Flood Control Zones 1 & 1A  
Arroyo Grande Creek  
Waterway Management Program  

SCOPE OF WORK  
COST ESTIMATE  
For Environmental Documents and Permitting  

Prepared for:  
County of San Luis Obispo  
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I. INTRODUCTION

Morro Group/SWCA Environmental Consultants, Inc. is pleased to submit this scope of work and cost estimate for the preparation of environmental review documents and environmental regulatory permitting of the Arroyo Grande Creek Waterway Management Program. Our proposed scope of work is designed to address potential environmental impacts of the proposed actions in accordance with California Environmental Quality Act (CEQA) Guidelines and National Environmental Policy Act (NEPA) requirements. Swanson Hydrology and Geomorphology has prepared the related proposal for development of the final Waterway Management Program (WMP) plans/documents, and this WMP is the proposed action to be reviewed by this Scope of Work.

This Scope of Work identifies our project understanding, based on the project information supplied by the San Luis Obispo County Public Works Department, the Zone1/1A Technical Advisory Committee, and our research of background documents under the interim scoping contract and during preparation of the IRWM grant application sections for the Zone 1/1A flood management projects. Section II outlines the Morro Group/SWCA Scope of Work for preparation of the environmental documents and the regulatory permit application packages. Section III lists exclusions and assumptions considered during preparation of the scope of work and budget, Section IV lists the anticipated deliverables including the schedule for task completion, and Section V outlines the costs associated with completion of the proposed Scope of Work.

Morro Group/SWCA will be working with Swanson Hydrology and Geomorphology (Swanson H+G) as they develop the draft and final Waterway Management Program (WMP). Swanson H+G has prepared a separate scope of work for preparation of the WMP plans/documents which is included as Attachment A and incorporated as a part of this proposal.

A. PROPOSED ACTION AND PROJECT UNDERSTANDING

The objective of the Arroyo Grande Creek Waterway Management Program is to comprehensively manage the lower three miles of Arroyo Grande Creek, that is designated as Arroyo Grande Flood Control Channel (Zones 1 and 1A of the San Luis Obispo County Flood Control and Water Conservation District), to improve flood protection and enhance environmental values. The Proposed Action, as presented in the Request for Qualifications, July 2007, includes the Alternative 3c projects presented in the “Arroyo Grande Creek Erosion, Sedimentation and Flooding Alternatives Study” prepared by Swanson Hydrology and Geomorphology (January 2006) for the San Luis Coastal Resource Conservation District (RCD). The four main components of the Proposed Action include the following:

- Vegetation Management: Alternative 1 in the Swanson Study, vegetation management along the creek channel bed and banks, is intended to improve flood capacity by decreasing the hydraulic roughness of the channel. The vegetation management program would consist of maintaining a 10- to 15-foot riparian buffer on both sides of the low-flow channel to provide riparian habitat and streamside cover to protect aquatic habitat. The riparian buffer would provide root strength to reinforce the banks of the low flow channel in bank full conditions. Recent vegetation management (2004, 2005, 2006, and 2007) has been accomplished under a 1602 Streambed
Alteration Agreement with California Fish and Game Department (CDFG) on behalf of RCD, and an extension of that permit valid through 2009.

On-going vegetation management is proposed under the Waterway Management Program and would be conducted as often as necessary to maintain a Manning's roughness value of 0.04 through an adaptive management approach that would include regular reconnaissance surveys, as well as site visits with regulatory agency staff as needed. The details of this adaptive management program would be included in the Waterway Management Program guidelines.

- **Sediment Removal**: Alternative 2 in the Swanson Study includes sediment removal that would be added to the vegetation management as part of the adaptive management Program. The initial, or first year, sediment removal would include removal of sediment on the levee side of the riparian buffers established through the vegetation management effort. The Arroyo Grande Creek flood control channel currently lacks the secondary channels that are found in more natural, low gradient streams. Sediment would be removed in the Arroyo Grande creek channel outside of the low flow / riparian corridor, and secondary, or overflow, channels would be excavated into areas between the levees. At strategic locations, the excavated secondary channels would be connected with the low flow channel to allow for complex flow conditions that will encourage scour and sediment transport, and reduce the need for future sediment removal. Periodic sediment removal, after the initial sediment removal efforts, would be incorporated in the Waterway Management Program Manual.

- **Levee Raise**: Alternative 3c in the Swanson Study includes raising existing levees approximately 3 to 5 feet to increase channel capacity, in conjunction with the vegetation management and sediment removal programs. The levee raise would require widening of the levee base which would entail construction of retaining walls along the residential properties on the outside of the north levee. This component would raise the levees above the 20-year water surface to provide a channel capacity of 8,600 cubic feet per second, with 2 feet of freeboard.

- **Railroad Bridge Raise**: The fourth component of Alternative 3c is raising the Union Pacific Railroad (UPRR) Bridge to move the low chord above the 50-year water surface elevation. The height of the levee raise would potentially exacerbate debris buildup on the upstream side of the existing UPRR Bridge; the bridge raise would reduce the potential for bridge failure during high flow events.

The County/Zone 1/1A has requested professional environmental services targeting environmental review, environmental regulatory processes, permits, and environmental mitigation monitoring plans.

Morro Group/SWCA will prepare an Environmental Impact Report (EIR) under CEQA for the Proposed Action/Project. The administrative draft EIR will be prepared concurrently with preparation (by Swanson H+G) of the Waterway Management Program and preliminary plans for the project capital projects. Morro Group/SWCA will also prepare an Environmental Assessment report (EA), assuming that the Army Corps of Engineers (ACOE) concurs that this is the appropriate NEPA document.

Based on our interim consultation with County staff, we understand that agency coordination is a critical task in this scope of work. Agency coordination will support the development of the Waterway Management Program which will include adaptive management strategies and methods for monitoring and maintenance of vegetation and sediment in the flood control channel, and the preliminary plans for the initial sediment removal, levee raise and UPRR bridge.
raise. Agency coordination will confirm the necessary environmental documentation and procedures, and the required permits for each component of the Proposed Action. We will coordinate with Swanson H+G on all agency consultation, and will begin consultation immediately following authorization of contracts.

We will seek multi-year programmatic permits from regulatory agencies for the maintenance, monitoring and management of vegetation and sediment load in the Zone 1/1A channels. The environmentally superior levee raise project from the EIR will be included in the WMP permitting at the preliminary plan level, as part of the overall Program.

We expect that the initial sediment removal and the levee raise construction project will be one-time capital projects for which individual permits will be processed at a later date, as required by regulatory agencies. These capital projects permits are not a part of this scope of work. The UPRR bridge raise project is expected to be a separate capital project, designed and permitted at a later date by the Union Pacific Railroad. We will consult with UPRR to develop a conceptual project suitable for environmental review, with the expectation that subsequent environmental review may be necessary for this component of the Waterway Management Program.

