterey County.

Mr. Perry Russell, Russell Consulting, will be the Principal Investigator for Geological Resources, Water Resources, and Wastewater. Mr. Russell has 26 years of experience as a geologist, including 17 years preparing technical sections for CEQA documents. Technical sections completed by Mr. Russell include geological resources, water resources, wastewater, hazardous materials, and safety, related to a number of development and oil and gas projects, including the Santa Maria Energy Orcutt Oil Field Expansion Project, the Venoco Paredon Project, the Matrix Oil Whittier Main Oil Field Project, the PXP Inglewood Oil Field Expansion Project, the Venoco Line 96 Project, the Venoco Ellwood Marine Terminal Abandonment Project, the Tranquillon Ridge Offshore Drilling Project, and the Molino Gas Development Project. He also prepared sections for the Plains All American Pipeline, L.P., Pier 400, Berth 408 Project, in the Port of Los Angeles. Development related documents included the Rice Ranch Specific Plan Supplemental EIR, which was an addendum to the Orcutt Community Plan EIR, and the Hunters Point Naval Shipyard Project (EIS), in the City of San Francisco, which was a highly contaminated shipyard proposed to be converted to residential, commercial, industrial, and recreational uses. Mr. Russell has also completed several projects in San Luis Obispo County, including an EIR associated with a proposed temporary storage facility for radioactive waste at the Diablo Canyon Nuclear Power Plant.

Mr. Russell is a California Professional Geologist and California Certified Engineering Geologist, and has experience in geotechnical engineering, petroleum geology, and soil/groundwater site assessment/remediation. Most of the latter involved oil and gas related facilities, including an extensive site assessment at the former Chevron-Carpinteria oil and gas processing plant; a major soil remediation (dig and haul) project associated with abandonment of the Phillips Petroleum gas processing facility in Gaviota, California; site assessment/soil remediation activities associated with abandonment of approximately 15 oil wells and 6 tank batteries in an area of proposed development in Ventura County; and auditing of a portion of Texaco's oil production facilities (approximately 40 well sites, production facilities, and pipeline corridors) in the rain forest of Ecuador. In addition, he contributed to a sea cliff retreat study at Long Point, on the Palos Verdes Peninsula, in association with establishment of a geologic setback for a proposed resort development (current site of the Terranea Resort).

Mr. Joe Fernandez, CCTC, will prepare the transportation/circulation section of the EIR. Mr. Fernandez has over ten years experience in traffic engineering and transportation planning and has prepared numerous transportation impact studies in San Luis Obispo County and throughout California. These include the Orcutt Area Specific Plan EIR, Chevron Tank Farm EIR, Laetitia Agricultural Cluster EIR, Chinatown Mixed-Use Project EIR, and Paso Robles Circulation

Element EIR, among others. Mr. Fernandez is a registered civil engineer in California, and a certified planner (AICP).

Ms. Brittney Stephens, MRS, is responsible for technical editing and document production. Working on projects from administrative draft through the final version, Ms. Stephens edits the contents for style, grammar, and readability. She formats all aspects of reports, including bibliographies, lists of figures and tables, acronyms, and resources. Ms. Stephens also creates templates for specific projects. She has worked on a variety of environmental impact reports, recently including the Chevron El Segundo Marine Terminal, ConocoPhillips Santa Maria Refinery reports, Whittier EIR, Chevron Tank Farm EIR, and Carone EIR.

3.2 Project Management Program

This section discusses MRS's proposed project management program to meet the requirements of the Scope of Work identified in the RFP. This includes the approach to technical direction and control, cost control, schedule control, project reporting, editorial review, quality control, and management of subcontractors.

MRS specializes in the management and successful completion of complex, multidisciplinary environmental review projects. With many years of experience in project management, MRS guarantees a strong project management component as part of this proposal. MRS's case management standards are applied to both small and large contracts to ensure work of the highest quality, meeting the needs of all clients within the agreed upon budgets. MRS has successfully used this approach with many past environmental and technical assignments.

The most important project management elements associated with this assignment focus on adherence to tight schedules, quality control, and communication. Close communication between the Project Manager, the MRS and subcontractor staff, and the County will be imperative. Formal communication will focus on the deliverables agreed upon for each task assigned. In addition, MRS expects close informal day-to-day communication, mostly by telephone and email. MRS will prepare monthly progress reports identifying the work completed during the previous period, any issues encountered, and plans for the upcoming month.

3.2.1 Management Team Roles and Responsibilities

MRS uses a three-tiered approach to managing environmental review projects. The first tier is the Project Manager who will provide overall direction to the team and who will interact with the County on a regular basis. The second level consists of the Issue Area Coordinators who are responsible for overseeing the development of their respective issue areas. The third level is the Principal Investigators, or technical experts, who will conduct a large amount of the work.

Project Manager

Mr. Steve Radis, the Project Manager, will be responsible for the following major activities:

1. *Compliance with County Guidance.* Including regular working sessions with the County regarding the overall progress of the study.
2. *Contract Compliance.* Systematic review of the contract to make certain that the individual provisions and commitments are being met.
3. *Progress Reporting.* Includes preparation of the monthly status reports, which will contain information on the technical progress as well as the project expenditures.
4. *Budget Tracking.* Includes monitoring expenditures on a week-to-week basis and reporting this information.
5. *Interdisciplinary Coordination.* Involves the identification of cross-disciplinary impacts and the coordination of information flow among the various issue areas.
6. *Staffing Adequacy.* Ensures that key staff is available when their input and participation are required.
7. *Management of Subcontractors.* Includes establishing contractual agreements, as well as tracking deliverables and billing, to assure the coordination of subcontractor activities.
8. *Quality Control.* Includes the review of all quality assurance guidelines and will provide a quality control function on the preparation of the environmental or technical review document.
9. *Report Production Control.* Includes the organization of production requirements for the numerous draft and final report deliverables. These major deliverables will be coordinated by MRS's Ventura Office.

Issue Area Coordinators

Serving as front line managers, the Issue Area Coordinators will direct the technical work of the Principal Investigators for their respective issue areas. Their responsibilities will include:

- Review and approval of work plans, schedules, and budgets for their Principal Investigators;
- Development of quality assurance guidelines for all field work being conducted by their Principal Investigators;
- Review and quality control of the technical documentation developed by their Principal Investigators;
- Preparation of the document sections that cover the coordinators' respective issue areas; and
- Preparation of monthly progress reports for their respective issue areas.

3.2.2 Project Management and Control Systems

Project management, which will span the entire life of the Project, is extremely important due to the controversial nature of the Project, the large number of interested parties, and the complexity of the technical issues. Project management will provide the necessary interface among the County, other responsible agencies, and the consultant Project team. Formal communication with the County will center on monthly progress reports, the deliverables agreed upon, and the program of scheduled meetings. At a minimum, MRS recommends monthly meetings with the County to review progress and discuss issues. There will be times when more frequent meetings will be required. MRS will work closely with the County for the duration of the Project to ensure that progress is carefully tracked, attention is drawn to any difficulties encountered, and the project is conducted in a highly professional manner.

During the course of a project, MRS's proven program management system and its associated defined controls will ensure consistent control of program costs, schedule, staffing, technical performance, deliverables, and subcontractors. The program management and control systems will ensure that the quality of the work will meet or exceed all the County's contract requirements. Figure 3-2 depicts the key planning and control processes used on a weekly and monthly basis to support program management of both individual tasks and the overall project.

The individual program control methods and systems that comprise this approach are described below.

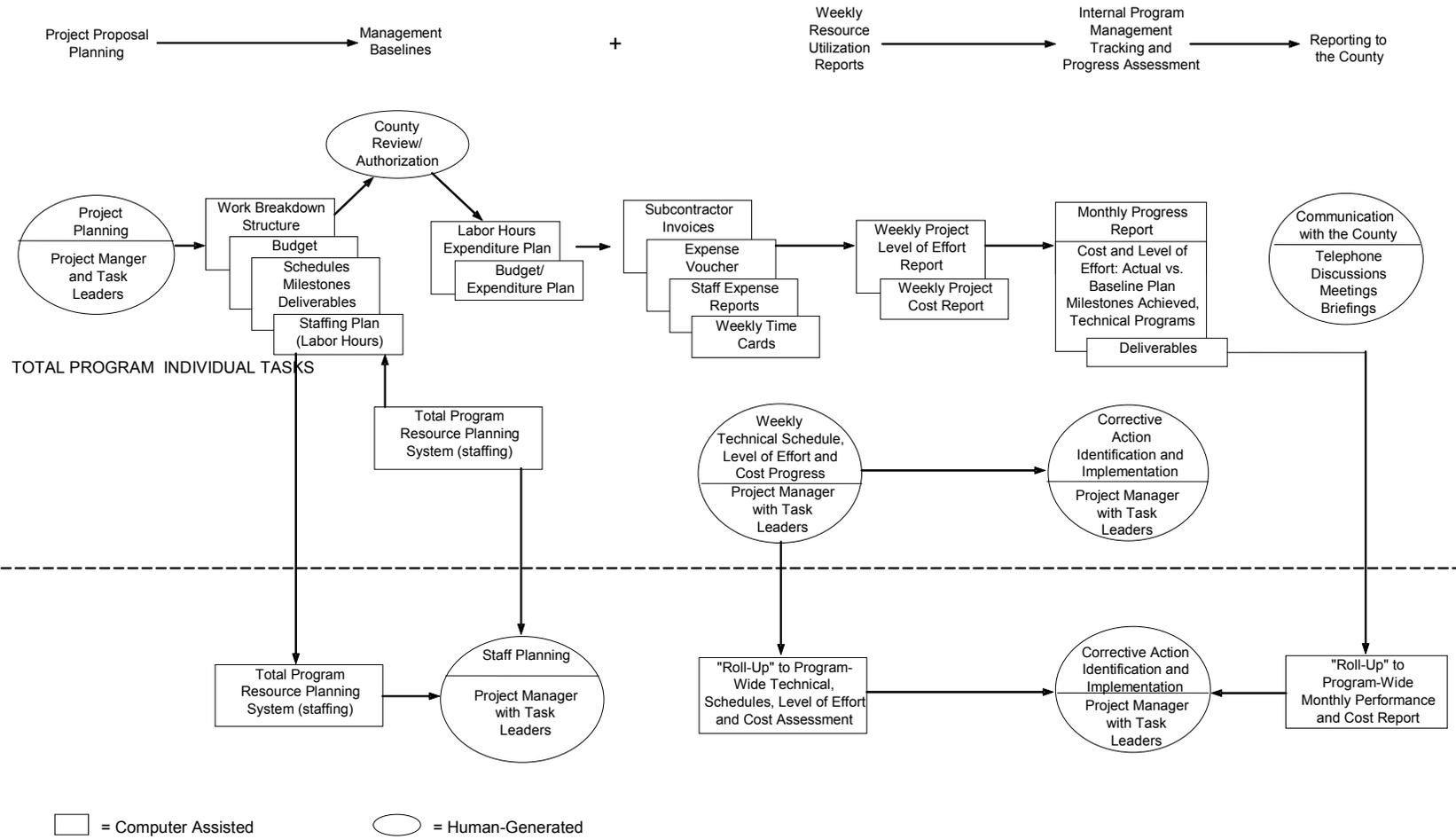
Quality Assurance/Quality Control

In every project, MRS aims to provide the client with a high quality product that meets expectations, all applicable professional standards, and regulatory requirements. To meet this quality standard, Quality Assurance/Quality Control (QA/QC) procedures are developed for each project during the planning stage. MRS uses a number of management techniques for assuring and controlling the quality of the work product. In the area of QA, the major focus is on staff integration, communication, and the development of QA guidelines for field work and document production. MRS's QC program uses a multi-tiered approach to assure that all work products are of the highest quality and meet or exceed all of the County's contractual requirements. Each major component of the QA/QC program is described below.

Staff Integration Meetings

To facilitate coordination of the assessments and communication among staff members, MRS established a program of biweekly planning and coordination meetings based on an agenda developed and circulated in advance. The Project Manager will conduct these meetings to review work in progress, plans, and schedules and to ensure effective communication among the project team and with the County. The objective of these meetings is to ensure that the quality of communication—internal and external—is enhanced whenever possible.

Figure 3-2 Program Management System Flow Diagram



Monthly Status Reviews

Because of the complexity and schedule constraints for environmental review projects MRS will conduct formal monthly status review meetings for Issue Area Coordinators to meet with the Project Manager for a technical, schedule, and budgetary assessment of progress. Monthly status reviews provide a forum for discussion and peer review of the quality of the work, which often leads to important improvements in performance from the widest possible sharing of information.

Problem Anticipation and Management

MRS recognizes problem anticipation and management as an explicit aspect of its Project Management Plan for this assignment. Unanticipated problems occur despite the best planning and intention. On task orders, MRS recognizes its obligation to anticipate, identify, and resolve all problems—technical, managerial and financial—as quickly as possible. Problems may be identified during the planning, execution, review, and reporting phases of the project. They can most often be avoided by thoroughly planning the program; realistically budgeting time, labor and costs; clearly communicating with County staff; and closely monitoring the actual performance of the MRS staff and any associated subcontractors.

Problems will be most often identified by project staff as they work on the project. They may be practical problems (e.g., conditions experienced at field sites delay test operations) or conceptual problems relating to the steps in the technical approach. Many of them can be quickly solved by the involved staff members. Problems that cannot be solved in this way will be brought to the immediate attention of the Project Manager, who will then decide the best way to resolve the issue.

The Project Manager will present persistent problems to senior management at MRS for assistance in problem resolution to assure that contract performance meets all County expectations and standards. Table 3-1 summarizes potential problem areas and the management methods MRS uses to identify and resolve them at the earliest possible time.

A quality assurance guideline will also be developed for the document preparation activities. This will cover the preparation of technical appendices as well as the environmental or technical document. During the first month of a project, a document preparation manual, or style guide, will be developed to provide a detailed outline of the final report, a set of word processing templates that detail the style and structure of the report and technical appendices, a list of acceptable acronyms, and a standard format for figures and tables. This document will be submitted to the County for review and comment and then distributed to the project team. Please see Section 5.0, Document Preparation, for additional discussion of the Style Guide.

Table 3-1 Approach to Problem Identification, Management, and Resolution

Potential Problem	Method of Identification				Possible Corrective Action
	Discussion with the County	Communication to Project Manager by Staff	Team Meetings	Progress Review by Project Manager	
<i>Change in County Requirements</i> <ul style="list-style-type: none"> • Accelerated delivery • Modification of scope 	<ul style="list-style-type: none"> • • 				<p>Expand staff; accelerate schedule.</p> <p>Hold team meeting; revise staffing; revise schedule and budget as necessary.</p>
<i>Slippage in Schedule</i>	•	•	•	•	Expand staffing; revise schedule in consultation with the County.
<i>Attrition of Personnel</i>		•	•		Execute backup plan for key staff; utilize existing resource pool.
<i>Cost Growth</i>	•	•	•	•	Absorb cost growth if no change in scope of work.
<i>Quality of Work</i>	•	•	•	•	Immediate meeting of Project Manager and appropriate Issue Area Coordinators; possible staffing changes.
<i>Subcontractor Performance</i>		•	•		Immediate discussions between Project Manager and Subcontractor; implement specific corrective action plan.
<i>Delay in Review Process at the County</i>	•				Hold in-person review to expedite review schedule; accelerate the response to comment schedule.

Cost and Schedule Control

MRS maintains cost, schedule, and resource control via a four step process. First, cost and schedule baselines are established, against which actual cost and schedule performance can subsequently be compared. Second, cost and schedule data are collected and reported on a weekly basis to the Project Manager. Third, actual performance is compared against baseline plans, identifying any deviations from plan. Fourth, deviations in cost or schedule performance are discussed internally and, if necessary, with County staff and corrective actions are taken. Each step is described below in more detail.

Establishing Cost and Schedule Baselines

MRS's internal program management system requires a comprehensive planning process at the initiation of each project to establish baselines against which to monitor expenditures, staffing, and progress. For each project, MRS establishes a task plan of individual work elements. For each work element, MRS will develop direct labor hours by individual staff members, non-labor expenses, and a schedule. This will serve as the project-specific proposal.

Once these data are developed and entered into the program, MRS will use their project management system to generate baselines for each task and its component work elements. This baseline will assist in staff planning, and most importantly, assist the Project Manager by providing a computer-aided graphic comparison of actual labor utilization and expenditures against the baseline, revealing labor or cost variance.

Documenting Actual Cost and Schedule Performance

The basic input document that initiates cost and labor hour documentation and control is the Weekly Time Card. Each project is assigned a unique identification number, and hours worked each week on each project are recorded by staff members and entered into the company's computerized accounting system. Similarly, direct expenses are recorded on standard company expense report forms or other charge vouchers and charged to each project as incurred. The company's standard accounting system provides weekly and monthly summaries of expenditures to date and the balance remaining for any given project. These data are useful for monitoring project financial status. The system also produces an expense breakdown report for each project.

Comparing Actual Performance against Baseline Performance

On a periodic basis, the Project Manager will assess actual performance against baseline plans by estimating technical progress in terms of percent completion. Technical performance measurement will be based on quantitative measures where possible (e.g., number of sub-tasks completed, number of drawings completed) and otherwise on professional judgment. For cost control, the company's program management system can also be compared manually. For schedule control, progress and schedule monitoring will be based on bi-weekly meetings between the Project Manager and the Issue Area Coordinators, where estimates of the percentage of work completed can be compared with the baseline schedule.

Taking Corrective Action

Identifying deviations from baseline plans at the earliest possible time and taking appropriate corrective actions help maintain cost control. Corrective actions depend on the nature of the cost deviation and the reasons behind it. For minor deviations, corrective actions may include:

- Setting new lower targets for final cost, if expenditures are lower than expected;
- Identifying alternate methods for accomplishing contract objectives; and
- Amending the statement of work to define the best use of remaining funds.

If delays in the schedule arise during the course of the project, the Project Manager will discuss the situation with the County and apply similar corrective actions to recover and maintain the schedule.

3.2.3 Communications Procedures

Communication is a critical component in the analysis of a large, complex, and information-intensive project. Given the large number of issue areas typically covered by environmental review projects, cross-discipline communication is also extremely important. MRS's project management communication procedures are designed to accomplish the following objectives:

- Specify the formal communication and documentation procedures to be used by all team members;
- Institute a uniform method of recording actions and maintaining reference files;
- Assure appropriate data flow to and between team members; and
- Control the flow of data from the field to the Principal Investigators.

Transfer of information occurs on a daily basis via the one-on-one communication between Principal Investigators and Issue Area Coordinators. In addition, weekly meetings disseminate technical information such as baseline data, project description information, as well as information pertinent to multi-disciplinary environmental review projects.

MRS has a formal process for tracking and disseminating information and data for large projects. A centralized recordkeeping system maintains all data relevant to the project. Each piece of information is given a unique tracking number and placed in a central file. A computerized database is maintained noting all the information in central files, a method of organization which allows team members to electronically scan the information database and request copies of information. In addition, hard copies of the database are regularly printed and distributed to the project team.

As part of a typical environmental project, MRS develops fact sheets covering site history, project description, and alternatives, as well as cumulative projects. These fact sheets will contain information that is needed by the Principal Investigators to assess impacts and develop

mitigation measures. The use of fact sheets assures that all project team members have consistent information on which to base impact assessments and mitigation measures.

3.2.4 Management of Subcontractors

MRS has a long history of using subcontractors on assignments to enhance in-house capabilities. MRS has developed a comprehensive system for managing subcontractors. Each subcontractor will be issued a purchase order that defines the scope of their work, the deliverables and due dates, and the associated cost estimate. The purchase order also contains the required billing and progress reporting instructions. These purchase orders serve as contracts with each of the subcontractors.

Each subcontractor will be required to submit a final work plan to MRS. The appropriate Issue Area Coordinator and the Project Manager will review the work plans. The work plan will include the scope of the study, a list of deliverables and due dates, estimated budgets for professional services and expenses, and a QA/QC program for assuring the highest quality work.

In addition, the Issue Area Coordinators will be responsible for monitoring the performance of each subcontractor who reports to them. The monitoring activities will include daily communication and monthly meetings—a combination that will both assess progress relative to schedule and budget and will forecast work activities expected to occur during the next month. This information will be communicated to the Project Manager in our monthly status reviews.

MRS's working relationship with subcontractors is based on the principle that subcontractors are extensions of in-house staff. Subcontractors will have unlimited access to all project data and project library information, and they will be provided office space and support in the MRS Ventura office. Subcontractors will also be given access to MRS's in-house computer network which allows for easy entry to email, documents, reports, and data. This in-house computer network can also be remotely accessed by subcontractors and staff.

4.0 Study Methodology

This chapter discusses the approach of Marine Research Specialists (MRS) to preparing the Environmental Impact Report (EIR) for the Avila Point Project. Throughout the project MRS will take direction from the County and follow the County's EIR standards, practices, and guidelines and the California Environmental Quality Act (CEQA) Guidelines issued by the State Office of Planning and Research.

The main purposes of the EIR include:

- Evaluating the environmental impacts associated with the Applicant's proposed project;
- Developing feasible alternatives that meet most of the basic objectives of the project and can potentially eliminate significant impacts caused by the proposed project; and
- Developing mitigation measures that can reduce the level of significance of impacts associated with the project and the alternatives.

The results of the EIR analysis will be used by the public and governmental agencies in making decisions regarding the project.

This section of the proposal is divided into two major segments. The first segment provides a general discussion of the proposed approach to each of the major tasks listed in the Request for Proposals (RFP). The second segment presents the detailed scope and approach to each of the environmental issue areas.

4.1 General Approach to Project Tasks

This section briefly discusses the proposed approach to each of the major tasks listed in the RFP and typically part of an EIR process.

4.1.1 Project Management Program

MRS specializes in the management of complex, multi-disciplinary projects that are similar to the proposed project. MRS staff has many years of experience in project management and offers a very strong project management component as part of this proposal. Section 3.2 provides a detailed project management program for the project. Section 6.0, Project Schedule provides a detailed project schedule to track progress as part of the management program.

4.1.2 Project Description

MRS will develop the project description based upon the information the Applicant has submitted to the County. A review of the application documents shows that some amount of data

is currently available to develop the project description. However, we would expect that additional data would be provided by the Applicant as part of the studies they are currently conducting. Based on the information submitted by the Applicant, as well as the pending remediation studies, such as Feasibility Study and Remedial Action Plan (RAP), a considerable amount of work remains before a comprehensive project description can be completed.

Development projects that include site remediation require several studies before a coherent and logical project description can be completed and used as the basis for environmental review. As shown in Figure 4-1, the foundation for a defensible EIR requires several elements to clearly define the proposed actions. As we have learned from the Chevron Tank Farm EIR project, the decision about the future land use at a site drives the type and extent of remediation at the site. The Applicant has provided a broad overview, or “vision statement”, defining the desired site land use designation. Additional refinement will be required, both for the project description and analysis of alternatives, to evaluate the types of development activities that could take place on the project site. Based on the proposed development, human health and environmental risk need to be evaluated. The risk analyses are then used as the foundation for the RAP and in defining what cleanup levels need to be achieved. The RAP then clearly defines the remediation activities that will be required to achieve the desired land uses. The proposed land use designation, development plan, risk analyses and RAP form the foundation for the project description and allows for a clear definition of the whole of the proposed actions.

Assuring that the ecological and human health risk assessments and RAP are complete and accurate is critical to the preparation of a complete and defensible project description and EIR. This requires a close working relationship with the Regional Water Quality Control Board (RWQCB), who is responsible for approval of the human health risk assessment and the RAP, as well as other members of the Avila Tank Farm Collaborative Assessment Team (ATCAT).

The project description chapter will address the need for the project, as well as the Applicant’s proposed actions to implement the project. The project description will be dissected into remediation activities, changes in the land use designation, and future development activities.

As MRS begins developing the project description chapter, staff will work closely with the Applicant, the County, RWQCB and ATCAT to assure that the project description accurately reflects the proposed project. It is likely that as the project description is developed, additional information will be needed from the Applicant. MRS will submit data request forms to the County that detail the data needed and the reason for the request. These requests will also include a due date for the information to maintain the overall schedule.

Once a draft project description is developed, MRS will submit it to the County for review and comment. MRS will suggest that the Applicant and other ATCAT members are given an opportunity to review the project description to assure that it accurately reflects the proposed

project. This is extremely important since the project description data will serve as the basis for assessing the impacts associated with the proposed Project.

Figure 4-1 Project Description Remediation and Site Development Components



4.1.3 Alternatives Analysis

The CEQA Guidelines, Section 15126.6, requires an EIR to describe a reasonable range of alternatives to a project or to the location of a project which could feasibly attain its basic objectives and evaluate the comparative merits of the alternatives. CEQA Guidelines, Section 15126.6, provides direction for the discussion of alternatives to the proposed project. This section requires:

- *A description of “a range of reasonable alternatives to the project, or to the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives” [15126.6(a)];*

- *Setting forth alternatives that “shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project” [15126.6(f)];*
- *A discussion of the “No Project” alternative, and “if the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” [15126.6(e)(2)]; and*
- *A discussion and analysis of alternative locations “that would substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR” [15126.6(f)(2)(B)].*

For this EIR, it is critical to develop a defensible alternatives analysis that meets the following objectives:

- The alternatives analysis is comprehensive enough to assure that it has looked at a reasonable range of feasible alternatives to the proposed action; and
- The alternatives analyzed throughout the document are limited to only those that could feasibly attain the Applicant’s basic objectives for the Project and that have the ability to reduce significant impacts associated with the proposed action.

In order to accomplish these objectives, MRS proposes an alternative screening analysis. An alternative screening analysis provides the basis for selecting alternatives that meet the second objective listed above, provides a detailed explanation of why other alternatives were rejected from further analysis, and assures that only feasible alternatives that can reduce significant impacts and meet the basic objectives of the project are evaluated and compared in the EIR.

This screening methodology also uses the “*rule of reason*” approach to alternatives as discussed in the CEQA Guidelines, Section 15126.6(f). The rule of reason approach has been defined to require that EIRs address a range of feasible alternatives that have the potential to diminish or avoid adverse environmental impacts. In defining feasibility of alternatives, the CEQA Guidelines state:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (Section 15126.6(f)(1)).

If an alternative is found to be technically infeasible, then it would be dropped from further consideration. Typically, this is the primary feasibility factor used to eliminate an alternative without further screening analysis. For example, other onshore locations for the drilling operations may be found infeasible given the current state of the directional drilling technology.

In addition, CEQA states that alternatives should “*attain most of the basic objectives of the project*” [Section 15126.6(a)]. If an alternative is found to not obtain the basic objective, then it would also be eliminated.

The use of a screening analysis for the alternatives ensures that the full spectrum of environmental concerns is adequately represented and that a reasonable choice of alternatives is selected for evaluation in the EIR.

Using this approach, the alternatives analysis section of the EIR will include: (1) a brief description of a range of reasonable alternatives to the proposed Project; (2) a screening analysis that summarizes and compares the significant environmental effects of the project and each alternative; and (3) an environmental analysis of the alternatives that were selected for further consideration in the EIR.

4.1.4 Administrative Draft EIR

Preparing the Administrative Draft EIR requires the majority of project work. One of the first tasks will be to develop a Style Guide for the EIR that provides a detailed outline of the document and formatting information. The requirements for maps and figures are detailed in the Style Guide along with a list of appropriate acronyms. More information regarding the Style Guide is provided in Section 5.0, Document Preparation. A draft Style Guide will be submitted to the County for review and comment. Once the County has approved the Style Guide, MRS will issue the Style Guide and Microsoft Word document templates to the project team.

The major task for the Administrative Draft EIR is analyzing the environmental issue areas identified in the Notice of Preparation (NOP) and comment letters on the NOP. In the Administrative Draft EIR, each environmental issue area will contain the following major sections:

- Environmental Setting (Baseline);
- Impact and Mitigation Assessment (Project and Alternatives);
- Cumulative Impacts; and
- Mitigation Monitoring Plan.

The overall approach to the development of each of these major sections is discussed further in the following sections. Section 4.2 details the methodology that will be used for each of the issue areas.

Environmental Setting

For most issue areas, the baseline information is expected to be developed from previous studies in the area, field investigations, long-term monitoring activities, regulatory requirements, and other EIRs. The sources of information likely include state and local agencies, reports prepared for the Applicant, and the previous CEQA documents prepared for the PXP oil field. Where data gaps are identified, MRS will conduct further surveys and field investigations to fill those gaps. MRS assumes that some field surveys will be necessary to verify existing data, particularly in the areas of biological resources, geological resources, visual, noise, and hazards.

The Applicant is preparing a large number of documents on the project area that address a wide range of baseline issues. One of the first tasks will be to conduct a peer review of these documents to determine the adequacy and accuracy of the information and to determine if there are any data gaps. Information from the Applicant's documents that pass the peer review will be used in developing the environmental setting for the EIR. Where data from these documents is found to be lacking or in need of significant additional information, MRS will work with the County and the Applicant to determine how best to fill these significant gaps.

As part of this EIR, MRS is proposing to prepare a technical appendix covering the regulatory setting for each issue area. This will help to limit the overall size of the main EIR document, while not sacrificing the adequacy of the EIR.

MRS proposes to submit a draft of the environmental setting section of the EIR to the County for review and comment prior to the release of the Administrative Draft EIR (see Section 6.0, Project Schedule, for more information).

Impact Assessments for the Project and Alternatives

One of the most important tasks in evaluating impacts is developing a set of well-defined significance criteria (or environmental thresholds) for each of the issue areas evaluated in the EIR. MRS proposes to develop the significance criteria prior to the assessment of impacts and to agree on these with the County in advance. Where available, significance criteria will be based upon existing County environmental thresholds or standards. Where criteria do not exist, they will be developed based on criteria used in previous EIRs or existing CEQA Guidelines. The significance criteria developed with the County for the Excelaron Project EIR will serve as the basis for the criteria. With well-defined criteria, the impacts can be classified in terms of significance with a greater degree of confidence.

Mitigation Measures and Residual Impacts for the Project and Alternatives

One of the major goals of an EIR is identifying potential impacts and then developing reasonable, feasible, and effective mitigation measures to reduce the impacts to insignificance. During the course of preparing an EIR, mitigation measures are identified by issue area. Coordination between issue areas is important; otherwise mitigation measures in one issue area are not carried through into other issue areas to determine if any residual impacts exist. In order

to facilitate the coordination of impacts and mitigation measures, MRS uses a Mitigation/Engineering Coordinator to ensure consistency of the mitigation measures. MRS also proposes a number of workshops with the project team to discuss impacts and mitigation measures. This approach assures that each mitigation measure is evaluated thoroughly and all the potential residual impacts are addressed for each of the issue areas.

For those impacts identified as significant, MRS will develop mitigation measures that will reduce the level of significance, if possible. The mitigation measures that MRS develops may be design changes, technology-based measures, new or revised management systems for project operation, or administrative procedures to ensure that certain processes or environmental conditions are carefully monitored. The mitigation measures will address primary and secondary impacts associated with the project.

In the approach to evaluating impacts, MRS will distinguish between impacts before and after mitigation. Significant impacts that cannot be mitigated to a level of insignificance will be categorized as Class I impacts. Class II impacts are those that are significant prior to mitigation, but can be mitigated to a level of insignificance. Class III impacts are adverse but not significant prior to mitigation. For Class III impacts, mitigation measures may be recommended if they could reduce the adversity of the impact. Class IV impacts are beneficial impacts.

Cumulative Impacts

The cumulative impact portion of the assessment is designed to address the cumulative impacts associated with reasonable, foreseeable projects within the study area. One of the first steps in the cumulative analysis will be to work with the County and other agencies in developing a cumulative projects list.

MRS will identify projects in the same vicinity as the proposed project, which could lead to cumulative impacts. MRS proposes to work with the County and other responsible agencies to determine which of these projects should be included in the cumulative analysis. Using this information, a cumulative projects description will be developed, which will detail all projects on the cumulative list. The cumulative projects description will be submitted first to the County for review and approval and then to the project team.

Mitigation Monitoring Plan

The mitigation measures and the mitigation monitoring plans developed for each issue area will be consolidated into a comprehensive mitigation monitoring program. The monitoring program will identify all mitigation monitoring requirements placed on the County and other agencies and also the reporting requirements of the Applicant. The need for subsequent verification by onsite inspection will also be defined in the monitoring program, together with any post-remediation and post-construction monitoring that may be required to evaluate the effectiveness of the mitigation measures and a dispute resolution procedure in the event the monitoring program generates disputes between the relevant agency and the Applicant.

The mitigation monitoring and reporting plan will provide a list, by topic, of all proposed mitigation measures. For each measure, a summary will list the requirements of the proposed measure and what, if any, approvals are needed from various agencies. The plan will also include a table of the following information:

- Impact;
- Mitigation measure and identification number;
- Location;
- Action required by the Applicant;
- Monitoring or reporting mechanisms;
- Timing of mitigation measure implementation;
- Effectiveness/compliance criteria;
- Party responsible for verification;
- Method of verification; and
- Monitoring and reporting schedule.

These mitigation monitoring criteria will be developed for each mitigation measure in each issue area. The draft mitigation monitoring plan will be provided to the County at the same time as the Administrative Draft EIR. A summary of the plan will be included in the Executive Summary of the EIR.

Comparison of Alternatives

As required by CEQA, MRS will determine the environmentally superior alternative. The determination of the environmentally superior alternative will be performed by conducting a comparative analysis of all issue areas of the mitigated impacts for each alternative evaluated throughout the document. Alternatives that are unfeasible, would not reduce significant impacts over the proposed Project, or would not meet the project objectives, will be dropped from further consideration and will not be included in the comparison of alternatives.

4.1.5 Prepare Public Draft EIR

Preparation of the Public Draft EIR will incorporate all of the comments received from the County on the Administrative Draft EIR and produce a “camera ready” copy of the EIR for final review by the County. Once the County has signed off on the “camera ready” document, MRS will be responsible for printing and mailing the Public Draft EIR. MRS will provide bound copies of the Public Draft to the County in three-ring binders with tabs for each of the major sections. MRS will also provide the County with one unbound reproducible master copy and a reproducible electronic copy on CD. MRS will also work with the County to make sure that the Public Draft EIR is available online for download. MRS will also provide the County with CDs of the Public Draft EIR. MRS will also provide the County with bound copies of the Executive Summary for members of the public who do not want to read the entire EIR. All bound copies of

the EIR and the Executive Summary will have a CD of the entire EIR. Section 5.0, Document Preparation of the proposal provides more information on the document preparation task.

4.1.6 Prepare Administrative Final EIR

At the close of the public comment period on the Draft EIR, MRS will prepare the Administrative Final EIR. This task involves preparing written responses to all the comments received on the Public Draft EIR and modifying the EIR document as needed to address the comments.

All the comment letters received on the Public Draft EIR will be numbered with unique codes. The Project Manager and the Issue Area Coordinators will assign responsibility for responding to the comments. The draft responses for each comment will be assembled into a Response to Comments section that will be added to the EIR. The EIR will be modified as required by the comments. Areas of the EIR that are modified in response to the comments will be marked with revision marks. As needed, the Response to Comments section will guide the reader to changes in the EIR and to additional information in the EIR that addresses the comment.

MRS will submit an Administrative Final EIR to the County that includes all of the responses to comments, as well as all of the changes to the Public Draft EIR. This will allow the County to review the responses and confirm that the appropriate changes were made to the EIR. In developing the cost estimates for response to comments, MRS assumes that no new analyses will be required to prepare the responses to comments or the Administrative Final EIR.

4.1.7 Prepare Proposed Final EIR

Preparation of the Proposed Final EIR will incorporate all of the comments received from the County on the Administrative Final EIR; the Proposed Final EIR will also include the Response to Comments section. MRS will produce a “camera ready” copy of the EIR for final review by the County. Once the County has signed off on the “camera ready” document, MRS will be responsible for printing and mailing the Proposed Final EIR. MRS will be responsible for printing 45 bound copies of the Proposed Final. The majority of these copies will be in three-ring binders with tabs for each of the major sections. MRS will also provide the County with one unbound reproducible master copy and a reproducible electronic copy on CD. MRS will also work with the County to make sure that the Proposed Final EIR is available online for download. MRS will also provide the County with CDs of the Final EIR. MRS will also provide the County with bound copies of the Final Executive Summary for members of the public who do not want to read the entire Final EIR. All bound copies of the EIR and the Executive Summary will have a CD of the entire EIR.

4.1.8 Public Meetings and Hearings

In developing the costs for this project, MRS assumed that various team members will participate in six (6) meeting with the County, four (4) public hearings, and one (1) scoping meeting. We have also include two (2) public meetings on the Public Draft EIR. As needed, MRS will be responsible for developing presentations for these meetings/hearings. MRS has assumed that the County will be responsible for recording and transcribing the public meeting, if needed, for the official record.

4.1.9 Assistance with CEQA Findings and Staff Reports

MRS included time to assist the County with the preparation of the CEQA Findings as well as various sections of staff reports. The sections where MRS will provide assistance to the County include CEQA and policy findings, conditions of approval, EIR certification resolution, and any statement of overriding consideration. As MRS has demonstrated in the past, we are prepared to provide ongoing support to the County during the staff report and hearing process.

4.1.10 Pre-EIR Tasks

As noted in Section 4.1.2, additional studies need to be completed by the Applicant, and in some cases peer reviewed and approved by the ATCAT. Studies pending completion that are needed before the EIR can commence in earnest include:

- Site Conceptual Model,
- Risk Management Plan,
- Feasibility Study, and
- Remedial Action Plan.

Together with the other available studies and Applicant information, a coherent and logical project description can be developed that will be adequate for EIR scoping purposes and subsequent environmental review.

MRS has included time to assist the County in the review and compilation of the materials necessary to accurately describe the whole of the proposed actions associated with the project and significantly refine the project description. It is proposed that MRS assist the County in reviewing the studies listed above, serve as a member of the ATCAT team, work with responsible agencies to refine the project and EIR scope, to prepare the Notice of Preparation (NOP) and conduct scoping meetings with the County.

MRS has extensive experience in forming and participating in Multi-Agency Coordination Committees (MACC) and has maintained a close working relationship with most of the ATCAT agency and applicant participants on past and current projects (e.g., Chevron Tank Farm,

Guadalupe, previous Avila Beach cleanup). MRS has also worked closely with the California Coastal Commission (CCC) on a wide variety of projects for the past three decades and has an excellent working relationship with senior CCC staff.

4.2 Issue Area Study Methodology

This remainder of this section of the proposal provides the study methodology for each of the issue areas.

4.2.1 Aesthetics

This section presents the scope and approach for assessing impacts for aesthetic resources for the project.

General Approach and Methodology

The aesthetics section will provide a photographic and written inventory of existing site conditions and establish the baseline visual character, including comprehensive documentation of the extent and quality of project visibility. On-site visual resources will be specifically identified, including landforms, geologic features, and vegetative groupings that are of significance as seen from key viewing areas. All applicable previous environmental studies and relevant reports will be reviewed, verified, utilized to the extent feasible, and referenced as part of the aesthetics section, including the Avila Beach Specific Plan and EIR.

Preparation of the aesthetics section will include peer review of applicant-submitted photo-simulations, including viewpoint selection and methodology. This information will be verified for accuracy prior to incorporation into the EIR analysis. Peer review of the photo-simulations and proposed development will also include field verification of the heights and massing of all proposed structures, earthwork, remediation, and vegetation modification by direct observation of temporarily placed reference poles and other markers. Appropriate viewpoint selection for simulations will be confirmed by comparing the project to County Coastal Policies regarding important view corridors and scenic resources, combined with a full reconnaissance of potential views to the project. Simulation locations will be checked for their value in providing full public disclosure. Photo-simulations will be checked for consistency with all known visual aspects of the project plans and actions.

If the peer review finds that additional photo-simulations and/or viewshed analysis are warranted in order to prepare a defensible EIR section, corrections are necessary, or nighttime simulations are requested, new photo-simulations will be prepared as an **optional task**, at the request of the County. Accurate heights, massing, and location of all structures and other critical elements depicted in new computer-generated photo-simulations will be ensured by direct visibility of surveyed on-site placement of reference pylons and flags combined with computer modeling.

The methodology will include preliminary identification and analysis of potential conflicts between existing visual resources and the proposed Specific Plan Amendment, design criteria, remediation, and development plans. This will be accomplished through extensive field work in conjunction with utilization of photo-simulations and topographic, engineering, and architectural models. Project impacts will be evaluated relative to the overall landscape context including surrounding land use, visual harmony with the existing landforms and landcover, and consistency with existing landscape character. These physical attributes will be considered along with the variety of viewer's expected responses to the proposed changes on this sensitive site. The proposed project will be analyzed for consistency with applicable state and local coastal and planning policies, guidelines and thresholds. The site is not currently designated a Sensitive Resource Area (SRA) for visual resources, or within an area subject to Highway Corridor Design Standards. Analysis of the Amendments and development plan will include identification of policies and planning area standards specific to the project site, consistent with County Coastal Policies and the Coastal Act.