B. PROJECT TEAM

The project team members and their assigned duties on the Arroyo Grande Creek Waterway Management Program environmental services are presented in the following paragraphs. Morro Group/SWCA has teamed with Swanson Hydrology and Geomorphology to finalize the WMP plans/documents, the environmental documents and the permitting to establish the Waterway Management Program for Zone 1/1A. Swanson H+G will be a subconsultant to SWCA under this contract. The project team includes several other subconsultants to Morro Group/SWCA, with one change proposed for the cultural resources consultant. Since Morro Group/SWCA offers cultural services, we propose to replace Far Western Archaeological Consultants with SWCA archaeologists, under the direction of Cindy Arrington (Program Director) for preparation of the archaeological survey report. JRP Historical Consulting will prepare the Section 106 historical report, as originally proposed. Kleinfelder, Inc. will prepare an Environmental Site Assessment for hazardous materials. Full resumes for Morro Group and subconsultant team members were included with the Statement of Qualifications provided in August 2007. (Staff resumes for the SWCA archaeological staff are included as Attachment B.)

Morro Group/SWCA staff that are included on the project team have been assigned the following tasks under this scope of work.

Mrs. Mary Reents, Project Director, will be responsible for project team direction, and will oversee preparation of the NEPA environmental document. She will review all documents and ensure compliance under CEQA and NEPA.

Mr. Keith Miller, Senior Planner, assume the role of Project Manager and will manage the day-to-day coordination of the project team and be the primary contact with the client and subcontractors. Mr. Miller will be responsible for preparation of the Environmental Setting, Agriculture, Air Quality, Geology/Soils, Flooding/Hydrology/Water Quality, Hazards and Hazardous Materials, Global Warming, Growth-inducing Impacts and Alternatives sections of the EIR. Mr. Miller has over seven
years experience in land use and environmental planning and has knowledge of policies and procedures of local government planning operations and federal and state laws related to planning, zoning, and environmental policy. Mr. Miller has experience working for public agencies, implementing local land use ordinances, general plans, CEQA, NEPA, and SMARA, the Surface Mining and Reclamation Act. He has acted as project manager during the preparation of Environmental Impact Reports (EIRs), Constraints Analyses and a variety of other environmental documents, including over 40 mitigated negative declarations. He is familiar with the URBEMIS air quality modeling program, the TNM noise modeling program, agricultural impact assessments (including LESA), and monitoring the implementation of mitigation measures and conditions of approval.

Ms. Deborah Hollowell, Mapping Coordinator and Environmental Planner, will prepare the EIR Project Description, and will coordinate with Swanson H+G during development of the final Waterway Management Program. She will coordinate biological resources mapping and quantification of impacts. Ms. Hollowell will prepare the Cultural Resources, and the Transportation/Traffic sections of the EIR. She will oversee the organization of the Mitigation and Monitoring Plan.

Mr. Bob Sloan, Senior Biologist, will provide in-house review and coordination of biological surveys and reports.

Mr. Geoff Hoetker, Biologist, will be responsible for preparation of the Biological Resources section of the EIR, and prepare the Wetland Assessment report and Biological Assessment report for California red-legged frog and tidewater goby.

Ms. Jaimie Jones, Assistant Planner, will be responsible for preparation and distribution of the NOP, tracking responses to the NOP, and for EIR compilation including Summary, Mitigation and Monitoring Program, and Response to Comments sections. She will assist with report graphics, and will be responsible for report publications.

Ms. Cindy Arrington, Program Director, for archaeological resources will oversee SWCA archaeology staff in preparation of the archaeological survey report in support of the EIR.

C. PROJECT TEAM COORDINATION

The project schedule proposed by the County in the Request for Qualifications is fairly short, given the coordination and review we expect with both regulatory agencies and local project proponents. In order to expedite the project, Morro Group/SWCA proposes to divide project management between Deborah Hollowell and Keith Miller. Ms. Hollowell will focus on project start-up managing the NOP preparation, coordinating with Swanson H+G, and writing the draft Project Description. Mr. Miller will manage preparation of the CEQA document, including Alternatives Analysis, and will coordinate the technical resources sections and subconsultants. Ms. Hollowell will coordinate mapping and impact calculation for the proposed project and for the alternatives analysis, and will prepare the NEPA environmental documentation. Following approval of the environmental documents, Ms. Hollowell will coordinate the preparation of regulatory permit applications.

We acknowledge that County staffing for this project is changing as we develop this scope and budget. We anticipate that we can work easily with these changes. Morro Group/SWCA will
be working with Swanson H+G, to coordinate the development of the Waterway Management Program. The close coordination developed between Morro Group and Swanson staff during the interim contract and IRWM grant application will continue as we accomplish our parallel work tasks.

We will provide monthly progress reports to the County and Zone 1/1A. Monthly attendance at Zone 1/1A meetings is not included in the scope and budget, but Morro Group/SWCA will meet with the Zone 1/1A Technical Committee to review the draft WMP and draft EIR. Team coordination time is included in each of the tasks, and in overall project management.

II. SCOPE OF WORK

Task 1: Project Management

1.1 Project Coordination

This task includes standard project management task including contract administration, scheduling, invoice oversight, and internal review for quality assurance.

1.2 Review and Coordination – WMP Documents

This task will include coordination with Swanson H+G during development of the formal Waterway Management Program guidelines (WMP guidelines) which will be the manual for flood management on Arroyo Grande Creek in Zone 1/1A. The WMP guidelines will contain the methods and procedures determined to be the preferred alternative means of providing improved flood protection through channel management in the Zone 1/1A district area. The WMP guidelines will include the long-range plan for vegetation management and sediment control in the Arroyo Grande Creek channel. It will also provide the rationale and preliminary plans for the initial sediment removal and levee raise projects.

Morro Group/SWCA will review and evaluate the draft Waterway Management Program plans/documents while preparing the administrative draft environmental documents. Significant issues identified during impact analysis will be reviewed by the project team and the County, and recommended mitigations will become part of the Proposed Action by incorporating them in the Waterway Management Program plans/documents. In the intent is to have the Waterway Management Program be self-mitigating to the greatest extent possible.

Task 2: Notice of Preparation (EIR)

The Notice of Preparation (NOP) is a standard requirement under CEQA, and will be prepared by Morro Group/SWCA for review and approval by County Public Works staff. Once approved, Morro Group staff will prepare the certified mailing to the Office of Planning and Research and responsible agencies, and other parties identified by the County/Zone 1/1A.

Assumption: County staff will assist in preparing the list of recipients for the NOP.
Task 3: Public Scoping Meeting

The scoping meeting will be held in conjunction with a Zone 1/1A meeting. We anticipate that the meeting will be scheduled during the NOP response period, which is expected to be within two months after authorization of the contract. Morro Group/SWCA will be responsible for chairing the meeting. A slide show presentation and handouts will be prepared, and comments will be solicited and tallied.

Assumption: County staff will be responsible for advertising the Public Scoping Meeting..

Task 4: Agency Consultation

Coordination with environmental regulatory agencies is key to development of a successful program that be permitted for implementation. The Morro Group/SWCA project manager and lead biologist, along with Swanson H+G staff, plan to meet early this spring with ACOE, RWQCB, USFWS, CDFG, NMFS, Coastal Commission and UPRR representatives to review the intended projects and identify each agencies requirements and timing to develop the program through implementation. If agencies are willing, an agency scoping meeting will be held separate from the public scoping meeting; all agencies, including the cities of Arroyo Grande and Grover Beach, and watershed coordinators and watershed partners would be asked to participate. Consultation with all agencies will be ongoing during all work tasks, as needed.

The County believes that the appropriate Federal Lead Agency for the project is the U.S Army Corps of Engineers, based upon that agency’s role as the permitting agency for section 404 of the federal Clean Water Act and their subsequent ability to enforce conditions of any ESA permits. NRCS may also continue to have a role in the process, based on their previous involvement in the project. As early as 1990, the Corps has indicated that an individual section 404 permit, triggering the need to produce a NEPA document as well as evaluate alternatives from the perspective of the Clean Water Act. Morro Group/SWCA staff will coordinate with the Corp, with other federal agencies, and with the District and the other agencies and organizations partnering on this project. The budget for informal consultation time with regulatory agencies includes individual site visits with each agency and follow up phone time. Site visits will be combined where possible to reduce costs.

Task 5: Administrative Draft EIR

CEQA review will entail preparation of a Program Environmental Impact Report (EIR) to evaluate the WMP long-term maintenance, the capital projects for sediment removal and levee raise, and the conceptual plans for UPRR bridge raise. The EIR will address both long-term and short-term site-specific and cumulative impacts of the proposed project. Contents of the EIR will include all requirements of the CEQA Guidelines.

Morro Group/SWCA will review and evaluate the draft Waterway Management Program plans/documents while preparing the administrative draft environmental documents. Significant issues identified during impact analysis will be reviewed by the project team and the County, and recommended mitigations will become part of the Proposed Action by incorporating them in the Waterway Management Program plans/documents. In the intent is to have the Waterway Management Program be self-mitigating to the greatest extent possible.
The Environmental Analysis section of the EIR will address the following resources:

**Agricultural Resources**

The project site is located along the north edge of the Cienega Valley, which is important agricultural land in the County, with Prime Agricultural soils capable of 2 to 3 crops per year. The proposed project will increase flood protection for this farmland area. Permanent easements may be required for levee widening associated with increasing levee elevations. Temporary access and construction easements may be required over agricultural properties. The potential effects of construction activities and any necessary easements will be identified and evaluated.

Easements needed to implement the project may affect or convert important agriculture lands, lands in Williamson Act contract, or conflict with existing agricultural zoning. The proposed land uses will be analyzed for impacts to and compatibility with agricultural uses on and adjacent to the project area. Keith Miller, Morro Group/SWCA will prepare this section.

**Scope of Work**

1. The EIR analysis will identify agricultural uses and soil classifications (i.e., prime agricultural soils) on and adjacent to the project site, and evaluate applicable ordinances, policies, and regulations regarding agricultural protection and compatibility. Existing conditions related to flooding and flood management will be discussed.

2. Morro Group/SWCA will discuss the proposed project in conjunction with findings and recommendations made through consultation with County Agricultural Commissioner’s Office and other agencies as appropriate.

3. Cumulative impacts to agricultural resources (i.e., prime agricultural land), cumulative agricultural compatibility impacts and cumulative conversion impacts will be quantified and discussed. The Annual Report of the Farmland Monitoring and Mapping Program (California Department of Conservation, Division of Land Resource Protection) will be consulted to determine the affected acreage of Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) and Agricultural Land to non-agricultural land uses countywide. Both detrimental and beneficial impacts will be evaluated.

4. The Agricultural Resources section of the EIR will identify any significant impacts to agricultural resources including those on the subject property, adjacent properties, and properties located downstream that may be adversely affected by the proposed project. During analysis, feasible impact-specific mitigation measures/ or planning area standards will be identified.

5. Impacts that cannot be reduced to a level of insignificance and which may require findings of overriding consideration will be identified.

**Air Quality**

The proposed project would generate short-term construction related emissions. The proposed capital projects for initial sediment removal and for levee raise would involve the use of multiple pieces of heavy equipment and would include large amounts of grading and hauling, which have the potential to result in short-term air quality impacts. Any short-term construction-related impacts will be analyzed and mitigation measures recommended where necessary in accordance with the APCD. Potential long-term project-related impacts could occur related to on-going
maintenance of the flood control channel. Project emissions will be evaluated in accordance with the County of San Luis Obispo Air Pollution Control District CEQA Air Quality Handbook (April 2003) and the 2001 Clean Air Plan. Mitigation measures will consider use of best available technologies, and implementation of standard APCD measures. Keith Miller, Morro Group/SWCA will prepare the Air Quality section of the EIR.

**Scope of Work**

1. Provide a discussion of the existing air quality setting of the proposed project, including baseline air quality, regional climate and prevailing wind patterns and their affect on air quality, applicable regulatory setting, and project impact significance thresholds, based on consultation with the APCD.

2. Estimate short-term construction emissions for criteria pollutants of concern through the use of screening emission factors established by the APCD, and consultation with the Swanson H+G and County Public Works to establish what types of equipment would be used on the project, how many pieces of said equipment would operate on the site, their duration of operation, and the amount of earthwork that would be required to develop the project. Emission estimates will be included in an appendix for reference. A key requirement for determining emissions related to hauling import and/or export material is establishing a source of fill material and a disposal location for excavated sediment.

3. Estimate short and long-term construction emissions, as applicable, through the use of the URBEMIS 2007 9.2 modeling program. Emission estimates will be included in an appendix for reference.

4. Evaluate long-term project emissions in accordance with the APCD Scope and Content of Air Quality Sections in Environmental Documents and the latest Clean Air Plan as appropriate.

5. Identify short-term, long-term, residual, cumulative, and significant impacts, if any, resulting from the construction and operation of the project. Cumulative impacts will be evaluated with reasonably foreseeable future project emissions in the region. Impacts associated with project implementation will be compared to defined thresholds of significance based on pertinent local, state, and federal plans and policies.