Key Issues

The proposed development has the potential to be seen from a wide variety of locations throughout the communities of Avila Beach, Shell Beach, Pismo Beach, recreational areas and trails, as well as public roadways including Highway 101. Varying vantage points provide different visual perspectives, including the context of existing developed and undeveloped areas. The project site is in a prominent location, above the community of Avila Beach, and has the potential to be seen from many viewpoints throughout the surrounding area and has the potential to be visually prominent as seen from the community and public use areas of Avila Beach. The project would result in substantial physical changes to the site, including remediation efforts, which would include the removal of existing structures and landform alterations in previously disturbed areas. The development would introduce new uses onto the site, which would have the potential to be highly visible and affect the visual character of the adjacent community as well as the site itself. Depending on numerous planning and design decisions, proposed new access roads, grading, structures, recreational areas, commercial landscaping, vehicles, lighting, signage and other elements would have the potential to either be compatible with, or be inconsistent with the existing scenic character and public viewshed.

Impact Assessment of the Project and Alternatives

The aesthetic section will compare the existing on-site and through-site visual resources with the project features as proposed, and will identify any potential impacts based on the Coastal Act, CEQA Guidelines, San Luis Obispo County Initial Study checklist criteria, County Coastal Policies, and other relevant planning documents. The evaluation will assess all remediation, proposed structures and site amenities, vegetation and facility removal, parking areas, access roads, grading and earthwork, utilities, lighting, revegetation, landscaping and other improvements for their complete effect on all public views. The analysis will address the potential for lighting impacts and glare, including direct source visibility, reflective

characteristics, atmospheric variables, and ambient affects. The proposed lighting plan will be reviewed for consistency with applicable county policies. Effects of the lighting as well as possible mitigation measures will consider current “dark sky” practices in the discussion, and may include site-specific policies or standards.

Potential visual changes will be identified in terms of long and short-term impacts. Construction activities and disturbance will be addressed, as well as consideration of any proposed landscaping plant growth rates and size potential. The aesthetics section will address both primary (direct) and secondary (indirect) visual impacts.

It is anticipated that potential viewers may experience the project as an alteration of overall landscape character in addition to its individual components. Accordingly, the analysis methodology will also evaluate the cumulative effect that each of the individual project components will have on the visual character of the surrounding landscape. The visual section will consider the project’s contribution to a potential change to public views when seen with other approved or pending projects in the area.

Avoidance, minimization and mitigation measures and other recommendations will be related to specific impacts. Measures will be defined as short-term, long-term, primary or secondary. Residual, post-mitigation effects of the project will be identified. Measures will be written with the intention of adoption as policies and/or planning area standards, in addition to conditions of approval.

Project alternatives will be qualitatively evaluated and compared in terms of their relative impacts to aesthetic resources. A discussion of the disadvantages and merits of each alternative will be provided.

4.2.2 Agricultural Resources

This section presents the scope and approach for assessing agricultural resource impacts associated with the proposed project.

General Approach and Methodology

Agricultural production in the Avila region consists of cattle grazing, orchards, row crops, and vineyards. Approximately 56% of the 95-acre project site consisted of tanks and industrial facilities, and the remainder of the site supports natural habitat. The project site is currently zoned for Industrial land use and has not historically supported agricultural production or livestock grazing. Surrounding parcels are within the Residential, Recreation, Open Space, and Rural Residential land use categories. Historical agricultural use has been limited to cattle grazing on the parcel to the east. The site and proximate parcels are not under a Williamson Act contract or agricultural preserve.

The underlying soils include Cropley clay (0-2% slopes), Diablo and Cibo clays (15-30% slopes), Gazos-Lodo clay loams (15-30% slopes), Lopez very shaly clay loam (9-30% slopes), and Santa Lucia shaly clay loam (50-75% slopes). All soil types are non-irrigated, and range from capability class 3 to 8. The County Conservation and Open Space Element (2010) provides the following Farmland classifications: Cropley clay as Prime Farmland and Highly Productive Rangeland Soils; Diablo and Cibo clays as Other Productive Soils and Highly Productive Rangeland Soils; and, Gazos-Lodo clay loams as Highly Productive Rangeland Soils. The Natural Resources Conservation Service (NRCS) Farmland Classification Map, which considers existing and historic use of land, also rates Cropley clay as Prime Farmland (if irrigated). Approximately four acres of this soil type is located along Avila Beach Drive. All other soil types are not considered Prime Farmland, due to the industrial and undeveloped nature of the remainder of the site.

Based on the location and the absence of agricultural uses on the project site, remediation and development does not appear to have the potential to result in direct adverse effects to agricultural resources. The agricultural resources impact analysis will evaluate potential impacts to agricultural uses in the project vicinity resulting from the proposed land use designation change and construction and operation of the proposed project (e.g., creation of dust, groundwater or community services district water use, etc.). The analysis will provide baseline information regarding site and area soils, but will focus on indirect impacts to regional agricultural operations. The agricultural resources evaluation will include:

- Consultation with the Agricultural Commissioner's office;
- A description of the history of agricultural use and production in the vicinity; and,
- Baseline information regarding the geology of the site and vicinity, focusing on agricultural capability of soils

Impact significance will be quantified using significance criteria for agricultural resources and operations. If potentially significant impacts are identified, mitigation measures will be proposed, where possible, to reduce the impact to a level of insignificance. Mitigation measures will be prepared such that they can be incorporated into the LCP Amendment as policies or planning area standards, as applicable.

Key Project Issues

Agricultural use of the site is generally limited by historic oil storage and transfer uses, slopes, and soil profiles. As noted above, the immediate area is suitable for rangeland, and the parcel to the east has supported cattle grazing. Productive Farmland in the region is generally located along riparian corridors and valleys north of Avila Beach Drive and east, south, and north of San Luis Bay Drive. There is the potential (however; not yet agreed to) Avila Community Services District (CSD) would provide water for the project; the source of the CSD's water includes the Lopez Reservoir and State Water Project. This section of the EIR will reference information

from the Water Resources EIR section regarding water use and water quality (depending upon the final determination made by the applicant regarding a project water source). The potential impact of the proposed land use designation change, and subsequent development project on adjacent and nearby agriculture, including potential land use incompatibilities, will be the focus of the analysis in the EIR.

Impact Assessment of the Project and Alternatives

SWCA will incorporate existing data into the EIR analysis from various available sources, including reports on-file with the County and available information from the NRCS and Department of Conservation. SWCA will contact the Agricultural Commissioner's office to solicit comments and verify conclusions regarding agriculture value of the site and surrounding areas. SWCA will document communications and include pertinent comments in the EIR analysis. SWCA will propose mitigation measures for each significant impact. The cumulative impact analysis will consider potential land use developments in the area, such as the County Parks trail development, consider regional effects to agricultural production and land use conflicts, and identify additional impacts.

Project alternatives will be individually evaluated and compared in terms of their relative impacts to agricultural resources. A discussion of the disadvantages and merits of each alternative will be provided.

4.2.3 Air Quality and Greenhouse Gases

This section presents the scope and approach for assessing the proposed projects and alternatives impacts for air quality and climate change.

General Approach/Methodology

The general approach to the air quality assessment will be to develop a baseline and then assess the impacts associated with the proposed project and alternatives against the baseline. The analysis will cover potential impacts from emissions of criteria air pollutants, toxic air contaminants, odorous events, asbestos, lead and greenhouse gasses.

The potential impacts from increased emissions of criteria pollutants will be assessed against the San Luis Obispo Air Pollution Control District's (SLOAPCD) threshold criteria as detailed in the SLOAPCD CEQA Air Quality Handbook (April 2012) and state and federal ambient air quality standards. Emissions will be quantified for development construction and operations onsite and offsite emissions utilizing the most current version of the California Emissions Estimator Model (CalEEMod) software. The SLOAPCD guidelines for the use of CalEEMod will be utilized.

Construction remediation emissions will be estimated based upon equipment and load factor use using detailed construction emission calculation spread sheets. Emissions will also be estimated from soil offgassing, if applicable, and emissions associated with pipeline removal and draining activities. These emissions levels will be calculated as part of the construction and remediation

activities and will utilize the CalEEMod emissions factors and the SLOAPCD guidelines (the use of the revised Carl Moyer load factors, for example)

The project region in San Luis Obispo County is currently in violation of the state standards for ozone (O₃) and respirable particulate matter (PM₁₀). The station closest to the project site located in Grover Beach and monitors only wind speed and direction (SLOAPCD 2012 Ambient Air Monitoring Network Plan). Other coastal monitoring stations include Morro Bay or Nipomo which monitor ozone as well as meteorological parameters. The evaluation of project air quality impacts will focus on potential O₃ precursor (reactive organic compounds [ROC] and nitrogen oxides [NO_x]), PM₁₀ and PM_{2.5} emissions. The SLOAPCD CEQA handbook presents methods to evaluate air quality impacts for CEQA purposes. The MRS air quality staff has previous experience in the evaluation of emission sources and impacts of projects in San Luis Obispo County, and they are familiar with SLOAPCD handbook used to assess proposed emissions.

Carbon monoxide “hot spots” analysis will be performed associated with increases in traffic due to the project if project traffic levels produce LOS of below D at area intersections. The modeling software CALINE4, or the most recent version, will be used in combination with intersection and roadway geometry and vehicle traffic levels. Emission factors as generated by the most recent version of EMFAC (which is also incorporated in the CalEEMod software) will be used. CO hot spot guidance will be used as specified by the carbon monoxide protocol developed by the UC Davis Institute for Transportation Studies (ITS 1997) and recommended by the California Department of Transportation for conducting CO hot spots analysis.

Toxic emissions will primarily be associated with diesel engines used during remediation and construction. Guidance will be sought from the San Luis Obispo County Air Pollution Control District (APCD) on the assessment of impacts from any of the toxic air pollutant sources that are identified. Toxic emissions are a potential concern for emissions related to diesel combustion as diesel has been identified as a health concern by CalEPA. Diesel combustion sources will include construction equipment, particularly related to grading and earthmoving. Increases in diesel impacts will also be assessed along primary transportation corridors.

Diesel toxic impacts associated with diesel construction equipment or heavy duty diesel trucks associated with industrial activities will follow the guidelines specified by the SLOAPCD or by the SCAQMD for mobile diesel emissions.

Impacts of other toxic pollutants from stationary sources will be evaluated and, if above the prescribed screening levels, will be assessed using the most recent version of the Hotspots Analysis and Reporting Program (HARP) developed by CARB. HARP will utilize local meteorological conditions, emission factors, and emission sources’ parameters, e.g., stack dimensions, gas velocities, exhaust temperatures, equipment coordinates, and will assess the cancer risk as well as the level of acute and chronic health impacts from the emission of toxic pollutants.

Additional toxic emissions may be associated with earthmoving activities of soils that have BTEX or other hydrocarbon contamination. Soil analysis has been conducted on some of the soils at the site at different depths, and the results of these analysis will be utilized to estimate emissions from contaminated soils handling. If these types of soils are moved or hauled offsite as part of the proposed project or alternatives, analysis will be conducted to assess the emissions and potential toxic impacts of soil offgassing.

Odor emissions may also be associated with remediation activities. Odorous compounds could emanate from hydrocarbon affected soils during excavation and soil handing activities. An odor analysis will be conducted utilizing odor thresholds published by the American Industrial Hygiene Association.

The demolition of existing facilities may have asbestos or lead containing materials. The handling of these materials is addressed under existing SLOAPCD and NESHAPs rules and these will be incorporated into the analysis. In addition, the proposed project site is located in an area that is specified by the SLOAPCD as potentially having naturally occurring asbestos. Earthmoving and grading activities will therefore require additional analysis related to potential asbestos exposure. Potential fugitive dust emissions from the demolition of existing facilities will also be addressed in the air quality section of the EIR.

Greenhouse gas (GHG) emissions will be estimated for the remediation, construction and operations utilizing primarily CalEEMod, which includes estimates for CO₂ emissions and other GHG pollutants. All GHG emissions will be converted to a CO₂ equivalent basis to estimating the significance of GHG emissions.

Baseline Environmental Setting

The existing air quality and meteorological conditions will be characterized to provide an environmental setting that the proposed project emissions will potentially impact. The existing and projected air quality will be described without the project for the selected study area. Regions that exceed the Ambient Air Quality Standards (AAQS) or are close to the AAQS will be identified as being most sensitive to increases in ambient concentrations of the air pollutants.

A detailed description of the baseline air pollutant concentrations and trends in the region will be prepared based on data from monitoring stations in San Luis Obispo County. Regional toxic air contaminant concentrations and trends will also be characterized based on the available data from CARB and the SLOAPCD.

Impacts from the emissions of inert pollutants will generally be limited to the vicinity of the project and transportation corridors. Thus, for the project location, a study area that includes southern San Luis Obispo County will be selected.

Existing traffic conditions within the affected road network will be analyzed in detail to establish a baseline for potential CO “hotspots” analysis, if needed. This analysis could be used for soil handling options which may utilize significant trucking requirements.

The environmental setting includes characterization of the area with regard to the existing air quality, the regional meteorology, and the applicable air regulations. Much of this information has already been compiled for other EIRs in the County and this information will be utilized. Existing data will be updated and refined as it applies to the current project.

Federal, state, and county air quality regulations will be reviewed to identify those items that apply to the project including issues such as toxic emissions, CO “hotspots” due to increased traffic, and odorous compounds emissions. Discussions with regulatory agencies will be carried out to identify pending regulations that might affect the proposed project.

GHG emission baseline will address the current status of regulations at both the Federal and State levels, such as any recent CARB requirements, as well as the status of local air district GHG emission thresholds. The SLOAPCD adopted GHG thresholds on March 28, 2012, and these thresholds will be utilized to assess the impacts of GHG emissions.

Impact Assessment (Project and Alternatives)

The principal objectives of the impact assessment are to determine the impacts of project emissions on ambient air quality and human health and to identify potentially significant impacts. Impacts will be determined by assessing emission inventories and by conducting air quality modeling. All air quality modeling will be conducted in accordance with EPA and CARB guidelines, as well as with input from the SLOAPCD. Modeling will be conducted related to CO “hot spots,” toxic diesel emissions associated primarily with construction equipment and truck transport, toxic emissions associated with stationary sources and localized impacts (NO_x, PM, etc.) that may exceed the air quality standards.

For criteria pollutants, only inert modeling is proposed in this project, as emissions thresholds could be used to determine significance for ozone precursors (ozone is classified as nonattainment and any incremental increase above a minimum emissions threshold will be considered significant). Emission spread sheets that list equipment and load factors will be used to estimate construction emissions related to remediation activities. Operational emissions associated with recreational uses of the project site will utilize CalEEMod. Offsite emissions associated with vehicle traffic will utilize CalEEMod, which incorporates EMFAC emission factors as a part of the model.

An emission spread sheet based upon equipment lists and load factors will also be used to estimate emissions associated with the remediation phase of the project.

Air dispersion modeling will be conducted related to localized exceedances of air quality standards utilizing the ISC or AERMOD model. A meteorological dataset for use in the dispersion modeling analysis will be compiled using data from nearby monitoring stations. If there are some missing observations, data from other monitoring stations located in the same air basin will be used or boundary layer meteorological theory will be used to estimate parameters such as mixing height.

Modeling associated with CO hot spots will be conducted if needed for impacted intersections using the CALINE4 model along with intersection configuration and traffic levels and emissions. Emissions will be based on the most recent EMFAC model. Impacts will be determined based on exceedances of the State and Federal 1 hour and 8 hour CO standards.

Impacts of diesel emissions, both associated with remediation, construction and industrial operations, will be modeled using the ISC or AERMOD model and the CARB unit risk factor related to cancer for diesel particulate matter. These will be compared against the CARB thresholds for increased cancer risk to determine significance of diesel toxic emissions.

Other toxic emissions will be screened and, if exceeding the screening level will be modeled using the HARP model. The results of the HARP modeling will be compared against the CARB thresholds for increased cancer, acute and chronic risk to determine significance of toxic emissions.

Activities that could produce odors emissions will be identified. These could include hydrocarbon impacted soil handling activities related to remediation. Compounds which could create odor problems will be identified using odor thresholds as published by the American Industrial Hygiene Association.

The potential impacts associated with asbestos and lead will be examined based on demolition material potentially containing asbestos or lead paint, and naturally occurring asbestos. The project area is located within an area designated by the SLOAPCD as potentially having naturally occurring asbestos. Requirements associated with asbestos handling and potentially asbestos containing dust as specified in NESHAPS and by the SLOAPCD will be included in the mitigation measures.

Emissions of greenhouse gasses will also be assessed for all remediation and construction activities and operations. GHG emissions will be quantified in the same manner as criteria pollutants, with emission factors and tabulated in columns next to the criteria pollutants. Regulatory requirements will address recent GHG emission regulation, such as AB 32. GHG, including carbon dioxide (from combustion), methane (from combustion and fugitive emissions), nitrous oxide and hydrofluorocarbons will be addressed. GHG emissions will be assessed for both direct (located on-site) and indirect (from mobile sources and electricity generation) and will address life-cycle issues such as transportation. CalEEMod will be utilized for estimated of

CO₂, nitrous oxide and methane emissions and the CARB compendium of GHG emissions factors will be utilized for other GHG pollutants. Electrical generation GHG emissions will utilize CalEEMod factors for the area. The construction GHG emissions will be amortized over a 25 year period and added to the operational GHG emissions. This combined number will be used to determine the significance of GHG emissions.

Development operations will be assessed for GHG emissions relative to a service population or the numeric annual GHG emissions numbers as specified by the SLOAPCD in their GHG thresholds documents.

Impacts associated with both construction and long-term operational activities will be quantified. Mitigation of project emissions will be required for significant impacts. Generally, for non-attainment pollutants, a project is required to reduce emissions to the maximum extent possible using control measures, and then to provide offsets for the remaining operational emissions liability. Mitigation measures are also required for temporary impacts such as fugitive dust and combustion emissions from construction activities. The SLOAPCD CEQA Air Quality handbook includes mitigation measures that will be applied to substantially reduce emissions.

Mitigation measures for diesel emissions will utilize the CARB Diesel Risk Reduction recommendations towards the use of catalysts to reduce diesel hydrocarbon and PM emissions and the guidance in the currently proposed CARB regulation “Reduction of Emissions of Diesel Particulate Matter, and Other Pollutants from In-use Heavy-duty Diesel-fueled Vehicles”. The SLOAPCD CEQA handbook also includes the use of diesel particulate catalysts as a mitigation measure. Additional mitigation measures related to fugitive dust are also in the SLOAPCD CEQA handbook and these will be included in the mitigation measures. Additional measures specified by other air districts, such as the SCAQMD, may be added as applicable, to further reduce emissions.

Mitigation measures will be developed in accordance with the SLOAPCD current Rules and Regulations, Clean Air Plan and CEQA Handbook.

Rules and requirements related to asbestos and lead handling and naturally occurring asbestos will be included in mitigation measures to reduce the impacts associated with asbestos or lead materials. These may include an asbestos dust mitigation plan which will address stabilizing of unpaved areas and storage piles and limits on vehicles speeds. Mitigation measures related to lead paint impacts will be focused on reducing potentially lead containing dust with measures such as manual removal of paint materials, cleaning of areas and limits on operations during windy periods. These would be applicable to demolition activities of existing structure or equipment.

Mitigation measures will also be developed to reduce GHG emissions. These could include the use of construction related lower GHG emission fuels or operational aspects of the project, such

as roadway bike lanes and access to public transportation for the industrial and recreational areas, that will be incorporated into the CalEEMod model to quantify their associated emission reductions. We will coordinate closely with the APCD on classification of the impacts as to significance and thresholds.

4.2.4 Biological Resources

This section presents the scope and approach for assessing the biological impacts associated with the proposed project.

General Approach and Methodology

The biological resources analysis will begin with a comprehensive review of all relevant background materials available for the project site. At the time of this proposal submittal, we understand that the applicant is currently relying upon previously prepared technical studies to support the EIR analysis. At a minimum, the EIR analysis will include review and incorporation of the following documents, where relevant:

- Final Ecological Evaluation, Unocal Former Avila Terminal, San Luis Obispo County, California (Jordan Environmental 2003).
- Ecological Evaluation Supplement I, Unocal Former Avila Terminal (David Wolff Environmental, 2004)
- Ecological Evaluation Supplement II, Unocal Former Avila Terminal (David Wolff Environmental, 2004)
- 90-Day Vernal Pool Branchiopod Wet Season Survey Report for the Unocal Former Avila Terminal Site, Avila Beach, California (David Wolff Environmental, 2005)
- Results of Surface Water and Sediment Sampling, Unocal Avila Tank Farm, (Avocet Environmental, 2005)
- Predictive Ecological Risk Assessment v2.0 (BBL Sciences 2004)
- Draft Addendum to the Predictive Ecological Risk Assessment – An Assessment of On-Site Wetlands (BBL Sciences 2007)
- Results of Wetland Surface Water and Sediment Sampling, Unocal Former Avila Tank Farm, Avila Beach (Avocet Environmental, Inc. 2005)

Other reference documents that will be reviewed include:

- Avila Point Site Plans
- Historic aerial photographs
- Cave Landing Pathway, Biological Study Report (Padre Associates 2010)

SWCA biologists will peer review, compile, and utilize the existing information to the greatest extent feasible. However, because many of the relevant technical biological studies prepared on

behalf of Unocal are between six and ten years old, these reports may require updating in order to satisfy County CEQA and resource agency standards (e.g., California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS)).

The previous studies conducted by Unocal's (now Chevron) consultants (listed above) will serve to support the findings within the updated reports, but will not be relied upon solely for all biological data. Field surveys will need to be conducted to verify general accuracy of the maps and other information contained in the above-referenced background materials, and to obtain additional biological information to adequately meet the standards for EIR analysis. The updated information gathered by SWCA will ensure accuracy, and consistency with local, state, and federal regulatory requirements.

In addition to conducting a literature review and field survey of the project site, additional updated information will be obtained from the California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS), CDFW, USFWS, regional conservation planning documents, and existing biological resource documentation for other local projects.

The Biological Resources Section of the EIR will include a description of the site's biological attributes (derived in part from the background review and field surveys noted above), as well as individual narratives on the current status and known distribution of sensitive and special status plants, animals, and habitats. Updated maps of vegetation, wetlands, and occurrences of rare plants and wildlife will be prepared for the project, using a combination of ground-truthed background study information, and any new information obtained during additional biological studies that may be needed to adequately address impacts in EIR.

Key Project Issues

In addition to the issues outlined below, key project biological resources issues associated with the proposed project would include those related to the peregrine falcon (PEFA). The peregrine falcon is considered a fully protected species by CDFW, and the USFWS has prepared a Monitoring Plan for the American Peregrine Falcon A Species Recovered Under the Endangered Species Act (USFWS 2003). The Santa Cruz Predatory Bird Research Group (SCPBRG) database, which was maintained through 2008, documents a known PEFA nesting location on southwestern seacliff exposures, within the project boundary (i.e., the Fossil Point PEFA Eyrie). During the project pre-bid meeting a PEFA was observed flying adjacent and over the project site. No "take" is allowed for fully-protected species such as PEFA. Based on SWCA's experience, a thorough nesting survey for this species would be needed in order to determine when this particular nesting pair incubates their eggs. SWCA Raptor Specialist, Paul Andreano, a permitted PEFA biologist, would conduct these surveys and provide an thorough impact analysis specific to this species, which would take into consideration potential short and long-term effects, including noise and increased human presence in the immediate area.

Impact Assessment of the Project and Alternatives

Biological resources include sensitive and non-sensitive vegetation communities, plants, and wildlife. The analysis will include synthesizing and verifying the accuracy of existing information for integration into the EIR. This would be accomplished through detailed review of all previous studies for adequacy and consistency with established agency standards and protocols, and performance of additional field surveys to ground-truth study results and provide necessary new information.

It is assumed that all technical biological studies that are prepared by the applicant's consultant will need to be updated in order to be adequate for EIR review. At a minimum, it is assumed that the following technical studies would need to be completed/updated to support the EIR analysis:

Botanical Survey – The last botanical survey conducted was in 2005 by David Wolff Environmental. Only one sensitive species was identified – Well's manzanita (*Arctostaphylos wellsii*). Botanical studies are generally considered valid for 2 years by CDFW. SWCA proposes to update this information for the purposes of the EIR.

Jurisdictional Waters Assessment – Field observations related to wetland features were tentatively designated as wetlands in 2003 by Jordan Environmental. These wetland features were formally delineated by David Wolff Environmental in 2005 following the 1987 U.S. Army Corps Manual. According to the applicant, the U.S. Army Corps determined that federal jurisdiction was not present; however, a state jurisdiction has not yet been made. Wetland delineations are generally considered valid for 5 years. SWCA proposes to update this information for the purposes of assessing impacts within the EIR using the USACE 1987 Manual and the USACE 2008 Regional Supplement for the Arid West Region (v2.0).

California red-legged Frog Habitat Assessment – Formal protocol surveys for California red-legged frog have not been conducted. Previous surveys that were conducted by David Wolff Environmental in 2004-05 were only incidental observations during the aquatic sampling effort for vernal pool fairy shrimp. SWCA proposes to complete the first step of the USFWS protocol and prepare a Habitat Assessment which would be submitted to USFWS for review and determination as to whether formal protocol field surveys would be needed. A scope and budget for the protocol field surveys is not included within this proposal, since it is unknown if the USFWS would require these surveys. Protocol field surveys for CRLF, if required, would be considered an optional task (costs are not currently included for this level of field effort).

Oak Tree Inventory and Mapping – Based on the information provided, the applicant has not prepared an oak tree inventory for the proposed project. Given the potential for oak tree and oak woodland impacts related to the project, SWCA proposes to conduct an inventory of oak trees within the project site. The location, species, diameter, and dripline of each oak tree within the survey area will be recorded. SWCA will also identify areas within the site that would serve as suitable habitat for any future replanting efforts that may be needed to mitigate impacts.

USFWS Protocol Vernal Pool Fairy Shrimp Surveys – Dry season and wet season surveys for this species were conducted by EcoAnalysts, Inc. and David Wolff Environmental, respectively in 2004-05. The results for presence of this species was negative. Due to the limited range of this species and limited ability to inhabit new areas, SWCA assumes that the USFWS would not require additional surveys for this species to be conducted.

Wildlife Reconnaissance Survey – General wildlife reconnaissance surveys were conducted by David Wolff Environmental in 2004-05. Five sensitive wildlife species were observed to utilize the project site (brown pelican, double-crested cormorant, peregrine falcon, silver legless lizard, and Cooper’s hawk). Due to the age of the previous survey, SWCA proposes to conduct additional wildlife surveys within the project site to inventory wildlife that are currently utilizing the project site.

As part of the reconnaissance-level surveys, SWCA proposes to conduct a total of three site visits to document wildlife present within the project site. All wildlife occurrences will be added to the existing list of data that has been gathered during previous studies, and analyzed within the EIR.

Raptor Surveys - Mr. Paul Andreano, will evaluate the site for raptor activity, focusing on the long-term nesting activity of peregrine falcon and analyzing potential impacts to this species as a result of the proposed project. Raptor nest locations within 500 yards of project area will also be mapped. Mr. Andreano holds a Section 10(a)1(A) permit for peregrine falcon and is considered an expert in raptor species. In order to determine the specific nesting activity related to the peregrine falcon pair, Mr. Andreano would conduct a series of surveys (up to 8) during the nestling (April to June) and fledging (May to mid-August) periods until the nesting behavior of this breeding pair can be characterized. Surveys will be conducted during periods when breeding behavior is most likely to be observed, such as dawn or dusk.

The EIR section will include a thorough discussion of all potential short and long-term impacts to biological resources that could result from the proposed actions. The analysis will specifically focus on project actions, including decommissioning and demolition of the existing structures, remediation and restoration of contaminated areas, access roads and trails, and future development and maintenance activities. An evaluation of monitoring and maintenance components of the project will determine the possibility of long-term impacts. Direct, indirect, and cumulative impacts will be analyzed consistent with criteria set forth by CEQA and the County’s Initial Study Checklist, and will be discussed in context with local land use policies and ordinances.

Mitigation proposed as part of the project design will be evaluated for adequacy, efficacy, and consistency with accepted standards. Measures may include designation of sensitive habitats through the proposed Amendments, and identification of site-specific policies and standards to avoid or reduce potential impacts. Additional measures designed to avoid or offset significant

impacts to biological resources will be developed where necessary, such as improvement or enhancement of site restoration, habitat rehabilitation, and resource management plans. Mitigation measures will be consistent with the planning and land use documents adopted by the County. A discussion of residual impacts of the proposed project that are expected to remain after implementation of recommended mitigation measures, if any, will be included.

Cumulative impacts will be evaluated from local and regional perspectives. For example, the proposed project may contribute to a cumulative loss or degradation of a habitat type (e.g., oak woodlands). Development projects approved, pending, or planned for the project area will be considered in the cumulative impact analysis. The County Department of Planning and Building the City of Pismo Beach Community Development will be contacted regarding upcoming or proposed projects in the vicinity, and all such projects will be included in the cumulative analysis.

Project alternatives will be individually evaluated and compared in terms of their relative impacts, both deleterious and beneficial, to biological resources. A discussion of the disadvantages and merits of each alternative will be provided. A discussion of residual impacts of the proposed project that are expected to remain after implementation of recommended mitigation measures will be included.

4.2.5 Cultural Resources

This section presents the scope and approach for assessing cultural resource impacts associated with the proposed project.

General Approach and Methodology

Preparation and completion of the Cultural Resources section of the EIR will include the following four steps: 1) a thorough and detailed description of all classes of cultural resources that may be impacted; 2) careful assessment of resources and potential impacts; 3) meaningful and transparent consultation with project stakeholders and 4) development of recommendations and mitigation measures that take into account the views of all consulting parties and that meet CEQA requirements.

Albion proposes an approach that combines technical studies that meet or exceed professional standards with substantial consultation with stakeholders to achieve the desired outcome, that is, a defensible document. Albion has extensive experience in this area, having successfully directed complex cultural resource studies for important County projects involving sensitive Native American issues. Especially noteworthy are the Nacimiento Water Project (2007-2011), the Eagle Ranch Residential/ Resort Development Project in Atascadero (2011-current), and the Dana Adobe Nipomo Amigos (DANA) EIR (2012-current). Each project experienced significant controversy during early project planning, largely centered on Native American concerns about cultural studies. In each case, Albion principals and technical staff were called on to provide peer

review of previous studies, make recommendations for remedial studies when needed, facilitate meaningful consultation between project stakeholders, and develop appropriate recommendations and protocols for future project activities.

Key Project Issues

The project site contains at least three prehistoric archaeological sites, including a purported Native American Village site likely occupied between 300 and 500 years ago. A number of cultural resource studies have been conducted on the property, including an archaeological inventory, a geoarchaeological assessment, subsurface evaluation, and a preliminary Treatment Plan for future development. Evaluation of the sites in 2000 for inclusion in the California Register of Historical Resources found that all three sites are potentially significant under current CEQA Guidelines. While significant impacts have occurred over time, each site possesses intact deposits that may address important archaeological research questions. Importantly, local Native American communities consider these locations to be sacred, and have expressed concerns about protections during any planned development. Key issues include the following:

- Utility of existing cultural resource data to meet current environmental review needs.
- Careful assessment of previous work to identify data gaps and evaluate previous study methods and findings to ensure accordance with current professional standards.
- Applicability of prior treatment recommendations for the current plan.
- Review of prior treatment recommendations in light of current project scope.
- Efficient and fact-based consultation with Native American tribes and groups.
- Coordination of Native American consultation under Senate Bill (SB 18), review of current cultural resource data, communication between the archaeological team reviewer and Native Americans.

Impact Assessment of the Project and Alternatives

Albion proposes the following steps, each led by Albion's Principal Investigator for Archaeology, Jennifer Farquhar and Native American consultation, Clinton Blount. The goals of this work is to provide a detailed understanding of the site's extent, constituents, integrity, and significance/importance in order to accurately assess and mitigate project impacts in the EIR.

Initial Meetings - Albion will meet with project stakeholders to review current project plans and methodologies for the analysis.

Native American Consultation - Albion will provide assistance to the County (and Chevron) in meeting its obligations under SB 18. SB18 creates a mandatory consulting relationship between, in this case the County, and potentially affected Native American tribes and groups. The purpose of SB18 is to provide a structured consultation relationship that ensures the appropriate groups are consulted, impose deadlines for mutual responses, and create guidelines for how consultation is carried out. The ultimate goal of SB18 is to make sure that the Native American community is

fully informed about the project and potential impacts to traditional resources, has a recognized position in the environmental review process, can comment on proposed investigation and management of resources, and can seek meaningful responses from the County and ultimately the project proponent.

Chevron has taken the proactive step of reaching out to the Native American community to begin discussions of the project. While this will certainly complement the SB18 process, the County, in fulfilling the bill's requirements will be beginning a new phase of formal consultation. The consultation process will certainly bring tribes and groups already discussing the project back into discussions. The outreach required under SB18 may also bring new groups into the discussion. Based on recent experience in the region, the Native American Heritage Commission will provide between 10 and 15 potential participants. Actively seeking participation from these groups will bring more "voices" to the discussion, thereby broadening the consultation with a wider range of ideas and treatment recommendations. A fact-based approach to discussions is often the best way to focus consultation on the resources present at a project.

The potential controversy and often misinformation surrounding virtually any project in the County necessitates bringing substantiated cultural resource data into the consultation process. To solve this key issue, Albion will assist the County and project proponent in creating an open dialogue with all responding groups through both group meetings and individual consultation sessions. Albion will also bring the work in progress by the archaeological Principal Investigator, Jennifer Farquhar, into the consultation process. Albion has found that involving the consulting tribes and groups in the document review process has done much to clarify misunderstandings or misconceptions regarding such volatile issues as project effects, sacred sites, cemeteries, and traditional resources. This approach of active consultation also allows the County to reinforce the guidelines for the SB 18 and broader CEQA processes. In short, there are topics and recommendations that are appropriate to the environmental review process, and others that fall outside the process.

Review of Existing Documentation - Albion will conduct a thorough review of all cultural resource studies conducted for the project site. At a minimum, this will involve evaluation of:

- Background documents amassed during the previous records search at the Central Coast Information Center at UCSB;
- Soils and geology maps;
- Inventory and Assessment Report for Avila Tank Farm (Gibson and Parsons 2001); and
- *Suggested Treatment of Yak Tityu Tityu Cultural Resources at the Avila Tank Farm* (Gibson 2012).

Develop Project Map - Using GIS, Albion will develop a single composite project resources map depicting all cultural resource boundaries, all known historic features, and areas of proposed project activity. This map will be updated throughout the project, and used during each subsequent phase of the project.

Field Verification - Albion will conduct an onsite verification of previous cultural resources studies. Work will focus on determining accuracy of site boundaries and identification of additional features or artifact concentrations. Any additional information obtained during this effort will be added to the project resources map.

Report of Findings - Following completion of the field verification, Albion will prepare a report of the findings. The report will include an assessment of prior work, a detailed update of site descriptions, and recommendations for any additional work that may be required to prepare the EIR (see optional task below). Based on preliminary review of existing information, it appears that previous reports submitted by the applicant (i.e. Gibson 2012) and the results of the peer review and field verification would be sufficient for incorporation into the EIR. In the event any deficiencies or issues arise during the peer review and field verification, Albion will provide notification immediately for discussion.

An important aspect of this report will be a very clear discussion of proposed project activities in relationship to cultural resources. This, in conjunction with the composite project resources map, will provide the basis for determining the need for additional technical studies (if required) as well as detailed and focused treatment recommendations for cultural resources in the EIR.

Optional Task – Additional Survey - Based on the location of specific project elements following development of the project description, some additional survey may be required to supplement existing data. This task is included as an option for future consideration by the County.

SWCA will work with Albion to incorporate information from the technical review and Native American consultation into the EIR. The EIR section will summarize pertinent information from the Report of Findings, while respecting confidentiality regarding resource locations and certain aspects of Native American consultation. The analysis will include a thorough discussion of all potential short and long-term impacts to cultural resources that could result from the proposed actions, and will focus on project actions that may affect significant historical (archaeological) resources (e.g., ground disturbance, increased human presence and access). Direct, indirect, and cumulative impacts will be analyzed consistent with criteria set forth by CEQA and the County's Initial Study Checklist, and will be discussed in context with local land use policies and ordinances.

Mitigation measures may include designation of archaeologically sensitive areas through the proposed Amendments (if appropriate), and identification of site-specific policies and standards

to avoid or reduce potential impacts. A discussion of residual impacts of the proposed project that are expected to remain after implementation of recommended mitigation measures, if any, will be included.

Cumulative impacts will be evaluated from local and regional perspectives, and will consider recent projects such as the County's purchase of the Pirate's Cove property and plans for trail improvements (currently pending approval). The County Department of Planning and Building and the City of Pismo Beach Community Development will be contacted regarding upcoming or proposed projects in the vicinity, and all such projects will be included in the cumulative analysis.

Project alternatives will be individually evaluated and compared in terms of their relative impacts, both adverse and beneficial, to cultural resources. A discussion of the disadvantages and merits of each alternative will be provided. A discussion of residual impacts of the proposed project that are expected to remain after implementation of recommended mitigation measures will be included.

4.2.6 Geological Resources

This section presents the scope and approach for assessing the project and alternative impacts for geological resources.

General Approach and Methodology

The project site is located on a prominent topographic headland (Fossil Point), immediately southeast of flat-lying Avila Beach. The topography across the headland consists of relatively flat graded tank pads, generally separated by moderate to steep slopes. The property contains a steep north facing slope, slopes and coastal bluffs to the south, and relatively level coastal terraces in the center and northeastern portions of the site. The coastal bluffs are generally steep to near-vertical. Most of the site is underlain by the Pliocene Squire Sandstone, which is a member of the Pismo Formation. This fine- to medium-grained sandstone overlies volcanic tuff and tuff breccia of the Miocene Obispo Formation. Portions of the site are directly underlain by the Obispo Formation (i.e., the Squire Sandstone is absent). Much of the surficial soils and near surface bedrock has been modified/graded into artificial fill deposits. The seismically active Hosgri Fault and associated Shoreline Fault are located off the coast of the project site.

An abundance of environmental site assessments and other technical studies have been prepared for the project site in relation to subsurface contamination. Many of these reports would include onsite geologic information that would be useful in establishing baseline information. MRS would peer review these technical documents and subsequently incorporate the findings into the Initial Study and EIR. MRS will also review regional geologic reports and maps to assess the regional geologic conditions. In addition, MRS will perform a detailed site reconnaissance to assess existing conditions.

Geologic hazards at the site are anticipated to include potential slope instability, seismically induced ground movement, and erosion. Surface faulting is not anticipated at the site. Upon completion of the analysis, MRS will write the technical section for the Initial Study and EIR, addressing all geologic and geotechnical hazards, potential impacts, and mitigation measures.

Key Project Issues

Site remediation would result in removal of existing paved areas that currently inhibit erosion. Soils disturbed during excavation, grading, and stockpiling of soil would be subject to erosion induced sedimentation of adjacent coastal waters. Similarly, future development would involve grading and excavations that could result in erosion induced sedimentation of adjacent marine waters.

New construction associated with the Development Plan would be completed in proximity to a steep coastal bluff. A geologic bluff retreat study is being completed to evaluate the building setback that would be required during development. Steep temporary slopes would likely be created during remediation and Development Plan-related construction.

New structures would potentially be subject to strong seismically induced ground movement and associated ground failure as a result of movement on the nearby (offshore) Hosgri Fault, the recently discovered Shoreline Fault, or other regional faults. Inadequate design could result in structural failure.

Impact Assessment of the Project and Alternatives

The geologic impact evaluation will include a discussion of impacts associated with topographical alteration as a result of Development Plan construction. Erosion impacts will be addressed with respect to site remediation and subsequent Development Plan construction. Slope stability impacts will be addressed with respect to coastal bluff retreat, temporary slopes created during remediation and construction, and permanent slopes constructed for subsequent development. Seismically induced ground shaking will be addressed with respect to potential earthquakes on the nearby Hosgri Fault and other regional faults, including a discussion regarding compliance with the Uniform Building Code.

Primary and secondary impacts will be designated significant or insignificant based on the criteria of CEQA, the State CEQA Guidelines, and any thresholds or criteria used by the County. Impacts will be clearly assigned to different phases of the project (i.e., remediation and development) and impacts and mitigation measures worded to be useful in developing development standards, conditions of approval, and establishment of other guidelines.

Mitigation for reducing the effects of significant impacts will be developed, emphasizing establishment of erosion control measures to minimize sedimentation entering adjacent coastal waters and preventative measures with respect to slope failure. Mitigation measures would be

site-specific (e.g., geologic setback from the coastal bluff), yet generalized enough to be useful for creation of development standards to be implemented during non-specific new construction.

Cumulative impacts to geological resources associated with the proposed project and other foreseeable projects will be evaluated. Given the local nature of the geological impacts of the project, it is likely that few cumulative impacts will be identified.

4.2.7 Hazards and hazardous Materials

This section presents the scope and approach for assessing potential safety and hazardous materials impacts associated with the proposed project and alternatives.

General Approach and Methodology

The proposed project could introduce potentially hazardous activities during the remediation and construction. The project could also present hazards and risk to wildlife or human health through the exposure of wildlife or humans to existing site contamination. Residual contamination could also pose potential health and environmental hazards for future land uses.

The safety and hazardous materials analysis will quantify the current risk baseline and evaluate potential changes in risk associated with the proposed activities and alternatives. If remediation would require the movement of large quantities of contaminated material to the landfill or other locations, the risks associated with the transportation of materials will be quantified and assessed. Fire hazards will also be addressed for remediation, construction and operational phases of the project.

For the environmental risks to wildlife and humans, the analysis will utilize the existing studies completed by Chevron for the proposed project, including the Avocet Feasibility study and the associated Risk Assessments. Considerable work has been done by the Avila Tank Farm Collaborative Assessment Team (ATCAT), a multi-agency group that has been formed to address surface and near-surface issues associated with remediation at the site. ACTAC members have been actively involved in the development of the human health risk assessment and the ecological risk assessment. The ATCAT will also be involved in the development of the Remedial Action Plan (RAP). Both of these risk assessments have been certified by the ATCAT. As part of our peer review of these documents, we will draw upon the work that has been done by the ATCAT.

The following studies would be peer reviewed as part of the EIR analysis when they become available:

- Remedial Action Plan (RAP): There will be multiple references to human health, ecological risk, and occupational health in the RAP that will be reviewed and evaluated for completeness and appropriate referencing.

- Feasibility Study (FS): There will be many references to a human health risk assessment and ecological risks throughout the FS. This study relies upon the 2011 supplemental human health risk assessment (HHRA) prepared by McDaniel Lambert, Inc. (as part of a cooperative process involving the ATCAT) and a predictive ecological risk assessment (pERA) prepared in 2004 as a collaborative process between BBL Sciences, the RWQCB, and the other ATCAT members. The potential terrestrial and aquatic ecological receptors at the Avila Tank Farm site were evaluated and possible terrestrial aquatic ecological risks associated with the Avila Tank Farm site were assessed. The FS, HHRA, and pERA will be reviewed and evaluated.

The peer review will involve assessing each of the above studies as to completeness, technical accuracy and whether correct procedures/protocols are followed. The peer review will also identify factors that, if varied due to construction irregularities or reasonable variability, could cause changes in the assessment results.

A key component of the safety and hazardous materials analysis will be establishing the baseline. The baseline will primarily address the ecological and human health aspects of the hazardous materials located at the site as described in the existing studies listed above. Baseline conditions related to human health would rely on the work conducted in the McDaniel Lambert 2011 Human Health Risk Assessment. Baseline conditions related to ecological risk would rely on the work conducted in the BBL Sciences 2004 Predictive Ecological Risk Assessment.

Numerous field investigations and related studies have been conducted at the Site since the late 1990s, and have resulted in the drilling of more than 300 soil borings, the excavation of 25 exploratory trenches, the collection of soil gas from 79 locations, and the establishment of approximately 85 groundwater monitoring wells. The relevant summary studies and technical reports that will be utilized include:

- Site Characterization, Unocal Avila Station, Avila Beach, California England & Associates, February 1998.
- Additional Site Characterization, Western and Northern Areas, Unocal Avila Pump Station, Avila Beach, California England & Associates, February 2000.
- Final Supplemental Site Characterization, Unocal Avila Pump Station, Avila Beach, California England Geosystem, Inc., April 2002a.
- Soil Gas Monitoring Report, September 2002, Unocal Avila Pump Station, Avila Beach, California England Geosystem, Inc., November 2002b.
- Shallow Soil Characterization, Unocal Avila Terminal, Avila Beach, California England Geosystem, Inc., November 2003.

- Remediation Technology Panel Assessment of Off-Site Migration of Hydrocarbons at the Avila Beach Tank Farm Site Huntley et al., April 2004.
- Additional Shallow Soil Characterization in Support of Risk Assessment, Avila Terminal, Avila Beach, California Avocet Environmental, Inc., 2004a.
- Analysis of Background Metals, Unocal Avila Tank Farm, Avila Beach, California Avocet Environmental, Inc. and Blasland, Bouck & Lee, Inc., September 2004b.
- Groundwater and Cliff Springs Monitoring Report, Second Semiannual 2007, Chevron Avila Beach Terminal Site (Former Unocal Terminal), Avila Beach, California Parsons, Inc., January 20, 2007 [sic, 2008].
- Additional Soil Sampling and TPH Profile in Shallow Soil, Former Avila Tank Farm, Avila Beach, California Avocet Environmental, Inc., 2008a.
- Soil Gas Investigation Report, Former Avila Tank Farm, Avila Beach, California Avocet Environmental, Inc., August 2008b.

In addition to crude oil and petroleum products that were found in Avila Beach from the leaking pipelines, the tank farm site also has contamination associated with the operation of the tank farm facility. Therefore, the hazards analysis will consider a wide range of hydrocarbons, metals and chlorinated solvents in the evaluation of cleanup levels, containment strategies and human and environmental risk.

Key Project Issues

The project site is geologically complex and poses significant challenges when compared to the Avila Beach Cleanup Project where excavation was a relatively easy and effect approach to removing a majority of the contamination. Due to the geological complexity of the site, some areas cannot be effectively remediated and several containment strategies will need to be considered. It is expected that the RAP will identify a variety of remediation approaches varying from removal to containment for different areas of contamination. Remediation approaches will be determined based on the ecological and human health risks, the feasibility of contaminant removal, effectiveness of contaminant containment, contaminant exposure barriers, long-term in situ treatment options, and long-term monitoring.

The key issue associated with hazards and hazardous materials revolves around long-term human and environmental exposure to residual contamination. Exposure associated with site remediation and construction are short-term in nature and can be effectively mitigated. Long term exposure to residual contamination needs to be evaluated in terms of the effectiveness of cleanup activities, the effectiveness of containment where contamination cannot be effectively remediated, and potential exposure pathways associated with the proposed land development. The HHRA and pERA clearly identify where additional measures will be required to achieve an acceptable level of long-term risk to humans and the environment. Additional measures will

likely be identified during the preparation of the FS and RAP, and may be supplemented with EIR mitigation measures. Potential measures to address long-term human health and environmental risk could include additional remediation activities, physical barriers (e.g., containment caps, vapor barriers under buildings) and deed/land use restrictions to prevent certain development activities.

Impact Assessment of the Project and Alternatives

The safety and hazardous materials impact analysis will address issues related to hazardous materials use during remediation and construction, such as equipment fuel and fueling. Impacts will be determined based on risk criteria established by CEQA Appendix G, and County adopted thresholds.

Transportation risk associated with the movement of contaminated materials on highways will be assessed by examining the numbers of trips and associated accident rates along applicable highway segments. Increasing truck traffic along highways could increase transportation risk due to accidents.

Fire risk will address potential areas where fire could arise, such as hot work, refueling, grassland area activities, etc. A fire could potentially impact nearby areas including recreational, residential areas or businesses.

Ecological and human health impacts would be defined by the existing studies listed above and adherence to the designated exposure limits as defined by the RWQCB and others. Our peer review will also identify potential factors that, if varied due to construction irregularities or other factors, could cause exceedances of these limits. These factors would result in potential mitigation measures to ensure a sufficient margin of safety related to ecological and human health risk.

Mitigation measures will be proposed for each issue that has the potential to impact public safety, human health or ecological risk. The mitigation measures will be evaluated in terms of feasibility, adequacy and most importantly, effectiveness. Two key considerations in the application of specific mitigation measures will be the specific phase or activity of the proposed project or alternative, and the location of people in proximity to project-related activities.

Mitigation measures for short-term remediation and construction activities could take the form of preventative measures related to fueling of construction equipment, including designated refueling areas and containment, or additional margins of safety related to the caps and containment of materials related to ecological and human health risk. Mitigation related to transportation of contaminated material could include measures such as hiring practices, vehicle speed limits, drug testing, etc. MRS has conducted extensive analysis for the County of Santa Barbara on the transportation of hazardous materials and the effectiveness of mitigation measures.

Mitigation measures to address long-term human health and environmental risk could include additional remediation activities, physical barriers (e.g., containment caps, vapor barriers under buildings) and deed/land use restrictions to prevent certain development activities.

4.2.8 Land Use

This section outlines the scope and approach for the Land Use section of the EIR.

General Approach and Methodology

The proposed project consists of a variety of actions, including a Specific Plan Update, Local Coastal Plan (LCP) Amendment, Development Plan, and Remediation Plan, which will require comprehensive review of Coastal Policies and the Coastal Act. As an **optional task**, SWCA will provide support to MRS and the County during development of the project description, including Specific Plan language related to land use. The project will be evaluated for consistency with these documents and other applicable plans and policies, specifically for physical environmental impacts resulting from inconsistencies, if identified. The focus of the Land Use section will be to provide a project-specific analysis of the project's land use conformity, compatibility, and context in a manner both clear to the reader and useful for project reviewers and decision makers.

A substantial record exists regarding present and historic use of the site. Pertinent documents include the Avila Beach Specific Plan and Environmental Impact Report, San Luis Bay Area Plan (Coastal), and information provided by the applicant related to other permits for the project site. In addition SWCA has a substantial library of source material for the immediate area, including the Pirate's Cove Administrative Draft EIR, San Luis Bay Estates Subsequent EIR, Bob Jones Bikepath (various segments and documents), and Sycamore Mineral Springs EIR. SWCA will conduct a thorough review of all pertinent documentation and will provide a complete background section detailing the site's land use history. The background description will include information regarding past land use issues and the remedies applied.

To maximize clarity, the impact analysis section will be presented in tabular format, focusing on any land use issue that may present a significant impact on the physical environment. SWCA will compile pertinent policies and programs into one or more tables, providing a detailed analysis of the project's consistency and potential effect on the environment. To avoid repetition, topical consistency analyses, such as Air Quality, will be addressed in each specific section, and will be referenced in the Land Use section. The tables will be designed to be excerpted for future use by project reviewers and decision makers.

Analysis will include direct, indirect and cumulative impacts. The EIR will identify policies and planning area standards to mitigate potential land use impacts and ensure consistency with the Coastal Act.

Key Project Issues

In order for the project to be developed, the County Board of Supervisors must approve a Specific Plan Amendment and LCP Amendment, which will include a land use designation change and identification of policies and planning area standards specific to the project site. The current land use designation is Industrial, and applicable combining designations include Archaeological Sensitive Area (ASA) and Flood Hazard (FH). This process will include a comprehensive analysis of consistency with Coastal Policies, which will be directly tied to the EIR analysis and identification of coastal resources such as sensitive habitats, visual resources, water quality, coastal access, and provision of visitor serving facilities. This process will include extensive coordination with the County and Coastal Commission staff regarding the potential identification of mapped combining designations, overlays, and related policies and standards.

Impact Assessment of the Project and Alternatives

The EIR will include a thorough discussion of potential impacts related to planning and land use compatibilities that could result from the proposed actions. Direct, indirect, and cumulative impacts will be analyzed consistent with criteria set forth by CEQA. Both short- and long-term impacts will be considered. A discussion of residual impacts of the proposed project that are expected to remain after implementation of recommended mitigation measures will be included.

Project alternatives will be individually evaluated and compared in terms of their relative impacts, both deleterious and beneficial, to land use resources. A discussion of the disadvantages and merits of each alternative will be provided.

Any significant impacts will be reduced to a level of insignificance, where possible, by the application of specific mitigation measures. Mitigation measures to address land use impacts may include equally effective options to amend or modify site-specific policies and planning area standards, or the development project, to attain conformity. The provision of options will allow decision makers and project proponents to tailor the response to consistency impacts. The section will state the residual level of significance resulting after application of the specified measure(s).

Cumulative impacts will be evaluated from local and regional perspectives. Development projects approved, pending, or planned for the project area will be considered in the cumulative impact analysis, including the County's purchase of the Pirate's Cove property and future access and parking improvements (as approved during the currently pending Planning Commission hearing). The County Department of Planning and Building, San Luis Obispo Local Agency Formation Commission (LAFCO), and the City of Pismo Beach Department of Community Development will be contacted regarding upcoming or proposed projects in the vicinity, and all such projects will be included in the cumulative analysis. The Land Use section will specifically address planned annexations or expansions of Spheres of Influence for local jurisdictions.

4.2.9 Noise and Vibration

This section presents the scope and approach for assessing the noise related project and alternatives impacts.

General Approach/Methodology

Remediation, construction and development activities for the proposed project and alternatives could increase noise levels in the vicinity of the site and along transportation corridors. The noise impact analysis will focus on remediation/construction equipment and activities related to the ongoing operations of the industrial and commercial uses. Truck transportation related to remediation, construction and operations of could also produce noise impacts to communities located near the construction site and along transportation routes.

Remediation, construction and operation activity noise levels will be calculated based on the construction schedules and equipment lists developed in the project description. The impact analysis will be based on the relationship between projected noise levels (and the duration of these levels) and applicable policies and requirements of the County Noise Elements. Impact criteria will include the noise/land use compatibility guidelines supplemented by annoyance and sleep disturbance criteria as appropriate. Additional criteria may be added to address sudden, peak noise impacts associated with blasting or concrete breaking.

The project remediation and construction would generate noise and vibration due to a number of activities, including construction equipment operations (graders, front loaders, etc), potential blasting (if conducted), and concrete breaking and possible concrete grinding. Noise generated by equipment and activities will be estimated using existing databases on equipment and activity noise levels as available from the EPA and various other sources. In addition, noise measurements related to construction work conducted by MRS on other projects will be utilized, in particular related to construction equipment. Equipment specific noise data will be utilized where appropriate.

In addition, as truck and vehicle traffic levels would most likely be increased along the transportation routes, the increases in noise as a result of increased truck and vehicle traffic will be assessed. Federal Highway Administration models for estimating traffic noise will be utilized to assess increased traffic impacts. Community populations with potential exposure to traffic noise will be identified and mapped, including businesses and residences along Avila Beach Drive, Cave Landing Road, within Avila Beach, or recreational areas.

Operational noise sources may include nighttime activities, increased vehicle traffic or development support equipment (pumps, etc). Estimates of noise from pumps and other operations would utilize existing databases on noise in combination with distances to sensitive receptors.

Baseline Environmental Setting

From our review of the project materials and knowledge of the project area, our proposed approach is to gather sufficient baseline information to address the issues outlined in the RFP and any other issues that are identified. We propose to utilize the existing material to the fullest extent feasible in our study to perform the following tasks:

- Describe the existing noise environment throughout and around the site by compiling and reviewing existing noise data for the study area, including general plans and noise elements and by taking supplemental, site specific noise measurements.
- Measure noise levels at up to six locations in the study areas to confirm and update existing noise measurements. Noise measurements will be taken near residences, sensitive ecological areas and recreational areas in the vicinity of the proposed project location and transportation routes.
- Compile impact criteria based on a review of the County Noise Elements, City Municipal Code and EPA reports (for peak noise, annoyance and sleep disturbance criteria).

Baseline noise measurements will focus on impacts to existing sensitive receptors, including residential areas and recreational areas.

Baseline noise levels will also rely on the community noise levels developed as part of the San Luis Obispo County Noise Element Technical Reference Document, which defines noise levels at 41 different sites in the County and the Airport Area Specific Plan. Additional community noise monitoring will be conducted to supplement this data. This noise monitoring will be conducted by MRS staff utilizing a Quest 1900 data logging sound level meter at locations near the project site and along pertinent transportation corridors.

Impact Assessment (Project and Alternatives)

Noise impacts will be assessed on the basis of the change in the ambient noise environment in the study area that would be caused by remediation, construction, transportation, and operational activities. The various elements of the project will be evaluated to determine which of them will influence ambient noise levels. The next step will be to determine how much change will be expected. The analysis will proceed as follows:

- Calculate noise levels and the duration of the impact for sensitive receptor locations in the noise study area utilizing existing equipment-specific noise level databases and measurement studies.
- Determine the elements of the project that will cause a noticeable change over the measured background noise levels generated by remediation, construction, transportation and operation activities and associated traffic.

- Evaluate ground borne vibration levels, if applicable, associated with equipment and activities.
- Evaluate projected noise levels and incremental noise increases against appropriate significance criteria, including criteria related to peak noise levels associated with blasting type activities, if conducted, and vibration criteria.
- Evaluate potential conflicts as a result of noise on surrounding residential, agricultural and recreational land uses.

Calculations will be made to estimate noise levels at noise sensitive locations in the vicinity of locations surrounding the site and along candidate transportation corridors. Remediation, construction and operational noise will be modeled using an existing procedure such as the one developed for the EPA titled “Regulation of Construction Activity Noise,” in which construction equipment source levels are defined and combined with information on distance to receiver, duration of equipment usage, operating characteristics, etc. These methods will define peak and average noise exposure levels (Leq and CNEL). Source noise levels will be obtained from the available technical literature and previous equipment measurements conducted by MRS. Traffic noise will be modeled using an existing procedure such as the Federal Highway Administration’s “Traffic Noise Prediction Model”, a highway noise model which could be utilized to analyze trucking impacts to community noise levels.

The alternatives analysis will examine the potential impacts associated with the identified alternatives. The noise impacts of the alternatives will be assigned a significance level and will also be compared to those from the proposed project.

The impact discussion for this project will identify any noticeable change in the existing contribution that would result from construction and operation activities and the significance of that change. A change of 3 dBA is generally regarded as the threshold of noticeable change in an ambient noise environment.

4.2.10 Population and Housing

This section presents the scope and approach for assessing impacts related to population and housing.

General Approach and Methodology

The project will result in additional temporary or contract employment opportunities during construction, which will likely be provided by the current labor pool in the area. Operation of the resort facilities would require permanent staff, also likely from the local population. The development would serve tourists and locals, and would not include permanent housing. Therefore, the project is unlikely to have a measureable effect on the population and housing

balance in the County. The population and housing section will provide information regarding baseline conditions and expected population growth in the immediate area, and County.

Impact Assessment of the Project and Alternatives

Impacts are not expected to be significant. General information regarding potential employment and population growth will be provided in the EIR. If impacts are significant and adverse, mitigation will be provided to reduce impact severity. Project alternatives will be individually evaluated and compared in terms of their relative impacts, both deleterious and beneficial, to population and housing. A discussion of the disadvantages and merits of each alternative will be provided. Mitigation measures will be applied, if necessary, to reduce impact significance. If payment of fees is part of the mitigation program, the EIR will include information regarding the basis of fees and effectiveness in achieving reductions in impact significance. The EIR will include a discussion of local and regional housing and population trends in the cumulative impact section.

4.2.11 Public Services and Utilities

This section presents the scope and approach for assessing impacts to public services and utilities associated with the proposed project.

General Approach and Methodology

The proposed project would change the land use category of the site in anticipation of land development. This change would result in the creation of resort facilities and coastal access, which would require public services and utilities, including community water supply, wastewater transport and treatment (either onsite or through the Avila CSD), emergency services response, and increased use of local roads. This section will analyze increased environmental impacts associated with demand for public services and utilities resulting from the proposed project.

The analysis will focus on evaluation of impacts related to fire protection/emergency response resources, water supply, and wastewater, although impacts related to schools, solid waste facilities, roads, and utilities will also be evaluated. Detailed analysis presented in the Water and Wastewater sections of the EIR will be cross-referenced. Baseline information regarding affected service providers and utilities will be summarized. The analysis will utilize relevant and quantifiable significance thresholds and will propose mitigation measures for identified significant impacts, which can be incorporated into the Specific Plan and LCP Amendment as planning area standards.

Impact Assessment of the Project and Alternatives

SWCA will review agency and department comments in response to the NOP to clarify anticipated capability and capacity to serve the project. SWCA staff will contact CALFIRE, the Avila CSD, Sheriff, and other emergency response and public service/utility providers to solicit additional comment and information where needed. SWCA will document all consultation efforts, and incorporate pertinent information.

Fire. The analysis of fire protection impacts will include a review of existing services as well as risks resulting from the proposed project. The section will evaluate whether the project will have physical environmental impacts which affect public services, or otherwise substantially increase fire risk and emergency response demands on site. Recommended preventative and prescriptive measures to reduce demand on services will be addressed. This may include, but not be limited to, compliance with the Fire Code, access, water storage, and identification of vegetation management/fuel modification areas. The section will evaluate whether the project will have physical environmental impacts which affect public services, or otherwise substantially increase risk and emergency response demands on site.

Police/Sheriff. This section will provide information regarding the County Sheriff's existing facilities and staffing, as well as information regarding other potential responders (e.g., if the Sheriff has a mutual agreement with another jurisdiction). The analysis will incorporate accident and fire risk reduction measures identified in the impact analysis for fire protection services, and emergency response due to increased public access.

Roads. This section will primarily reference the detailed analysis provided in the Transportation and Circulation section of the EIR, including proposed and recommended on and off-site road improvements.

Schools. This section will provide general information regarding area schools. Physical impacts to schools are expected to be less than significant. The proposed project is not expected to result in substantial increases in new households with school-age children in the San Luis Coastal School District.

Solid Waste. Construction and operation of the project would generate solid waste, including hazardous materials, standard construction materials, non-hazardous waste, and recyclables. The section will provide general information regarding local landfills and estimates of solid waste generated by the project, and will identify measures to reduce the demand for landfill capacity. This section will incorporate and cross-reference information from the Hazards and Hazardous Materials section of the EIR, including anticipated quantities of hazardous materials and proposed transport and disposal during remediation.

Utilities. PG&E and Southern California Gas will provide energy to the project. Information regarding onsite utility connections will be outlined in the EIR. This section of the EIR will summarize anticipated long-term energy use and identify energy conservation measures identified by the applicant and included in the County Green Building Ordinance.

Mitigation measures will be proposed for each significant impact, which can be incorporated as policies or planning area standards. If mitigation measures consist of fees, the mitigation measure program will specifically outline the basis for fees, as well as timing and other components designed to ensure impacts are reduced to a less than significant level. The analysis

will consider the cumulative effects of growth on public service and utility providers. Project alternatives will be individually evaluated and compared in terms of their relative impacts, both adverse and beneficial, to public services. A discussion of the disadvantages and merits of each alternative will be provided.

4.2.12 Recreation

This section outlines the scope and approach for the recreation section of the EIR.

General Approach and Methodology

The Recreation section will provide detailed information regarding plans and policies that address recreational resources, coastal access, and visitor serving facilities, including the Coastal Act, County Local Coastal Program, Parks and Recreation Element, and Conservation and Open Space Element. The section will address impacts to recreational resources, specifically, impacts associated with the coastal access, existing and proposed trails (including the connection between Shell Beach and Avila Beach), open space management, bike paths, and private/public recreational opportunities proposed as part of the project.

SWCA will consult with County Parks regarding potential trail easements, private and public trail and open space access, and connection to the Pirate's Cove parking area and associated trail improvements. Potential impacts and compatibility issues with existing beach areas, such as Avila Beach and Pirate's Cove, will be addressed.

Key Project Issues

As noted above, key issues relate to the site's location on the coast adjacent to the community of Avila Beach (to the west) and recreational areas such as Pirate's Cove beach and path use area to the east. The Avila Beach community and surrounding area is rich in ocean- and land-based recreational opportunities (beach use, kayaking, fishing, surfing, golfing, hiking, birding, etc.). The project presents an opportunity for new coastal access and a long-term trail connection along the coastline, which is likely to be seen as a beneficial effect. The site is also proximate to the Bob Jones Bikepath, which extends from Avila Beach to the City of San Luis Obispo, currently in formal and informal segments. Long-term plans for these projects will be considered. A key component of the analysis will be the cumulative change in regional public access in the area related to this project, Pirate's Cove improvements, and the Bob Jones Bikepath. This section will also cross-reference detailed analysis presented in the Land Use and Transportation and Circulation (e.g., relating to parking and internal circulation on the project site) sections of the EIR, including parking capacity, trip generation related to proposed recreational facilities and open space/coastal access, and alternative transportation measures.

Impact Assessment of the Project and Alternatives

The EIR will include a thorough discussion of potential adverse and beneficial impacts related to recreational resources that could result from the proposed actions. The project would result in the addition of an additional 95 acres of Recreation-designated land within the San Luis Bay

Planning Area (Coastal), and development plans include coastal access and recreational trails and open space. Direct, indirect, and cumulative impacts will be analyzed consistent with criteria set forth by CEQA. Both short- and long-term impacts will be considered. Any significant impacts will be reduced to a level of insignificance, where possible, by the application of specific mitigation measures. Mitigation measures to address recreation impacts would include policies and planning area standards. The section will state the residual level of significance resulting after application of the specified measure(s).

Cumulative impacts will be evaluated from local and regional perspectives. Development projects approved, pending, or planned for the project area will be considered in the cumulative impact analysis. The County Department of Planning and Building, County Parks, and the City of Pismo Beach Department of Community Development will be contacted regarding upcoming or proposed projects in the vicinity, and all such projects will be included in the cumulative analysis.

Project alternatives will be individually evaluated and compared in terms of their relative impacts, both deleterious and beneficial, to land use and recreational resources. A discussion of the disadvantages and merits of each alternative will be provided.

4.2.13 Transportation and Circulation

This section presents the scope and approach for assessing the transportation and circulation impacts of the Project, alternatives, and cumulative projects.

General Approach and Methodology

Central Coast Transportation Consulting (CCTC) will provide professional traffic engineering and transportation planning support necessary to develop the project description and update the Avila Beach Specific Plan. CCTC will prepare a transportation impact study appropriate for use as an appendix to the EIR, and will prepare the transportation/circulation section of the EIR. Due to the phased nature of the project it will be necessary to evaluate traffic conditions during remediation of the project site, construction of the proposed resort, and operations of the proposed resort.

Potential impacts will be identified using County of San Luis Obispo and Caltrans guidelines for all phases of the Project. The analysis will include an evaluation of parking, traffic capacity and safety, and will identify mitigation measures where applicable.

Key Project Issues

The community of Avila Beach is a popular destination for SLO County residents and other visitors. The redeveloped commercial district, beaches, recreational facilities, and special events draw visitors year round, particularly during summer weekends. Traffic and parking conditions during peak periods are of particular concern to local residents. The proposed project would

potentially impact transportation conditions during the remediation, construction, and redevelopment phases by increasing parking demand and adding traffic to the roadway network.

Staff Support and Project Scoping

The Avila Beach Specific Plan notes that future use of the project site will require an amendment to the Specific Plan. CCTC will review the proposed development plan in the context of the Specific Plan to determine the extent to which the project conforms to the Plan. This review will include issues related to vehicular, pedestrian, bicycle, and transit, as well as parking.

The project may also propose elements that are not addressed in the Specific Plan, such as the use of neighborhood electric vehicles or golf carts on public roadways. This section will include review and recommendations related to these issues. CCTC will assist in the preparation of development standards as a part of this task.

Impact Assessment of the Project and Alternatives

CCTC will document existing conditions of the transportation system in the study area. This analysis will include a review of relevant studies prepared by others. A preliminary list of study locations is listed below. The final study locations and time periods will be developed in consultation with the County and other applicable agencies.

Preliminary Study Intersections:

- Avila Beach Drive/San Luis Bay Drive
- Avila Beach Drive/Cave Landing Road
- Avila Beach Drive/Project Driveway
- Avila Beach Drive/Shell Beach Road
- San Luis Bay Drive/Ontario Road

Preliminary Study Roadway Segments:

- Highway 101 (North of San Luis Bay Drive)
- Highway 101 (South of Avila Beach Drive)
- Avila Beach Drive (West of San Luis Bay Drive)

Given the nature of resort developments and Avila Beach's attraction as a tourist destination, the peak traffic conditions are expected to occur during summer weekends. However, the San Luis Bay Area Plan specifies that traffic conditions along Avila Beach Drive be evaluated during the weekday PM peak period based on counts collected in May each year. The time period analyzed in the transportation impact study will be developed in consultation with the County.

We have budgeted for the collection of new peak hour traffic counts at up to 5 locations, and will use existing data to the maximum extent possible. Study intersections will be evaluated using the

Synchro software package, while study roadway segments will be evaluated using average daily traffic (ADT) volumes.

Existing parking will be discussed using information contained in previously prepared studies, as the proposed project would provide on-site parking. Parking occupancy counts and other data collection can be conducted as an additional service if necessary.

The existing conditions analysis will document collision rates on roadways in the study area, and will compare the rates at high-collision locations to similar facilities in the County, Caltrans District 5, and Statewide. CCTC will conduct field visits to ensure that the results of the existing conditions analysis accurately reflect field conditions.

Remediation and Construction Impacts - The project's remediation phase would consist of the removal and cleanup of industrial infrastructure remaining from the tank farm operations. Remediation activities may include the excavation and transportation of contaminated soils and infrastructure to off-site disposal locations and importation of clean soils if none are available from on-site borrow locations. The project's construction phase would consist of hauling of building materials/equipment and contractors accessing the site.

CCTC will estimate the traffic expected due to site remediation, including workers traveling to and from the site, mobilization of heavy equipment, and off-site hauling of material. The estimate will apply an equivalency factor to convert heavy vehicles to their passenger car equivalent, and will include an estimate of peak daily and hourly traffic expected during the highest intensity of activities. Similar estimates will be prepared for the construction phase of the project.

CCTC will review the proposed site access points to ensure they meet the applicable standards for sight distance and would allow for adequate acceleration and deceleration distance. On-site staging areas would also be reviewed as a part of this task, as would truck routes to and from the planned waste disposal sites and proposed employee parking

CCTC will identify impacts using County and Caltrans significance criteria.

Redevelopment Impacts - The development of a resort hotel would generate peak hour traffic during the busy summer weekend periods, potentially impacting the local roadway network. Transportation impacts associated with the redevelopment of the project site would hinge on the trip generation estimates for the project. While the proposed uses are included in ITE's *Trip Generation Manual* (under the Resort Hotel land use), it may be necessary to modify these rates to reflect site specific conditions (such as the car-free design) and other ancillary uses planned as a part of the project. Alternatively, a trip generation survey of a similar site can be conducted as an additional service. Trip generation and distribution estimates will be developed in consultation with County staff.

CCTC will evaluate potential impacts to vehicles, bicycles, pedestrians, transit, and parking in accordance with County and Caltrans criteria. Emergency access to the site will be addressed along with a review of the project's consistency with the Diablo Canyon Emergency Evacuation plan. The project's contribution to the County Road Maintenance Fund will also be calculated as a part of this task.

Project alternatives will be qualitatively evaluated to determine if their impacts would be equal to, greater than, or less than those of the proposed project.

Cumulative Impacts - CCTC will develop future year forecasts to reflect Cumulative Conditions both with and without the project. The forecasting methodology will be determined in consultation with County staff. Potential forecasting resources include the Avila Traffic Model, the SLOCOG Travel Demand Model, a project list approach, or some combination of these.

CCTC will contact the relevant agencies to collect information on planned roadway improvements expected to be in place under Cumulative Conditions. Cumulative impacts will be identified as described above.

Mitigation Measures - CCTC will identify mitigation measures as needed to reduce or eliminate significant impacts associated with the Project. These measures may include restrictions on the timing of vehicles hauling soils or construction materials, the timing of employee shifts, designation of specific truck haul routes, designation of specific parking areas for employees and contractors, limitations on the size of special events, and potential roadway improvements. Currently proposed improvements will be considered as potential mitigation measures to ensure consistency with past planning.

4.2.14 Wastewater

This section presents the scope and approach for assessing potential wastewater impacts associated with the proposed project, alternatives, and cumulative impacts.

General Approach and Methodology

A wastewater facility would not be required for remediation activities, but such a facility would be required for Development Plan-related construction. The wastewater section will address potential project impacts related to either off-site conveyance to an established wastewater treatment plant or construction of a new facility on-site.

Key Project Issues

Wastewater facilities for the project, required for Development Plan-related new construction, is proposed as a main line gravity distribution network in general alignment of the project road system. The wastewater will connect to an off-site larger conveyance system operated by the Avila Beach Community Services District or San Miguelito Mutual Water Company. However, in the event that these facilities are not able to serve the project, Chevron has informed the

County that wastewater may be treated on-site through construction of a small package wastewater facility.

Impact Assessment of the Project and Alternatives

Impacts will be addressed with respect to the availability and capacity of a wastewater treatment facility to accommodate wastewater generated by the project. The details related to the project wastewater facility would be refined through development of the EIR project description, or explored through EIR alternatives. Upon completion of the analysis, SAIC will prepare a technical section for the EIR describing the environmental setting, evaluating potential impacts, and providing mitigation measures, as applicable.

Primary and secondary impacts will be designated significant or insignificant based on the criteria of CEQA, the State CEQA Guidelines, and any thresholds or criteria used by the County. MRS will identify mitigation measures as appropriate. Impacts and mitigation measures will be worded to be useful in developing development standards, conditions of approval, and establishment of other guidelines.

MRS will assess the potential cumulative wastewater impacts associated with the proposed project and other identified development projects recently completed, planned, or reasonably foreseeable in the area.

4.2.15 Water Resources

This section presents the scope and approach for assessing the project and alternative impacts for water resources.

General Approach and Methodology

Storm water within the operational areas of the site continues to be managed with the facility infrastructure. A series of pipes route storm water between tank rings to the lowest former tank location, which is now a water storage basin, referred to as the Lower Basin. All of the operational areas drain to this basin. Currently, water is held in the basin and tested prior to release to an outfall on the beach. Groundwater occurs in complex bedrock fractures beneath the site.

An abundance of environmental site assessments and other technical studies have been prepared for the project site in relation to the subsurface contamination. Many of these reports would include onsite hydrologic information that would be useful in establishing baseline groundwater information. MRS would peer review and subsequently incorporate the findings of these technical documents into the environmental setting for the Initial Study and EIR. MRS will also reference regional water resource documents, including the RWQCB Central Coast Basin Plan.

This baseline information would then be used to evaluate surface water and groundwater related impacts. Erosion and potential siltation of adjacent coastal waters will be addressed primarily in

the Geological Resources section. Water supply impacts will be addressed with respect to availability of water from local water purveyors.

Key Project Issues

Remediation activities would likely include exposure of contaminated soils, including temporary stockpiling pending soil characterization and off-site disposal. Precipitation on these exposed soils could result in runoff of contaminated surface water, if not properly contained. In addition, excessive ground seepage of ponded surface runoff, such as at the existing Lower Basin, could alter hydrogeologic conditions beneath the site and potentially exacerbate migration of contaminated groundwater.

During future development, it is critical to prevent surface runoff from migrating over the coastal bluff, as such runoff can substantially contribute to slope instability and associated slope failure. Controlled runoff would alleviate this potential problem.

From 1977 to 1994, a water moratorium prevented new construction in Avila Beach. Since 1994, the State Water Project has provided additional water supplies, which has enabled new construction. It is MRS' understanding that water supply for the project, for both remediation and Development Plan-related new construction, will be provided by the Avila Beach Community Services District and/or San Miguelito Mutual Water Company. However, a letter of commitment for such water supplies has not been provided to-date.

Impact Assessment of the Project and Alternatives

MRS will evaluate surface water quality impacts related to site remediation, with an emphasis on the potential for off-site runoff of contaminated surface water. Similarly, impacts will be addressed with respect to disposal of contaminated groundwater during remediation, which would be extracted either through excavation related dewatering activities or as a result of groundwater pumping.

MRS will evaluate the proposed Development Plan drainage system with respect to water quality, water velocity, and water flow (volume). In the event a drainage plan has not been provided, mitigation measures will be provided to ensure that future development does not create excessive, uncontrolled, polluted runoff. Such measures will be site-specific, yet applicable to a range of specific site uses. MRS will also evaluate the potential for containing surface water runoff in a location other than the Lower Basin, either on- or off-site, to prevent uncontrolled off-site runoff and changes to the underlying hydrogeologic conditions as a result of percolation of ponded water.

MRS understands that a letter of commitment will be provided by either the Avila Beach Community Services District and/or San Miguelito Mutual Water Company, with respect to water supply for the proposed project. Senate Bill 610 of 2001 requires that water suppliers provide a Water Supply Assessment (WSA) to planning agencies for any proposed projects that

are subject to CEQA and would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project. Such a document would be required for the Avila Point project and would be prepared by the applicable water purveyor. The details related to the project water supply would be refined through development of the EIR project description, or explored through EIR alternatives. In addition, the project proposes to implement various water conservation measures to minimize water use. Such measures will be considered while evaluating water supply issues.

Primary and secondary impacts would be designated significant or insignificant based on the criteria of CEQA, the State CEQA Guidelines, and any thresholds or criteria used by the County. Impacts will be clearly assigned to different phases of the project (i.e., remediation and development). MRS will provide a discussion of mitigation measures that could be imposed on the project to minimize potential impacts related to surface water quality, groundwater quality, and water supply. Impacts and mitigation measures will be worded to be useful in developing development standards, conditions of approval, and establishment of other guidelines. Where applicable, the mitigation measures will be included in the MMRP.

MRS will assess the potential cumulative water resource impacts associated with the proposed project and other identified development projects recently completed, planned, or reasonably foreseeable in the area.

5.0 Document Preparation

This section discusses the approach and management systems that Marine Research Specialists (MRS) uses in preparing environmental review documentation. The section is divided into six main parts which present document format; writing and production responsibilities and quality control; high volume report production, word processing, and computing capability; interaction and review cycles; and base maps and Geographic Information Systems (GIS). The final part presents a proposed outline for the Project EIR.

5.1 Document Format

In the preparation of environmental review documentation it is imperative that sound, defensible documents be produced that are “user friendly” and can be understood by the public and local decision makers. In many ways these two goals are mutually exclusive; since in order to make a document defensible, it must contain the detailed technical information required to defend the document. On the other hand, it is this detailed technical information that frequently overwhelms the public and decision makers. MRS has developed an approach that meets both goals specified above. Our approach involves the preparation of a concise, reader-friendly main document written to be read by the public and decision makers. This main document would contain cross-references to technical appendices that contain all required technical information. This document format approach allows the more informed reader to quickly access the additional information in the technical appendices.

MRS will work to keep the main volume of the EIR to about 200 pages, not including the executive summary or the impact summary table. This will be accomplished by including most of the technical details of the analysis in technical appendices, as previously discussed . To limit the size of the main volume of the EIR, MRS proposes a Regulatory Setting technical appendix. In a typical EIR, the Regulatory Setting section is included as part of the Environmental Setting, and can typically include as many as 60 pages for all issue areas. Moving this to a technical appendix will reduce the overall length of the main volume of the EIR.

MRS also proposes producing a standalone version of the Executive Summary that includes the impact summary tables and summary of mitigation measures as part of the Public Draft EIR and the Final EIR. This document, a short and concise summary of the project and associated impacts and mitigation measures, would be available to the general public. Each copy of the executive summary would include a CD with the entire EIR document for readers who wanted to review additional information.

The two major components to producing a concise document are the presentation format and the text wording. If a document is presented properly and has adequate indexing and internal cross-referencing, access to the information is easier and, therefore, the document is more user-friendly. This environmental documentation is typically packaged in a three-ring binder with tabs

dividing the major chapters. Each chapter will have coding in the upper right hand corner of each page. The document will contain a table of contents and an index. The text will be presented using a three digit numbering system with subheadings. The style guide, which is discussed below, will serve as the basis for controlling the document format. The technical appendices will use the same format as the main document.

The environmental documentation will be produced from the MRS Ventura office. This office has consistently produced over 15,000 pages of documentation per year for the past 10 years and routinely generates documents that are 1,000 pages or larger.

For the Public Draft EIR and the Final EIR, MRS proposes production of the technical appendices on CD only, included with each copy of the EIR. This approach would reduce printing and the amount of paper used to produce the EIR. MRS would provide two printed sets of the technical appendices to the County as part of the Public Draft and Final EIR.

5.2 Writing and Production Responsibilities and Quality Control

The Project Manager will coordinate overall report production activities and will be assisted by the Office Manager, who directs the actual support staff activities. These activities will be directed out of the Ventura office.

The Issue Area Coordinators will have writing responsibility for their respective technical areas. The Issue Area Coordinators provide primary quality control on the material prepared by the subconsultants. For the overall project, the Project Manager, and the Technical Editor will serve as the quality control checks. More information on quality control can be found in Section 3.0, Personnel and Project Management.

MRS will develop a Style Guide for all documentation that will assist in quality assurance for document preparation. At the onset of a project, a Style Guide will be developed to reflect all California Environmental Quality Act (CEQA) and regulatory agency document compliance requirements. The Style Guide will emphasize preparing documentation that must provide disclosure and serve both for public review and policy decision making. The Style Guide will help ensure that documents are concise and well presented. The Guide will set document format requirements and approved abbreviations. It will contain a standard graphics format for tables and figures as well as the necessary base map guidelines. The Technical Editor will participate actively in preparing the Style Guide.