6. Incorporate mitigation measures and identify any additional mitigation necessary if project emissions cause an exceedance of any impact significance threshold. Impacts that cannot be reduced to a level of insignificance and which may require findings of overriding consideration will be identified.

**Assumption:** Calculation of emissions related to hauling import and/or export material is dependent on haul routes/distances from the project site to a source of fill material and a disposal location for excavated sediment. We assume that the County and/or Swanson H+G will provide preliminary source and disposal locations for evaluation.

**Biological Resources**

A Biotic Assessment was prepared concurrent with development of the Alternatives Study (SH+G, 2006). The Biotic Assessment includes habitat mapping for the project area (channel reach), identifies potential impacts to special-status species and sensitive habitats from development of the proposed project, and presents measures to mitigate these impacts. This assessment and the mitigation measures have been the basis for vegetation management/removal
in 2006 and 2007, which was conducted under a multi-year section 1602 Streambed Alteration Agreement from CDFG (valid through 2009).

According to a preliminary search of the California Natural Diversity Database (CNDDB, January 2008), a review of the Biotic Assessment, and our biologists’ familiarity with the project area, federally-listed plant and animal species protected under the Federal Endangered Species Act (FESA) have the potential for occurrence in or near the project site and could be affected by the proposed project. These include marsh sandwort (*Arenaria paludicola*), Gambel’s watercress (*Nasturtium gambelii*), tidewater goby (*Eucyclogobius newberryi*), south-central California coast steelhead evolutionarily significant unit (ESU) (*Oncorhynchus mykiss irideus*), and California red-legged frog (*Rana aurora draytonii*). Several other sensitive species protected under the California Endangered Species Act (CESA) and/or CEQA may also have the potential for occurrence.

The Biotic Assessment along with other relevant background information and reports will be reviewed and used as the basis for evaluating potential impacts of the project on biological resources. Given the dynamics of terrestrial and aquatic ecosystems, a site visit will be conducted to assess any potential changes that may affect the potential of the project area to support sensitive species. Overall habitat mapping of the entire project area will not be conducted. Existing habitat mapping from the Biotic Assessment will be augmented by results from sensitive plant species surveys (refer to Task 5 below) and GPS mapping of any notable changes observed in the field. A Wetland Assessment (refer to Task 7 below) will not be prepared for purposes of the EIR analysis, but will be conducted in conjunction with development of the initial sediment removal project plans. Mr. Geoff Hoetker, Morro Group will oversee the Biological Resources section of the EIR.

**Scope of Work**

1. Review and compile existing project information, reviewing and compiling existing information relating to biological resources of the project site. Previous reports will be reviewed as part of this task, including related prior projects by Morro Group. A list of sensitive species with potential for occurrence will be compiled based on review of relevant reports, the California Natural Diversity Data Base (CNDDB), and other pertinent literature. Appropriate resource agencies, including CDFG, the U.S. Fish and Wildlife Service (USFWS) and Coastal Commission will be consulted as a part of Task 2: Agency Consultation. In addition, resource conservation organizations such as the California Native Plant Society (CNPS) and Audubon Society will be contacted, as appropriate.

2. Conduct ground-truth field surveys and mapping. This task will primarily focus on verifying existing information regarding sensitive biological resources of the project site. During the site survey, sensitive communities within and near proposed project area will be assessed to confirm their potential to support special-status species. Any observed occurrences of sensitive species will be documented. Existing habitat maps will be augmented with relevant data. The location, size, and distribution of identified sensitive species will be mapped using our Global Positioning Systems (GPS).

3. Summarize baseline conditions of project site. This task will consist of preparing the biological resources setting section for the EIR. As part of this task, descriptions of major plant communities, wildlife resources, and special-status species of the project site will be prepared. Information provided in the existing biological resources reports, such as the Biological Assessment, will be incorporated into the discussion of baseline conditions of biological resources of the project site. In addition, a detailed discussion of key federal, state, and local
regulations and policies associated with protection of biological resources of the project site will be included.

4. Evaluate project-related impacts. As part of this task, the proposed project components will be evaluated with respect to potential impacts on biological resources of the project site and surrounding area. Waterway Management Program guidelines and schematic plans for capital projects will be reviewed to determine the potential project-related effects on sensitive plants and wildlife, nesting birds, and sensitive communities known or having potential to occur within the project area. Impacts associated with project implementation will be compared to defined thresholds of significance based on pertinent local, state, and federal plans and policies. As part of this task, appropriate resource agency staff will be contacted to discuss potential project-related effects on sensitive resources of the project site.

5. Develop mitigation measures for proposed project. This sub-task will consist of developing mitigation measures to reduce, to the degree possible, the significant, adverse impacts associated with implementation of the proposed project. The Waterway Management Program manual is intended to be self-mitigating, by presenting guidelines using best-management practices for vegetation and sediment management, including monitoring methods and schedules, habitat enhancement strategies and corrective procedures for long-term flood management. The draft WMP and the draft EIR will be prepared concurrently, and mitigation identified through the EIR evaluation will be incorporated into the draft Waterway Management Program plans/documents.

Assumption: This estimate is based on the availability of the July 2007 County-wide aerial photography, which is scheduled to be delivered in spring 2008.

Cultural Resources

The results of the cultural resources investigation (refer to Task 11) will be reviewed and potential impacts, if any, will be identified and evaluated. Management recommendations will be incorporated into mitigation measures appropriate to each project component. Results of the historic architectural resources investigation (refer to Task 12) will also be incorporated into the cultural resources section of the EIR which will be prepared by Deborah Hollowell in consultation with the SWCA cultural resources staff.

Geology and Soils

The County has received a preliminary scope of work and cost estimate from Fugro West, Inc. for preparation of a preliminary geotechnical evaluation and a subsequent design-level geotechnical report to evaluate the feasibility and associated geotechnical impacts of raising the levee as proposed.

The results of the Preliminary Geotechnical Investigation will be reviewed and summarized. The soil capability for the proposed levee design will be considered and recommended mitigation for modification of the levee design will be incorporated into the Waterway Management Program plans/documents and the EIR. Potential erosion and sedimentation impacts related to other project components will be evaluated. The Geology and Soils section of the EIR will rely heavily on existing information and be completed by Keith Miller, Morro Group/SWCA.

Scope of Work
1. Summarize existing pre-project drainage/flooding conditions and concerns and identify areas where active erosion and sedimentation are currently occurring.

2. Identify and evaluate potential impacts to soils from project implementation, and recommend appropriate mitigation measures to reduce impacts to less than significant levels.

**Assumption:** The cost and contract management for geotechnical investigation is not a part of this scope of work and will be the responsibility of the County Public Works Department.