5.3 High Volume Report Production, Word Processing, and Computing Capability

MRS has demonstrated the required capabilities for high-volume report production on previous environmental review assignments with comparable schedules. Reports will be prepared on Windows-based PCs using Microsoft Word. The numerous technical and draft reports will be input into the system by hand or through telecommunication capabilities. MRS's computer

network system is capable of communicating with other types of word processing systems, as well as software converting, so it can communicate with the word processing equipment at subcontractors' offices. The word processing system in the MRS Ventura office can also handle document transfer via ftp from other systems. The office is also equipped with scanners and optical character recognition software, which allow paper documents to be converted to word processing text.

In the production of large documents, the importance of a competent support staff is critical. This includes both word processing operators and graphic artists. MRS staff have been producing large EIR/EISs, as well as other environmental documents, for more than 10 years and have developed a very efficient system for producing and tracking up to 100 word processing documents for as many as ten volumes. All are edited four times for technical content and three for proper format.

The MRS Ventura office is equipped with high quality printers, including a color Phaser with tabloid capabilities, a Konica networked color photocopier, and large format plotters.

MRS's system is also capable of telecommunicating final text and tables via internet to various printing shops that handle desktop publishing.

5.4 Interactions and Review Cycle

The emphasis of MRS's overall approach to document writing and production is interaction with the County. Such interaction will take place continuously throughout the project through a review cycle involving specific preplanned working sessions. Draft report deliverables will be provided to the County for review and comment.

As needed, follow-up working sessions will be scheduled between the County and the key members of the project team to review these report deliverables and make changes based on County comments. The overall approach will be a collaborative one, with the project team and the County working on the document together. MRS recognizes that throughout this process, their ultimate responsibility as the prime contractor is to prepare fully responsive documentation on a timely basis that meets the needs and requirements of the County.

5.5 Base Maps and Geographic Information Systems

Base maps used in environmental review projects for field work and report graphics will involve electronic formats of USGS and NOAA maps at scales of 1:24,000 to 1:100,000 and 1:250,000 and aerial photographs of the proposed project area. Copies of all maps relevant to each discipline will be distributed to team members at the start of the project to provide a common basis for discussion across disciplines. These maps will become report quality base maps summarizing baseline information, project facility locations, impacts, and suggested mitigation

measures. All mapping information will be compiled and produced in a GIS format to allow for manipulation and production of different maps of the gathered information.

Typically during environmental review projects, original data are developed for the project study area. These data are entered into electronic layers in a GIS system in both AutoCAD and MapInfo or ArcView systems. The data are stored in individual layers, such as roads, topography, biology, plume areas, etc. Each layer can be individually controlled and updated allowing for an almost infinite variation in the maps. Typical layers often include:

- Land use and zoning;
- Depth to groundwater;
- USGS monitoring wells;
- Threatened and endangered plants;
- Vegetation and wildlife habitats;
- Geology;
- Recreation areas;
- Roads;
- Study area locations;
- Hydrologic features;
- Wetlands; and
- Project facilities.

Any geographic information electronically mapped as part of this project will be provided as a .SHP file, a format compatible with ESRI's ArcView GIS software program, and will be registered to the California State Plane NAD 83, Zone 5 coordinate system, units in feet. A .PRJ file will also be included reflecting this coordinate system.

All .SHP files submitted will include sufficient metadata compatible with the ArcCatalog .XML format. At a minimum, this metadata will include the following:

- An abstract containing a brief narrative summary of the data set including levels of accuracy and methods of data capture.
- Purpose for creating the data with a summary of the intentions with which the data set was developed
- Citation including the name of the organization and/or individual that developed the dataset
- Maintenance requirements noting the frequency with which changes (if any are necessary) are made to the data set after the initial data set is completed
- Theme key words associated with the data set
- Contact information for the creator of the data set and for the creator of the metadata

- Date the data was published

Descriptive text, thoroughly defining all features within each mapped data set, will be incorporated into the data attribute tables. If codes or abbreviations were used for data attributes then a .LYR or other document explaining the codes will be included. If maps were created in ArcView a .MXD file will be included showing proper final map layout with any necessary symbolization. Map symbology will be provided in a .LYR file which the County can import into any subsequent maps if desired.

In addition, terrain information will be utilized where needed. Terrain is maintained in the GIS systems and can be used to produce realist viewpoints from any location or can be used to produce 3D flybys of an area.

In addition, photo editing software, such as Adobe Photoshop, will be used to produce realistic photo simulations associated with the visual impact analysis. The GIS system produces quantitative estimates of feature characteristics from any viewing location and these characteristics are develop photo simulations of post-project conditions utilizing current area photographs. The GIS system also allows for the development of “viewshed” maps, which enable the feature characteristics, such a feature height, to be assessed from any location within the terrain. This enables analysis of whether the drilling rig will be visible, for example, from a specific location.

5.6 Proposed EIR Outline

The EIR will evaluate the proposed project and alternatives and their potential impacts in accordance with all the requirements of CEQA and other applicable laws, regulations, and guidelines. The preliminary outline of the EIR is as follows:

- Executive Summary
- Impact Summary Tables
- Section 1.0 Introduction
- Section 2.0 Project Description
- Section 3.0 Cumulative Projects Description
- Section 4.0 Environmental Impact Analysis
 - 4.1 Aesthetics
 - 4.1.1 Environmental Setting
 - 4.1.2 Significance Criteria
 - 4.1.3 Proposed Project Impacts and Mitigation Measures
 - 4.1.4 Cumulative Impacts
 - 4.1.5 Mitigation Monitoring Plan
 - 4.1.6 References
 - 4.2 Agricultural Resources

- 4.3 Air Quality/Greenhouse Gases
- 4.4 Biology Resources
- 4.5 Cultural Resources
- 4.6 Geological Resources
- 4.7 Hazards and Hazardous Materials
- 4.8 Noise and Vibration
- 4.9 Population and Housing
- 4.10 Public Services and Utilities
- 4.11 Transportation and Circulations
- 4.12 Wastewater
- 4.13 Water Resources
- 4.14 Land Use
- 4.15 Recreation

Section 5.0 Alternatives Analysis

Section 6.0 Other CEQA-Mandated Sections

- 6.1 Unavoidable Significant Adverse Effects
- 6.2 Growth Inducing Impacts
- 6.3 Energy Conservation

Section 7.0 Summary of Mitigation Measures

Section 8.0 Mitigation Monitoring Plan

Comment Letters and Responses to Comments

List of EIR Preparers

Agencies and Individuals Consulted During Preparation of the EIR

Technical Appendices

6.0 Project Schedule

This section of the proposal provides a schedule for the project and lists the proposed deliverables to the County. It presents a detailed project schedule, along with a discussion of the basis for the proposed time frame. The schedule shows all the proposed deliverables for the project.

6.1 Proposed Schedule

The project schedule in Figure 6-1 provides a comprehensive indication of the organization and preparation that has been given to the management plan. All relevant project milestones and deadlines are identified, allotting time for fieldwork and analysis, document writing, and County review of draft documents. Table 6-1 lists the key milestone dates from the proposed schedule.

Table 6-1 Key Milestone Dates

Milestone	Week of EIR Contract
Planning Commission Scoping Hearing	-
Draft EIR Style Guide to County	3
Draft Project Description to County	5
Draft Cumulative Project Descriptions to County	9
Draft Environmental Setting Sections to County	15
Administrative Draft EIR to County	27
Release of Public Draft EIR (45-day public comment period)	40
Public Workshop on EIR	43
Public Comment Meeting on EIR	46
Administrative Final EIR and Response to Comments to County	55
Final EIR to County	60

1. The schedule assumes that a Remedial Action Plan has been developed and clearly defines the remediation component of the EIR Project Description.

A critical item in the project's success is management and control, assuring that tasks are completed on time and that the appropriate information is transferred to the dependent tasks. The management tools described in Section 3.0, Key Personnel and Project Management will ensure that work tasks are accomplished in the appropriate order and that critical information is effectively transferred to any dependent tasks.

The schedule in Table 6-1 estimates various lengths of time for County reviews of the deliverables. These review periods are based on experience with similar projects. However, if the County's review cycles vary, the schedule will be necessarily updated to reflect those variations accordingly.

The proposed project schedule forecasts releasing the Public Draft EIR approximately seven months after award of the contract. Assuming a 45-day public comment period, the Final EIR would be released approximately 11 months after the award of the contract.

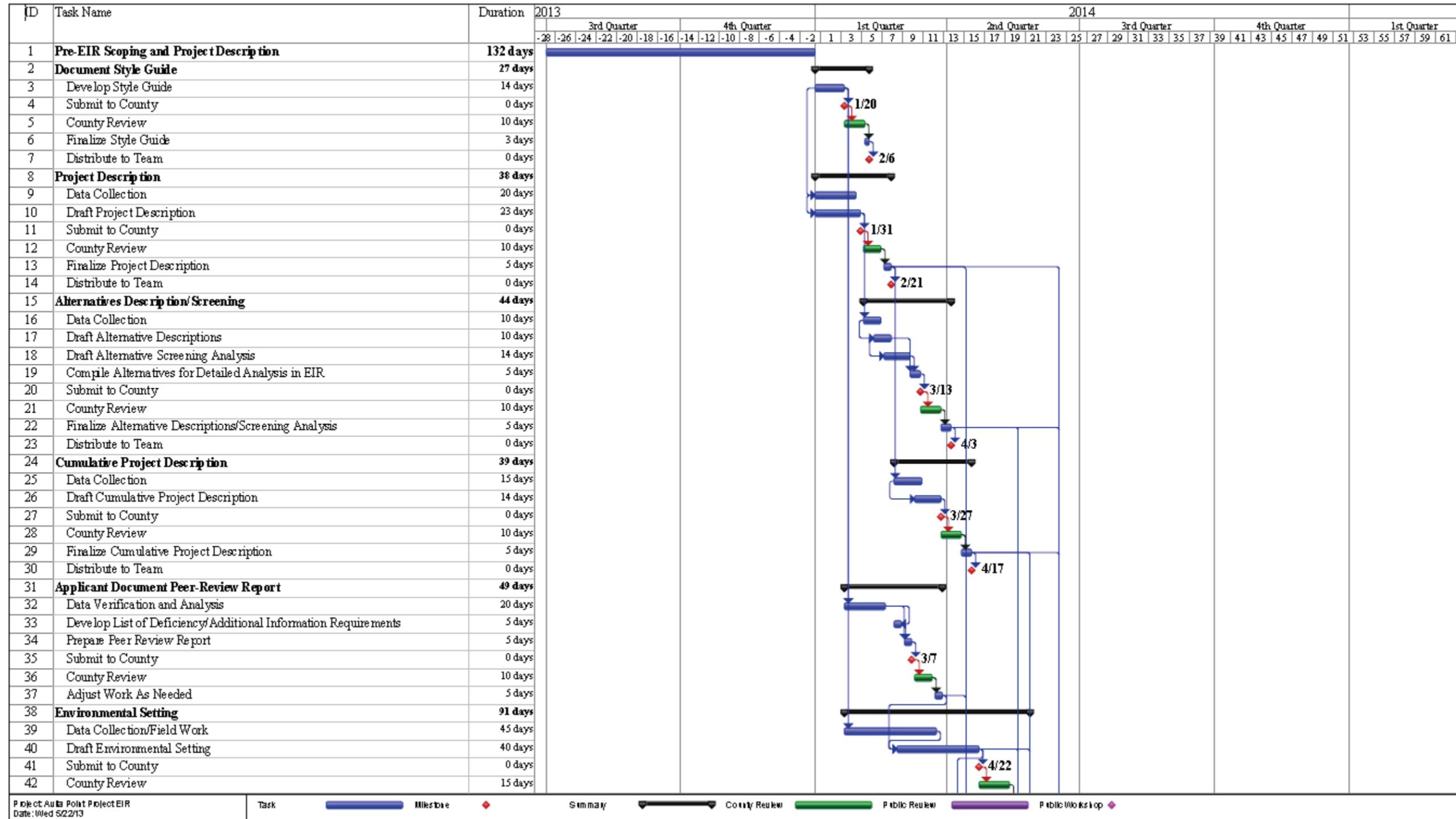
6.2 Project Deliverables

In developing the proposed schedule, considerable thought was given to providing the County with draft work products for review throughout the course of the project. This approach serves a number of useful purposes. First, the County has an early opportunity to review work products and to comment on format and structure; those comments will then be incorporated into future deliverables. Second, this approach allows the County to actively participate in the development of the project documents. Third, it assures that the final work product is a collaboration between MRS and the County. Table 6-2 lists key deliverables, proposed due dates, and the duration of the County review period.

Table 6-2 List of Deliverables, Proposed Due Dates, and Duration of County Review Period

Milestone	Week of Contract	Estimated County Review Period (work days)
Draft EIR Style Guide	3	10
Draft Project Description	3	10
Draft Cumulative Project Descriptions	9	10
Draft Environmental Setting Sections	15	20
Administrative Draft EIR	27	15
Camera Ready Public Draft EIR	36	5
Administrative Final EIR and Response to Comments	55	15
Camera Ready Final EIR	60	4

Figure 6-1 Estimated Avila Point EIR Schedule



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7.0 Cost Quotation and Budget Summary

MRS proposes to perform, on a best efforts basis, the work described in the accompanying technical proposal for a cost of \$930,627. This cost includes professional services and expenses. Table 7-1 summarizes the costs for the Project by issue area and major task. Table 7-2 provides a detailed breakdown of the costs by issue area and major task. Table 7-3 provides a more detailed breakdown of costs associated with the biological technical studies. The fixed costs for the EIR are \$766,989. The time and material budgets are as follows:

1. County Meetings - \$110,868,
2. Hearings - \$26,130, and
3. CEQA Findings - \$26,640.

As discussed in Section 4.0 of the proposal, Table 7-2 shows the estimated cost for a number of pre-EIR items, which is a cost of \$97,408. This cost has been included in the total fixed price for the EIR provided above. The costing provided in Table 7-4 provides a number of optional tasks, which are discussed in the respective issue areas write-ups in Section 4.0 of the proposal.

The cost estimate includes all activities associated with development of an EIR as discussed in Section 4 of the proposal. The estimated costs for the Project rely on the following major assumptions.

- Field work will be limited to what is described in Section 4 of the proposal.
- The Applicant prepared technical studies will be complete enough to not require a substantial additional field work.
- The Project Description does not significantly change from the description in the RFP documents provided by the Applicant, including the Remedial Action Plan.
- Attendance by various team members at six (6) meetings with the County.
- Attendance of various team members at four (4) public hearings.
- Attendance by various team members at one NOP scoping hearing.
- Attendance by various team members at two public meeting on the Draft EIR.
- The Public Draft EIR will be 400 pages (not including the Technical Appendices).
- The Final EIR will be 450 pages (not including the Technical Appendices).
- 250 comments will be addressed as part of the Response to Comments, and no new analysis will be required as a result of the comments received on the Public Draft EIR.
- Four (4) hard copies and one electronic copy of the draft Project Description and EIR Outline.
- Five (5) copies of the Administrative Draft EIR with appendices as follows: four (4) hard copies (in three ring binders); and one CD in original format (e.g., Word).

- Forty five (45) copies of the Draft EIR as follows: five (5) hard copies with appendices (in three ring binders); fifteen (15) bound copies with appendices included as a CD in an envelope; twenty five (25) CDs (with graphics and appendices) in “searchable” .pdf format; ten (10) separately bound copies of appendices; and one (1) electronic copy in original format [e.g., Word].
- One (1) copy of the Draft EIR in an HTML, or other acceptable web-friendly format, so text and graphics can be easily placed on the county’s web site; (this shall at least include breaking the document in smaller, easily downloadable portions).
- Five (5) copies (2 three-hole drilled, 2 bound, 1 CD) of the Administrative Final EIR with appendices.
- Fifty five (55) copies of the Final EIR as follows: five (5) hard copies with appendices (in three ring binders); twenty five (25) bound copies with appendices as CDs in envelopes at back of document; twenty five (25) CDs (with graphics and appendices) in “searchable” .pdf format; fifteen (15) separately bound copies of appendices; and one (1) CD in original software format (e.g., Word).
- One set of CDs (or other electronic medium acceptable to the county), in Word (current version, properly formatted), with the Draft and Final EIR, mitigation monitoring program and appendices. Spreadsheets and or databases developed for this EIR will also be included on these CDs using the latest County’s spreadsheet software. If GIS layers are developed / used, this information will also be submitted electronically.

Objectivity

Neither MRS, nor any of the members of the project team, has been hired by the Applicant to assist in the preparation of materials directly related to any component of the proposed project. No member of the contractor’s team has a financial gain or an interest in the final outcome of the project. MRS hereby certifies that MRS and its subcontractors have the capacity to submit a neutral and unbiased environmental document.

MRS has reviewed the County Contract and finds all of the provisions acceptable.

Table 7.1 Cost Summary

Issue Area	Hours	Costs
Direct Labor		
A. Project Description/Alternative Screening	376	\$73,280
B. Aesthetics	144	\$12,681
C. Agricultural Resources	80	\$8,738
D. Air Quality/Greenhouse Gases	324	\$59,840
E. Biological Resources	438	\$56,349
F. Cultural Resources	266	\$32,632
G. Geological Resources	211	\$23,210
H. Hazards and Hazardous Materials	398	\$77,360
I. Noise and Vibration	270	\$45,600
J. Population and Housing	32	\$3,498
K. Public Services and Utilities	61	\$6,603
L. Land Use	166	\$19,433
M. Transportation and Circulation	212	\$30,030
N. Wastewater	76	\$8,360
O. Water Resources	211	\$23,210
P. Recreation	56	\$5,980
Q. Document Preparation and QA/QC	1,064	\$150,227
R. Project Management	<u>1,268</u>	<u>\$251,128</u>
Total Direct Labor	5,653	\$888,158
Other Direct Costs		\$42,469
Total Costs		\$930,627

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Table 7.2 Detailed Cost Estimate for the Avila Point Project EIR

Key Staff	Rate (\$/hr)	Pre-EIR Tasks		Biological Technical Studies		Project Description Alternatives Analysis		Administrative Draft EIR		Public Draft EIR		Administrative Final EIR Response to Comments		Final EIR		Public/ County Meetings		Hearings		CEQA Findings		Total	
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Direct Labor																							
A. Project Description/Alternative Screening																							
John Peirson	\$220.00	40	\$8,800	0	\$0	40	\$8,800	0	\$0	4	\$880	4	\$880	0	\$0	0	\$0	0	\$0	0	\$0	88	\$19,360
Steve Radis	\$200.00	40	\$8,000	0	\$0	48	\$9,600	0	\$0	8	\$1,600	8	\$1,600	0	\$0	0	\$0	0	\$0	0	\$0	104	\$20,800
Greg Chittick	\$180.00	24	\$4,320	0	\$0	120	\$21,600	0	\$0	24	\$4,320	16	\$2,880	0	\$0	0	\$0	0	\$0	0	\$0	184	\$33,120
Total Issue Area		104	\$21,120	0	\$0	208	\$40,000	0	\$0	36	\$6,800	28	\$5,360	0	\$0	0	\$0	0	\$0	0	\$0	376	\$73,280
B. Aesthetics																							
Bill Henry	\$182.60	0	\$0	0	\$0	4	\$730	4	\$730	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	8	\$1,461
Robert Carr	\$82.50	0	\$0	0	\$0	20	\$1,650	80	\$6,600	5	\$413	10	\$825	5	\$413	8	\$660	8	\$660	0	\$0	136	\$11,220
Total Issue Area		0	\$0	0	\$0	24	\$2,380	84	\$7,330	5	\$413	10	\$825	5	\$413	8	\$660	8	\$660	0	\$0	144	\$12,681
C. Agricultural Resources																							
Shawna Scott	\$139.70	0	\$0	0	\$0	2	\$279	4	\$559	2	\$279	2	\$279	2	\$279	0	\$0	0	\$0	0	\$0	12	\$1,676
Emily Creel	\$102.30	0	\$0	0	\$0	12	\$1,228	32	\$3,274	8	\$818	6	\$614	2	\$205	0	\$0	0	\$0	0	\$0	60	\$6,138
Adriana Neal	\$115.50	0	\$0	0	\$0	2	\$231	4	\$462	2	\$231	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	8	\$924
Total Issue Area		0	\$0	0	\$0	16	\$1,738	40	\$4,294	12	\$1,329	8	\$893	4	\$484	0	\$0	0	\$0	0	\$0	80	\$8,738
D. Air Quality/Greenhouse Gases																							
Greg Chittick	\$180.00	0	\$0	0	\$0	32	\$5,760	160	\$28,800	8	\$1,440	24	\$4,320	12	\$2,160	12	\$2,160	0	\$0	0	\$0	248	\$44,640
Steve Radis	\$200.00	0	\$0	0	\$0	2	\$400	48	\$9,600	8	\$1,600	10	\$2,000	8	\$1,600	0	\$0	0	\$0	0	\$0	76	\$15,200
Total Issue Area		0	\$0	0	\$0	34	\$6,160	208	\$38,400	16	\$3,040	34	\$6,320	20	\$3,760	12	\$2,160	0	\$0	0	\$0	324	\$59,840
E. Biological Resources																							
Jon Claxton / Paul Andreano	\$139.70	0	\$0	64	\$8,941	0	\$0	58	\$8,103	20	\$2,794	20	\$2,794	0	\$0	16	\$2,235	8	\$1,118	0	\$0	186	\$25,984
Travis Belt	\$127.60	0	\$0	104	\$13,270	0	\$0	16	\$2,042	4	\$510	4	\$510	0	\$0	0	\$0	0	\$0	0	\$0	128	\$16,333
Barrett Holland / Adriana Neal	\$115.50	0	\$0	104	\$12,012	0	\$0	8	\$924	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	112	\$12,936
Jaimie Jones	\$91.30	0	\$0	12	\$1,096	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	12	\$1,096
Total Issue Area		0	\$0	284	\$35,319	0	\$0	82	\$11,068	24	\$3,304	24	\$3,304	0	\$0	16	\$2,235	8	\$1,118	0	\$0	438	\$56,349
F. Cultural Resources																							
Blount	\$143.00	0	\$0	0	\$0	0	\$0	96	\$13,728	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	96	\$13,728
Brady	\$86.58	0	\$0	0	\$0	0	\$0	16	\$1,385	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	16	\$1,385
D'Oro	\$76.96	0	\$0	0	\$0	0	\$0	14	\$1,077	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	14	\$1,077
Farquhar	\$105.82	0	\$0	0	\$0	0	\$0	92	\$9,735	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	92	\$9,735
Shawna Scott	\$139.70	0	\$0	0	\$0	0	\$0	32	\$4,470	0	\$0	16	\$2,235	0	\$0	0	\$0	0	\$0	0	\$0	48	\$6,706
Total Issue Area		0	\$0	0	\$0	0	\$0	250	\$30,397	0	\$0	16	\$2,235	0	\$0	0	\$0	0	\$0	0	\$0	266	\$32,632

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Table 7.2 Detailed Cost Estimate for the Avila Point Project EIR (con't)

Key Staff	Rate (\$/hr)	Pre-EIR Tasks		Biological Technical Studies		Project Description Alternatives Analysis		Administrative Draft EIR		Public Draft EIR		Administrative Final EIR Response to Comments		Final EIR		Public/ County Meetings		Hearings		CEQA Findings		Total	
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
G. Geological Resources																							
Perry Russell	\$110.00	40	\$4,400	0	\$0	0	\$0	60	\$6,600	15	\$1,650	80	\$8,800	8	\$880	8	\$880	0	\$0	0	\$0	211	\$23,210
Total Issue Area		40	\$4,400	0	\$0	0	\$0	60	\$6,600	15	\$1,650	80	\$8,800	8	\$880	8	\$880	0	\$0	0	\$0	211	\$23,210
H. Hazards and Hazardous Materials																							
John Peirson	\$220.00	16	\$3,520	0	\$0	8	\$1,760	8	\$1,760	4	\$880	8	\$1,760	0	\$0	0	\$0	0	\$0	0	\$0	44	\$9,680
Steve Radis	\$200.00	80	\$16,000	0	\$0	8	\$1,600	60	\$12,000	10	\$2,000	8	\$1,600	8	\$1,600	24	\$4,800	0	\$0	0	\$0	198	\$39,600
Greg Chittick	\$180.00	0	\$0	0	\$0	16	\$2,880	80	\$14,400	20	\$3,600	24	\$4,320	8	\$1,440	8	\$1,440	0	\$0	0	\$0	156	\$28,080
Total Issue Area		96	\$19,520	0	\$0	32	\$6,240	148	\$28,160	34	\$6,480	40	\$7,680	16	\$3,040	32	\$6,240	0	\$0	0	\$0	398	\$77,360
I. Noise and Vibration																							
Greg Chittick	\$180.00	0	\$0	0	\$0	32	\$5,760	90	\$16,200	16	\$2,880	20	\$3,600	4	\$720	8	\$1,440	0	\$0	0	\$0	170	\$30,600
Michael Cassata	\$150.00	0	\$0	0	\$0	0	\$0	80	\$12,000	4	\$600	16	\$2,400	0	\$0	0	\$0	0	\$0	0	\$0	100	\$15,000
Total Issue Area		0	\$0	0	\$0	32	\$5,760	170	\$28,200	20	\$3,480	36	\$6,000	4	\$720	8	\$1,440	0	\$0	0	\$0	270	\$45,600
J. Population and Housing																							
Shawna Scott	\$139.70	0	\$0	0	\$0	2	\$279	1	\$140	1	\$140	1	\$140	1	\$140	0	\$0	0	\$0	0	\$0	6	\$838
Emily Creel	\$102.30	0	\$0	0	\$0	4	\$409	16	\$1,637	2	\$205	2	\$205	2	\$205	0	\$0	0	\$0	0	\$0	26	\$2,660
Total Issue Area		0	\$0	0	\$0	6	\$689	17	\$1,777	3	\$344	3	\$344	3	\$344	0	\$0	0	\$0	0	\$0	32	\$3,498
K. Public Services and Utilities																							
Shawna Scott	\$139.70	0	\$0	0	\$0	2	\$279	2	\$279	2	\$279	2	\$279	1	\$140	0	\$0	0	\$0	0	\$0	9	\$1,257
Emily Creel	\$102.30	0	\$0	0	\$0	8	\$818	26	\$2,660	6	\$614	8	\$818	2	\$205	0	\$0	0	\$0	0	\$0	50	\$5,115
Adriana Neal	\$115.50	0	\$0	0	\$0	2	\$231	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	2	\$231
Total Issue Area		0	\$0	0	\$0	12	\$1,329	28	\$2,939	8	\$893	10	\$1,098	3	\$344	0	\$0	0	\$0	0	\$0	61	\$6,603
L. Land Use																							
Shawna Scott	\$139.70	0	\$0	0	\$0	6	\$838	2	\$279	2	\$279	2	\$279	2	\$279	24	\$3,353	24	\$3,353	0	\$0	62	\$8,661
Emily Creel	\$102.30	0	\$0	0	\$0	24	\$2,455	40	\$4,092	16	\$1,637	8	\$818	6	\$614	0	\$0	0	\$0	0	\$0	94	\$9,616
Adriana Neal	\$115.50	0	\$0	0	\$0	4	\$462	4	\$462	2	\$231	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	10	\$1,155
Total Issue Area		0	\$0	0	\$0	34	\$3,755	46	\$4,833	20	\$2,147	10	\$1,098	8	\$893	24	\$3,353	24	\$3,353	0	\$0	166	\$19,433
M. Transportation and Circulation																							
Joe Fernandez	\$137.50	0	\$0	0	\$0	16	\$2,200	144	\$19,800	12	\$1,650	4	\$550	2	\$275	18	\$2,475	0	\$0	0	\$0	196	\$26,950
Ron Marquez	\$192.50	0	\$0	0	\$0	2	\$385	12	\$2,310	2	\$385	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	16	\$3,080
Total Issue Area		0	\$0	0	\$0	18	\$2,585	156	\$22,110	14	\$2,035	4	\$550	2	\$275	18	\$2,475	0	\$0	0	\$0	212	\$30,030
N. Wastewater																							
Perry Russell	\$110.00	24	\$2,640	0	\$0	0	\$0	16	\$1,760	10	\$1,100	16	\$1,760	4	\$440	6	\$660	0	\$0	0	\$0	76	\$8,360
Total Issue Area		24	\$2,640	0	\$0	0	\$0	16	\$1,760	10	\$1,100	16	\$1,760	4	\$440	6	\$660	0	\$0	0	\$0	76	\$8,360

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Table 7.2 Detailed Cost Estimate for the Avila Point Project EIR (con't)

Key Staff	Rate (\$/hr)	Pre-EIR Tasks		Biological Technical Studies		Project Description Alternatives Analysis		Administrative Draft EIR		Public Draft EIR		Administrative Final EIR Response to Comments		Final EIR		Public/ County Meetings		Hearings		CEQA Findings		Total	
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
O. Water Resources																							
Perry Russell	\$110.00	40	\$4,400	0	\$0	0	\$0	60	\$6,600	15	\$1,650	80	\$8,800	8	\$880	8	\$880	0	\$0	0	\$0	211	\$23,210
Total Issue Area		40	\$4,400	0	\$0	0	\$0	60	\$6,600	15	\$1,650	80	\$8,800	8	\$880	8	\$880	0	\$0	0	\$0	211	\$23,210
P. Recreation																							
Shawna Scott	\$139.70	0	\$0	0	\$0	2	\$279	1	\$140	1	\$140	1	\$140	1	\$140	0	\$0	0	\$0	0	\$0	6	\$838
Emily Creel	\$102.30	0	\$0	0	\$0	8	\$818	26	\$2,660	6	\$614	6	\$614	2	\$205	0	\$0	0	\$0	0	\$0	48	\$4,910
Adriana Neal	\$115.50	0	\$0	0	\$0	2	\$231	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	2	\$231
Total Issue Area		0	\$0	0	\$0	12	\$1,329	27	\$2,800	7	\$754	7	\$754	3	\$344	0	\$0	0	\$0	0	\$0	56	\$5,980
Q. Document Preparation and QA/QC																							
John Peirson	\$220.00	0	\$0	0	\$0	0	\$0	32	\$7,040	24	\$5,280	32	\$7,040	16	\$3,520	0	\$0	0	\$0	0	\$0	104	\$22,880
Steve Radis	\$200.00	0	\$0	0	\$0	0	\$0	32	\$6,400	24	\$4,800	32	\$6,400	24	\$4,800	0	\$0	0	\$0	0	\$0	112	\$22,400
Bill Henry	\$182.60	0	\$0	0	\$0	0	\$0	24	\$4,382	12	\$2,191	24	\$4,382	12	\$2,191	0	\$0	0	\$0	0	\$0	72	\$13,147
Michael Cassata	\$150.00	0	\$0	0	\$0	0	\$0	100	\$15,000	60	\$9,000	60	\$9,000	16	\$2,400	0	\$0	0	\$0	0	\$0	236	\$35,400
Bonnie Luke	\$140.00	0	\$0	0	\$0	0	\$0	60	\$8,400	40	\$5,600	40	\$5,600	16	\$2,240	0	\$0	0	\$0	0	\$0	156	\$21,840
Brittney Stephens	\$90.00	0	\$0	0	\$0	0	\$0	180	\$16,200	80	\$7,200	100	\$9,000	24	\$2,160	0	\$0	0	\$0	0	\$0	384	\$34,560
Total Document Preparation and QA/QC		0	\$0	0	\$0	0	\$0	428	\$57,422	240	\$34,071	288	\$41,422	108	\$17,311	0	\$0	0	\$0	0	\$0	1,064	\$150,227
R. Project Management																							
John Peirson	\$220.00	24	\$5,280	0	\$0	4	\$880	80	\$17,600	32	\$7,040	32	\$7,040	16	\$3,520	200	\$44,000	48	\$10,560	60	\$13,200	496	\$109,120
Steve Radis	\$200.00	120	\$24,000	0	\$0	4	\$800	80	\$16,000	32	\$6,400	32	\$6,400	16	\$3,200	200	\$40,000	48	\$9,600	60	\$12,000	592	\$118,400
Brittney Stephens	\$90.00	16	\$1,440	0	\$0	0	\$0	40	\$3,600	0	\$0	20	\$1,800	0	\$0	0	\$0	8	\$720	16	\$1,440	100	\$9,000
Bill Henry	\$182.60	80	\$14,608	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	80	\$14,608
Total Program Management		240	\$45,328	0	\$0	8	\$1,680	200	\$37,200	64	\$13,440	84	\$15,240	32	\$6,720	400	\$84,000	104	\$20,880	136	\$26,640	1,268	\$251,128
Total Direct Labor		544	\$ 97,408	284	\$ 35,319	436	\$ 73,645	2,020	\$ 291,891	543	\$ 82,930	778	\$ 112,484	228	\$ 36,849	540	\$ 104,983	144	\$ 26,010	136	\$ 26,640	5,653	\$ 888,158
Other Direct Costs																							
Travel			\$0		\$210		\$550		\$3,279		\$950		\$840		\$225		\$4,575		\$120		\$0		\$10,749
Mailing			\$0		\$0		\$100		\$180		\$160		\$180		\$120		\$0		\$0		\$0		\$740
Printing and Binding			\$0		\$0		\$125		\$2,100		\$8,520		\$2,200		\$9,850		\$725		\$0		\$0		\$23,520
Communication			\$0		\$0		\$330		\$750		\$50		\$250		\$125		\$50		\$0		\$0		\$1,555
Other Direct Costs Subs			\$0		\$0		\$0		\$1,500		\$0		\$0		\$0		\$0		\$0		\$0		\$1,500
Miscellaneous			\$0		\$0		\$0		\$180		\$375		\$0		\$0		\$0		\$0		\$0		\$555
G&A on Other Direct Costs			\$0		\$21		\$111		\$799		\$1,006		\$347		\$1,032		\$535		\$0		\$0		\$3,850
Total Other Direct Costs			\$0		\$231		\$1,216		\$8,788		\$11,061		\$3,817		\$11,352		\$5,885		\$120		\$0		\$42,469
Total EIR		544	\$97,408	284	\$35,550	436	\$74,861	2,020	\$300,679	543	\$93,991	778	\$116,301	228	\$48,201	540	\$110,868	144	\$26,130	136	\$26,640	5,653	\$930,627

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Table 7.3 Detailed Cost Estimate for Biological Technical Studies

Key Staff	Rate (\$/hr)	Botanical Survey		Jurisdictional Waters Determination		CA Red-Legged Frog Habitat Assessment		Oak Tree Inventory and Mapping		Wildlife Reconnaissance Surveys		Raptor Survey		Total	
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Direct Labor															
Jon Claxton	\$139.70	0	\$0	0	\$0	16	\$2,235	0	\$0	16	\$2,235	0	\$0	32	\$4,470
Paul Andreano	\$139.70	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	32	\$4,470	32	\$4,470
Travis Belt	\$127.60	32	\$4,083	32	\$4,083	0	\$0	24	\$3,062	16	\$2,042	0	\$0	104	\$13,270
Barrett Holland	\$115.50	36	\$4,158	0	\$0	0	\$0	24	\$2,772	0	\$0	0	\$0	60	\$6,930
Adriana Neal	\$115.50	8	\$924	8	\$924	4	\$462	16	\$1,848	4	\$462	4	\$462	44	\$5,082
Jaimie Jones	\$91.30	2	\$183	2	\$183	2	\$183	2	\$183	2	\$183	2	\$183	12	\$1,096
Total Direct Labor		78	\$ 9,348	42	\$ 5,190	22	\$ 2,880	66	\$ 7,865	38	\$ 4,921	38	\$ 5,115	284	\$ 35,319
Other Direct Costs															
Travel			\$35		\$35		\$35		\$35		\$35		\$35		\$210
Mailing			\$0		\$0		\$0		\$0		\$0		\$0		\$0
Printing and Binding			\$0		\$0		\$0		\$0		\$0		\$0		\$0
Communication			\$0		\$0		\$0		\$0		\$0		\$0		\$0
Records Search			\$0		\$0		\$0		\$0		\$0		\$0		\$0
Other Direct Costs Subs			\$0		\$0		\$0		\$0		\$0		\$0		\$0
Miscellaneous			\$0		\$0		\$0		\$0		\$0		\$0		\$0
G&A on Other Direct Costs			\$4		\$4		\$4		\$4		\$4		\$4		\$21
Total Other Direct Costs			\$39		\$39		\$39		\$39		\$39		\$39		\$231
Total Technical Studies & Opt Task			\$9,386		\$5,228		\$2,918		\$7,904		\$4,960		\$5,154		\$35,550

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Table 7.4 Detailed Cost Estimate for Optional Tasks

Key Staff	Rate (\$/hr)	Pre-EIR Tasks		Biological Technical Studies		Project Description Alternatives Analysis		Administrative Draft EIR		Public Draft EIR		Administrative Final EIR Response to Comments		Final EIR		Public/ County Meetings		Hearings		CEQA Findings		Total	
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Optional Tasks																							
<i>1. Additional Photo Simulations</i>																							
Bill Henry	\$182.60	0	\$0	0	\$0	0	\$0	4	\$730	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	4	\$730
Bob Carr	\$82.50	0	\$0	0	\$0	0	\$0	56	\$4,620	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	56	\$4,620
Total		0	\$0	0	\$0	0	\$0	60	\$5,350	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	60	\$5,350
<i>2. Additional Cultural Survey</i>																							
D'Oro	\$69.96	0	\$0	0	\$0	0	\$0	15	\$1,049	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	15	\$1,049
Farquhar	\$96.20	0	\$0	0	\$0	0	\$0	24	\$2,309	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	24	\$2,309
Total		0	\$0	0	\$0	0	\$0	39	\$3,358	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	39	\$3,358
<i>3. Land Use Amendment Policies</i>																							
Shawna Scott	\$139.70	0	\$0	0	\$0	0	\$0	40	\$5,588	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	40	\$5,588
Total Optional Tasks		0	\$0	0	\$0	0	\$0	139	\$14,297	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	139	\$14,297

8.0 References

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Additional references for the Project Manager or for any of the key team members can be provided upon request.

Appendix A - Resumes

Marine Research Specialists

JOHN F. PEIRSON, JR.

Mr. Peirson is a Principal of MRS. Before joining MRS, he was a Principal in Arthur D. Little's Environmental Health & Safety Practice and Director in their Santa Barbara and Ventura, California, offices. For more than 25 years, Mr. Peirson has been extensively involved in preparing CEQA documents for various state and local agencies.

Mr. Peirson has been involved CEQA permitting activities since 1983. He has participated in the preparation and CEQA permitting of over 60 major projects within California. Most of these projects have been very controversial and involved considerable work in developing permitting strategy. None of the EIRs that John Peirson has led have ever been over turned in Court.

Mr. Peirson has provided more than 600 hours of testimony to local and state decision makers which have included Planning Commissions, Boards of Supervisors, the State Lands Commission and the California Coastal Commission. He also has extensive experience in working with local and state government staff in developing permit conditions and findings associated with development projects.

Mr. Peirson received his B.A. (1978) in Mathematics from Hartwick College with a minor in chemistry. He also completed advanced studies in Chemical Engineering from Columbia University (1979).

PROFESSIONAL EXPERIENCE

Some of his assignments have included the following:

- Mr. Peirson is currently the project manager for the Chevron Tank Farm EIR. This is a joint project between SLO County and City and involves the remediation and future development of the Chevron Tank Farm property located just north of the SLO Regional Airport. MR. Peirson has overseen a team of CEQA experts in the development of the EIR. The project has involved working closely with various responsible agencies (RWQCB, County Environmental Health, SLOAPCD, CDFW, USFWS) to define the extent of the remediation and the possible types of developments that could occur at the site. One of the key challenges of this project has been the the development of possible land use that could occur at the site for the proposed zoning. Mr. Peirson worked with the Applicant and the City and County to develop a wide range of possible land uses that would be consistent with the County General Plan, the City Airport Area Specific Plan, and the Airport Land Use Plan.
- Mr. Peirson is currently the project manager for the Guadalupe Oil Field Remediation Environmental Monitoring Project. He has been managing this ongoing project since 1998. Mr. Peirson oversees a team of biologists and engineers who have developed strong working relationships with the field personnel at the Guadalupe site, as well as with the regulatory staff who are responsible for overseeing the remediation and abandonment activities. Mr.

Peirson stays in close contact with staff from the California Coastal Commission, Regional Water Quality Control Board, San Luis Obispo County Air Pollution Control District, California Department of Fish and Game, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers.

- Mr. Peirson was project manager for the Guadalupe Oil Field Remediation and Abandonment EIR. This EIR evaluated environmental impacts associated with the remediation and abandonment of the Guadalupe Oil Field by Unocal. This highly environmentally sensitive site covers approximately 3,000 acres within the Guadalupe-Nipomo Dunes system. This highly complex project assessed a number of remediation technologies and assessed their impacts and effectiveness on various spill locations with diverse characteristics. The project, which lasted over two years, and involved extensive field work both onshore and offshore. The project also included a six-month remedial investigation of the extent of the contamination. The site contains more than 90 petroleum plumes. The project involved over 100 staff members working in 18 different environmental issue areas.
- Mr. Peirson was the project manager for the Diablo Canyon Independent Spent Fuel Storage Facility EIR, which was prepared for San Luis Obispo County. This very controversial project involved the evaluation of the impacts associated with the long-term storage of nuclear waste at the Diablo Canyon site. This was the first EIR prepared in California for a nuclear facility. The major areas of concern in the EIR were air quality, public health, risk of upset and terrorism.
- Mr. Peirson is currently the permitting manager for Cook Hill Properties who is proposing the development of 1,200 homes and commercial development on a 480 oil field site. Mr. Peirson has been responsible for overseeing the development of all of the EIR technical reports. This has involved working closely with various Federal, State and local agencies. The project has focus on the development of a Specific Plan that would include ongoing oil development, housing, commercial development, as well as a habitat conservation area for the protection of the California Gnatcatcher, which is a Federally listed species. The Specific Plan has focused on a number of possible development scenarios for the property.
- Mr. Peirson recently completed an EIR for the County of Los Angeles covering the development of a Community Standards District (CSD) for the Baldwin Hills Oil Field. The project involved the evaluation of a hypothetical development scenario to determine the level of impacts and associated mitigation measures. The mitigation measures were then used to develop a CSD, which would serve to regulate any future development within the Boundaries of the CSD. Mr. Peirson was responsible for managing the preparation of the EIR and for drafting the CSD provisions. This project required working closely with the landowners, and concerned citizens in the preparation of the EIR and the CSD.
- Mr. Peirson was project manager for the City of Carpinteria's Consolidation of Pitas Point and Carpinteria Gas Odorant Station EIR. This project would consolidate two existing

facilities by dismantling and removing the odorant equipment at the Carpinteria Odorant Station, constructing a new natural gas pipeline, and installing new equipment at the Pitas Point Odorant Station. Although the project would result in reduced public health and safety impacts, reduced air emissions, and upgraded equipment, it generated significant public controversy due to the proximity of residential and public use areas.

- Mr. Peirson was project manager for Santa Barbara County's Tranquillon Ridge Oil and Gas Development Project, LOGP Produced Water Treatment System Project, and Sisquoc Pipeline Bi-Directional Flow Project EIR. This complicated EIR assessed the environmental impacts associated with three different but interrelated projects proposed by three applicants. The proposed Tranquillon Ridge Project would involve the development of oil and gas wells in a proposed State Tidelands Lease from Platform Irene, which is in Federal Waters and is currently used to develop and produce the Point Pedernales Field. This EIR involved a wide range of alternatives for oil development, pipeline replacement, processing facility location, and drill mud/cuttings disposal.
- Mr. Peirson is currently the project manager of the City of Carpinteria's Paredon Project EIR. This project involves the construction and operation of a oil and gas development project in close proximity to local neighborhoods and the California coast. Major issues of concern were noise, air quality, hazards and aesthetics. This project involved close cooperation with the State Lands Commission and the California Coastal Commission, as well as the local neighbors who would be affected by the proposed project.
- Mr. Peirson was the project manager of the Molino Gas Development Project EIR. This project was the first project approved for the development of offshore reserves using an onshore drilling location. The project involved assessing the environmental impacts of the development, and the development of new land use and coastal development polices covering onshore development of offshore oil and gas reserves.
- Mr. Peirson was a project manager for the Chevron Point Arguello Field EIR/EIS which evaluated the environmental impacts of three offshore oil and gas platforms, oil and gas pipelines, and a large oil and gas processing facility.
- Mr. Peirson was the program manager for the Chevron Point Arguello Field Q-6 Supplemental EIR, which addressed the transportation of oil by tanker from the Gaviota Interim Marine Terminal. As part of this Supplemental EIR, he helped develop an air quality impact analysis for various tanker routes as well as for most of the alternatives covered in the Gaviota Marine Terminal Supplemental EIR/EIS. Mr. Peirson was also responsible for the preparation of the alternatives description and screening analysis done as part of the Q-6 Supplemental EIR.
- Mr. Peirson was the project manager for the Unocal Point Pedernales Field Development EIR/EIS, which included two offshore platforms, oil and gas pipelines, and an onshore oil and gas processing facility.

- In addition, Mr. Peirson was the Project Manager for the Unocal Point Pedernales Supplemental EIR prepared for Santa Barbara County. This document addressed the impact associated with the construction of a new gas plant near Lompoc, as well as the effect that the closing of the Battles Gas Plant would have on other gas producers within Northern Santa Barbara County and Southern San Luis Obispo County. This study required existing oil and gas facilities in the study area to be evaluated, which include all of the existing Unocal facilities. This document presented one of the most comprehensive insights into oil and gas development activities within Northern Santa Barbara County.
- Mr. Peirson was Project Manager of the Exxon SYU Supplemental EIR, the Exxon Lompoc Pipeline Supplemental EIR, the Pacific Pipeline EIR, and numerous other EIRs covering housing developments and modifications to existing facilities. Mr. Peirson was also the Director in Charge of Arthur D. Little's ongoing contract with the SCAQMD to provide CEQA support.
- Mr. Peirson was program manager for the preparation of the Crude Oil Transportation Analysis (COTA). This study was done for Santa Barbara County, and addressed the economic and technical issues associated with various crude oil transportation alternatives.

STEVEN RADIS

Before joining MRS as a Principal, Mr. Radis was a Principal in Arthur D. Little, Inc.'s Environmental Health & Safety Practice located in the Santa Barbara and Ventura, California, offices. His expertise includes consequence and risk analysis, fire and explosion dynamics, hazard evaluation, external events analysis, fault tree analysis, meteorological modeling and analysis, physical oceanographic modeling and analysis, and model development. Mr. Radis has worked on a wide variety of studies for utilities, commercial, and government clients involving meteorological modeling, quantitative risk assessments, health risk assessments, consequence analysis, risk management, and air quality modeling (inert/photochemical pollutants, toxic air contaminants).

Since 1984 Mr. Radis has been involved in the preparation of CEQA and NEPA studies for a wide variety of facilities including power generating facilities (coal, fuel oil, natural gas, geothermal, hazardous waste), hazardous waste disposal facilities (chemical and nuclear), crude oil and natural gas transmission pipelines and distribution networks, oil and gas development projects, and military development or conversion projects. Mr. Radis has managed a majority of these projects and was also responsible for analysis of the system safety, public health, and air quality issue areas.

Mr. Radis has worked on the development of several numerical models, including the development of or revisions to several accidental release models, an oil spill model, a multi-component pool model, atmospheric diffusion models, an integrated human exposure and health risk assessment model, and several meteorological models.

Mr. Radis has prepared several transportation risk analyses for Santa Barbara County to evaluate the risks associated with the transportation of ammonia, natural gas liquids (NGL) and liquefied petroleum gases (LPG). The studies evaluated alternative transportation routes, tankers and a wide variety of transportation safety measures that could be implemented by the County. Two of these studies evaluated county-wide transportation issues, while numerous other studies evaluated project-specific transportation issues.

PROFESSIONAL EXPERIENCE

His experience includes the following:

- As part of an EIR/EIS for the Unocal Avila Beach Cleanup Project, Mr. Radis served as the Project Manager for San Luis Obispo County, California Regional Water Quality Control Board, and the U.S. Army Corps of Engineers. The EIR/EIS included the evaluation of site contamination and a variety of cleanup strategies, including air sparging/bioventing, solidification/ stabilization, solvent flooding, steam stripping, excavation, and thermal desorption. Leaking Unocal Marine Terminal pipelines had resulted in approximately 400,000 gallons of petroleum hydrocarbon contamination beneath the town of Avila Beach and the adjacent beach and intertidal zone. San Luis Obispo County certified the EIR/EIS, and Mr. Radis assisted the Regional Water Quality Control Board in establishing cleanup levels for the site.
- Mr. Radis managed the preparation of an Environmental Impact Report for the Nacimiento Water Project. The EIR that evaluated environmental impacts associated with construction and operation

of a 65-mile water pipeline and associated facilities in San Luis Obispo County. The pipeline would draw water from Nacimiento Reservoir and deliver it to various purveyors in the County. The pipeline would cross numerous jurisdictions and would affect a number of landowners and agencies. The proposed project included two equal options: (1) Raw Water Option that entailed construction of the pipeline and facilities that would deliver raw water to the purveyors; and (2) Treated Water Option that also entailed construction of a water treatment plant; in this case, potable water would be delivered to the purveyors. This EIR contained more than 800 pages, not including the Executive Summary and technical appendices. Over 140 mitigation measures were developed to lessen impacts from the proposed project.

- Mr. Radis completed a safety and vulnerability analysis of the Diablo Canyon Power Plant (DCPP) and the San Onofre Nuclear Generating Station (SONGS) Steam Generator Replacement Projects for the California Public Utilities Commission. The EIR analyses evaluated a range of equipment and operational failure modes and quantitatively evaluated the associated radiological consequences of core damage accidents and releases. Failure modes, release mechanisms and consequences associated with terrorist attacks were also evaluated.
- For the County of San Luis Obispo, Mr. Radis completed a safety and vulnerability analysis of the Diablo Canyon Power Plant (DCPP) Independent Spent Fuel Storage Installation (ISFSI). The EIR analysis evaluated a range of equipment and operational failure modes and quantitatively evaluated the associated radiological consequences of spent fuel pool and dry cask storage accidental releases. Failure modes, release mechanisms and consequences associated with terrorist attacks were also evaluated.
- For the California Coastal Commission, Mr. Radis prepared an independent, qualified third-party review of certain hazard analysis aspects of a proposed exploration and production project submitted by Macpherson Oil Company (MACPHERSON) to the CCC as part of Application E-96-28 for a coastal development permit (CDP). MACPHERSON had been selected by the City of Hermosa Beach to conduct exploratory drilling and production of hydrocarbons from the City Maintenance Yard. If the exploratory drilling and associated temporary production testing proved successful, MACPHERSON proposed to drill up to 30 wells from the City Maintenance Yard. Permanent tanks and production facilities would also be installed at the City Maintenance Yard site. Based on the initial review, a wide variety of safety issues associated with the proposed project, including:
 - Potential hydrogen sulfide hazards,
 - Additional hazard scenarios,
 - Project risk profiles,
 - Transportation risk,
 - Pipeline safety, and
 - Concerns related to the abandoned Chevron pipeline.

MACPHERSON amended their CDP application to address some of the concerns that were raised in the draft report, as well as clarified some potential inconsistencies between their CDP application and their project as permitted by the City of Hermosa Beach. The amended CDP included changes to crude oil pipeline transportation, and end use of produced gas since produced gas would not likely meet the Southern California Gas Company hydrogen sulfide limit of 4 ppm

during the entire lifetime of the project without the installation of gas sweetening equipment and further environmental review.

- Mr. Radis was the Project Manager and Public Safety coordinator for the Venoco Ellwood Marine Terminal Lease Renewal Project EIR that was prepared for the California State Lands Commission. This was the last marine oil terminal in Santa Barbara County and the continuing operation of the terminal is raising a lot of public outcry. Critical environmental issues included the increased risk of an accidental release of oil and its impact on marine and terrestrial water quality and biological resources, recreation, land use, and visual resources.
- For the California Coastal Commission, Mr. Radis provided technical assistance in the reviews of the BHP Billiton Liquefied Natural Gas (LNG) Cabrillo Port Project and the Port of Long Beach Sound Energy Solutions (SES) Long Beach LNG Project. The review of the proposed projects was focused on the adequacy and completeness of risk analysis, especially in terms of the safety review requirements of 49 CFR 193 Subpart B and NFPA Design Standard 59A. Mr. Radis also acted as a technical advisor to CCC staff on risk analysis, vapor dispersion modeling, etc., as well as identifying deficiencies, if any, in the analysis or recommended mitigation measures.
- Mr. Radis prepared the Marine Vessel Transportation and System Safety/Risk of Upset sections of the Pacific Energy Crude Oil Marine Terminal SEIS/EIR; a project that included construction of a marine terminal on Pier 400 in the Port of Los Angeles. The Marine Vessel Transportation analysis considers the specific type and number of vessels that currently visit the Port and pass by Pier 400, and evaluates the number and characteristics of tankers that would be calling at the new Pier 400 marine terminal after project implementation. The System Safety/Risk of Upset section evaluated potential oil spill risks, as well as fire and explosion hazards associated with marine vessels and terminal operations.
- For the County of Santa Barbara, Mr. Radis was the Project Manager for the Ellwood Pipeline, Inc. (EPI) Line 96 Modification Project EIR. The project included the installation of a new pipeline to redirect the transportation of processed crude oil from the Ellwood Onshore Facility (EOF) to the existing Plains Pipeline, L.P. (PPLP) Coastal Pipeline. The redirection of the pipeline allowed for the decommissioning of the Ellwood Marine Terminal, which was the last marine oil terminal in Santa Barbara County.
- Mr. Radis was a Project Manager on the Point Pedernales Project Supplemental EIR that was prepared for Santa Barbara County. Mr. Radis was also the Principal Investigator for the Air Quality and Risk-of-Upset Project portions of the Supplemental EIR.
- Mr. Radis conducted system safety and reliability studies for several oil and gas projects for Santa Barbara County. These studies included hazard identification, external event and offsite consequence analyses. Facilities included oil and gas processing plants, offshore platforms, onshore production facilities, as well as sour gas and crude oil pipelines. QRAs were prepared for several of the projects.
- Mr. Radis conducted oil spill modeling simulations for several oil and gas projects in California. These analyses included the simulation of multi-component land based spills, spills to rivers and creeks, as well as ocean and harbor spills. Local oil spill modeling projects include simulations of spills in the Ventura River and existing and proposed pipelines along the Ventura coastline.

- For the Center for Chemical Process Safety of the American Institute of Chemical Engineers, Mr. Radis co-authored a book entitled *Guidelines for Postrelease Mitigation Technology in the Chemical Process Industry*. As part of this effort, Mr. Radis quantitatively evaluated the effectiveness of a variety of hazardous chemical mitigation technologies.
- For a Texas-based law firm, Mr. Radis prepared an analysis of external events and provided expert testimony to the Texas Water Commission related to the safety of a hazardous waste disposal facility proposed for the Houston Ship Channel. This study included a review of past external events in the region and centered on hurricane, tornado, and storm surge hazards. The study required the development of a wind field model to simulate hurricanes passing over the site and to estimate potential maximum wind speeds and wind load on the proposed equipment, as well as projected changes in ship channel water levels.
- For a large Southern California utility, Mr. Radis evaluated the feasibility and system safety of converting a fuel oil pipeline distribution network into a regional crude oil and petroleum product storage and distribution system. An analysis of safety and environmental issues was prepared for the CPUC and the South Coast Air Quality Management District. Both agencies approved the conversion project, which is now operating at full capacity. An expansion of the pipeline system was evaluated to increase overall system pipeline throughput capacity, as well as to accommodate unit train and VLCC tanker deliveries.
- Mr. Radis has been involved in the preparation of EIR/EISs for a wide variety of facilities including power generating facilities (coal, fuel oil, natural gas, geothermal, hazardous waste), hazardous waste disposal facilities (chemical and nuclear), crude oil and natural gas transmission pipelines and distribution networks, oil and gas development projects, and military development or conversion projects. Mr. Radis has managed a majority of these projects and was also responsible for the system safety, public health, and air quality issue areas.
- For four Local Emergency Planning Committees in Alaska, Mr. Radis developed emergency response planning procedures through the preparation of a comprehensive regional hazard and risk analysis.
- For a large engineering company, Mr. Radis prepared a quantitative risk assessment for a LNG marine terminal and power plant project in Puerto Rico. The project included conducting a hazard assessment, fault tree analysis, consequence analysis, and quantitative risk analysis. An analysis of external events that could potentially affect the proposed facility was also conducted.
- Mr. Radis has worked on the development of several models, including the development or revisions to several accidental release models, an oil spill model, a multi-component pool model, atmospheric diffusion models, an integrated human exposure and health risk assessment model, and several meteorological models.

Mr. Radis earned his M.A. and B.A degrees in Climatology from California State University, Northridge. He is a member of the American Meteorological Society and the Air and Waste Management Association.

GREG CHITTICK

Mr. Chittick is a Senior Scientist with Marine Research Specialists with more than 20 years of experience specializing in safety, risk, air quality analysis, noise, aesthetics, and GIS systems. At MRS, he has been involved in preparing air quality studies and environmental impact assessments, environmental technology studies, computer mapping analysis, modeling accidental releases of hazardous materials, and conducting risk analysis studies for small and large facilities.

In 1985, Mr. Chittick received a B.S. in Mechanical Engineering from the University of California at Santa Barbara; in 1987, he received an M.S. in Mechanical and Environmental Engineering from the University of California at Berkeley. Mr. Chittick previously worked at Lawrence Berkeley Laboratory on studies related to building energy efficiency. Mr. Chittick also worked for more than 10 years with Arthur D. Little, Inc., based in Boston, on risk and EIR analysis. Mr. Chittick is a member of the American Society of Mechanical Engineers, Southern California Association of Risk Analysis, the Chlorine Institute, and the International Institute of Ammonia Refrigeration.

Mr. Chittick's areas of expertise include:

ENVIRONMENTAL IMPACT ASSESSMENT

- Mr. Chittick has managed a number of environmental impact studies, including analysis on pipeline transportation of crude oil and oil and gas processing facilities. These projects were all related to CEQA.
- Mr. Chittick has performed impact analysis related to EIR and EIS projects in a number of different impact areas including risk and hazardous materials, air quality, traffic analyses, noise analysis, visual impacts, and environmental justice.
- Mr. Chittick has completed numerous air quality analyses for over 30 CEQA documents over the past 20 years. Analysis have included assessment of criteria pollutants, including emissions from hydrocarbon impacted soil handling activities associated with the Guadalupe project; toxic pollutants, including AB2588 health risk assessments; CO hot spots analysis and greenhouse gas emissions analysis, including electrical grid assessments; and indirect emissions. Modeling conducted as part of these analyses included ISC, SLAB, ACE, HARP, CALINE4, and URBEMIS, among numerous others.
- Mr. Chittick conducted greenhouse gas and emissions analysis of housing projects including mitigations involved land use and in-fill issues associated with pedestrian, bike, and public transportation, and the use of LEED and Energy Star features in housing design to reduce energy use, criteria and greenhouse gas emissions. Modeling was conducted associated with Title 24 building efficiency models to quantify the impact of building features, such as high efficiency appliances, windows, and insulation, on overall energy use and greenhouse gas emissions.
- Mr. Chittick assessed risk impacts using QRA techniques on oil and gas projects, hydrogen plants and pipelines, offshore drilling, and production units as well as pipelines and marine terminals.

Risk analysis examines risks to public health as well as the quantitative analysis of oil spill probabilities and impacts to the environment.

- Mr. Chittick utilized spill modeling and trajectory models with winds and currents to estimate the probability and extent of spill impacts on numerous projects.
- Mr. Chittick's traffic impact experience includes analysis of level of concern and intersection traffic flow changes due to project related increases in traffic volumes utilizing the Intersection Capacity Utilization approach and the Highway Capacity Manual software.
- His experience with noise analysis has included impacts of increased traffic, construction equipment operations, as well as in-field measurements of noise levels. Analysis included modeling of noise generated from a range of equipment, including assessing the attenuation of noise levels over barriers and terrain and assessing the effectiveness of a range of noise mitigation methods. The analysis included the development of location-specific models to assess potential noise impacts.

Mr. Chittick has conducted over 20 in-field noise measurement and assessments studies, including noise associated with construction equipment, sheetpile installation, railway noise, truck noise, processing equipment noise, including pumps and compressors, and natural noise sources, including ocean waves and surf. Studies of noise mitigation have included the measurement of the effect of noise barriers, noise blankets and the effects of vegetation on noise attenuation. Assessments have included A weighted, linear, and octave band analysis.

- His experience with visual impacts have been conducted with visual simulations of proposed projects, including oil and gas processing plant equipment removals and additions, grading and land contouring impacts on visual resources, drill rig impacts. Mr. Chittick conducted extensive visual analysis including viewpoint analysis, 3D flythrough assessment, and visual simulations. Viewpoint assessments involve the development of maps showing locations of areas where towers and drilling rigs are visible over complex terrain and manmade features. 3D simulations have included the assessment of terrorist risk on Diablo Canyon nuclear power plant and the location of storage casks to minimize view and target accessibility. Mr. Chittick has conducted numerous visual simulations of proposed development projects for CEQA documents, placing drilling rigs, tanks, storage areas, building, vegetation, roadways and other objects within visual simulations. His visual impacts analysis has utilized BLM VRM, USDA SMS, and US DOT VRM assessment techniques.
- Mr. Chittick has also conducted fire protection and emergency response analysis associated with a number of oil and gas project EIRs in Santa Barbara County. All included analysis of pertinent issues, including water supply and demand estimates and availability of emergency response and mutual aid assistance. He also examined and compared projects to applicable codes and guideline, including IRI, ANSI, and NFPA.

RISK ANALYSIS

- Mr. Chittick has prepared risk management plans for compliance with the California CalARP programs and the previous Risk Management and Prevention Program and California and Federal RMP programs. He has also developed and audited programs related to the Federal and State OSHA PSM programs. His work expertise includes the oil and gas industry, offshore environments, Alaska North Slope facilities, the food processing industry, gas distribution and odorant facilities, and water treatment plants. This expertise involves performing the HAZOP studies, conducting incident investigations, preparation of the offsite consequence analysis, examination of facility detection and monitoring systems, emergency response and equipment histories and integrity, and community demographic data.
- Mr. Chittick has conducted quantitative risk analysis for a large range of facilities, including oil and gas processing, ammonia refrigeration, ammonia storage related to SCR, gas liquids storage, transportation of hazardous materials, water treatment facilities, and crude oil marine terminals. His studies included developing QRA models, FN curves, and mitigation measures to reduce risk impacts.
- Mr. Chittick has conducted quantitative risk analysis for a large range of transportation related projects, including transportation of gas liquids and ammonia on highways and pipeline transportation of crude oils. His studies have included developing QRA models, FN curves and mitigation measures to reduce risk impacts.
- Mr. Chittick has conducted numerous fault tree analyses on a range of facilities, including crude oil tanker transportation, offshore LNG terminal operations, offshore crude oil terminal operations, gas processing plants, gas liquids storage and transportation facilities, truck, rail and pipeline transportation systems, and ammonia refrigeration systems.
- Mr. Chittick has conducted numerous chemical release and dispersion modeling analyses, including releases of hydrogen, ammonia, gas liquids, hydrocarbons, produced gas containing hydrogen sulfide, and vapor from spilled combustible liquids, including crude oil. Models include SuperChems, SLAB, ISC, Aloha, and multi-component models.

GEOGRAPHIC INFORMATION SYSTEMS

- Mr. Chittick utilizes GIS analysis in almost all projects that he has been involved. GIS enables the accurate analysis of populations, impact zones, and spatial relationships between project components that are critical to high quality reports.
- Mr. Chittick implemented and managed database and Geographic Information System requirements for a multi-million dollar EIR on a 3,000 acre petroleum product cleanup project, GIS for large pipeline projects and for numerous EIR and risk assessments. GIS systems have included pipeline routes, soil sampling results, groundwater monitoring data, terrain, biological features, sensitive plant locations, geologic features, groundwater contours, aerial photographs, groundwater and soil plume delineations, equipment locations, refinery building locations and

blast impacts, 3D terrain analysis and volume calculations, census data mapping, and sensitive receptor locations related to disaster emergency response and coordination.

Mr. Chittick has conducted analysis on emission control technologies for use on internal combustion engines, and he developed a detailed cost estimate for a multi-billion dollar, 1,000-mile coal slurry pipeline system.

He has extensive experience with PC and Macintosh computers, including software and hardware expertise, networking, programming, installation, and optimization. Projects include customized macro/program development, database development, AutoCAD drawings and graphics, and computer GIS mapping analysis including demographic data analysis.

PUBLICATIONS

Risk Management Program Handbook, Accidental Release Prevention Under the 1990 Clean Air Act, Contributing author, Thompson Publishing Group, Washington DC, August 1997.

Chemical Incident Data Helps Facilities Manage RMP, Contributing author, Thompson Publishing Group.

BRITTNEY STEPHENS

Ms. Brittney Stephens serves as Technical Editor and Office Manager at MRS. Her role as support staff is pertinent to company-wide adherence of office standards. As Technical Editor, her responsibilities include the oversight of consistency within style parameters for safety and environmental projects, including Environmental Impact Reports and Annual Reports. She performs assignments relative to the organization and coordination of shared drives, editing and proofreading, word processing and formatting, and the modification and design of graphics. She controls all aspects of report production.

As Office Manager, Ms. Stephens assists with administrative, bookkeeping, marketing and human resources matters. She is currently producing HTML documents with corresponding CSS language for MRS. She is proficient in multiple software programs within the Microsoft Office Suite and the Adobe Creative Suite.

Ms. Stephens earned a Bachelor of Science in Business Administration from Chapman University, with a concentration in Marketing. In her previous position as a website administrator, she produced myriad online marketing campaigns through Google and Yahoo while comprehensively managing an expansive online retail store and its order management operations.

SWCA Environmental Consultants

Years of Experience

22

Expertise

CEQA/NEPA compliance

Project management

QA/QC

Research and technical analysis

Environmental monitoring

Environmental permitting

Education

M.C.R.P., Masters of City and Regional Planning, California Polytechnic State University, San Luis Obispo, 1991

B.S., Natural Resources Management, California Polytechnic State University, San Luis Obispo, 1988

Registration

American Institute of Certified Planners, District of Columbia, 1998

Professional Affiliations

American Planning Association – California Chapter, Member

California Association of Environmental Professionals – Central Coast Chapter, Member

Experience Summary

Mr. Henry has more than 20 years of professional experience in environmental and land use planning involving preparation, coordination and processing of numerous types of environmental documents, construction monitoring plans, revegetation plans, technical reports, resource agency permits, and resource protection studies. He is responsible for project management and coordination, client representation, permitting, and research and technical analysis.

Mr. Henry oversees the quality of staff deliverables and documents, marketing and proposal preparation, and directs the day-to-day activities of SWCA’s San Luis Obispo office. Mr. Henry has been project manager and contributor to more than 100 environmental determinations, including but not limited to EIRs, Expanded Initial Studies, and MNDs during his tenure as an environmental planner. Projects managed by Mr. Henry include environmental documents for fiber optic cable projects, governmental development projects, residential subdivisions, commercial developments, mineral extraction projects, airport expansions, and recreational facilities.

Selected Project Experience

San Miguelito Partners Local Coastal Plan Amendment EIR; San Luis Obispo County, California; County of San Luis Obispo. SWCA prepared an ExIS and Administrative Draft EIR evaluating the environmental impacts of a Local Coastal Plan amendment for a project site located in the Pirates Cove area of Avila Beach. *Role: Project Manager. Provided project oversight and QA/QC, and assisted with preparation of the ExIS and EIR.*

San Luis Bay Estates Phases 4, 5, and 6 Tract Map and Development Plan Subsequent EIR; San Luis Obispo County, California; County of San Luis Obispo. SWCA prepared a Subsequent EIR for a proposal to subdivide a parcel into lots varying in size and type to create a multi-phase planned development project near Avila Beach. *Role: Project Manager. Provided project oversight and QA/QC, and assisted with preparation of the EIR.*

Chevron Tank Farm Remediation and Redevelopment Project Environmental Services; San Luis Obispo County, California; City and County of San Luis Obispo. SWCA is providing project management services for the remediation and redevelopment of a project site located at the base of San Luis Obispo County Regional Airport runway. *Role: Project Manager. Serves as project manager representing both clients implementing and overseeing the environmental review process, including managing consultants, serving as liaison between project applicant and clients, preparing staff and agency reports, and presenting projects to decision-making bodies.*

Guadalupe Oil Field Restoration Project Environmental Services; San Luis Obispo County, California; County of San Luis Obispo. SWCA is providing project management services for the restoration of a project site located near the city of Guadalupe. *Role: Project Manager. Serves as project manager implementing and overseeing the environmental review process, including serving as liaison between project applicant and client, preparing staff and agency reports, and presenting projects to decision-making bodies.*

Years of Experience

14

Expertise

CEQA/NEPA compliance

City and regional planning

Local government assistance

Project management

Land use policy

Education

B.S., Natural Resource Management;
California Polytechnic State University, San Luis Obispo, 2001

Training

Comprehensive NEPA Training Series, 2008

Project Management Bootcamp, 2008

Association of Environmental Professionals (AEP) California Annual Conference, 2002-2012

American Planning Association California Annual Conference, 2002-2011

AEP CEQA Advanced Workshop, 2004-2012

Affiliations / Memberships

American Planning Association- California Chapter, Member

California Association of Environmental

Experience Summary

Ms. Scott is a senior planner with experience in land use and environmental planning involving the preparation, coordination, and processing of public projects and discretionary use permits. She specializes in implementing lead agency responsibilities under CEQA and NEPA, managing project teams, and writing environmental documents. Ms. Scott has experience implementing policies and procedures of local government planning operations and federal and state laws related to planning, zoning, environmental policy, local coastal plans, and the Coastal Act.

Ms. Scott has prepared several types of environmental documents including EIRs, MNDs, and CEQA Findings. In addition, Ms. Scott has managed the preparation of NEPA documents including CEs, EISs/RODs, and EAs/FONSI. She has extensive experience evaluating a variety of environmental resources, land use opportunities and constraints, and policy consistency. Ms. Scott's projects are kept on track and within budget through close coordination with the project team, the client, and the client's design/engineering consultants.

Selected Project Experience

Nipomo Community Park Master Plan Program EIR; Nipomo, CA; County of San Luis Obispo General Services Agency. SWCA prepared an EIR for the Master Plan, which included park amenities and internal and offsite road improvements in Nipomo. *Role: Project Manager. Prepared an environmental constraints analysis and Initial Study, various sections of the EIR, response to comments, and CEQA Findings; led project scoping meetings; and presented at public hearings.*

Excelaron (Mankins) Conditional Use Permit Huasna Valley Oil Exploration and Production Project EIR; San Luis Obispo County, California; Marine Research Specialists, County of San Luis Obispo. SWCA prepared the Aesthetics, Agriculture, Biology, Cultural Resources, Land Use, Population and Housing, and Public Services sections of the EIR; responded to public and agency comments on the Draft EIR; and supported the project team and County during a series of public hearings for the project, which included a phased plan to explore, test, and possibly produce oil on approximately 260 acres in Huasna Valley. *Role: Senior Planner. Responsibilities included team management, coordination with the prime consultant, document preparation and quality assurance/quality control, and public hearing assistance.*

Dana Adobe Nipomo Amigos (DANA) Land Use Ordinance Amendment and Conditional Use Permit Initial Study and EIR; San Luis Obispo County, California; County of San Luis Obispo. SWCA



SHAWNA SCOTT, B.S.
Project Manager / Planning Team Leader

Professionals-Central
Coast Chapter,
Member

prepared and Initial Study and subsequently is preparing an EIR evaluating the environmental impacts of an LUO Amendment and CUP to allow the implementation of a Master Plan and the Stories of the Rancho Project in Nipomo. *Project Manager. Prepared an Initial Study, led project scoping meetings, and is preparing various sections of the EIR.*

Years of Experience

6

Expertise

Environmental, land use, and property law

CEQA / NEPA compliance

Project management

Environmental law updates, CEQA litigation

Education

J.D., Indiana University School of Law, 2005

Environmental Law Research Group, Indiana University School of Law, 2002-2004

B.A., Political Science, Arizona State University; Tempe, Arizona, 2002

Training

State Bar of California Minimum Continuing Legal Education, 2006-2012

Association of Environmental Professionals (AEP) CEQA Workshops and Legislative Updates, 2009-2013

American Planning Association Annual Conference, 2011

Professional Affiliations

State Bar of California

Experience Summary

Ms. Creel is a project manager and environmental planner in SWCA's San Luis Obispo office. She obtained her JD in 2005 and has been practicing in the field of environmental, property and land use law in California for more than six years. She has a specialized background in environmental law and policy, water law, nuisance law, and land use controls.

Ms. Creel is well-versed in state and federal environmental laws and regulations, the administrative process, local county and municipal codes, and California Coastal Commission regulations. She is proficient in analyzing statutory interpretations and researching the formulation and referencing authority of reliable legal precedence through common law court decisions. Six years of litigation and consulting experience have given Ms. Creel a working knowledge of available legal resources and ongoing changes in environmental law and policy. Her varied experience has given her the ability to handle complex environmental and legal issues.

Selected Project Experience

City of Soledad Downton Specific Plan EIR; Monterey County, California; Lisa Wise Consulting, City of Soledad. SWCA prepared an EIR for the Soledad Downtown Specific Plan and form-based code, which was completed on time and within budget in less than six months, from initiation of the Notice of Preparation to certification of the Final EIR. *Role: EIR Project Manager, Primary Author. Preparation of the EIR, including the NOP, Initial Study, project scoping materials, responses to comments, CEQA Findings and Statement of Overriding Considerations, SB 18 consultation materials, public noticing, and Planning Commission and City Council hearing presentation.*

Grover Beach Lodge and Conference Center EIR; San Luis Obispo County, California; City of Grover Beach. SWCA prepared an EIR for a beachfront lodge, located in the city of Grover Beach, in a sensitive State Park area under the jurisdiction of various regional and state agencies. The EIR tiered off the recently certified Master EIR for the City's Land Use Element, also prepared by SWCA. *Role: Project Manager. Oversaw preparation of the EIR, conducted extensive consistency analysis of applicable regional and state policies, and coordinated closely with the City of Grover Beach, California Department of Parks and Recreation, County of San Luis Obispo, RWQCB, SLOAPCD, California Coastal Commission, and Caltrans.*

Grover Beach Land Use Element and Master EIR; San Luis Obispo County, California; City of Grover Beach. SWCA prepared the Land Use Element (LUE) and Master EIR, which evaluated the LUE as well as nine subsequent projects in Grover Beach, including the redevelopment of Grand Avenue, the Beachfront Lodge project, a train station expansion,

San Luis Obispo
County Bar Association
AEP, Central Coast
Chapter, Member

development of the Strawberry Field, three undeveloped open space parcels, and infill areas, and rezoning of an industrial area. *Role: Environmental Planner. Determined project consistency with regional plans, goals, and policies of various local and regional agencies throughout the project area, and prepared various sections of the EIR.*

Years of Experience

11

Expertise

Endangered Species Act consultation

CEQA/NEPA compliance

Regulatory permitting

Wetland delineation

Education

B.S., Biological Sciences; California Polytechnic State University, San Luis Obispo; 2001

Registration / Certification

Plant Voucher Collecting Permit, CDFW; 2081(a)-09-04-V

Scientific Collecting Permit, CDFW; SC-7285

Authorized to survey for, relocate, and monitor California Red-legged Frog under various USFWS Biological Opinions

Training

Wetland Training Institute Basic Wetland Delineation Training, 2007

HAZWOPER Training Course (40 Hour)

County of San Luis Obispo San Joaquin Kit Fox Habitat Evaluation Workshop, 2003-2005

Experience Summary

Mr. Claxton is as a biologist and environmental consultant in California with experience performing a variety of biological and environmental tasks including preparing Endangered Species Act Section 7 Biological Assessments, Caltrans Natural Environment Studies, CEQA documents, mitigation and monitoring plans, and sensitive species survey reports. In addition to preparing technical documents, he is experienced in conducting compliance monitoring for numerous small- and large-scale construction projects.

In addition to preparing technical documents, Mr. Claxton is experienced in conducting compliance monitoring for numerous construction projects throughout California. He has also prepared several state and federal permit applications, including USACE Section 404 Nationwide Permit Applications, RWQCB Section 401 Water Quality Certifications, and CDFG Section 1600 Streambed Alteration Agreements.

Selected Project Experience

Cave Landing Bike Path Phase I Cultural Resource Inventory; San Luis Obispo County, California; County of San Luis Obispo. SWCA conducted a Phase I Cultural Resource Inventory for the 0.37-mile Cave Landing Bike Path Project, providing bicycle and pedestrian access from southern Avila Beach to northern Pismo Beach. *Role: Project Manager. Provided project management for the surveys and report preparation.*

Arroyo Grande Creek Waterway Management Program and EIR; San Luis Obispo County, California; County of San Luis Obispo Department of Public Works. SWCA assisted in the development of a waterway management program to address flooding issues along Arroyo Grande Creek while enhancing environmental values, provided the design basis and methodology for long-term management along the channel, and prepared the EIR, wetland assessment, Section 106 documentation, and environmental assessment. *Role: Project Manager/Biologist. Prepared Biological Resources section of EIR, assumed project management responsibilities, provided permitting assistance to the County, and prepared the mitigation plan.*

Brisco Road/Halcyon Road/Highway 101 Interchange Project; San Luis Obispo County, California; Wood Rodgers. SWCA prepared various technical reports analyzing alternatives for the interchange modification project, located in the city of Arroyo Grande, in support of the joint CEQA/NEPA process, including Community Impacts Assessment, Visual Impact Assessment, Water Quality Assessment Report, and Initial Study/Mitigated Negative Declaration. *Role: Project Manager. Provided project management for CEQA and NEPA technical documents.*



JON CLAXTON, B.S.
Senior Biologist

CEQA Basics Work
Shop Series 2002, 2003
and 2004

Branch Mill Road Bridge Replacement Project; San Luis Obispo County, California; Quincy Engineering. SWCA prepared CEQA/NEPA documentation, technical studies, and permitting for the bridge replacement project located over Tar Springs Creek in Arroyo Grande. *Role: Project Manager. Provided project management for CEQA and NEPA technical documents and prepared the permit application packages.*

Robert G. Carr

Visual Resource Specialist

California Landscape Architect No. 3473

B.S.L.A., Landscape Architecture, California Polytechnic State University San Luis Obispo.

Robert Carr is a California licensed Landscape Architect specializing in visual impact analysis. He has over 25 years of professional landscape architectural experience, both as a private consultant and in the public sector. Robert has been responsible for analyzing the potential aesthetic effects of a variety of proposed major developments. He has prepared visual impact assessments and reports for inclusion in more than 200 environmental impact reports, negative declarations and other environmental documents in accordance with NEPA and/ or CEQA guidelines.

Mr. Carr has extensive experience in preparing aesthetic studies for controversial projects involving high quality visual resources and sensitive viewer groups in the Coastal Zone and throughout the state. His work has included analysis of planned developments, large-scale controversial mixed-use commercial projects, residential subdivisions, multi-story apartment buildings, public parks, golf course development, wineries, state-wide fiber-optic cable installation projects, wireless communication towers, mines and quarries, landfills, and wastewater treatment plants.. Mr. Carr's work includes programmatic analysis of city general plans, University of California long-range development plans, and county watershed zone management plans.

Mr. Carr has personally prepared hundreds of visual simulations illustrating the potential visual character of proposed projects and as public disclosure information. Mr. Carr's simulations are high-quality computer-enhanced photographs showing a high degree of realism and accuracy. Robert's photo-simulations and other graphic illustrations are used to support the findings of environmental documents, as prime exhibits at public hearings and informational meetings, as promotional displays, and on the internet. Mr. Carr also is formally trained and has experience in the development of 3-D real-time computer modeling. As an Associate Member of the National Association of Photoshop Professionals, Mr. Carr continues to enhance his skills in the area of visual- simulation.

Robert has considerable expertise with several visual analysis methods, including those developed by the Bureau of Land Management, the U.S. Forest Service, the Federal Highway Administration, and methods preferred by the various cities and counties of the central coast, the State Coastal Commission, and also regional hybridized approaches. Mr. Carr's knowledge of established visual assessment methodology results in legally defensible, understandable technical documents.

Mr. Carr also has a variety of other experience relating to analysis of the visual environment. This experience includes guest lecturer for the Cal Poly San Luis Obispo Landscape Architecture Department, and development and instructing of statewide CEQA and NEPA visual assessment training for the California Department of Transportation.

Albion Environmental, Inc.

CLINTON M. BLOUNT

**PRINCIPAL, ANTHROPOLOGIST, CULTURAL RESOURCE PROJECT MANAGER,
ETHNOGRAPHER, ORAL HISTORIAN**

Clinton Blount is President and cofounder of Albion Environmental, Inc. Trained as a cultural anthropologist, he specializes in Native American consultation, oral history ethnography, and cultural resource project management. Mr. Blount's recent anthropological work in San Luis Obispo County includes assignments as Native American consultation and participation coordinator for the Nacimiento Water Project (North County), the Los Osos Wastewater Project (Los Osos), the DANA Adobe project (Nipomo), and the Eagle Ranch Development (Atascadero). Mr. Blount specializes in section 106 driven Traditional Cultural Property Studies, NAGPRA process treatment of human remains, SB 18 consultation, and general consultation under the guidelines of the California Native American Heritage Commission. To date he has completed over 10 Traditional Cultural Property studies as part of the Federal Energy Regulatory Commission project relicensing process. He has also conducted major ethnographic inventories for Caltrans. Mr. Blount has a strong record of fostering positive working relationships between Native American groups, agencies, and project proponents. He works frequently with the Native American tribes and groups in San Luis Obispo County, and is fully conversant with specific tribal interests and the various ways in which these groups participate in the environmental review process.