**Hazards / Hazardous Materials**

The Phase I Environmental Site Assessment (ESA) and a Naturally-Occurring Asbestos (NOA) Study will be prepared by Kleinfelder under a subcontract with Morro Group/SWCA (refer to Task 13). Morro Group/SWCA staff will review and summarize the results of the ESA and NOA Study, identifying potential impacts and appropriate mitigation measures related to hazardous materials sites and emissions, if any. The Hazards and Hazardous Materials section of the EIR will be completed by Keith Miller, Morro Group/SWCA, and will include the following scope of work.

**Scope of Work**

1. Review and compile existing information. This task will include Consultation with the County Health Department (including the Environmental Health Division), Regional Water Quality Control Board, CDF-County Fire Department; UC Co-Op Extension; County Department of Agriculture, CDFG, and County Risk Management Division.

2. Review and incorporate the results of the Phase 1 ESA and NOA Study.

3. Identify short-term, long-term, secondary, cumulative and significant impacts, if any, resulting from implementation of the project components.

4. Recommend mitigation measures as appropriate to mitigate significant impacts.

5. Identify unavoidable significant impacts which may require findings of overriding considerations.

**Flooding / Hydrology / Water Quality**

The proposed project would reduce flooding by thinning vegetation, removing existing and future sediment from the creek channel, and raising adjacent levees. Extensive analysis of the local flooding and hydrologic setting of the creek have been previously prepared. This section of the EIR will summarize that information and identify any additional impacts to water quality that may result from operations that would occur within the creek channel. Potential reduction in flooding potential, changes to local and regional hydrology resulting from the project, and changes to water quality will be described. Potential water quality impacts resulting from operating heavy equipment in the channel will be discussed as well. Keith Miller, Morro Group/SWCA will be preparing this section of the EIR.

**Scope of Work**

1. Summarize existing pre-project drainage/flooding conditions and concerns, discuss existing nearby drainage capacities and volumes, and discuss potential long-term impacts resulting from the proposed project.
2. Evaluate existing drainage infrastructure (e.g., culverts, drainage swales, channels, etc.) to determine if adequate facilities exist to accommodate the proposed project.

3. Identify and evaluate potential impacts to drainage and flood control resources from project development, and recommended appropriate mitigation measures to reduce impacts to less than significant levels.

**Transportation and Traffic**

The proposed project area crosses Highway 1, 22nd Street and the UPRR railroad. The design and implementation of the project components will be considered for their impact, both permanent and temporary, on the right-of-way and facilities for these roadways. Construction routes and traffic could cause temporary impacts to traffic flows and patterns. Potential impacts to emergency access will be considered and mitigation measures recommended. Cumulative transportation and traffic impacts discussion will consider design and timing of related projects including Halcyon Road and Highway 1 bridge projects, and subsequent reconstruction of the UPRR bridge. The proposed projects will not contribute to long-term traffic volumes and no traffic counts will be done under this scope of work. Deborah Hollowell, Morro Group/SWCA will prepare this section which will include the following:

**Scope of Work**

1. Consult with County, UPRR and Caltrans staff to determine study area. Conduct a field review of the existing streets, intersections, and traffic controls in the study-area.

2. Identify planned roadway and intersection improvements in the study-area.

3. Evaluate permanent site access and construction access and circulation for implementation of each component of the project.

4. Recommend mitigation measures for all identified traffic impacts by phase.

**Issues with less than Significant Impacts**

Based on our preliminary review of the proposed project, several resource areas are expected to have less than significant issues and will not be addressed in individual sections for the following reasons:

- **Land Use/Planning** will not be changed as part of this Proposed Action. Therefore, no significant impacts are anticipated related to land use.

- **Mineral Resources**, if identified as an issue, will be covered as a part of the Geology / Soils section.

- **Noise** increases would be generated by construction only, and will be mitigated in accordance with County standards regarding timing of equipment operation.

- **Population and Housing** would be unaffected by this project. Implementation of the project components would not be growth inducing, either directly or indirectly. Housing would not be affected; the project design specifically avoids the need for acquisition of property or of permanent easements through residential properties. No existing housing will be displaced.
• **Public Services** would not be affected by project implementation. The project would not require new or altered facilities, service ratios or response times for fire, police, schools, parks or other public facilities.

• **Recreation** demand would not be affected by implementation of the project.

• **Visual Resources** would not be affected by the project. The visual appearance of the facilities may be slightly altered, but the use will be unchanged. Existing levees will still be visible; changes in vegetation have been and will continue to be ongoing. Highway 1 in the project area is not a designated Scenic Highway.

The following standard CEQA sections will also be included in the EIR:

**Introduction / Summary**

This section will be prepared by Jaimie Jones, Morro Group/SWCA and will be prepared in accordance with §15123 of the *CEQA Guidelines*. It will include the following items:

**Scope of Work**

1. A brief summary of the proposed project and location of the project.

2. A summary of the alternatives, environmentally superior alternative, and growth inducing impacts of the proposed project.

3. A summary of impacts (site specific and cumulative) and mitigation measures in tabular form, indicating class of impact, description of the impacts and residual impacts after mitigation, and proposed mitigation measures. This tabular form also can be used to summarize the required findings.

4. A brief discussion of environmental issues, project impacts, cumulative impacts, and mitigation measures. Mitigation measures will be written so that they can be easily used as conditions of approval.

**Project Description**

The project description will be based on the information supplied by the County, contained in the Alternatives Study by Swanson H+G, and in the Waterway Management Program plans/documents as they are developed. Deborah Hollowell, Morro Group/SWCA will prepare the Project Description, according to the scope of work described below

**Scope of Work**

1. Provide description of project site location and legal description, including the Assessor’s Parcel Map, regional and vicinity maps.

2. Provide a detailed description of the actions, or components, comprising the long-term vegetation and sediment maintenance proposed along with the projects for initial sediment removal, levee
raise and UPRR bridge raise. List and describe all activities proposed to achieve the proposed project in sufficient detail to evaluate the effect of those activities on environmental resources.

3. Clearly identify project objectives and project phasing in consultation with the District, and in response to available funding.

5. In addition, the project description will summarize the recent history of flood management within the District, which led to the current proposed project.

Environmental Setting
An environmental setting section will be included in the EIR in order to familiarize the readers with the project area and surrounding area characteristics. This section will also include a discussion of the project’s consistency with applicable County plans and policies. This section of the EIR will be prepared by Keith Miller and Audrey Peters of Morro Group/SWCA and will include the following scope of work. As appropriate, detailed consistency information will be placed in an appendix and only those issues that are considered inconsistent with plans and policies will be discussed in the Environmental Setting section.

Scope of Work

1. Describe physical characteristics of the site and surrounding area (e.g., geology, biology, and land characteristics). Photographs of the surrounding roadways and residential/commercial/agricultural uses will be included for frame of reference.

2. Provide a detailed description of the present condition of flood management facilities and an overview of the study area. The study area will be defined after discussions with County staff. The study area will form the basis for cumulative impact evaluation. This information will be included here to familiarize readers with the limits of the cumulative study area.

3. Provide an analysis of the consistency of the project with applicable County plans and policies that pertain to the project site. The inconsistencies will be discussed in the EIR text and all consistency evaluation information will be contained in an appendix to the EIR.

Alternatives Analysis

CEQA Guidelines (§ 15126 (a)) requires an EIR to describe a reasonable range of alternatives to a project which could 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. An analysis of various alternatives to the proposed project will be required as part of the EIR. The Alternatives Analysis section will be prepared in accordance with §15126(d) of the CEQA Guidelines, and will include, as required, the “No Project” Alternative. The discussion will include reasonable alternatives capable of eliminating or reducing significant adverse environmental effects to a level of insignificance. Secondary impacts of the alternatives will be discussed, but in less detail than the significant effects of the project as per CEQA §15126(d) (4).

Given the CEQA mandates, this section of the EIR will: (1) describe the range of reasonable alternatives to the project; (2) examine and evaluate resource issue areas where significant
adverse environmental effects have been identified and compare the impacts of the alternatives to those of the proposed project; and, (3) identify the Environmentally Superior Alternative.

The EIR will use an alternative screening analysis to limit the number of alternatives evaluated in detail. The use of an alternative screening analysis will provide a detailed explanation of why some of the alternatives are rejected from further analysis and assure that only the environmentally preferred alternatives are evaluated and compared in the EIR. In addition, this screening analysis will use the “rule of reason” methodology as discussed in CEQA (Guidelines §15126.6(f)) that requires that EIRs address a range of only those feasible alternatives that are necessary to permit a reasoned choice. 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” (§ 15126.6(f)(1)). Through the scoping process, if an alternative is found to be infeasible, as defined above, then it will be dropped from further consideration. In addition, CEQA states that alternatives should “…attain most of the basic objectives of the project…” (§ 15126.6(a)). If an alternative is found to not obtain the basic objectives of the proposed project, then it will also be eliminated.

There are a number of feasible alternatives to the proposed project that were examined in the Alternatives Study, several of which should be examined under CEQA for their impact to environmental resources. Among these, the Levee Raise 3A and 3B should be considered for comparison with the proposed Levee Raise 3C alternative. Several other alternatives were also identified at a preliminary meeting with the Zone 1/1A Technical Committee including restoration of the Los Berros channel as overflow storage, bypass channels past the UPRR bridge rather than UPRR bridge raise (for alternatives 3B and 3C, and sediment management using the bench ripping method. Other alternatives may be identified during the public scoping meeting. Alternatives that can be eliminated through the screening analysis will be discussed with a general or qualitative level of detail. Project-specific level analysis, suitable for NEPA evaluation, will be prepared for up to three (3) feasible alternatives under this scope of work.

Keith Miller, Morro Group/SWCA will prepare the Alternatives section of the EIR, which will consist of the following scope of work:

**Scope of Work**

1. Conduct an alternative screening analysis that limits the number of alternatives evaluated in detail to those alternatives that are environmentally preferred, can be feasibly implemented, and that achieve most of the basic objectives of the proposed project. This analysis will occur after an evaluation of preliminary impacts has been completed. This allows alternatives to be developed that have the highest potential to avoid or mitigate one or more significant impacts.

2. Conduct an analysis of the alternatives listed below in addition to any other alternatives that may arise during the scoping or Notice of Preparation response process. These alternatives may include, but are not limited to, the following:
• No Project Alternative: This alternative will describe impacts based on the existing conditions and zoning without further development such as the proposed project.

• Levee Setback Alternative: This alternative will include analysis of a project to setback the south levee and widen the flood channel. It is anticipated that the potential effects to agricultural lands, biological and cultural resources, and the upstream and downstream effects on hydrology and hydraulics will be the focus of the evaluation.

• UPRR Bypass Channels: This alternative proposes to create secondary, culverted channels under the railroad to reduce the existing bridge constriction during high flood flows.

3. Prepare a matrix displaying the major characteristics and significant environmental effects of each alternative, and a discussion of any other significant effects that may result from an alternative in addition to those caused by the proposed project.

4. Identification of the preferred alternative. An Environmentally Superior Alternative will be recommended among the other alternatives.

**Significant Environmental Changes and Global Warming**

For EIRs on plans, policies, ordinances, and projects that will be reviewed with an environmental impact statement (EIS) under NEPA, the EIR must analyze and justify the extent to which the proposed project will commit nonrenewable resources to uses that future generations will probably be unable to reverse. While the proposed project is not expected to contribute significantly to global warming in the long-term, global warming trends are expected to affect the function of the flood management program. These effects will be discussed in this section as well as in individual sections on air quality and hydrology. Keith Miller, Morro Group/SWCA will prepare this section.

**Growth-inducing Impacts**

CEQA Guidelines (§15126.2(d)) state that for the preparation of EIRs, growth-inducing effects are defined as “…ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” The Guidelines expand upon this description by stating: “Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow more construction in service areas).” Increases in population may also tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

This section of the EIR will analyze the proposed project in terms of its potential to substantially induce growth in the surrounding area. These and any other potentially growth inducing issues will be examined in the EIR. Keith Miller, Morro Group/SWCA will be responsible for the preparation of the Growth Inducement section, which will consist of the following scope of work.

**Scope of Work**

1. Review and summarization of all applicable planning documents as they relate to growth inducing impact information.

2. Review of the proposed project in terms of its potential for fostering economic or population growth, either directly or indirectly, within the study area.
3. Identify of significant growth inducing impacts.

4. Identify mitigation measures, as necessary, to reduce potential growth-inducing impacts.

**Mitigation Monitoring and Reporting Program**

Public Resources Code §21081.6 requires an agency making findings pursuant to CEQA to adopt a reporting or monitoring program. A draft mitigation monitoring and reporting program (MMRP) will be prepared as part of the draft EIR in order to allow the reviewing agencies to comment. The purpose of the MMRP will be to ensure compliance with all mitigation measures identified in the Initial Study and EIR to mitigate or avoid potentially significant adverse environmental impacts resulting from the proposed project.

In the Environmental Analysis section of the EIR, each project component of the WMP would be considered and mitigation measures indicated for each component. The mitigation measures and monitoring requirements will be grouped independently in the MMRP for each project component that may need separate permitting and/or will be implemented in phases. It is anticipated that the MMRP measures for long-term maintenance will be incorporated into the final WMP guidelines. MMRP measures for capital projects will be organized for each separate project so they can be easily incorporated into plans and specifications for each component project.