EDUCATION

Advanced to Candidacy for Ph.D. in Anthropology, University of California, Riverside, 1976.

M.A., Anthropology, California State University, Sacramento, 1971.

B.A., Anthropology, California State University, Sacramento, 1970.

PROFESSIONALEXPERIENCE

- **Native American Coordination, Nacimiento Water Project**

Principal, (2007–2011)

The Nacimiento Water Project, serving several communities in northern San Luis Obispo County, required management of numerous cultural resources. The Native American communities in the region expressed an interest in participation in these management efforts. Mr. Blount coordinated with representatives of the Salinan and Northern Chumash groups to insure that concern were incorporated into management plans, and that monitors from these groups were present during archaeological excavation and construction in sensitive portions of the pipeline alignment. He also coordinated with the Santa Ynez Band of Chumash Mission Indians and Salinan Nation to ensure the proper treatment and reburial of human remains under the auspices of the Native American Graves Protection and Repatriation Act.

- **Ethnographic Inventories, Caltrans Districts 3 and 6 Transportation Enhancement Activity (TEA)**

Ethnography and Native American Consultation (2006–2011)

Caltrans District 3 (Sacramento Valley region) and District 6 (San Joaquin Valley region) conducted inventories of rural highways as part of forward planning for yet to be defined highway improvement projects. Mr. Blount consulted with the following tribes to develop an inventory of traditional places in or near the rural highway segments under investigation: Mechoopda Band, Greenville Rancheria, KonKow Maidu, Tsi-Akim Maidu, Paskenta Band, Colusa Band, Cortina Band, Rumsey Rancheria, Mooretown rancheria, Enterprise Rancheria, Berry Creek Rancheria, Grindstone Rancheria, Tule River Reservation, Kawaiisu, Southern Valley Yokuts, and Western Mono. Consultation also included discussions with several representatives of unrecognized California tribal groups. The work resulted in an inventory of ethnographic places, as well as a detailed discussion of the ethnographic and contemporary California Indian communities in the District 3 region.

- **Traditional Cultural Properties Study, McCloud Pit FERC Relicense Project**

Principal Investigator (2007—Present)

Pacific Gas and Electric Company (PG&E) is relicensing its McCloud Pit Hydroelectric Project on the lower reaches of the McCloud and Pit Rivers. The work is currently underway, and Mr. Blount is overseeing two separate Traditional Cultural Property Studies, one with the Winnemem Band of Wintu and the Pit river Tribe. The results will be incorporated into the draft License Application and Historic Properties Management Plan.

- **Los Osos Wastewater Facilities Project**

Native American Coordinator (2001—Present)

The Community Services District was anticipating construction of 37 miles of sewer line and a treatment facility in the town of Los Osos. Mr. Blount led a two year consultation process that included communication with 25 Native American representatives, consultation with the Native American Heritage Commission, the State Water Resource Control Board. He prepared and negotiated a plan for the treatment of human remains, and made presentations at the District's public meetings. Consultation was conducted with both Chumash and Salinan communities. The project fell into hiatus until 2012, and Mr. Blount resumed his role as Native American coordinator for the construction phase, set to begin in late 2012.

JENNIFER M. FARQUHAR, M.A., RPA

PRINCIPAL, SENIOR ARCHAEOLOGIST

Ms. Farquhar serves as a project manager and principal investigator at Albion Environmental, Inc. A staff member since 1999, she has considerable experience in cultural resource management and is well-versed in both state and federal cultural resource laws and regulations. At Albion, her duties include cultural resource consultation, as well as the design and implementation of archaeological field and laboratory projects.

Over the years, Ms. Farquhar has directed a broad range of projects involving the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and Section 106 of the National Historic Preservation Act (NHPA). Recently, Ms. Farquhar led the Section 106 consultation for the Nacimiento Water Project (NWP) in San Luis Obispo County, serving a lead role in the consultation between the US Army Corps of Engineers, the National Guard Bureau, the California National Guard, and the California State Historic Preservation Officer. Her role in this project was wide ranging, from authoring Project documents including the Archaeological Research Design and Treatment Plan, the Archaeological Monitoring Plan, and the Project Memorandum of Agreement (MOA), to implementing field and laboratory programs. Other recent large-scale projects include the Bay Street Reservoir System Transmission Improvement Project for the City of Santa Cruz; and Albion's PG&E State-Wide Master Services Agreement.

Ms. Farquhar is a lecturer in the Anthropology Department at UC Santa Cruz, where she teaches a class in lithic analysis. She received her Master's degree in anthropology from the California State University, Sacramento, and has served as President and Northern Vice President for the Society for California Archaeology. Ms. Farquhar is a Registered Professional Archaeologist (RPA).

EDUCATION

California State University, Sacramento

M.A., Anthropology with a concentration in Archaeology 2003

Thesis Title: *Organization of Flaked Stone Technology and Settlement Mobility on the South Central Coast of California: A Perspective from Diablo Canyon and Point Sal.*

University of California, Santa Cruz

B.A., Anthropology

1989

SELECT PROJECT EXPERIENCE

Dana Adobe EIR, San Luis Obispo County, California

Project Manager, Principal; Investigator (2012-Present)

Ms. Farquhar is currently responsible for designing and implementing archaeological studies in advance of an EIR for a proposed visitor and interpretive center at this historic location. Work to date includes a peer review of previous archaeological studies, archaeological survey, archaeological evaluation, and coordination with local Native Tribes on proposed treatment of significant cultural resources.

Eagle Ranch Specific Plan and Annexation, Atascadero, San Luis Obispo County, California
Project Manager, Principal; Investigator (2011-Present)

Ms. Farquhar recently designed and implemented archaeological studies for a constraints analysis for the proposed Eagle Ranch development in the City of Atascadero. Work included a peer review of previous archaeological studies, archaeological survey, and coordination with local Native Tribes on proposed treatment of significant cultural resources. Ms. Farquhar is currently compiling additional technical studies in preparation for the project EIR.

Camp Roberts Water Supply Upgrades Project, San Luis Obispo County, California
Project manager, Principal Investigator (2010-2011)

Served as Project Manager and Principal Investigator for the Camp Roberts Water Supply Upgrades Project, in San Luis Obispo County. She is responsible for the design and implementation of field and laboratory investigations at two NRHP eligible archaeological sites in the Project right-of-way, as well as supervision of the Project archaeological monitoring program. The archaeological study was designed to satisfy requirements of the NHPA Section 106 consultation, specifically, to mitigate adverse effects to historic properties by this federal undertaking.

Camp Roberts Cultural Resources Management Consultation, San Luis Obispo County, California

Principal Investigator (2010-Present)

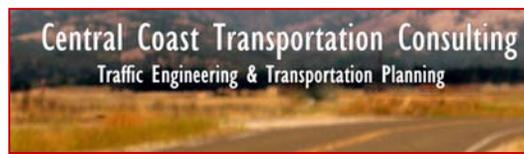
Ms. Farquhar serves as Principal Investigator for Albion's role in assisting the National Guard Bureau (NGB) in completing several cultural resources agreement documents for Camp Roberts and Camp San Luis, both in San Luis Obispo County. Several tasks are currently in progress including: 1) preparation of a Memorandum of Agreement (MOA) between the NGB, the Santa Ynez Band of Chumash Indians, and other interested parties, concerning treatment and disposition of heritage resources; 2) preparation of a Programmatic Agreement (PA) between the NGB, the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP) concerning consultation for Section 106 of the National Historic Preservation Act; 3) development of the facility Integrated Cultural resources Management Plan; and 4) examination and curation of collection for permanent accession to the San Luis Obispo County Archaeological Society (SLOCAS) storage facility. Ms. Farquhar's responsibilities include development of the PA, the ICRMP, and management of curation project.

Nacimiento Water Project, San Luis Obispo County, California

Project Manager and Principal Archaeologist (2007 – 2012)

Ms. Farquhar served as Project Manager and Principal Archaeologist for cultural resources for the NWP. She directed the Section 106 consultation for the project, serving a lead role in the consultation between the US Army Corps of Engineers, the National Guard Bureau, the California National Guard, and the California State Historic Preservation Officer. Her role in this project is wide ranging, from authoring documents including the project Archaeological Research Design and Treatment Plan, the Archaeological Monitoring Plan, and the project MOA, to supervising planned field and laboratory programs. More than 25 archaeological sites were investigated for this effort. The evaluation and data recovery program occurred more or less continuously between April and December, 2008. Additional site evaluation was accomplished in June 2009, and data recovery in December of 2009.

Central Coast Transportation Consultants



Joe Fernandez, PE, AICP

Summary

Mr. Fernandez has worked as a transportation planner and traffic engineer in California since 2002. He has successfully managed dozens of complex studies including transportation impact analyses, travel demand forecasting, traffic operations studies, traffic engineering design, and multimodal planning studies. As both a Certified Planner and Professional Engineer, he specializes in the development of solutions that are both technically sound and fitting with a communities' planning principles.

Career History

Principal, Central Coast Transportation Consulting 2011-Present

- Founder and lead project manager.
- Responsible for project scoping, budgeting, schedule adherence, and overall client satisfaction.

Senior Engineer/Planner, Febr & Peers Transportation Consultants 2004-2010

- Served as project manager for complex transportation projects. Responsible for project scoping, budgeting, schedule adherence.
- Led companywide multi-modal level of service research effort.
- Responsible for technical analysis and quality control for a wide variety of projects, including traffic operations, travel demand forecasting, multi-modal planning, and traffic engineering design.

Transportation Planner, San Luis Obispo Council of Governments (SLOCOG) 2003

- Assisted with Regional Transportation Plan, transit unmet needs analysis.

Planning Intern, City of Arroyo Grande 2002

- Prepared staff reports, assisted in bike plan update.
-

Education **Master of Science, Civil Engineering** 2004

California Polytechnic State University, San Luis Obispo, CA

Master of City and Regional Planning 2004

California Polytechnic State University, San Luis Obispo, CA

Bachelor of Science, Civil Engineering 2002

Vanderbilt University, Nashville, TN

Graduated magna cum laude.

Awards and Publications

- Award of Excellence: Central Coast APA, City of Paso Robles Circulation Element
- Transportation Excellence Award, Transportation Agency of Monterey County, Seaside West Broadway Specific Plan
- Neighborhood Planning Award, NorCal APA, Seaside West Broadway Specific Plan
- *Network Planning: Developing a Multimodal Approach*, ITE Journal, September 2009 issue
- *Achieving Sustainable Results: Public-Private Efforts and Coordination*, California APA Annual Conference, 2008
- *Another Case Against Roadway Widening: This Time It's For Drivers*, ITE District 6 Annual Conference Paper, 2006



Ron Marquez, PE, TE

Summary

Mr. Marquez has over 40 years of experience as a professional in the transportation field in both the public and private sectors. He has spent 23 years in the public sector, most recently as the manager of the Traffic Engineering, Parking, and Traffic Maintenance division of the City of Santa Cruz. He also managed the Traffic Engineering section of the City of Campbell, and served as the Executive Director of the Santa Cruz Regional Transportation Commission. He has 17 years of experience as a transportation consultant in California. This unique combination of public and private sector experience is invaluable when developing solutions to satisfy diverse stakeholders. Since his retirement from public service in 2003, he has consulted on select projects in California.

Career History

Principal, Marquez Transportation Engineering

- Teams with CCTC to provide experienced review and input.
- Provides project oversight and review of key transportation issues and deliverables.
- Served as on-call traffic engineering consultant to the Cities of Capitola and Santa Cruz.

Traffic Engineering Division Manager, City of Santa Cruz and City of Campbell

- Managed the Traffic Engineering Division of the Public Works Department for both cities.
- Managed the Parking and Traffic Maintenance sections for the City of Santa Cruz.

Executive Director, Santa Cruz Regional Transportation Commission

- Responsible for staff of eight and budget of \$4,000,000.
- Agency Director for four of the thirteen years employed at the SCRTC.

Principal, Ergo Engineering

- Firm founder and principal for nine years.
 - Served Cities of Watsonville, Capitola, Santa Cruz, and numerous private entities.
-

Education

Master of Science, Civil Engineering

San Jose State University, San Jose, CA

Bachelor of Science, Civil Engineering

San Jose State University, San Jose, CA

Memberships & Registrations

- Member, Institute of Transportation Engineers
- Registered Professional Traffic Engineer in California (#1457)
- Registered Professional Civil Engineer in California (#26302-retired)

Russell Consulting

Perry W. Russell

M.S., Geological Sciences, California State University, Northridge, 1988

B.A., Geological Sciences, University of California, Santa Barbara, 1984

PROFESSIONAL REGISTRATIONS

California Professional Geologist (#5777), since 1993

California Certified Engineering Geologist (#1837), since 1993

WORK SUMMARY

Mr. Russell has 26 years of experience as a professional geologist/hydrogeologist. Since 1995, Mr. Russell's focus has been on writing geology, water resources, wastewater, safety, and hazardous materials portions of environmental planning documents, in accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Mr. Russell also completes various other tasks, including erosion control studies, water supply assessments, and third party reviews of geologic/seismic reports.

Mr. Russell began his career as an engineering geologist, working for several years completing geologic/seismic reports, landslide investigations, fault studies, and geologic monitoring at large grading/construction sites. Projects included large residential tracts, industrial/commercial developments, high-rise buildings, and corridor projects. Mr. Russell's experience also includes approximately 12 years of experience working on projects involving soil and groundwater contamination. He served as project geologist on a variety of hazardous waste type projects, including military installations, oil company properties, and commercial developments. Mr. Russell has also worked as a petroleum geologist, completing projects in California and Texas.

Mr. Russell is currently working part-time as Russell Consulting and part-time for Science Applications International Corporation (SAIC). To-date, all of the CEQA work has been completed with SAIC, while work under Russell Consulting has primarily included Phase I Environmental Site Assessments and an annual (for over 10 years) geologic hazards survey along the PXP/Phillips 66 Point Pedernales pipeline, from Surf Beach (on Vandenberg AFB) to the Orcutt Pump Station.

PROFESSIONAL EXPERIENCE

Science Applications International Corporation, Senior Geologist (1995 to Present)

Completed geology, water resources, wastewater, safety, and hazardous materials/waste sections for numerous NEPA, CEQA, and joint documents including the following projects:

- Proposed expansion of Santa Maria Energy's Orcutt Oil Field, near Orcutt, California. Primary issues involved potential grading induced siltation of an on-site creek, construction of a truck crossing within the creek, potential oil spills into the on-site creek, as well as several other creeks along an associated oil pipeline, frac outs during construction of the pipeline, water supply, and potential surface expressions of oil as a result of steam injection. (EIR)

- Proposed large-scale residential developments in northern Santa Barbara County, including the Rice Ranch Specific Plan area (tiered off the Orcutt Community Plan EIR), the Bluffs at Mesa Oaks, and the Wye Specific Plan area. Primary issues involved limited water supply, potential flooding, highly erodible soils, and highly compressible soils. (EIRs)
- Proposed Hunters Point Naval Shipyard Project, in the City of San Francisco. The project involved conversion of a large, highly contaminated naval shipyard to residential, commercial, industrial, and recreational uses. (EIS)
- Proposed continuation of exploration and production activities at Plains Exploration and Production Company's (PXP's) Inglewood Oil Field, in Inglewood, California. Primary issues involved potential movement on the underlying active Newport-Inglewood Fault, potential differential settlement associated with secondary recovery efforts, and potential gas migration to the surface along improperly sealed wells. (EIR)
- Proposed temporary storage facility for radioactive waste at the Diablo Canyon Nuclear Power Plant in San Luis Obispo County, California. Primary issues involved the presence of a major active fault located within four miles of the facility, stability of a proposed large cut slope, and landslide encroachment along the sea cliff. (EIR)
- Proposed Matrix oil drilling project in a nature preserve, within the Whittier Hills of the Los Angeles basin. Primary issues involved drilling in proximity to multiple active faults, potential slope failure, and proximity to creeks. (EIR)
- Plains All American Pipeline, L.P., proposed Pier 400, Berth 408 Project, Port of Los Angeles. Primary issues involved tsunamis, potential pipeline rupture along the active Palos Verdes Fault, liquefaction, and subsurface contamination along the pipeline route. (EIR/EIS)
- Venoco's proposed Paredon onshore drilling project at the Carpinteria oil and gas processing facility. Primary issues involved the presence of a nearby active fault, potential groundwater contamination associated with waste re-injection, and potential spills into the nearby Pacific Ocean. (EIR)
- Venoco's proposed Line 96 pipeline from the Ellwood Onshore Facility to the All American Pipeline at Las Flores Canyon. Primary issues involved construction induced erosion and siltation along numerous creek crossings. (EIR)
- Proposed lease renewal of the Venoco Ellwood Marine Terminal, in Goleta, California. Primary issues involve the presence of the nearby active More Ranch Fault, potential wave-induced scour in the intertidal zone, as well as erosional impacts associated with future repair of a potentially ruptured oil and gas pipeline, affiliated with continued offshore production. (EIR)
- The Tranquillon Ridge offshore drilling project in northern Santa Barbara County. Primary issues involved erosional/water quality impacts associated with future repair of a potentially ruptured oil and gas pipeline, affiliated with continued offshore production. (EIR)

- A proposed oil and gas exploration project at Molino Canyon in Gaviota, California. The project included potential geologic impacts associated with hillside grading and excavation and potential hydrologic impacts associated with surface flow, local bedrock groundwater use, and wastewater injection. (EIR)

Russell Consulting, Geotechnical/Environmental Geologist (1995 to present)

On a part-time basis, completed Phase I Environmental Site Assessments for approximately 25 clients. Also have completed an annual (for over 10 years) geologic hazards survey along the PXP/Phillips 66 Point Pedernales pipeline, from Surf Beach (on Vandenberg AFB) to the Orcutt Pump Station. The geologic hazards surveys have been completed for Storrer Environmental Services, which provides on-going environmental consulting services to the Santa Barbara County Energy Department.

Douglas P. Imperato (Consulting Geologist), Petroleum/Environmental Geologist (1995 to 1998)

On a part-time basis, completed oil and gas exploration projects in California's Sacramento Valley. Fields worked included Willows-Beehive and Sutter Buttes. Also, completed environmental assessments for a major insurance carrier of industrial properties.

Venoco, Inc., Petroleum Geologist (1995 to 1997)

On a part-time basis, completed oil and gas exploration and development projects onshore and offshore California and onshore Texas. Oil and gas fields worked include Willows-Beehive and Grimes in the Sacramento Valley, the offshore Ellwood field near Santa Barbara, the Santa Clara field near Camarillo, and Big Mineral Creek in north Texas.

Fugro West, Inc., Project Geologist (1989 to 1995)

Project manager for an average of five to ten environmental assessment/remediation projects at any given time. Personal duties included proposal preparation, client interaction, field work scheduling and completion, report preparation, budgetary analyses, and concurrent marketing for additional work. Other projects included preparation of geology sections for environmental impact reports and a fault study associated with expansion of the Port of Los Angeles. Relevant experience includes:

- Co-managed a major soil remediation (dig and haul) project associated with abandonment of the coastal Phillips Petroleum gas processing facility in Gaviota, California.
- Co-managed an extensive site assessment at the former Chevron-Carpinteria oil and gas processing plant, associated with partial abandonment of offshore oil production in the Santa Barbara Channel.
- Audited a portion of Texaco's oil production facilities (approximately 40 well sites, production facilities, and pipeline corridors) in the rain forest of Ecuador.
- Managed site assessment/soil remediation activities associated with abandonment of approximately 15 oil wells and 6 tank batteries in an area of proposed development in Ventura County.

- Completed tank pulls, site assessments, and quarterly monitoring at numerous retail gasoline stations, located throughout southern California. Clients included Chevron, Shell, Mobil, and Exxon.

Leroy Crandall & Associates, Inc., Staff Geologist (now LAW/Crandall) (1987 to 1989)

Performed geotechnical investigations and environmental assessments. Projects included fault trenching, slope stability evaluation, corridor studies, groundwater evaluations, geologic-seismic report preparation, and environmental site assessments. Relevant projects included a sea cliff retreat study at Long Point, on the Palos Verdes Peninsula, in association with establishment of a geologic setback for a proposed resort development (current site of the Terranea Resort).

Geosoils, Inc. and McCollum Geotechnical, Inc., Soils Technician and Staff Geologist (1986)

Performed soils and geological analysis for single-family home and large cut-and-fill tract home grading operations.

PUBLICATIONS/PRESENTATIONS

1987. The Point Fermin Submarine Fan: A Small, Late Middle Miocene Age Fan Within the Monterey Formation, Russell, P.W. in Fischer, P.J., ed., Geology of the Palos Verdes Peninsula and San Pedro Bay: Pacific Section SEPM and AAPG, 1987, p. 31-46; **presented** at the 1987 National AAPG-SEPM Annual Meeting, Los Angeles, California.
1987. Russell, P.W. and Cherven, V.B. Glauconiferous-Rich Lithic Sandstone at Point Fermin, California. In Fischer, P.J., ed., Geology of the Palos Verdes Peninsula and San Pedro Bay: Pacific Section SEPM and AAPG, p. 53-56.
1986. Reservoir Geometry and Trapping Mechanism, Lindsey Slough Gas Field, Southern Sacramento Basin: AAPG, Abs. 1986, v. 70, no. 4, p. 465; **presented** at the 1986 AAPG-SEG Annual Meeting, Bakersfield, California.

SECURITY CLEARANCE

Secret Security Clearance through the National Industrial Security Program, which has signed agreements with the Department of Defense, the Department of Energy and the CIA.

Appendix B – Company Qualifications

Marine Research Specialists

CHEVRON TANK FARM PROJECT EIR

CLIENT: COUNTY OF SAN LUIS OBISPO AND CITY OF SAN LUIS OBISPO

MRS is currently working with the County of San Luis Obispo and the City of San Luis Obispo to review a project to remediate and develop the San Luis Obispo Tank Farm, currently owned by Chevron. The 332-acre project site is now primarily vacant; it stored crude oil transported from the San Joaquin Valley via pipeline from 1910 until the early 1980s. Following two lightning strikes in 1926, explosions, releases, and fires created several surface occurrences (i.e., expressions) of highly weathered and burnt petroleum present on the ground today. Although some operations resumed, several reservoirs never returned to service.

Chevron intends to remediate the site to address contamination issues, restore and improve the habitat's ecological function, and develop portions of the site consistent with a proposed land use plan. Chevron's proposal includes development for business park, recreational use, and open space.



The site's inclusion in the City's Airport Area Specific Plan complicates the proposed project because the Specific Plan anticipates annexing the site and the San Luis Obispo County Regional Airport with the City. Due to potential lengthy approval times for long-term development and phasing plans with City annexation, Chevron filed land division applications with both the City and the County. Chevron presented two distinct development options to provide alternatives if the annexation is not successful.

MRS evaluated the remediation project as well as both the City and County development options and suitable alternatives in this EIR. This involved a baseline site analysis and baseline environmental settings as well as peer review of existing documentation. Potential impacts were evaluated for three distinct phases, or potential outcomes, for the project site including: 1) Remediation activities, 2) City development project and 3) County development project. The EIR was organized to allow for mitigation implementation and monitoring for all three potential outcomes of remediation and/or development.

AVILA BEACH EIR, EIS, AND CLEANUP MONITORING

CLIENT: THE COUNTY OF SAN LUIS OBISPO



MRS prepared an EIR for the County of San Luis Obispo that evaluated cleanup alternatives for Avila Beach, California, which is adjacent to the Unocal Avila Marine Terminal facility. The facility had stored and transferred petroleum products, including gasoline, diesel, fuel oil and crude oil, since 1910. Petroleum products were pumped from the tank farm located on a bluff overlooking the town through a network of underground pipelines beneath the town. More than 300,000 gallons of petroleum products leaked from the pipelines into surrounding soil and ground

water.

As a first step in the EIR process under the California Environmental Quality Act, MRS staff determined alternative remedial actions in addition to those proposed by the Applicant and evaluated all possibilities for impact evaluation. MRS collected and reviewed soil, ground water, and surface water data for the site, and then categorized each concern based on site-specific factors such as media, area, depth of contamination, topography, ground water depth, and the proximity to the ocean. Using these categorizations, MRS staff developed remedial alternatives to meet specified cleanup goals in the designated 10-year time frame.

After MRS discovered additional contamination offshore, the EIR was expanded to include an EIS to comply with the National Environmental Policy Act (NEPA) at the request of the Army Corps of Engineers.

Environmental impact analyses were then assessed for 19 issue areas to evaluate potential impacts associated with the proposed remedial project and alternatives. Where significant environmental impacts were projected to occur, measures were developed to avoid or reduce the severity of the potential impact.

Based on the results of the environmental impact analyses, an environmentally preferred alternative was selected. The environmentally preferred alternative was considered the least disruptive in terms of environmental and socioeconomic factors that led to complete remediation of the site. As a result, much of the contamination from Avila Beach was relocated to the McKittrick Waste Treatment Site in Kern County.

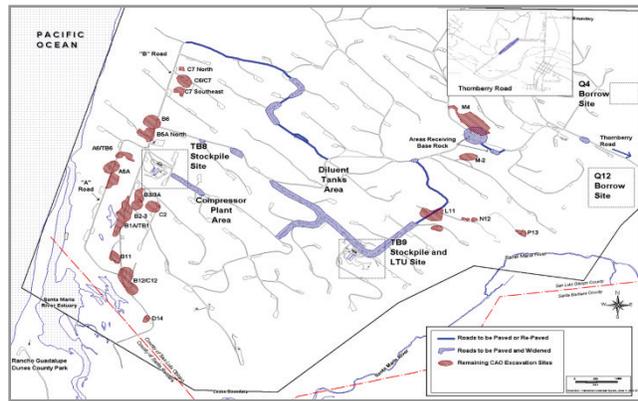


GUADALUPE OIL FIELD REMEDIATION AND ABANDONMENT EIR AND MONITORING

CLIENT: THE COUNTY OF SAN LUIS OBISPO AND THE RWQCB

MRS staff prepared an EIR for the County of San Luis Obispo that evaluated environmental impacts associated with the remediation and abandonment of the Guadalupe Oil Field by Unocal. A necessary first component of this EIR analysis was to identify and develop alternative remedial actions to those proposed by Unocal for a range of cleanup levels. This site, located in the central coast of California approximately 15 miles south of San Luis Obispo, covers approximately 3,000 acres within the Guadalupe-Nipomo Dunes system, which is designated a National Natural Landmark by the U.S. Secretary of the Interior.

Identifying and developing alternative remedial actions to those proposed by Unocal for a range of cleanup levels presented a significant challenge because of the sensitivity of the site, the number of separate-phase diluent plumes (more than 60), and the lack of pilot-test data to verify developing technologies would apply in the dune sands. In addition, the Regional Water Quality Control Board did not establish cleanup levels before the EIR was prepared, so MRS evaluated a range of cleanup levels in the EIR. Since analysis only evaluated impacts associated with remedial activities, and not impacts of the spill, MRS carefully selected significance criteria that accounted for the spill as part of the environmental baseline for the analysis. Several emergency remedial actions complicated baseline determinations. Both adverse and beneficial impacts associated with the remedial actions were incorporated into the environmental setting for the proposed project. And, abandonment and remediation were analyzed together in this project, which complicated the approach used for evaluating site-wide impacts.



The complexity of the ground water contamination and the proximity to sensitive resources required a ground water model capable of evaluating the potential effects on water quality resulting from the remedial actions. A computer simulation package (MODFLOW) simulated the ground water flow and software package MTD3 simulated the contaminant fate and transport. The models were calibrated using present day data from monitoring wells at the site and run for four remedial scenarios: (1) no action; (2) Unocal's proposal of a mix of technologies including excavation and hydraulic containment; (3) complete source removal, assumed to be equivalent to excavation; and (4) a remedial alternative with a mix of technologies that focus on source removal, including excavation, hot water flooding, and enhanced bioremediation.

After MRS's thorough work on the EIR, the firm worked closely with the County executing and monitoring the remediation and abandonment project. The remediation project carefully worked around breeding seasons of several endangered species.

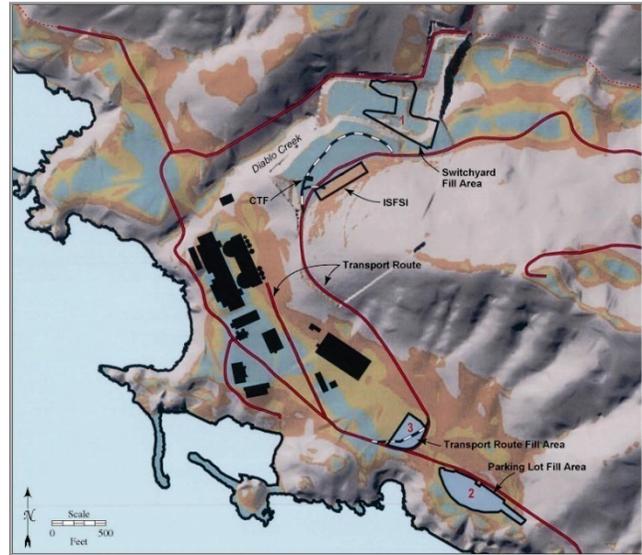
DIABLO CANYON INDEPENDENT SPENT FUEL STORAGE INSTALLATION EIR

CLIENT: THE COUNTY OF SAN LUIS OBISPO

MRS was the first consultation firm to prepare an EIR for a nuclear power plant. This project involved installing a long-term nuclear waste storage system at Diablo Canyon Nuclear Power Plant, located approximately 6 miles up coast from Avila Beach in the County of San Luis Obispo. The Applicant wanted to continue operating the plant’s nuclear reactor units until their existing license expired while avoiding an increase in the density of fuel rods in their existing spent fuel pools.

The EIR addressed a wide range of alternatives that covered various sites, as well as alternative storage technologies and designs. This was one of the most controversial projects permitted in California in the past 20 years; the Public Draft EIR drew more than 2,000 comments. The majority of the comments concerned safety, terrorism, and emergency response.

Federal law preempts local and State governments from regulating or conditioning any safety aspects of nuclear facilities. The Applicant and the Nuclear Regulatory Commission (NRC)



argued that the EIR could not address any of the safety issues. MRS maintained that the EIR was an informational document that required full disclosure, and, therefore, needed to address the safety impacts of the project. However, the document made it clear that only the NRC could implement the safety mitigation measures.

One of the key safety mitigation measures developed as part of the EIR was to bury the storage casks to reduce the likelihood and consequences of a terrorist attack. While

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po County could not require this mitigation measure, they did urge the NRC to implement the safety mitigation measures. The NRC is currently working with the Applicant to modify the project to bury the storage containers.



NACIMIENTO WATER PROJECT

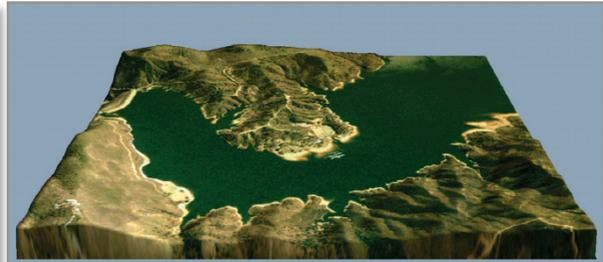
CLIENT: THE COUNTY OF SAN LUIS OBISPO

In 2003 San Luis Obispo County hired MRS to prepare a second EIR for this controversial large-scale water supply project, which failed to complete the CEQA process in 1997. The 66-mile water pipeline and associated facilities for chlorinated water draw water from Nacimiento Reservoir and deliver it throughout the County. A complex range of alternative pipeline routes and water supply sources accompanied the pipeline.

MRS's 1200 page EIR included more than 140 mitigation measures addressing concerns from several parties and agencies impacted by the lengthy pipeline. MRS worked to find ways to minimize the impacts on sensitive biological habitats and cultural resources in the areas surrounding the proposed pipeline.

MRS also developed an alternative placing the storage tanks underground, thereby reducing the potential for spills of chlorinated water into creeks and streams. This alternative also reduced visual impacts associated with the storage tanks. San Luis Obispo County adopted this mitigation measure and is requiring the majority of the storage tanks to be placed underground.

The County of San Luis Obispo certified the EIR in January 2004.



CONOCOPHILLIPS SANTA MARIA REFINERY THROUGHPUT INCREASE PROJECT EIR

CLIENT: COUNTY OF SAN LUIS OBISPO

MRS is the lead consultant in preparing an EIR for the ConocoPhillips Santa Maria Refinery Throughput Increase Project for the County of San Luis Obispo. Since 1955, the project site's land use has been petroleum oil refining. The facility is currently in operation and does so 24 hours per day, 365 days per year, except when shut down for maintenance.

The Santa Maria Facility mainly processes heavy, high-sulfur crude oil. Semi-refined liquid products from the facility are sent by pipeline to the Rodeo Refinery near San Francisco for upgrading into finished petroleum products. Products leaving the Santa Maria Facility are: (1) semi-refined petroleum transported by pipeline; (2) solid petroleum coke transported by rail or haul truck; and (3) recovered sulfur transported by haul truck.

The project as proposed involves increasing the permitted volume of processed crude oil by 10 percent and allowing the processing of previously refined gas/oil petroleum liquid under the definition of crude oil. The daily maximum limit of crude oil throughput would increase from 44,500 barrels per day to 48,950 barrels per day, which is the equivalent of 16,220,600 barrels per year to 17,866,750 barrels per year.



HUASNA VALLEY OIL EXPLORATION AND PRODUCTION PROJECT EIR (EXCELARON PROJECT)

CLIENT: COUNTY OF SAN LUIS OBISPO

MRS was the lead consultant in preparing an EIR for the Huasna Valley Oil Exploration and Production Project for the County of San Luis Obispo. Excelaron leased more than one thousand net mineral acres in the Huasna Valley area, including the project site, and proposes exploring, testing, and possibly producing oil on the western edge of the Huasna Basin in an existing oilfield designated by the California Department of Oil, Gas and Geothermal Resources.

Although the project site is on private property, Excelaron obtained exclusive easements over the Mankins Ranch and Porter Ranch to access the area.



The four-phased proposed project involves exploration and testing, production, cleanup and abandonment, and development. Although this project is in the very early stages, the applicant foresees 13 wells producing up to 1,000 barrels per day operating at peak production.



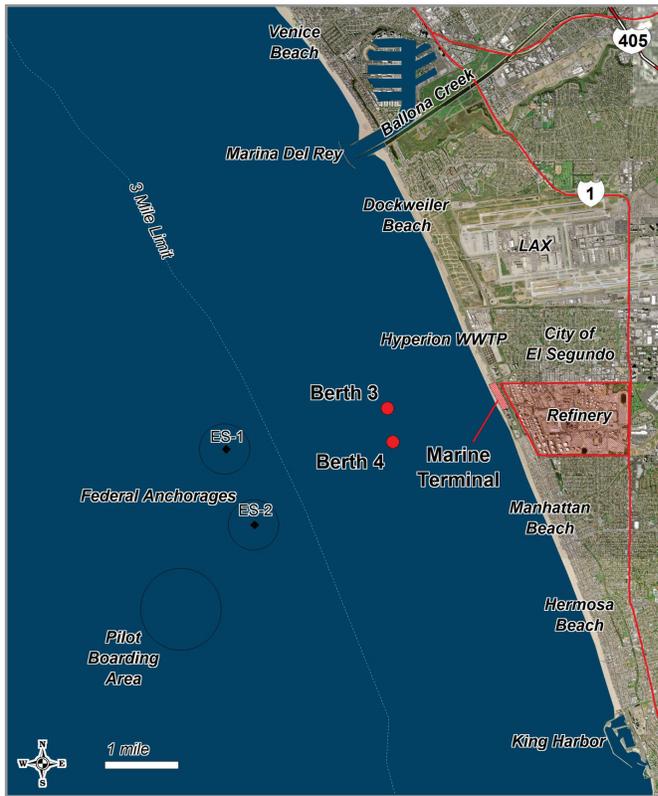
CHEVRON EL SEGUNDO MARINE TERMINAL LEASE RENEWAL PROJECT EIR

CLIENT: CALIFORNIA STATE LANDS COMMISSION

The Chevron El Segundo Marine Terminal Lease Renewal Project involves Chevron Products Company entering into a new 30-year lease of tide and submerged state lands from the California State Lands Commission for continued operations at the Chevron El Segundo Marine Terminal. The Marine Terminal has been operating since 1911, when the adjacent refinery that it serves opened. The new lease allows Chevron to continue operating the Marine Terminal for a 30-year period from 2010 to 2040. The Project involves continuing current operations and implementing future maintenance activities as needed at the Marine Terminal through the year 2040.

MRS prepared the EIR after working successfully with both the client and applicant to create a document to their satisfaction. Although this Project is a continuation of the status quo, the EIR evaluated contemporary alternatives, such as using potential Pier 400 facilities in the Port of Los Angeles/Port of Long Beach. MRS also considered moving the berths into waters farther offshore and modifying the type of berth systems used.

MRS is currently spearheading the implementation of the Mitigation Monitoring Program for the Chevron El Segundo Marine Terminal.



CARPINTERIA FIELD REDEVELOPMENT PROJECT EIR/EIS (CARONE PROJECT)

CLIENTS: CALIFORNIA STATE LANDS COMMISSION, BUREAU OF OCEAN ENERGY MANAGEMENT



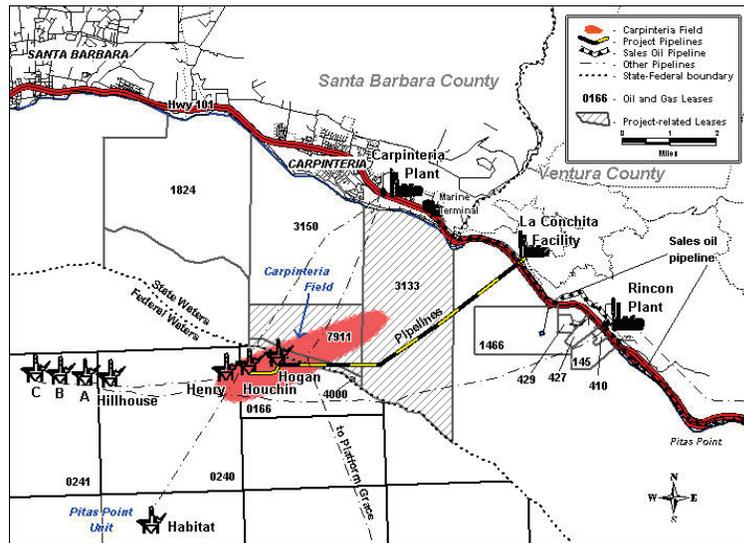
MRS is the lead consultant in preparing an EIR/S for the Carpinteria Field Redevelopment Project for the California State Lands Commission and Bureau of Ocean Energy Management. The project proposes to redevelop State leases of the Carpinteria Field — specifically, State Leases PRC-4000, PRC-7911 (the former southern portion of the original lease PRC-3150), and PRC-3133 — from an existing oil and gas platform (Platform Hogan) located in Federal waters.

Platform Hogan is owned by Signal Hill Services and operated by Pacific Operators Offshore Incorporated. Carone Petroleum Corporation has signed a platform use agreement with Signal Hills Services that provides rights to use Platform Hogan for drilling activities, and to process any future State Leases’ production at the La Conchita Oil and Gas Processing Facility.

The Carpinteria Field is located offshore of southern California, in the eastern part of the Santa Barbara Basin near the city of Carpinteria, California. The three State leases (PRC-4000, PRC-7911 and PRC-3133) are currently not

redeveloped and not producing. However, the Carpinteria Field also covers portions of two Outer Continental Shelf (OCS) Federal leases, OCS-P 0166 and OCS-P 0240, which are currently producing.

Carone Petroleum Corporation proposes limited redevelopment of State Leases PRC-4000, PRC-7911, and PRC-3133, which are estimated to contain sufficient recoverable reserves to enable commercial production. The goal of the development plan is to make full use of the existing hardware infrastructure and develop the remaining oil and gas reserves in the most economical way.

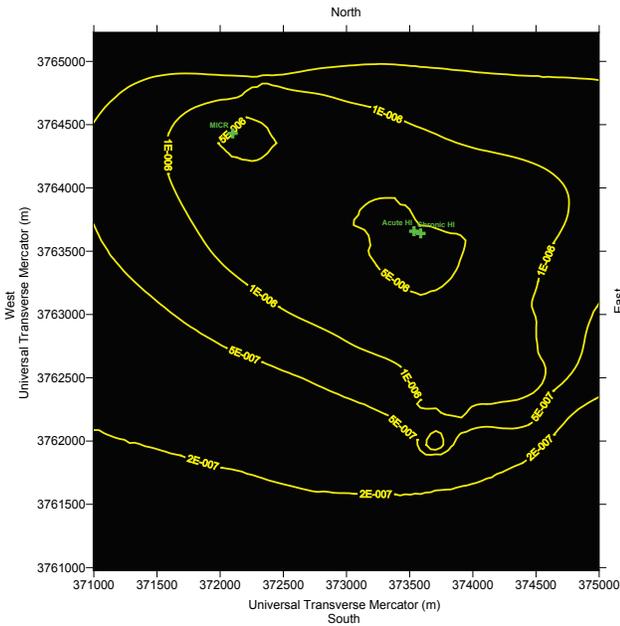
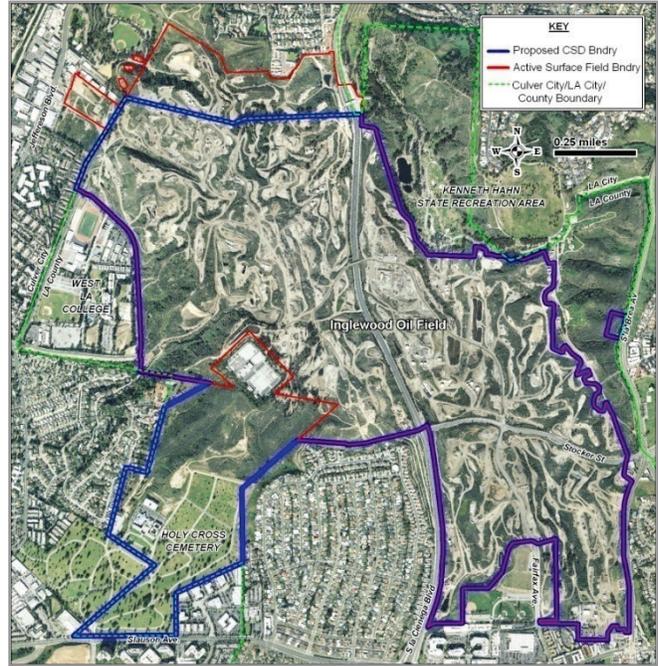


BALDWIN HILLS COMMUNITY STANDARDS DISTRICT EIR

CLIENT: LOS ANGELES COUNTY DEPARTMENT OF REGIONAL PLANNING

MRS was the lead consultant in preparing an EIR for a proposed Community Standards District (CSD) for the Baldwin Hills Oil Field located in unincorporated portions of Los Angeles County. The purpose of the CSD is to develop regulations to control oil and gas development activities at an oil field in close proximity to residential areas. MRS managed a team of over 30 professionals to develop the EIR. The EIR evaluated a hypothetical development scenario for the oil field and then assessed the impacts of this development. Based upon the impacts identified, a set of mitigation measures were developed to reduce the level of impacts to less than significant. MRS then used these mitigation measures to develop standards that were incorporated into the CSD.

Some of the most salient issues associated with the project were public health, noise, site cleanup and remediation, air quality, and geology. MRS worked closely with the County of Los Angeles, the landowners, and the affected public in developing the EIR and the CSD.



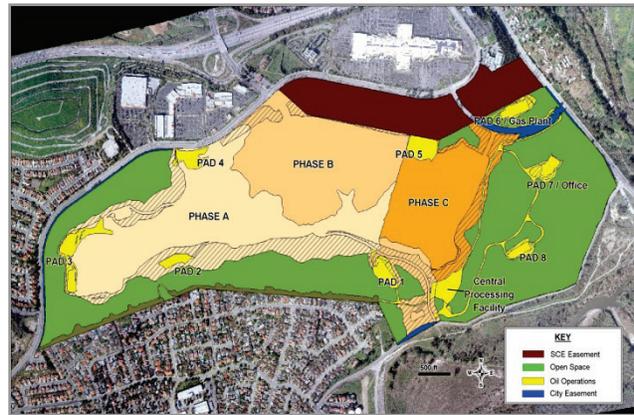
MRS organized more than 20 public meetings with the community as part of this project. MRS used small neighborhood meeting to work with the community on the EIR and the CSD.

MONTEBELLO HILLS SPECIFIC PLAN

CLIENT: COOK HILL PROPERTIES

MRS served as the lead consultant for Cook Hill Properties in the permitting and preparation of technical reports for an EIR covering a 1,200 homes and commercial development on a 480-acre oil field. The proposed project is a Specific Plan that evaluates a number of development scenarios for the subject property. The work has involved overseeing a large number of consultants preparing technical reports for an EIR that covers all of the major issue areas. MRS also has direct responsibility for preparing the air quality and hazards/hazardous materials technical report.

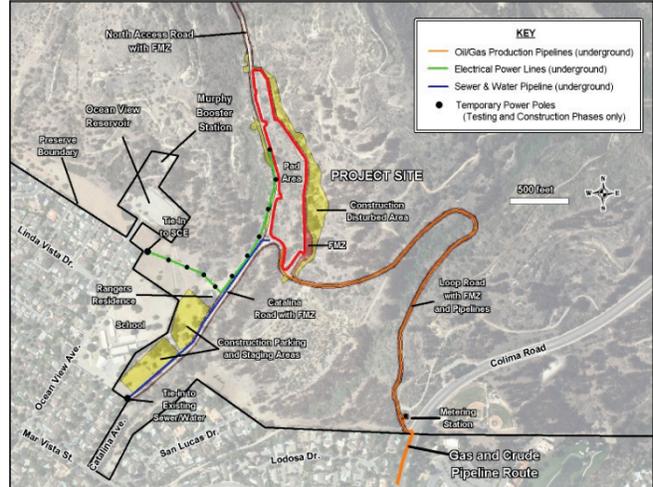
This is a very unique project since it involves the development of a Specific Plan that will have housing and commercial development with the bounds of an active oil field. This has required that the documents address the special issues associated with building habitable structures on the site of an oil field and the impacts of continued oil operations on the development. The project has involved close coordination with the US Fish and Wildlife Service since the site houses the California Gnatcatcher, which is a federally listed species. Some of the key issue areas for the project have been traffic and public health.



WHITTIER MAIN OIL FIELD EIR

CLIENT: CITY OF WHITTIER

MRS was the lead consultant in preparing an EIR for an oil and gas development project in the City of Whittier. The majority of the land encompassing the oil field was purchased from Chevron and Unocal with Measure A funds to preserve the land as open space and wildlife habitat. The Puente Hills Landfill Native Habitat Preservation Authority, a joint-powers agency whose members include the City of Whittier, County of Los Angeles, Los Angeles County Sanitation District, and Hacienda Heights Improvement Association, currently manages the land for the City. Residential and commercial developments surround the oil field on all sides.



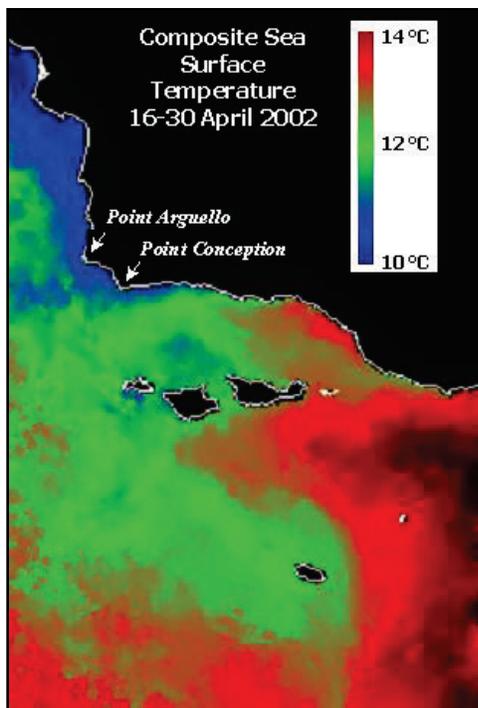
As proposed, the fully developed Project will consist of wells, oil processing, a gas plant, pipelines, and oil loading facilities. The facilities will be physically within the Whittier Main Field on an approximately 6.9-acre site used for drilling, production, and processing oil and gas. Trucks will transport the oil from the site to an oil terminal for ultimate delivery to local Los Angeles area refineries during the exploratory phase. A pipeline would be built for the production phase of the Project. The main environmental issues associated with this project were air quality, impacts to biological resources, traffic, noise, and risk of upset and hazardous materials. One of the unique aspects of this project is its location within a habitat preserve. This required a very thorough evaluation of the impacts of oil and gas development on the local habitat and wildlife as well

as recreational issues. Also since commercial and residential development surround the site, the environmental analysis necessarily addressed the unique issues of risk of upset and health risk associated with oil and gas development projects. MRS worked closely with the City, Puente Hills Landfill Native Habitat Preservation Authority, and local neighborhood associations in preparing the EIR.

VENOCO PAREDON PROJECT EIR

CITY OF CARPINTERIA

MRS prepared an EIR that assessed the impacts of the Paredon Project proposed by Venoco Inc. in Carpinteria. Venoco proposed to develop new oil and gas reserves from their existing Carpinteria Oil and Gas Processing Facility. The Project included drilling and exploration well and testing production through temporary facilities. If this exploratory drilling confirmed the commercial viability of development, Venoco proposed installation of permanent drilling facilities and modifications to their existing facilities. These modifications included drilling as many as 35 wells from a drilling pad on the existing facilities, producing up to 11,000 barrels of oil per day and 22 million standard cubic feet of gas per day from the new wells, and shipping up to 11,000 barrels of oil per day through existing pipelines.



For this EIR, MRS examined several alternatives to the Project, including drilling from existing offshore and onshore locations and drilling with a less powerful short rig. MRS also scrutinized impacts of the Project and potential impacts of alternatives to the Project.

TRANQUILLON RIDGE PROJECT EIR

CLIENT: COUNTY OF SANTA BARBARA



This project was actually a combination of “projects” that included extended reach drilling from a platform in Federal waters to develop a State Tidelands Lease that would extend the life of the platform and the onshore oil and gas processing facilities near Lompoc. This EIR involved a wide range of alternatives for oil development, pipeline replacement, processing facility location, and drill mud/cuttings disposal. This project is particularly relevant to the Chevron Tank Farm Restoration and Redevelopment Project since it required a number of different actions from different regulatory bodies such as the Santa Barbara

County, the California State Lands Commission, the California Coastal Commission, and the Santa Barbara County Air Pollution Control District. These governmental agencies had to be satisfied with the adequacy of the environmental document to take their permitting actions, somewhat similar to the complexities of this project.

The MRS team was instrumental in developing the oil and gas production estimates for the proposed project and in assessing the expected remaining life of the existing facilities. Data from similar development projects and oil fields were used to construct the estimated life of the proposed project. Information from previous EIR and production forecasts from the Minerals Management Service and the California State Lands Commission were used to estimate a range of years for the expected remaining life of the platform and onshore oil and gas processing facility. Monitoring reports were used to estimate the remaining life of the oil, gas and produced water pipelines. The result of this analysis was an estimated range of when the existing facilities would reach the end of their economic life. These data were then combined with the production forecast for the proposed project to estimate the potential for an extension of life of the facilities. The analysis showed that the proposed project would extend the expected life of the various facilities by as much as 20 years. Therefore, the Tranquillon Ridge Project EIR also evaluated the environmental impacts associated with an extension of life.



CAJON/EPTC PIPELINE SUPPLEMENTAL EIR/EIS

CLIENT: EDISON PIPELINE AND TERMINAL COMPANY

In Southern California, a group of companies proposed building a 140-mile crude oil pipeline that would cross Federal lands controlled by the Bureau of Land Management (BLM) and pass through some of the most densely populated areas of the Los Angeles Basin. In some of the areas crossed by the proposed pipeline, a number of rare and endangered species would have been impacted. In addition, there was strong public opposition to the pipeline from residents in the Los Angeles Basin.

MRS staff was responsible for preparing a Supplemental EIS/EIR for the proposed pipeline project. We prepared a comprehensive evaluation of the environmental and socioeconomic impacts associated with the construction and operation of the proposed crude oil pipeline. Given the high level of public resistance to the pipeline project, MRS staff met with the local communities along the pipeline route to assure them that all of their concerns about the pipeline project would be addressed. Because the route of the pipeline passed through minority and disadvantaged communities and in response to President Clinton's Executive Order requiring that environmental justice issues be addressed by all Federal agencies, we developed an innovative approach for evaluating the impacts of the project on minority and low income populations. MRS Staff worked with Federal, State, and Local agencies, the Applicant, and the affected communities to develop an alternative route for the pipeline that would avoid most of the minority and low income populations.

U.S. COAST GUARD, GULF OF MEXICO – DEEPWATER PORTS AND ONSHORE TERMINAL STORAGE EIS

CLIENT: THE UNITED STATES COAST GUARD

MRS staff, under contract to the U.S. Coast Guard, prepared EISs for applications by LOOP, Inc., and Seadock, Inc., for large deepwater ports and related onshore terminal storage and pipeline facilities located along the Gulf of Mexico. The proposed port facilities for these major projects were some 20 miles offshore in waters 100 feet deep—one off the Louisiana coast, the other off the Texas coast. Our investigations included the maneuvering characteristics of VLCCs (very large crude carriers), alternative SPM (single point mooring) designs, pumping platforms, offshore and onshore pipelines, and terminal storage facilities. One of the latter consisted of a steel tank farm, while the other was underground storage in a cavern leached in a salt dome. Our studies included examination of the physical, biotic, and human environments and the potential impacts to those environments as a result of the construction and operation of the projects. MRS staff made special studies of the potential risk of oil spills and of the potential regional land use and economic impacts associated with refinery and petrochemical developments that could result from each deepwater port. Each EIS was some 1,400 pages in length with a 50-page Executive Summary.

LNG PIPELINE AND STORAGE TERMINALS ALTERNATIVES EIR

CLIENT: THE PUBLIC SERVICE ELECTRIC AND GAS COMPANY OF NEW JERSEY

For the Public Service Electric and Gas Company, New Jersey, MRS staff prepared the EIR on a proposed liquefied natural gas (LNG) storage and pipeline project in coastal New York and New Jersey. We acquired baseline data on the natural and socioeconomic resources potentially affected by proposed and alternative LNG pipeline and terminal projects at sites along Delaware Bay, the Delaware River,

interior New Jersey, and Arthur Kill. Using these baseline data in conjunction with the description of alternative project engineering designs, MRS staff described the potential impacts of the alternatives on all categories of receptors, including water quality and terrestrial biota, and identified mitigating measures potentially applicable to the proposed action. A special alternative analysis was prepared as part of this study to examine in detail a number of alternative routes and terminal sites to the proposed pipeline crossing of the Arthur Kill.

POINT CONCEPTION LNG IMPORT TERMINAL FACILITY EIR

CLIENT: CALIFORNIA PUBLIC UTILITIES COMMISSION

For the California Public Utilities Commission, MRS staff prepared an EIR for proposed LNG import terminal facilities at a remote site in Point Conception approximately 40 miles west of Santa Barbara. The proposed project would have received large tankers carrying LNG, unload and temporarily store the LNG in massive insulated tanks, re-gasify the liquid, and transmit it in a 34-inch natural gas pipeline 112 miles to existing gas company trunk pipelines.

Siting such a major industrial facility in an area presently used for ranching, recreational purposes, and low density residential development necessarily involves significant environmental impacts. The study evaluated a broad range of impacts involving air and water quality, geoseismic factors, marine and terrestrial biology, land use, visual aspects, socioeconomics, induced growth, cultural resources, transportation impacts, and energy use. MRS staff conducted special studies on important issues of safety and reliability of the project. MRS staff also coordinated related studies performed by other contractors on marine traffic, facility security and safeguards, and energy alternatives to the project. A number of potential mitigating measures were identified and evaluated for each of the significant impacts.

EXXON SANTA YNEZ UNIT EXPANSION PROJECT SUPPLEMENTAL EIR

CLIENT: COUNTY OF SANTA BARBARA

MRS staff prepared a Supplemental EIR for Exxon's Santa Ynez Unit (SYU) Project. The SYU Project included two new offshore platforms, onshore oil and gas processing facilities, a marine terminal, and associated pipelines. The Supplemental EIR assessed the impacts due to many significant project changes which Exxon had proposed, addressing issue areas such as air quality, geology, surface and groundwater, cultural resources, terrestrial, freshwater and marine biology, socioeconomics, system safety and reliability, physical oceanography, and marine water quality. We also analyzed cumulative oil and gas development impacts and mitigation measures in the Supplemental EIR.

MCI/WORLDCOM FIBER OPTIC CABLE PROJECT EIR

CLIENT: THE COUNTY OF SAN LUIS OBISPO

MRS staff teamed with the Morro Group to prepare an EIR evaluating the installation of five trans-oceanic fiber optic cables and a cable landing in the County of San Luis Obispo. MRS staff was responsible for the preparation of a detailed project description, the development and evaluation of alternatives (including alternative installation technologies and cable routes), the air quality and marine cultural resources sections of the EIR, and managed all offshore issue areas. The EIR evaluated a variety of cable routes to avoid impacts to sensitive hard bottom habitat, installation technologies to avoid potential conflicts with commercial fishing, and cable landing locations to minimize recreational and biological impacts.

POINT ARGUELLO FIELD PROJECT EIR/EIS

CLIENT: THE COUNTY OF SANTA BARBARA

For the County of Santa Barbara and a Joint Review Panel, MRS staff assessed the environmental impacts of the proposed Chevron/Texaco onshore and offshore oil and gas development for the Point Arguello Field in the Southern Santa Maria Basin. This joint EIR/EIS included three offshore platforms, an onshore oil and gas processing facility near Gaviota, and a system of consolidated offshore and onshore pipelines to carry the produced oil and gas from the platforms to the processing facility. The study also evaluated a number of project alternatives and included an onshore/offshore area study.

CEQA SUPPORT

CLIENT: COUNTY OF SANTA BARBARA ENERGY DIVISION

MRS staff has supported the County of Santa Barbara Energy Division with contributions to a large number of CEQA documents. Two examples of recent projects are as follows:

A Supplemental EIR for modifications associated with the Unocal Point Pedernales Field. Most of this work has been focused on proposed changes to the Heater Separation and Pumping (HS&P) facility and the consolidation of gas processing facilities in northern Santa Barbara County.

A Supplemental EIR for the Mariposa Pipeline Project, a short pipeline proposed to transport oil directly from the Point Arguello oil and gas processing facility at Gaviota directly into the All American Pipeline system. Primary issues in addressed in this analysis were system safety and air quality. A fire safety analysis was also conducted as part of the assignment.

POINT PEDERNALES FIELD PROJECT EIR/EIS

CLIENT: THE COUNTY OF SANTA BARBARA

For the County of Santa Barbara and a Joint Review Panel including the U.S. Minerals Management Service (MMS), California State Lands Commission, California Coastal Commission, and the California Office of Offshore Development, MRS staff assessed the environmental impacts of the Union/Exxon offshore and onshore oil and gas development of the Point Pedernales Field in the Central Santa Maria Basin. This EIR/EIS included the analysis of:

- Two offshore oil and gas platforms, one by Union Oil, and the other by Exxon;
- Onshore heating, dehydration, and pumping facility at Lompoc;
- Installation of modifications to an existing refinery at Santa Maria;
- Associated pipeline systems;
- The future development of four platforms in the Santa Maria Basin area; and
- An onshore area study scenario including several options for future oil gas processing, transportation, and distribution in the project area.

The issues that were addressed in accordance with the National Environmental Policy Act (NEPA) and CEQA requirements included air quality, meteorology, geology, ground water, surface water, terrestrial and freshwater biology, marine biology, marine water quality, commercial fishing, cultural resources,

noise, visual impacts, socioeconomics, other uses including recreation and traffic, and system safety and reliability. The work was organized and carried out under the direction of a core team of MRS staff specialists and various subcontractors and consultants. The study included consideration of existing environmental conditions, impacts of the proposed project, potential mitigation measures, cumulative impacts, and the impacts of alternatives to the project.

OIL TRANSPORTATION ECONOMIC ANALYSIS

CLIENT: COUNTY OF SANTA BARBARA ENERGY DIVISION

MRS staff began the study with the development of projections of product requirements and crude oil supply as well as definition of volumes and quality characteristics of future Outer Continental Shelf (OCS) crude production in central California. The next task was the determination of the volume of OCS crude that can be refined in California with minor refinery modifications as well as retrofitting. Estimates of the investment and operating costs for these refineries were then developed.

The analysis also addressed the issue of a central upgrader and the maximum volume of upgraded OCS crude oil that could be accepted by California refineries. The volume of OCS crude oil which could be accepted by out-of-state refineries on the Gulf Coast and in Washington was also analyzed. Appropriate pipelines, tanker, and rail costs were also evaluated.

Specific transportation and scenarios for the economic analysis were developed and the results reviewed with the County environmental contractor. Additional areas of study included translating the economic analysis of alternative transportation scenarios into revised regulatory criteria and the evaluation procedures applicable to individual operators.

AUDITING AND ASSESSMENT OF PETROLEUM FACILITIES

The majority of MRS staff members were employees of ADL which was widely acknowledged as the leader in environmental, health, and safety auditing. MRS staff was part of the process safety and risk management group at ADL. The MRS staff left ADL to start a more focused practice in the areas of process safety management and risk, and environmental impact assessments. MRS staff works for both governmental agencies and industry in developing and evaluating safety management programs.

MRS staff has assisted some of the world's largest petroleum companies in the development of their environmental, health, and safety auditing and management programs. We have assisted these companies on a variety of assignments, including designing audit programs, participating on audits, conducting audit training, developing audit guides, and critiquing established audit programs. Selected examples of projects that MRS staff has worked on are presented below.

MRS staff served as one of the managers for a 10-month program to perform an independent assessment of the Trans Alaska Pipeline System (TAPS) and the Alyeska Pipeline Service Company. The purpose of the assessment was to identify any issue that could compromise the operational integrity of TAPS, and to provide baseline information for implementing the Alyeska Integrity Management System (AIMS). The assessment was carried out on an accelerated schedule and was completed in two phases. The assessment covered compliance with federal, state, and local environmental, health, and safety regulations, grants, permits, Alyeska policies and procedures, and industry standards and operational integrity issues along the 800-mile pipeline from the Alaskan North Slope to the Port of Valdez, Alaska. Reports were generated based on information gathered by the assessment teams during their field work. Presentations of the interim and final reports were made to the TAPS Owner Companies, Alyeska management, and appropriate regulatory agencies. The assessment included a full evaluation of the TAPS process safety management system including mechanical integrity and equipment reliability.

For a major Canadian oil and gas producer in Alberta involved in drilling operations and product distribution by pipeline, MRS staff was involved in an environmental, health, and safety audits of their exploration and production facilities. The purpose of these audits was to determine the facilities' compliance status and to identify potential environmental, health, and safety risks.

For Arco Alaska, MRS staff participated in a series of Process Safety Management Compliance Audits for their North Slope facilities. Three production facilities were covered including the Lisburne Production Center, the Compressed Gas Facility, and the Kuparuk Field. Areas of responsibility for these audits included Mechanical Integrity, Contractors, Incident Investigation, Management of Change and Process Hazards Analysis.

For one of the largest independent oil and gas companies in the United States, MRS staff conducted an environmental audit of one of its division's onshore and offshore exploration and production facilities. The purpose of the audit was to determine compliance with environmental laws and regulations and company policies and procedures.

For a major US oil company, MRS staff was involved in conducting a process safety management audit of a number of their refineries. The audit included a full evaluation of the mechanical integrity program at

each of the refineries. The purpose of these audits was to determine the facilities' compliance status and to identify potential environmental, health, and safety risks.

For Contra Costa County MRS staff managed a compressive safety evaluation of the Tosco Avon Refinery. This assessment involved a review of the safety management systems, human factors, and safety culture. The safety assessment was conducted using an open public process that included a number of public workshops on the scope of work and the findings of the safety assessment.

For Contra Costa County MRS staff managed a comprehensive safety evaluation of the General Chemical Richmond Works Facility. This assessment involved a review of the safety management systems, human factors, and safety culture. The safety assessment was conducted using an open public process that included a number of public workshops on the scope of work and the findings of the safety assessment.

For the Chevron Richmond Refinery, a staffing evaluation was conducted that addressed the impacts of staffing changes at the refinery on safety. The project involved interviewing more than 100 staff members and reviewing numerous documents and conducting field observations. The team worked closely with the refinery management staff, Union representatives, and the public. A report was generated that detailed a set of action plans and methods for determining how to assess the impact of staffing changes on overall facility safety. A presentation was given to the Richmond City Council as part of this project.

For a major independent oil company, MRS staff conducted comprehensive environmental audits at refineries in Kentucky and Minnesota. These audits included assessment of Leak Detection and Repair programs (NSPS, NESHAP and HON), Prevention of Significant Deterioration (PSD), and Title V permitting.

For a major refinery in the U.S. Virgin Islands, MRS staff participated in a comprehensive audit of air pollution control programs, requested by the owner to evaluate the degree of compliance with the emerging regulations pursuant to the 1990 Clean Air Act Amendments. The scope of the audit included Inspection and Maintenance (I&M) program for fugitive emissions.

PROCESS SAFETY AND RISK MANAGEMENT

MRS staff have been involved in a number of landmark safety and risk projects that have established the methods and data used by industry at large. MRS staff have been routinely called upon by owners and operators as well as regulators of hazardous processes to assist them in solving operational and safety problems, in investigating major accidents, and in setting up management systems to improve safety.

The depth and breadth of the MRS staff expertise and our credentials within the chemical process industry are exemplified by the books in which MRS staff has been key authors. These books include *Guidelines for the Technical Management for Chemical Process Safety* and *Guidelines for the Safe Storage and Handling of High Toxic Hazard Materials*. MRS staff also assisted Thompson Publishing Group in the preparation of the *Risk Management Program Handbook and Compliance Manual*.

MRS staff has performed risk analysis studies for a large number of petroleum clients and local governments covering a broad range of needs and activities. The objectives of these studies have been to assess risk in terms of potential impacts to plant personnel and offsite communities, impacts to normal operations (business interruption); and to assist in the protection of assets. Some examples of our work are as follows:

MRS staff conducted a risk analysis on the alkylation unit at a Los Angeles refinery. This study was requested by Ultramar Wilmington Refinery to investigate the relative degree of risk associated with alkylation processes involving hydrogen fluoride (HF) and sulfuric acid (H₂SO₄) catalysts. The study provided to Ultramar with a comparative summary of the two alkylation processes based on the risk attributable to accidental releases from the processes. The study included operation, re-generation, and transportation of HF and sulfuric acid utilizing risk analysis techniques. The project involved developing frequency analysis, demographics, and process specific release scenarios.

MRS staff conducted Process Hazards Analysis on the North Slope of Alaska for a wide range of oil and gas facilities including well pads, gathering centers, utilities and gas and oil production facilities. Involved leading numerous Hazard and Operability Studies (HAZOPs) and developing an Occupational Safety & Health Administration (OSHA) compliant Process Hazard Analysis (PHA) reports and hazard analysis approach. The work has been conducted both at Prudhoe Bay and Milke Point.

For a U.S. refinery, MRS staff performed a critical task analyses on operating and maintenance procedures. We developed a standard format to document procedures by task, responsibility, deviations, consequences, and precautions required to perform the task safely. Procedures were analyzed and documented in a tabular form to facilitate training and to provide a convenient reference.

For the County of San Luis Obispo, we are under contract to assist Environmental Health Services with the implementation of the California Accidental Release Prevention Program. This contract involves reviewing the databases of facilities with regulated substances, preparing RMP request letters, developing guidelines for RMP preparation, performing RMP completeness reviews and evaluations.

For two refineries of a U.S. based petroleum company, MRS staff conducted assessments of their compliance with API RP 750 and developed a work plan specific to each location to address the deficient areas. The work plan also included the level of effort in terms of manpower and skills needed to bring each refinery into compliance and to maintain the program at that level.

For a large refinery, MRS staff performed a hazard and risk analysis for an alkylation process unit that uses liquefied hydrogen fluoride (HF) as the catalyst. The analysis focused on potential loss-of-containment accidents associated with the receipt, off-loading of tank cars and storage of HF, HF alkylation reactors and processing equipment, and the storage and loading of spent acid. The risks presented to workers in the refinery and to persons off-site were calculated, and the annual probabilities of occurrence for each event were established through fault tree analysis. Practical risk control options were identified and the risk reduction potentials were evaluated. The client implemented several of our recommendations, including installation of a remotely operated shut-off valve mounted on the HF storage tank.

MRS staff completed a project for Unocal to integrate a detailed design package prepared by the Ralph M. Parsons Company for a diesel hydrotreater project and sulfur plant into existing facility programs for managing process risks.

Under contract to the County of Santa Barbara, California, MRS staff conducted a detailed risk assessment of the proposed Chevron development in the Santa Barbara Channel. The project consisted of three oil production platforms in 600 to 800 feet of water, gathering lines, subsea main oil and gas pipelines, shoreside upgrading of the very sour crude at the nearby Gaviota, California processing facility, onshore pipelines and tanker loading facilities. Impacts of particular concern to this study included public risks and risk of oil pollution.

MRS staff has prepared Risk Management and Prevention Programs (RMPPs) for more than forty facilities in California. Facilities for which we have prepared RMPPs include:

- A large refinery;
- Chemical manufacturing plants;
- Wastewater treatment facilities;
- Municipal water treatment facilities;
- Electroplating companies; and
- Dairies and food storage plants with refrigeration systems.

For a Joint Powers Agreement established by seven water and wastewater agencies in Contra Costa County, MRS staff assisted in preparing RMPPs for 16 facilities and to develop PSM programs for 13 facilities concurrently. The agencies involved were City of Antioch, City of Martinez, Contra Costa Water District, County Sanitation District, East Bay Municipal Utility District, Southern California Water Company, and West County Water District. As part of this complex assignment audits and HAZOPs were conducted for each facility. Also, we developed the safety analyses for engineered systems; and provided recommendations to enhance the management systems used by each agency to meet the requirements of the California Health and Safety Code and the OSHA PSM standard.

For a major oil company, MRS staff developed RMPPs for eight units of their Southern California refinery. This was a major undertaking involving HAZOP reviews, consequence modeling, fault tree analysis, a review of past accidents and incidents, development of a mechanical integrity program. The results were documented in the RMPP documents submitted to the Administering Agency.

For the County of Santa Barbara Fire Department, MRS staff conducted a detailed QRA of an offshore oil and gas production platform and an onshore oil and gas processing facility. The project included a complete HAZOP of the facilities and a detailed review of the safety management systems including mechanical integrity. The results of these studies were then used to develop a detailed risk assessment of the operations to determine the level of public risk. Mitigation measures were developed that allowed the level of public risk from the facility to be reduce to acceptable levels. All of the mitigation measures were adopted by the operator of the facility.

For the Alaska Department of Environmental Conservation and Kodiak Island in Alaska, MRS staff conducted a toxic and flammable material hazards analysis and emergency response capability study. The study involved developing an enhanced Geographic Imaging System (GIS) database, a risk prioritization scheme and risk ranking for both fixed facilities and transportation routes, and a GIS mapping system. MRS staff examined transportation routes along with potential impacts to environmentally sensitive areas and sensitive populations such as schools and daycare facilities.

WORKING WITH LOCAL GOVERNMENTAL AGENCIES ON SAFETY ISSUES

MRS staff has a long history of working with local governmental agencies in California to assist with the management of safety and risk from facilities that handle acutely hazardous materials. For more than 20 years, MRS staff has been working with local governmental agencies to ensure that facilities handling acutely hazardous materials are designed, constructed, and operated in a manner that meets all applicable regulations and is protective of the local community.

Sixty percent of the work that MRS does is for local governments in California. We have worked for Cities and Counties on large industrial projects. The work has involved permitting, design review, environmental and safety assessments, and compliance audits. All of the work that MRS does for local agencies involves interactions with the public. MRS has extensive experience in conducting public workshops on technical issues such as PSM and QRAs. Some selected qualifications of MRS staff on local government projects are presented below.

For Contra Costa County, MRS staff conducted a safety evaluation of the Tosco Avon Refinery (now the Golden Eagle Refinery) in Martinez, California. A team of four senior staff conducted the assessment using a combination of interviews, document reviews, and site inspections. The team worked with County and refinery staff as well as the concerned public to develop an acceptable scope and approach to the study. Regular meetings were held with all stakeholders to obtain input on the assessment and receive feedback on the progress of the study. MRS staff developed a set of findings and recommendations based upon the data collected during the two weeks spent onsite at the refinery. The findings and recommendations were made available to all stakeholders, including the public, for review and comment. Based upon the comments received, the assessment report was finalized and submitted to the Contra Costa County Board of Supervisors.

For Contra Costa County, MRS staff conducted a safety evaluation of the Tosco Avon Refinery (now the Golden Eagle Refinery) in Martinez, California. A team of four senior staff conducted the assessment using a combination of interviews, document reviews, and site inspections. The assessment focused on safety management systems, human factors and safety culture. The team worked with County and refinery staff as well as the concerned public to develop an acceptable scope and approach to the study. Regular meetings were held with all stakeholders to obtain input on the assessment and receive feedback on the progress of the study. MRS staff developed a set of findings and recommendations based upon the data collected during the two weeks spent onsite at the refinery. The findings and recommendations were made available to all stakeholders, including the public, for review and comment. Based upon the comments received, the assessment report was finalized and submitted to the Contra Costa County Board of Supervisors.

For Contra Costa County and the City of Richmond, MRS staff conducted a safety evaluation of the General Chemical Richmond Works facility in Richmond, California. A team of three senior staff conducted the assessment using a combination of interviews, document reviews, and site inspections. The assessment focused on safety management systems, human factors and safety culture. The team worked with County and facility staff as well as the concerned public to develop an acceptable scope and approach to the study. Regular meetings were held with all stakeholders to obtain input on the assessment and receive feedback on the progress of the study. MRS staff developed a set of findings and recommendations based upon the data collected during the two weeks spent onsite at the refinery. The findings and recommendations were made available to all stakeholders, including the public, for review and comment. Based upon the comments received, the assessment report was finalized and submitted to the Contra Costa County Board of Supervisors and the City of Richmond City Council.

For the County of Santa Barbara Fire Department, MRS staff conducted a risk assessment of an offshore oil and gas production platform and an onshore oil and gas processing facility. As part of this project MRS conducted a number of workshops that were used to educate the public on the content of a risk assessment. Public workshops were also held to solicit input on the overall scope of the project. MRS also held a number of workshops with the public to review the draft report and to obtain comments. The report

was released for a 30-day public comment period. As part of the final report, all comments received on the draft report were addressed in writing. The final report was presented to the Board of Supervisors in a public meeting.

For the County of Santa Barbara, MRS staff conducted an audit of an oil and gas processing facilities safety management systems. The review included the mechanical integrity program as well as reliability issues at the facility. As part of this project a number of workshops were held with the public to address the scope of the study, the methodologies used in the study, and the results of the study. Comments on the draft document were solicited from the public, and all comments were addressed in writing as part of the final document. The final report was presented to the Board of Supervisors in a public meeting.

For the County of San Luis Obispo, we have assisted Environmental Health Services with the implementation of the California Accidental Release Prevention Program. This contract involves reviewing the databases of facilities with regulated substances, preparing RMP request letters, developing guidelines for RMP preparation, performing RMP completeness reviews and evaluations.

MRS staff has been actively involved in many aspects of air pollution control for more than 20 years. Our experience includes:

- Air quality impact assessments involving dispersion modeling;
- Quantification and acquisition of air emissions offsets;
- Facility audits to ensure compliance with air pollution rules and regulations; and
- Development, evaluation, and application of air pollution control technologies.

Selected projects not previously discussed are summarized here:

CREW AND SUPPLY BOAT RECIPROCATING ENGINE NO_x CONTROL

CLIENT: THE COUNTY OF SANTA BARBARA APCD

In a field demonstration and testing program for the County of Santa Barbara APCD, MRS staff measured the effectiveness of several NO_x (nitrogen oxide) control methods towards achieving a 40 percent reduction in NO_x emissions from reciprocating engines in crew workboats serving offshore platforms. Cost-effective measures to reduce NO_x emissions by up to 60 percent were proven during at-sea testing; detailed measurements of the duty cycle of the support vessels were also taken.

OFFSHORE PLATFORM GAS TURBINE NO_x CONTROL

CLIENT: THE COUNTY OF SANTA BARBARA APCD

MRS staff managed the Offshore Gas Turbine NO_x Control Development Program for the County of Santa Barbara APCD. This program demonstrated advanced NO_x control technology for gas turbines used in offshore oil and gas operations. The role of MRS staff in these assignments included program management and review, technical assistance and analysis, scheduling and review of progress, contractor selection, and program publicity.

FEASIBILITY OF RETROFIT NO_x CONTROLS FOR AN OFFSHORE OIL PLATFORM

CLIENT: CHEVRON

MRS staff conducted a feasibility study of retrofit measures to reduce NO_x emissions from Chevron's offshore oil production platform, Hermosa. This assignment considered in detail the modifications required to install selective catalytic reduction (SCR), supplemental grid power, and full utility electrification. MRS staff also determined life cycle costs for these options.

AIR QUALITY MODELING

MRS staff has top expertise in various air quality modeling and analyses techniques. These include release modeling and dispersion related to acute and chronic health risks, and air quality modeling related to air impacts associated with the construction and operational phases of projects. Models used include public domain EPA models and proprietary models, such as SuperChems by ioMosaic, as well as customized in-house models for specialized applications. Air quality models that are routinely applied by MRS include the use of several meteorological models, including the Mesoscale Meteorological Model

and CALMET, and a wide variety of EPA and proprietary dispersion models. Dispersion models that have been used include the Urban Airshed Model (UAM), CALPUFF, CALGRID, AERMOD, Complex Terrain Dispersion Model (CTDM and CTDM+), Rough Terrain Dispersion Model (RTDM), Offshore and Coastal Dispersion Model (OCD), Industrial Source Complex Short Term (ISCST3) model, and many others.

CHINESE NATIONAL OFFSHORE OIL COMPANY AND ROYAL DUTCH SHELL

CLIENT: CONSORTIUM INCLUDING THE CHINESE NATIONAL OFFSHORE OIL COMPANY AND ROYAL DUTCH SHELL

For a consortium of companies including the Chinese National Offshore Oil Company and Royal Dutch Shell, MRS prepared an air quality study of the Pearl River Delta region of Southern China. This analysis involved the preparation of emission inventories (criteria, hazardous and greenhouse gas pollutants) for petrochemical development projects in Guangdong Province in Southern China. A regional emission inventory was also developed for Guangdong Province, the Pearl River Delta and Hong Kong. Regional meteorological modeling was conducted using the MM5 model utilizing local meteorological data and NCEP/NCAR Reanalysis data. Air quality modeling was conducted for criteria pollutants, hazardous air pollutants, and secondary photochemical and particulate constituents using the Urban Airshed Model (UAM). Modeling results were compared to World Bank and Peoples Republic of China (PRC) standards for air quality impacts and greenhouse gas emissions.

EMISSION INVENTORY

CLIENT: EXXON MOBIL, BRITISH PETROLEUM, AND STATOIL CONSORTIUM

MRS recently completed an emission inventory of both criteria pollutant and greenhouse gases emissions for a proposed West African oil development project 90 kilometers off the coast of Angola. This project included a wide variety of emission sources associated with the construction and operation of offshore crude oil production and processing facilities, all of which would be located on floating platforms and production vessels. As part of this project, MRS identified numerous areas where energy use and emissions could be significantly reduced. The analysis included the preparation of a verification protocol that will be implemented during the remaining design, drilling, construction and operation phases of the project. An air quality modeling analysis was also prepared to review potential impacts associated with project construction, operations, upset flaring and crude oil tankering.

PERMITTING OF A HYDROGEN PLANT IN CARSON CALIFORNIA

CLIENT: AIR PRODUCTS AND CHEMICALS

MRS staff was asked by Air Products and Chemicals to develop and implement a permitting strategy that would allow the construction and operation of a hydrogen plant in Carson, California, within an eight month time frame. MRS staff worked with the Client to develop a parallel path permitting strategy that required a number of permit applications to be submitted at the same time, and to track all of the permitting requirements. The key to this process was assuring that all the permit applications were consistent, and that the CEQA lead agency was the driver on the overall permit schedule. MRS staff first focused on obtaining all the discretionary permits, and then worked with other permitting agencies to obtain the administrative permits that were required for construction. The major permits that were required for the project included land use, air, water, fire, and right-of way permits.

ENVIRONMENTAL PERMITTING SUPPORT FOR ABANDONMENT OF FIVE OFFSHORE OIL PLATFORMS

CLIENT: CHEVRON

In order to provide Chevron with the scientific data needed to demonstrate the benefits to the environment from a rigs-to-reef program, MRS staff prepared an environmental assessment that compared the environmental impacts of full abandonment versus abandonment in place. Field studies were conducted to evaluate the health and diversity of the marine habitat that exists around the platforms as compared to the habitat around natural reefs. MRS staff also assessed the environmental impacts associated with various abandonment options. The impact assessment focused on impacts to air quality, marine biology, marine water quality, recreational and commercial fishing, and marine traffic and transportation. These assessments were used to support a rigs-to-reef program in California by showing that these types of programs reduce abandonment impacts to the environment, and enhance the overall marine ecosystem by increasing the available reef habitat.