**Scope of Work**

1. Review the mitigation measures recommended in the Initial Study and EIR and prepare a list of all mitigation measures that would require implementation if the project were approved. This list will form the basis of the MMRP.

2. Organize the MMRP with all mitigation measures requiring monitoring categorized by project component. This program will outline the agency or department responsible for each measure, identify the appropriate timing of monitoring for each component (i.e., pre-construction, construction, and post construction phases), identify the personnel responsible for monitoring, and determine the method of compliance.

3. Prepare a conflict resolution procedure, to be included in the MMRP, which would help alleviate any potential disputes arising between the County/Zone 1/1A and the permitting agencies.

4. Prepare a MMRP matrix describing each initial study and EIR mitigation measure, monitoring activities and the responsibilities of the various parties, along with the timing and frequency of monitoring and reporting activities.

5. Establish a post-monitoring program (i.e., for revegetation, etc.) following standard monitoring requirements specified by the appropriate regulatory agencies.

**Cumulative Effects**

Cumulative effects of the proposed project that are deemed “considerable” will be discussed as a sub-topic within each of the above environmental issue areas. *CEQA Guidelines §15065(c)* states that “cumulatively considerable” environmental impacts pertain to the incremental effects of an individual project that are considerable when viewed in connection with the effects of past
projects, the effects of other current projects, and the effects of probable future projects. Morro Group/SWCA will coordinate with County staff to compile a list of past, current and future projects considered appropriate for inclusion into the cumulative development scenario for the proposed project.

Task 6: Draft EIR

The administrative draft EIR will be reviewed by the County Public Works Department. Following that review, the Draft EIR will be prepared, incorporating revisions recommended and requested by the County. The Draft EIR will be published as both a printed document and in electronic (.pdf) format, and distributed for public review and comment. Comments will be collected and recorded during the 60-day public review period. Notice of Completion will be filed with the State Clearinghouse, as required by CEQA.

Task 7: Administrative Final EIR

7.1 Response to Comments

The budget estimate for this task has been generated based on approximate number of comments typically received on EIRs of this magnitude, which is assumed to be twenty (20) comment letters. At this time, it is impossible to predict the amount of public concern that the proposed project may trigger and the level of detail within each comment letter. Should preparation of the response to comments section significantly exceed 15 comment letters or 44 hours response time, Morro Group will notify the County and request a revised scope of work for this task.

7.2 Findings

A total of 40 hours have been included for preparation of EIR Findings. Keith Miller of Morro Group/SWCA will prepare these findings in a format approved by the County Public Works Department.

Task 8: Final EIR

The administrative final EIR will be reviewed by the County Public Works Department and all parties who submitted written comments on the public review Draft EIR. Following that review, the Final EIR will be prepared, incorporating revisions recommended and requested by the County, and other reviewers as appropriate. The Final EIR will be published as both a printed document and in electronic (.pdf) format, and distributed as required under CEQA.

Task 9: Public Hearing

The budget estimate for this task includes attendance by two Morro Group/SWCA team members at two public hearings, assuming one with the County Planning Commission and one with the Board of Supervisors, for the Final EIR.

Task 10: Special-status Species Plant Surveys

Botanical surveys were requested by the County, based on sensitive plant species identified in the Biotic Assessment. A total of four sensitive plant species are considered potentially present within the proposed project area including the marsh sandwort, La Graciosa thistle, Gambel’s watercress, and San Bernardino aster. Plant Surveys will be conducted throughout the 2008
blooming period (April to November) to determine the presence or absence of these species in the project work area.

**Scope of Work**

1. Conduct three botanical surveys; one in mid-May, one in June, and one in July, to fully cover the blooming season and determine presence/absence of sensitive plant species within the project area. Surveys will be preceded by visits to known populations of the species to check growth stage and ensure accurate identification.

2. If rare plants are found during the surveys, we will document the approximate number observed, the square footage occupied by the species, and will suggest potential avoidance measures. Any rare plant occurrences observed will be mapped using a Trimble GEO XT GPS mapping system capable of sub-meter accuracy, and will be marked with colored flagging tape or pin flags.

3. Prepare a report per County of San Luis Obispo and California Department of Fish and Game (CDFG) requirements to document botanical survey results. The report will include survey methods, observations, site photographs, a general plant species list, and will recommend avoidance measures if necessary. The report will also include a map to document the location of any sensitive plants observed during the surveys, based on GPS data and project plans.

**Task 11: Cultural Resources – Archaeological Phase 1**

SWCA archaeological staff will provide a cultural resources background search, a Sacred Lands file search, and a pedestrian survey that will be represented in a technical report that will follow the *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* guidelines developed by the California Office of Historic Preservation.

**Scope of Work**

1. Conduct a California Historical Resources Information System (CHRIS) records search of the 3.5 mile levee repair project area and associated right-of-way, including approximately 4,000 linear feet of UPRR right-of-way, and a 1-mile radius around the project area at the Central Coastal Information Center (CCIC) at the University of California at Santa Barbara. The CCIC houses cultural resources records and the primary purpose of the CHRIS records search is to identify any previously recorded cultural resources known to exist within or adjacent to the project area.

2. Examine historic maps, the NRHP, the California Inventory of Historical Resources, and the listing of California Historical Landmarks. The records search will also reveal the nature and extent of any cultural resources work previously conducted within the project area. SWCA assumes that the CCIC will conduct this records search within a maximum of eight hours and that this search will be conducted at standard rates.

3. Consult with Native Americans (NAHC) for a review of their Sacred Lands File. The NAHC will determine if any NAHC-listed Native American sacred lands are located within or adjacent to the project area. In addition, the NAHC will provide a list of Native American contacts for the project that they believe should be contacted for additional information. SWCA will prepare and mail a letter to each of the NAHC-listed contacts, requesting that they contact us if they know of any Native American cultural resources within or immediately adjacent to the project area. Because this area is historically occupied by the Chumash and preliminary consultation has already been done, SWCA understands the need to consult with the Chumash tribe. Therefore, Ms. Arrington will be available for a full day of consultation. The specific date, time, and location
will be arranged in the aforementioned contact. Should additional Native American consultation be required, SWCA would request a change order to complete this additional work.