MRS staff also helped Chevron develop and implement a public relations campaign, which focused on developing support from various public interest groups for a rigs-to-reef program. The public relations campaign included the development of a public opinion poll, as well as a public awareness campaign. MRS staff also assisted Chevron with their governmental agency interaction program, which focused on building support within various Federal, State, and Local governmental agencies for a rigs-to-reef program.

PERMITTING OF A COMBINED CYCLE POWER PLANT IN ELK HILLS, CALIFORNIA

CLIENT: ELK HILLS POWER

MRS staff was asked by Elk Hills Power (a joint venture between Sempra Energy and Occidental Energy Ventures) to assist in obtaining the necessary permits and licensing for a gas-fired combined cycle power plant to be located in the Elk Hills oil field. MRS staff worked with the Client to develop a parallel path permitting strategy that required a number of permit applications to be submitted at the same time, and to coordinate simultaneous review by several Local, State, and Federal agencies. MRS staff prepared the necessary application sections and provided expert witnesses that testified in hearings before the California Energy Commission in the areas of air quality, public health, hazardous materials, transportation, and alternatives.

As part of the project, MRS staff developed detailed operating curves to characterize emissions versus load for General Electric (GE) and Westinghouse Frame 7 turbines. These curves were used to establish emissions of toxic air contaminants during startup and low load conditions where turbine combustion performance is relatively poor. These emission profiles were used to conduct a health risk assessment to evaluate potential chronic and acute public health impacts associated with frequent facility startup and shutdown.

MRS staff also prepared detailed QRA to evaluate the transportation and storage of anhydrous ammonia. The transportation risk analysis was used to identify the optimum ammonia transportation route to the facility from a variety of suppliers.

MRS staff members have decades of experience in the management and performance of oceanographic research programs with a focus on providing Clients with quality products designed specifically for use in environmental decision making. We have a proven track record of repeatedly successful oceanographic studies. Our scientists' working understanding of the permit process is based on years of background in government and industry; they supplement this background with a broad awareness of fundamental ecological and oceanographic principles. MRS is equipped to perform a wide variety of offshore benthic sampling programs as well as the analysis of physical oceanographic data. We have a long history of computer applications resulting in the expertise to perform computer-intensive analyses encompassing data-management, statistics, marine geology, physical oceanography, marine acoustics, fluid dynamics, sediment-transport, modeling, and time-series analysis.

MONITORING OF LONG-TERM BIOLOGICAL RECOVERY IN PRINCE WILLIAM SOUND, ALASKA, AFTER THE EXXON VALDEZ OIL SPILL

CLIENT: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MRS is the prime contractor on this highly visible study being conducted for the U.S. Government to determine the extent of damage to intertidal biological communities in Prince William Sound, Alaska, that was caused by the Exxon Valdez oil spill. For over a decade, data have been collected at many intertidal sites within the Sound to assess damage and characterize the rate of recovery. Innovative analysis techniques have been developed to assess damage and recovery from oil spills, and to investigate the severity of impacts caused by various spill-cleanup measures. Much of this research has been published in peer-reviewed scientific journals. As part of this program, MRS staff developed an advanced grain-size analysis methodology that is capable of accurately resolving fine fractions within marine sediments. Recently, the monitoring program has evolved into a series of manipulative experiments to determine the exact mechanisms for oil-spill damage to sensitive intertidal organisms. In cooperation with scientists from the University of Washington, these field experiments are being conducted at sites within the Sound, and within the remote reaches of Kasitsna Bay, Alaska.

MARINE WATER AND SEDIMENT QUALITY MONITORING

CLIENT: CITY OF MORRO BAY

The City of Morro Bay has relied on MRS for all of its marine consulting work since July 1993. Most of this work involves extensive offshore monitoring of the City's wastewater discharge. Through MRS efforts, the City has been able to maintain a waiver from specific discharge requirements because MRS has been able to demonstrate an absence of impacts to the marine environment. The monitoring consists of quarterly water-quality surveys and annual benthic biological surveys in addition to intensive chemical scans of the effluent. MRS staff have also collected and analyzed sediment cores in Morro Bay to satisfy a U.S. Army Corps of Engineers pre-dredging permit requirement. Under the auspices of the Regional Water Quality Control Board, they have identified relict chromite mines with adjacent onshore watersheds as the source of an increasing sediment metal contamination offshore Morro Bay.

MONITORING DRILL-MUD DISCHARGES ASSOCIATED WITH FIBER-OPTIC CABLE BORES

CLIENT: THE COUNTY OF SAN LUIS OBISPO

MRS staff developed offshore monitoring techniques to identify and limit the release of drilling mud and other contaminants into the marine environment during directional drilling. The staff successfully applied these monitoring techniques during the prolonged installation of five underground conduits extending offshore from Montana de Oro State Park located near Morro Bay, California. These techniques have now become the standard and are required during directional drilling of all fiber-optic cable conduits offshore California. The technique involves the use of highly sensitive fluorometers and water-quality sensors that are continuously towed behind a survey vessel during drilling. Fluorescent dye is added to the drill-mud that is pumped downhole by the drilling rig located onshore. Even a small marine discharge of drill mud can be detected by this monitoring technique. This was repeatedly demonstrated by MRS staff during the monitoring at Montana de Oro State Park. MRS staff was able to pinpoint the location of the seafloor fracture immediately after the marine release of drill mud began. The total volume of drill-mud released was minimized by quickly stopping further drilling until fracture sealants could be applied downhole. In addition, divers were deployed directly over the fracture zone to quickly effect cleanup.

MRS staff was also responsible for writing all marine sections of an EIR for the installation of the five fiber optic cables at Montana de Oro State Park. MRS staff was responsible for assessing impacts to water quality, shoreline processes, commercial and recreational fisheries, marine traffic and the marine biology in the project area. Special topics of concern included the impacts caused by the installation of the cables in the nearshore and offshore environment, economic loss to commercial fishers caused by fishing exclusion and gear loss, and the impacts to sensitive hard-bottom species along specific cable alignments. Hard-bottom surveys using a remotely operated vehicle (ROV) were conducted to document the distribution of fragile coral species in the project area from the 30 to 125-m water depth.

CALIFORNIA MONITORING: ASSESSMENT OF LONG-TERM CHANGES IN BIOLOGICAL COMMUNITIES

CLIENT: MINERALS MANAGEMENT SERVICE

Program management and technical supervision was delegated to MRS for one of the largest programs funded by the Pacific OCS Regional Office of MMS. MRS staff served in program management roles on this high-visibility California Monitoring Program and provided overall technical analysis that culminated in a series of peer-reviewed, scientific publications. They were responsible for the collection and analysis of benthic hard-bottom epifaunal and soft-bottom infaunal data to determine if oil and gas platform discharges were detrimental to these communities. Also, a five year time series of current velocity, meteorology, and wave height data obtained from two long term moorings were analyzed to characterize a complex flow field with previously unseen coupling between winds and surface currents, and between bathymetry and bottom currents. Trajectory models were applied to predict likely depositional patterns of discharged drill muds and cuttings in the study region.

HARBOR AND OUTFALL MONITORING

CLIENT: MASSACHUSETTS WATER RESOURCE AUTHORITY

This project implemented the first phase of Massachusetts Water Resource Authority (MWRA's) long-term environmental monitoring plan for the future outfall that will be located in Massachusetts Bay. The purpose of this monitoring program was to provide baseline information so that future monitoring can verify compliance with the U.S. Environmental Protection Agency discharge permit and to assess the potential environmental impact of effluent discharged into Massachusetts Bay. In addition, this program

continued environmental monitoring of Boston Harbor to document changes in environmental quality following past improvements in wastewater treatment and sludge disposal. MRS's monitoring activities consisted principally of field surveys and laboratory analyses of the water column, benthos, fish, and shellfish and effluent for properties related to potential impacts.

EFFECT OF SEISMIC SURVEYS AND OIL AND GAS EXPLORATION ACTIVITIES ON THE FAUNA OF THE NORTHERN SECTOR OF THE CASPIAN SEA STUDY

CLIENT: KAZAKHSTAN CASPI SHELF (KAZAKHSTAN STATE OIL COMPANY), REPUBLIC OF KAZAKHSTAN

During offshore oil and gas exploration, geophysical surveys are typically performed to help locate oil and gas reserves. Surveys are conducted by reflecting acoustic energy off the sea floor then recording the reflections. Acoustic devices used to generate sound energy (e.g., explosives, air guns, water guns) can be harmful to marine life or to certain stages of the life cycle of marine organisms. In this project, MRS staff compared the potential adverse impacts of the various sound sources on the biological resources of the northern Caspian Sea. We conducted sound transmission and propagation modeling of sound from all possible sound sources for shallow, deep-water, and transitional zones in relation to different seasons and oceanographic conditions. MRS staff also conducted mapping of sensitive species based on field assessments to identify critical habitats (e.g., shallow-water spawning sites for the Caspian Sea sturgeon and pupping areas for the Caspian Sea seal) of fragile species in the Caspian Sea.

EFFECTS OF OCS SOUNDS ON MARINE MAMMALS STUDY

CLIENT: U.S. NAVY OCEAN SYSTEM CENTER, SAN DIEGO

This study, conducted in concert with the U.S. Navy Ocean System Center in San Diego, was one of the first studies to examine OCS sound effects on marine mammals. MRS staff monitored behavioral responses to sounds generated from vessels, offshore oil and gas platforms, seismic surveys, and activities associated with offshore oil and gas exploration and development to qualitatively describe altered behavior on migrating gray whales and pinnipeds offshore California. Playback experiments on gray whales and pinnipeds were also conducted offshore Alaska to determine the types of OCS sounds and sound frequencies that elicited adverse startle responses.

EFFECTS OF SOUNDS FROM A GEOPHYSICAL SURVEY DEVICE ON FISHING SUCCESS STUDY

CLIENT: MINERALS MANAGEMENT SERVICE

MRS staff conducted this study to determine the effects of geophysical survey sounds on the catchability of commercial fish species offshore central California. The study included literature searches and field studies. Literature searches focused on the effects of sound on fish behavior and on the characterization of sounds emitted from offshore geophysical surveys in the central California offshore environment. The literature reviews were followed by field investigations consisting of behavioral experiments on rockfish (*Sebastes*) and on the success of hook and line fishing in the presence of an operating geophysical (airgun) array. The sound source consisted of a towed 100-cubic inch airgun and hydrophones with trials conducted at 17 locations offshore central California. To establish ambient acoustical conditions in the study region, MRS staff utilized sound propagation models.

**ENVIRONMENTAL DESIGN CRITERIA FOR SEAWATER INTAKE PIPELINES
OFFSHORE SANTA BARBARA, CALIFORNIA STUDY**

CLIENT: THE CULTURED ABALONE, INC.

Near-shore environmental conditions were specified for exposed pipelines crossing the wave zone at Dos Pueblos Creek that resulted in a negative declaration for environmental impact. Engineering design criteria were established in support of the construction of an aquaculture facility that required the installation of three seawater intake pipelines. At the request of the California Coastal Commission (CCC) and the County of Santa Barbara, The Cultured Abalone, Inc. contracted MRS to combine probabilistic analyses with engineering risk assessments to set design current speeds and wave heights for computing associated design loads. Design wave heights were based on the application of site-specific bathymetry in a shoaling wave model such that orbital wave velocities and breaking wave loads could be accounted for in pipeline design. Field measurements of geotechnical properties were incorporated in sediment transport and foundation stability assessments to determine the amount of pipeline burial necessary to withstand loads from the design wave having a 25-year period.

MRS has extensive capabilities in computer analysis and graphic production. These capabilities produce exceptionally high-quality technical reports and documents from air dispersion modeling, noise and traffic modeling to mapping and GIS.

The capabilities include:

- Consequence modeling including dispersion, jet effects, thermal and explosion impacts of a wide range of material release scenarios for single and multi-component systems;
- GIS development utilizing ArcView and MapInfo software for producing base maps and detailed technical maps with large databases, aerial photographs, geological resources, three-dimensional terrain modeling, view-shed analysis, elevation, slope and aspect contouring, and pipeline elevation profile assessment and spill modeling;
- Noise impact measuring and modeling utilizing data-logging noise meters, octave band analyzers, and computer modeling of noise impacts related to construction and traffic.
- Computer Aided Design (CAD) capabilities utilizing AutoCAD software for producing and assessing piping and instrument diagrams, flow diagrams, and other CAD related drawings;
- Traffic flow analysis utilizing The Federal Highway Administration Highway Capacity Software (McTrans) for analyzing traffic impacts of construction and development projects; and
- Extensive computer resources including high-speed internet access, networking, color laser printing, E-sized color plotting, Adobe document production, and web page development and design.

All MRS projects utilize our computer expertise to varying degrees. For example, for the County of Santa Barbara and Venoco, Inc., Ellwood Onshore Processing Facility QRA, MRS staff conducted extensive scenario modeling for toxic impacts associated with hydrogen sulfide, thermal impacts associated with flame jets and fire balls, and overpressure analysis associated with explosions. For the County of San Luis Obispo, Guadalupe Oil Field Remediation and Abandonment EIR, MRS staff developed a detailed GIS system of the Guadalupe Dunes including more than 10,000 sampling points and extensive sampling results for each point that enabled an analysis of plume contours and locations as well as the ability to evaluate a range of project alternatives and their associated impacts. Also, as part of the QRA project, a GIS system was developed that enabled the accurate measuring of exposed populations and allowed for high quality report graphics detailing the potential impacts. Noise and traffic impacts assessments are used on a wide range of CEQA related projects.

SWCA Environmental Consultants

SWCA RELEVANT PROJECT EXPERIENCE

Hotel Projects

DeVincenzo General Plan Amendment/Development Plan EIR

SWCA was retained by the County of San Luis Obispo to prepare an EIR for the General Plan Amendment of 33 acres from Residential Rural to Recreation in the Coastal Zone, and for the proposed development plan for a 125-room hotel with restaurant, shops, and conference center facilities near the community of Avila Beach. The project review area includes approximately 151 acres on both sides of Avila Beach Drive.

Environmental review addressed in the EIR included: geologic hazards, grading and drainage, water supply, wastewater disposal, biological resources, cultural resources, visual resources, traffic and circulation and air quality. Key mitigation issues involved water supply from the transfer of State Water allocations and private wells; wastewater disposal by an on-site package plant treatment; drainage and visual impacts related to significant grading on steep, rocky slopes; and impacts to Coastal Commission wetlands. The Final EIR was completed in September 2004.

Beachfront Lodge and Conference Center EIR

SWCA was retained by the City of Grover Beach to prepare an EIR for the proposed Beachfront Lodge and Conference Center. The project was proposed at a beach-front lot at the west end of Grand Avenue, within Pismo State Park, and would require numerous entitlements, including zoning ordinance amendments, Local Coastal Program amendment, and a Coastal Development Permit. The project objective was to provide increased visitor-serving uses within the Coastal Zone and improve usability of the City's waterfront area through construction of a lodge and conference center and enhancement of existing State Park visitor facilities. Existing land uses consisted of a vacant dirt lot which was used as State Park overflow parking for equestrians and other large recreational vehicles. Therefore, the project also included replacement parking for large equestrian vehicles with trailers in an area of disturbed dune habitat south of Grand Avenue. Consistent with State regulations, the project was required to obtain a Leadership in Energy and Environmental Design (LEED) Silver certification.



Although the proposed visitor-serving land uses were generally well-suited to the project area and had been planned at this location for almost three decades, the sensitive context of the beachfront location resulted in increased potential for impacts on environmental resources. Aesthetic resources would potentially be affected due to the potential loss of scenic public views from US 101, removal of scenic dunes, and the visibility of excavated slopes, buildings and parked vehicles adjacent to the beach. Potential impacts to biological

resources included direct or indirect disturbances of potential Environmentally Sensitive Habitat Areas (ESHAs), impacts to central dune scrub habitat, potential sedimentation and pollution of Meadow Creek,

impacts to wetland vegetation, and impacts to habitat with potential to support special-status plants and animals. Noise and traffic associated with the project had the potential to affect nearby sensitive receptors, and the site was subject to risks of flooding from Meadow Creek and inundation as a result of wave run-up and sea level rise. SWCA calculated a conservative high still water elevation utilizing the mean high water line for the project location, and adding estimated worst case scenarios for sea level rise and wave run-up according to the USGS Coastal Vulnerability Assessment and data collected from NOAA. Although the project site had an elevation below the estimated high still water elevation, it was determined through field inspection and more than 100 GPS spot elevation measurements that the lowest point in the dune complex separating the project site from the Pacific Ocean was of sufficient height to deter worst case scenario levels of wave run-up and sea level rise.

This project had a high level of public participation and SWCA completed all noticing requirements under CEQA. Over 100 comment letters were received during the public review period of the Draft EIR, which were responded to both individually and through a series of Master Responses to address several equestrian-related issues that were repeatedly raised in numerous comment letters. The Final EIR went before the City of Grover Beach Planning Commission on July 21, 2011, which recommended the City Council approve the project. However, the Planning Commission also recommended that the proposed conference center be increased by 20 to 50 percent to provide a more substantial event space. In response to the comments received from the Planning Commission, the project applicant elected to make revisions to the project prior to moving the project and Final EIR forward to the City Council. Project revisions primarily involved separation and relocation of the conference center from the main lodge building to an adjacent location within the project site, and reconfiguration of the parking areas, swimming pool and outdoor landscaping and drainage basin areas to accommodate the new building reconfiguration. SWCA prepared a Revised Final EIR that analyzed the potential for additional or increased environmental impacts associated with these project revisions, including changes in hydrology and drainage, changed public views, relocation of a noise source within closer proximity to sensitive receptors, and alterations to internal parking and circulation. SWCA, in conjunction with the City, ultimately concluded that recirculation of the EIR was not necessary and the Revised Final EIR was certified by the Grover Beach City Council on March 5, 2012.

Kiessig (Sycamore Mineral Springs) Development Plan EIR

SWCA was retained by the County of San Luis Obispo to prepare an EIR for a proposal to expand the existing mineral springs resort by constructing 27, 2-unit cabins with individual spas for each unit. The expansion site is located directly across from the existing Sycamore Mineral Springs resort, on the north side of Avila Road and San Luis Obispo Creek. The expansion site is unique in that it is situated mostly within the 100-year flood plain of the San Luis Obispo and See Canyon Creeks. Issues analyzed included geology, soils and seismic hazards, water resources, flooding and drainage, biological resources, traffic and circulation, air quality, visual resources, archaeological resources, and agriculture.

Avila Beach Area Projects

Glen Ivy Resorts, Inc. (San Luis Bay Inn) Development Plan EIR

SWCA was retained by the County of San Luis Obispo to prepare a Supplemental EIR for a proposal to construct an 82-room, two-winged addition to the San Luis Bay Inn. The project site was adjacent to the existing Inn and, coupled with renovation of the existing facility, would result in a total number of 144 rooms upon completion of the addition. Issues analyzed included geologic and seismicity, water supply and wastewater disposal, visual resources, traffic, air quality, and archaeological resources.

San Miguelito Partners (Pirates Cove) Local Coastal Plan Amendment EIR

SWCA was retained by the County of San Luis Obispo to prepare an Expanded Initial Study (ExIS), and subsequently an EIR, for a Local Coastal Plan (LCP) amendment to extend the Avila Beach Urban Services Line (USL) to include portions of a 134-acre, five-parcel project site located in the Pirates Cove area of Avila Beach, California. After partial preparation of the ExIS, the County determined that the project would result in unavoidable adverse significant impacts and SWCA was retained to prepare an EIR. The objective of the project was to relocate the existing USL in order for four of the five parcels to receive urban water and wastewater disposal services from the Avila Beach Community Services District. Provision of water supply and wastewater disposal services would enable the applicant to construct four residences—one each on Parcels 1 through 4. Issues analyzed in the EIR included land use consistency; biological resources; cultural resources; aesthetics; drainage, erosion & sedimentation; and geology. The severity and nature of geologic hazards associated with an existing landslide (located up slope from the Cove, and downslope from proposed Lots 1 and 2) became a point of professional disagreement between the applicant's geologist and the County geologist and further evaluation of the landslide, and completion of the EIR, was halted at the applicant's request.

San Luis Bay Estates Phases 4, 5, and 6 Projects

Phases 4, 5, 6 Tract Map and Development Plan Subsequent EIR

SWCA was retained by the County of San Luis Obispo to prepare a Subsequent EIR for a proposal to subdivide a 561-acre parcel into 320 lots varying in size and type to create a multi-phase planned development project near Avila Beach. Of the lots, 286 were residential lots and the remaining 34 comprised private access roads and open space. The residential lots consisted of single-family lots, single-family planned development lots, and air space condominium lots. Issues analyzed included geologic hazards and site alteration, drainage, erosion, and sedimentation, water supply and wastewater disposal, biological resources, visual resources, traffic, air quality, noise, public services, and archaeological resources.

Phase 4 Mitigation Monitoring

SWCA was retained by Mid-Coast Land and BDC Development Corporation to monitor construction, post-construction and revegetation of Phase 4 and the Saddle Road Cut of a residential development. The project was broken down into six separate components over a 560 acre site. Environmental issues included minimizing oak tree removal and impacts, supervising oak tree trimming, protection of a heron rookery, ensuring compliance with complex visual resource mitigation measures through grade and slope checking, and ensuring proper installation and maintenance of sedimentation and erosion control measures. During construction, SWCA monitors located a previously unrecorded archaeological site which was promptly surveyed, recorded and relocated by a qualified archaeologist and Native Chumash monitor.

SWCA also monitored a 5-year oak woodland and coastal sage scrub revegetation plan. Monitoring of the plan included counting oak trees (over 5,000 are required to be replaced), documenting coastal scrub coverage and density, and surveying and counting sensitive plants such as the black-flowered figwort and Wells' manzanita. SWCA conducted monitoring visits on a quarterly basis and prepared detailed monitoring reports for submittal and review by the County.

Bob Jones Pathway, Phase II – San Luis Obispo to Ontario Road CEQA and NEPA Studies

SWCA was retained by the County of San Luis Obispo Department of General Services to prepare technical studies necessary to satisfy NEPA and eventually CEQA requirements for construction of the Phase II of the Bob Jones Pathway, a Class I and Class III pedestrian/bicycle trail connecting the City of San Luis Obispo and the community of Avila Beach. The portion of the proposed pathway (San Luis Obispo to Ontario Road) is an approximately 4.4-mile route that would connect the existing bikeway along South Higuera Street in the City of San Luis Obispo, paralleling San Luis Obispo Creek, to the Ontario Road Staging Area near the community of Avila Beach. The alignment of the pathway was selected based on an assessment that determined which route would have the least environmental and land use impacts and would be cost effective, while still meeting the overall purpose of the project.



SWCA is in the process of finalizing a Caltrans Natural Environment Study (NES), Biological Assessment (BA), Red-Legged Frog Survey Report, Wetland Assessment, Visual Impacts Study, Farmland Report, and Section 106 studies (historical and archaeological reports). The County has indicated that construction of the new corridor would be in roughly three sections/phases. The County plans to construct at least one section in fiscal year 2013/2014. The remaining section(s) would be constructed in roughly fiscal year 2015/2016 and 2016/2017 as funds are available. Construction of the entire path is anticipated to be complete by 2017.

Ontario Road Bridge Replacement Expanded Initial Study/Negative Declaration

SWCA was retained by the County of San Luis Obispo to prepare an ExIS for a project consisting of a request by the County Engineering Department to remove an existing bridge and to construct a replacement bridge over San Luis Obispo Creek near the community of Avila Beach. The ExIS focused on biological resource impacts and mitigation monitoring procedures involved with protection of sensitive resources such as the southwestern pond turtle, San Luis Obispo Creek, and associated riparian corridor. Of particular concern to the County was that the document specifically address the technique in which the County would monitor impacts and mitigation of sensitive resources during the highly disruptive construction phase of the project.

San Luis Bay Drive Bridge Replacement Project Biological and Cultural Services

SWCA teamed with TY Lin International of Sacramento, California to assist San Luis Obispo County in its effort to rebuild the undersized San Luis Bay Drive Bridge over San Luis Obispo Creek, near the community of Avila. Federal funding from the FHWA requires NEPA compliance, in addition to CEQA review. SWCA prepared a NES for this project, as well as a Historic Properties Survey Report (HPSR) in coordination with Bertrando & Bertrando Research Consultants and Far Western Anthropological Research Group. SWCA also conducted the CEQA analysis for this project, prepared a Habitat Mitigation and Monitoring Plan, and prepared and submitted permit applications to the Army Corps of Engineers,

Regional Water Quality Control Board, and the California Department of Fish and Game on behalf of the County. All permits have been obtained and the project construction will commence in June 2006.

Point San Luis Lighthouse Biological Services

Since 2005, SWCA has provided biological services in support of the Point San Luis Lighthouse Rehabilitation Project. The project included repairing the lighthouse access road and renovating the historical lighthouse structure. SWCA conducted biological surveys and performed biological and archaeological monitoring. Botanical and wildlife surveys were conducted and the results included in a series of Biological Resources Survey Reports (BRSRs). The BRSRs identified the existing resources on the point and analyzed potential impacts to sensitive resources that could result from project activities. Where appropriate, avoidance and mitigation measures were provided to minimize impacts to sensitive resources. These avoidance and mitigation measures were included in the CEQA documents. Pursuant to the CEQA conditions of approval, the Port San Luis Harbor District retained SWCA to monitor construction activities. Biological monitoring activities have included monitoring oak tree trimming for emergency vehicle access, providing environmental training for construction personnel, identifying appropriate construction staging areas, and monitoring erosion control measures. Archaeological monitoring activities have included providing environmental training, overseeing excavation near sensitive resources and providing a Native American monitor in areas near a documented burial site.

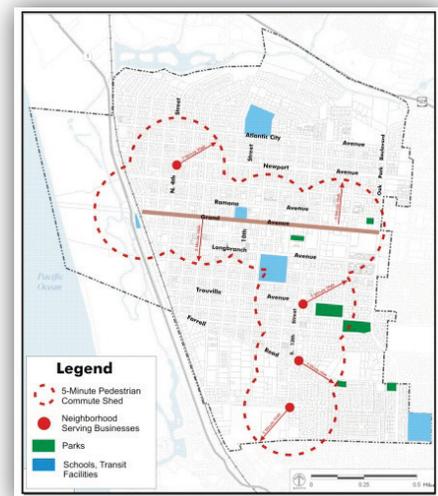
Cave Landing Bike Path Phase I Cultural Resource Inventory

SWCA was retained by the County of San Luis Obispo Parks Division to conduct a Phase I Cultural Resource Inventory for the Cave Landing Bike Path Project, located near Avila Beach, in San Luis Obispo County, California. The proposed project would provide bicycle and pedestrian access from southern Avila Beach to northern Pismo Beach for a distance of 0.37 miles. The study is intended to support future environmental documentation that would be required under CEQA.

General Plans

Grover Beach Land Use Element Update and Master EIR

SWCA was retained by the City of Grover Beach to prepare their Land Use Element (LUE) and Master EIR. The City had spent considerable time establishing their vision for the community before implemented the Visioning Project. Grover Beach is an established community, on a grid system, with limited open space that could be developed into new uses. While most neighborhoods in Grover Beach were discussed and considered as part of the Visioning Project, participants paid particular attention to the Grand Avenue corridor and the City's waterfront. The SWCA project team took their Vision for the Future and used it to establish a more modern approach to land use within the community. The first goal of the LUE was to protect and preserve existing residential developments, but to create walkable and complete neighborhoods that met all income groups. In addition, because of the configuration of the City, it was clear that the Vision was to promote the best of their resources, including the Grand Avenue beach access. The



majority of the land use changes within the LUE update were to promote visitor serving uses along Grand Avenue and Pacific Coast Highway, and designate uses for the small pockets of undeveloped lands within the City limits. As part of the LUE process, SWCA conducted public information meetings after a draft of the Land Use Plan was completed but before the LUE was submitted in draft form and before the Master EIR was completed. The Land Use Plan and the LUE goals, policies, and implementation measures were developed along with environmental evaluation, so that the plan was self-mitigating.

The EIR was prepared as part of the LUE document so that readers could access the environmental evaluation that lead to the policy or implementation measure. The Master EIR also evaluated, in general, based on information available at the time the EIR was prepared, nine subsequent projects, including redevelopment of Grand Avenue, a hotel and conference center at the Beachfront Lodge property, a train station expansion, ultimate development of a small isolated agricultural area known as the Strawberry Field, three undeveloped open space parcels, and infill areas. Also addressed in detail was the change of industrial areas within the Coastal Zone to visitor serving mixed uses and relocation of non-coastal-dependent industry outside of the Coastal Zone. A major issue in the Master EIR was GHG emissions, which addressed Assembly Bill 32 and Senate Bill 375; Grover Beach was very amenable to establishing a community based on sustainability, and many of the implementation measures implemented in the LUE, as directed under environmental review, promoted sustainable community concepts.

Coalinga General Plan

SWCA was retained by the City of Coalinga to prepare a Master EIR for the proposed General Plan Update (GPU) for the City of Coalinga, on the west side of Fresno County. Environmental issues of concern being addressed in the Master EIR include: land uses, biological resources, visual resources, air quality, traffic safety, geology, water, wastewater, public services, noise, cultural resources, drainage, and soils. The MEIR was prepared for the GPU to comply with CEQA. SWCA worked closely with the City of Coalinga, the San Joaquin Valley Air Pollution Control District (SJVAPCD), the USFWS, and other agencies, to ensure impacts potentially resulting from implementation of the proposed Update would be mitigated to a level of insignificance, with the exception of significant unavoidable adverse impacts. As part of the EIR process, SWCA identified for the City a list of subsequent projects that could be addressed under the Master EIR process. The list of subsequent projects included revision to and approval of the Draft Habitat Conservation Plan, the City's Housing Element, several implementing ordinances, the zoning ordinance, and subsequent neighborhood developments.

SWCA focused on incorporating as many mitigation measures into the GPU as possible; however, there were several significant unavoidable adverse impacts that could not be mitigated, including potential effects to federally and state listed species, loss of lands under Williamson Act contract, several intersections within the city at LOS F, and inability of the City to guarantee a sufficient water supply if lands within their Sphere of Influence were annexed to the City given the current restrictions on provision of state water, and provision of waste water treatment facilities for the short-term, until a new treatment plant was constructed.



The Master EIR was certified and SWCA assisted the City in meeting the implementation measures outlined in the Update to reduce significant impacts, and prepared the Housing Element.

City of Soledad Downtown Specific Plan EIR

As a sub-consultant to Lisa Wise Consulting, Inc., SWCA prepared a focused EIR for the City of Soledad Downtown Specific Plan. Soledad is an established community with considerable development potential in its historic downtown and areas adjacent to the Union Pacific Railroad and US 101. The Specific Plan focused particular attention on the downtown core, adjacent historic residential areas, the south "gateway" area adjacent to US 101 on- and off-ramps, and the railroad parcels. The project team took the City's vision for the future and developed a form-based code for the Plan area that introduced mixed uses in the downtown area, plans for development of a multimodal train depot/station in Soledad, and architectural style and building standards.



The EIR tiered off of the EIR prepared for the 2005 City of Soledad General Plan Update, which assumed a higher rate of growth in the City than would be accommodated by the Specific Plan. Therefore, many of the impacts associated with buildout under the Specific Plan were included in the buildout assumptions

made in the General Plan and adequately addressed in the General Plan EIR. The Specific Plan EIR relied on CEQA Guidelines §15152, which encourages tiering as a way to eliminate repetitive discussions of the same environmental issues, and focused on environmental issues that had changed since certification of the 2005 EIR because of differences in existing conditions or regulations. The EIR analyzed the potential for effects on aesthetics and cultural resources; air quality and GHGs; hydrology and water quality; land use planning and parks; transportation, circulation, and traffic; and water resources that would result from implementation of the Specific Plan.

As a result of mitigation recommended in the EIR, the Specific Plan was amended to include standards for water conservation, the dispersal of runoff infiltration opportunities, and preservation of views to historic downtown Soledad from US 101 in development of the railroad parcels. The General Plan parks requirement was also redefined in the Specific Plan to include park and recreation opportunities that are better suited to built-up downtown urban areas, including pedestrian and bicycle-friendly areas, pocket and linear parks, public plazas, and other outdoor gathering areas. As part of the EIR process, SWCA also assisted the City with the SB 18 tribal consultation process and prepared all required noticing documents, including the Notice of Preparation, Notice of Availability, Notice of Determination, Notices of Completion, and posted and published public notices. SWCA prepared CEQA Findings and a Statement of Overriding Considerations for significant, unavoidable air quality impacts associated with buildout under the Specific Plan. The EIR was successfully certified in September 2012, followed by the City's approval of the Specific Plan.

Other EIR Projects

Chevron Tank Farm Restoration and Development Plan Environmental Services

SWCA, was retained by the both the City and the County of San Luis Obispo to provide project management services for the processing of the Chevron Tank Farm Remediation and Redevelopment Project EIR. These services include a multitude of tasks associated with acting as the two agency's EIR project manager on the joint document. Bill Henry provides general-level staff assistance to the project applicant and the EIR consultant as a City and County point of contact so as to provide responses to question and information requests in a timely manner. This includes responding to information requests, scheduling required meetings, and conducting agency coordination needs. Mr. Henry will also administer the preparation of the EIR and all related CEQA requirements. Related tasks will include review and comment on the various versions of the EIR (i.e., Administrative Draft, Draft, Administrative Final, and Final), review of the responses to comments, preparation of findings, and preparation of the Notice of Determination.

Albion Environmental, Inc.

Albion Relevant Project Experience

Cultural Resources Investigations for the California Army National Guard at Camp Roberts and Camp Luis, San Luis Obispo County, California

Client: California Army National Guard at Camp Roberts
Environmental Office Building, 910 Postal Facility
Hwy 10, Building 914
Camp Roberts, CA 93451–5000

Contact: Ethan Bertrando, Cultural Resources Manager
(805) 238-8013, Email: ethan.bertrando@us.army.mil

Project Manager: Jennifer Farquhar, Clinton Blount

Key Personnel: Tom Garlinghouse, Senior Archaeologist
Stella D’Oro, Archaeologist, GIS Specialist

Contract Dates: *2003–Present*

Located in San Luis Obispo and Monterey Counties, Camp Roberts is a 42,784 acre California Army National Guard (CA ARNG) Component Training Center; neighboring Camp San Luis Obispo (Camp San Luis) comprises 15,433 acres. In 2003, Albion conducted surface collection and subsurface test excavations at four sites at Camp Roberts. The program was designed to determine if the sites are eligible for inclusion on the National Register of Historic Places (NHRP). Laboratory work included analyses of flaked and ground stone lithic materials, faunal remains, shell beads, and bone tools, and coordinated outside analyses including obsidian studies, archaeobotanical remains, and radiocarbon dating. The final report was issued in 2005.

Additional investigations were carried out in 2010 under subcontract with Barajas and Associates, Inc. Work included NRHP evaluation and data recovery excavations at two archaeological sites impacted by the Camp Roberts Water Supply Upgrades project. Data recovery efforts included investigation of large, intact prehistoric house floor. Albion conducted laboratory analyses of flaked and ground stone lithic materials, faunal remains, shell beads, and bone tools, and coordinated outside analyses including obsidian studies, archaeobotanical remains, and radiocarbon dating. The final report was completed September 2011.

Albion is also currently under subcontract with ERM to assist the National Guard Bureau (NGB) in completing several cultural resources agreement documents for Camp Roberts and Camp San Luis. Several tasks are currently in progress including: 1) preparation of a Memorandum of Agreement (MOA) between the NGB, the Santa Ynez Band of Chumash Indians, and other interested parties, concerning treatment and disposition of heritage resources; 2) preparation of a Programmatic Agreement (PA) between the NGB, the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) concerning consultation for Section 106; 3) update of ICRMP for all California Army National Guard installations; and 4)

assessment and curation of federal collections for permanent accession to the San Luis Obispo County Archaeological Society (SLOCAS) storage facility.

**Environmental Impact Report
Dana Adobe, San Luis Obispo County**

Client: County of San Luis Obispo
976 Osos Street, San Luis Obispo, CA 93408-2040
Contact: Steve McMasters, Principal Environmental Specialist
(805) 781-5096, Email: smcmasters@co.slo.ca.us
Project Manager: Jennifer Farquhar, Principal Investigator
Key Personnel: Clinton Blount, Native American Consultation
Contract Dates: 2012–Present

Albion is currently working with San Luis Obispo County to compile, analyze, and augment cultural resource information for the Dana Adobe Nipomo Amigos (DANA) development project. The project will result in enhanced visitor facilities and historical and cultural interpretation at this important early California site. Albion conducted a thorough records review, summarized previous research at the site, surveyed additional development areas, and prepared and implemented recommendations for further study and evaluation. Albion is currently in the process of conducting laboratory analysis and preparing an evaluation summary report including mitigation recommendations for incorporation into the Environmental Impact Report. In addition, Albion has been conducting intensive consultation with representatives of the Northern Chumash community, and will continue with consultation through the remainder of the EIR process.

**Native American Coordination and
Cultural Resource Data Recovery, Los Osos Wastewater Project, San Luis Obispo
County, Los Osos Community Services District**

Client: Far Western Anthropological Research Group
2727 Del Rio Place, Suite A, Davis CA 95618
Contact: Pat Mikkelson, Principal
(530) 756-3994, Email: pat@farwestern.com
Project Manager: Clinton Blount, Native American Consultation
Contract Dates: 2001–Present

The community of Los Osos in San Luis Obispo County began construction of a community wide Wastewater Treatment Plant. The project involves the construction of 37 miles of sewer line that will

reduce or eliminate the amount of effluent flowing into Moro Bay and the nearby estuary. This project is funded wholly by the community with the aid of a grant from the Environmental Protection Agency.

Los Osos is at the center of some controversy concerning Native American ties to the area, and therefore the rights to participate in planning and executing the project. In 2003 Albion Principals began consultation with the many representatives of the Chumash and Salinan communities concerning their interests in the project. This list of respondents grew to 25 individuals, representing at least six communities. The Native American Heritage Commission reduced this list to five individuals with demonstrated ties to the Los Osos area. Albion along with the Los Osos Community Services District worked with these Chumash representatives to develop a Memorandum of Agreement for the Treatment of Human Remains. This document details the procedures for Native American involvement in the project and the disposition of the remains of Chumash ancestors.

Clinton Blount is currently managing Native American participation in the project and has worked with the County to bring the two interested Northern Chumash tribes to an agreement on project participation. Work to complete the Project will extend through 2014-2015

Nacimiento Water Project Cultural Resource Investigations, San Luis Obispo County

Client: Environmental Science Associates
225 Bush Street, Suite 1700
San Francisco, CA 94104

Contact: Tom Roberts, ESA Project Manager
(510) 740-1703; Email: troberts@esassoc.com
Or, Eric Wier, Environmental Resource Specialist
Department of Public Works, County of San Luis Obispo
(805) 788-2766; Email: ewier@co.slo.ca.us

Project Manager: Jennifer Farquhar

Key Personnel: Clinton Blount, Native American Consultation
Stella D'Oro, Archaeologist, Graphic Designer
Ryan Brady, Senior Archaeologist

Contract Period: 2007–2012,
Contract Size: \$1.65M
Location Size: 45 Miles long

Albion provided cultural resource services for the Nacimiento Water Project (NWP), a 45-mile water pipeline that runs through western San Luis Obispo County. Under a subcontract agreement with Environmental Science Associates (ESA), Albion's role on the Project included coordination of the Section 106 consultation among the San Luis Obispo Flood Control and Water Conservation District, the U.S. Army Corps of Engineers (San Francisco District), the National Guard Bureau, the California National Guard, and the California State Historic Preservation Officer, and authoring the Project Memorandum of Agreement (MOA).

During this effort, Albion developed an Archaeological Research Design/Treatment Plan to outline procedures for recovering data from archaeological sites that will sustain adverse effects during the course of the construction. Other studies conducted by Albion during the Section 106 consultation include an Extended Phase I study to identify areas requiring further archaeological evaluation, and a geoarchaeological assessment of the project corridor to identify areas that may be sensitive for buried

cultural deposits. Albion provided archaeological monitoring of all ground-disturbing activities in areas determined to be sensitive for archaeological resources managing Native American (Chumash and Salinan) participation in the project.

In total, twenty-five cultural archaeological sites were subject to treatment under project agreements. Albion conducted laboratory analyses of flaked and ground stone lithic materials, faunal remains, shell beads, and bone tools, and coordinated outside analyses including obsidian studies, archaeobotanical remains, and radiocarbon dating.

It was necessary to exhume a prehistoric human burial that had been inadvertently encountered during the trenching for the Project. Albion subsequently conducted the majority of the laboratory analysis and authored the report. The Final Report was completed in June 2011.

Work included preparation of NWP collections for federal repository, preparation of MOA between CA ARNG and the San Luis Obispo Archaeological Society, and correspondence with SHPO and USACE regarding curation agreements.