4. Conduct a cultural resources Phase I intensive pedestrian survey of the entire project area. SWCA understands that the total project area equals approximately 3.5 linear miles surrounding Arroyo Grande Creek and approximately 4,000 linear feet along the UPRR right-of-way. The linear miles along the creek include a 100-foot right-of-way to the north from the center line of the creek and a 150-foot right-of-way to the south from the center line of the creek. Two SWCA archaeologists will conduct the survey utilizing pedestrian transects spaced at maximum intervals of 15 meters, covering all portions of the project area. At least one transect will be walked on the inside of each levee (to the north and south of the creek) and at least one transect will be walked on the outside of each levee (to the north and south of the creek). For the purposes of this proposal and cost estimate, SWCA assumes that the cultural resources survey will be negative (i.e. no previously unrecorded cultural resources will be encountered and no previously recorded cultural resources will require updates). Any previously unrecorded cultural resources (archaeological and/or historic architectural) identified during the survey would require a change order for formal recordation. No testing or excavation will be conducted, nor will any artifacts, samples, or specimens be collected during the survey.

5. Prepare a technical report documenting the results of the literature review, Native American consultation, and field survey as well as provide management recommendations for resources within or near the project area. The report will meet the Secretary of Interior’s Standards and Guidelines and will follow ARMR guidelines (Archaeological Resource Management Reports: Recommended Contents and Format). The report will include maps depicting the area surveyed for cultural resources. If the locations of sensitive archaeological sites or Native American cultural resources will be depicted or described in the report, it will be considered confidential; the report may not be distributed to the public. In order to protect these sensitive resources, the confidential technical report shall be made available only to qualified cultural resources personnel, the landowner, and project management personnel on a “need to know” basis.

**Task 12: Cultural Resources – Section 106**

JRP Historical Consulting, LLC (JRP), as a subconsultant to SWCA, will assist the project proponent for the Arroyo Grande Waterway Management Program with compliance with the applicable local, state and federal environmental regulations as they pertain to the protection of historic architectural resources. JRP principals and staff historians qualify as historians and architectural historians under the Secretary of the Interior’s Professional Qualification Standards (as defined in 36 CFR Part 61).

JRP will help the environmental team to define the Area of Potential Effects (APE) for historic architectural resources and will prepare a technical report to present the findings of inventory and evaluation of these resources within the APE. Evaluations will assess the eligibility of resources to be listed in the National Register of Historic Place (NRHP) under Section 106 of the National Historic Preservation Act, as well as eligibility for the California Register of Historical Resources (CRHR), for potential to be considered a historical resource under CEQA, as described in the CEQA Guidelines Section 15064.5 (a)(2)-(3). The APE for historic architectural resources is assumed to include up to 5 historic resources that will require inventory and evaluation on DPR523 forms. If any properties eligible for the NRHP are identified, JRP will also prepare a Finding of Effect document to assess the effect the project may have on identified resources and mitigate any adverse effects.
Scope of Work

1. Review previous documentation. JRP will review previous historic studies of the area, and other documentation regarding the history of the resources, as necessary.

2. Inventory and recordation. JRP will conduct inventory and record up to five built environment resources and will prepare DPR523 forms for these resources.

3. Research / Historic Context. JRP will conduct general research, with specific emphasis on historic land use and development within the project study area and its immediate vicinity. JRP will synthesize this information in a historic context narrative for Far Western and/or Foothill to incorporate in the ASR. Research will be conducted in local and state government records, as well as other repositories, as necessary.

4. Finding of Effect. JRP will apply the criteria of adverse effect and will present the conclusions and proposed applicable mitigation in a Finding of Effect report.

Task 13: Hazardous Materials Site Assessment

Kleinfelder as a subconsultant to Morro Group/SWCA, will provide a Phase I Environmental Site Assessment (ESA) and an evaluation of naturally occurring asbestos (NOA study) for the project area, including the approximately 3.5 miles of levee corridor and approximately 4,000 linear feet of UPRR right-of-way. The proposed ESA project will be completed in general accordance with the ASTM E1527-05 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” unless otherwise directed. Kleinfelder will review regulatory agency databases published by the Federal, State, and local government records to learn if environmental investigations have been or are currently being performed at the site or adjacent properties, and to learn if conditions of potential environmental concern have been reported.

Scope of Work

13.1 Phase 1 ESA

1. Regulatory Agency and Other Records Review Standard Environmental Record Sources - Federal and State: A review of published lists of Federal and State regulatory agency investigations and/or enforcement actions for the site and the surrounding area will be conducted within the ASTM minimum search distances of the site. One list search will be requested during our assessment. The list search will be centered between the two properties, with an expanded radius to accommodate standard reference search radii relative to the site parcels.

2. Additional Environmental Sources: State and Local: A review of reasonably ascertainable state and local regulatory agency records for information pertaining to environmental permits, site investigations, and documented enforcement actions for the subject site and adjacent facilities will be conducted.

3. Environmental Liens and Activity Use Limitations: ASTM 1527-05 requires the review of property title records for recorded environmental liens or activity use limitations imposed upon the site by regulatory agencies, for CERCLA liability protection. Because the site is likely to incorporate multiple parcels, Kleinfelder does not propose to conduct a search for environmental liens and activity use limitations assigned to the site parcels. Kleinfelder can review title documents provided by the client for environmental liens and activity use limitations for
additional costs. An additional fee of $120 per parcel will be required in the event that Kleinfelder is requested to secure and review environmental liens and activity use limitations for site parcels.

4. **Site History and Setting:** The history of the site will be researched by Kleinfelder to look for evidence of historical hazardous materials handling, storage, or disposal practices that may affect the property. We will attempt to review a sufficient amount of information to gain an understanding of the site’s history prior to development. Multiple standard historical sources, as they are available and reasonably ascertainable, will be consulted for information regarding the subject site. Standard historical sources include aerial photographs, topographic maps, city directories, interviews with site owners/managers (current and former), and local building department records.

5. **Site Visit:** Kleinfelder will observe field conditions indicating recognizable environmental conditions in connection with the property that may include:
   - The obvious location(s) of suspected past and present hazardous substance storage, application, use, and disposal areas.
   - The obvious location(s) of aboveground and underground storage tanks, pipelines, wells, transformers, and note building materials suspected to contain asbestos.
   - Facilities adjacent to the site that have an obvious potential to affect the environmental conditions at the site.
   - Photographically document conditions at the time of the site visit.

6. **Final Report of Findings – Phase I ESA:** Once the site visit and research has been conducted, Kleinfelder will provide a verbal summary of the findings and recommendations prior to issuing a report. A final report will be prepared that will include an evaluation of the information obtained from the Phase I ESA research and will include illustrations, photographs, pertinent regulatory agency documentation, maps, and qualifications of the professional that prepared the report. The final report will include an executive summary. The Phase I ESA will document data gaps encountered during the assessment and their significance on the conclusions of the report.

Kleinfelder anticipates that the ESA will recommend limited assessment testing for arsenic along the UPRR right-of-way, and included an optional cost estimate for this work. We suggest that the environmental issues regarding arsenic have known mitigation, and that testing can be done during construction design. Estimated cost to do arsenic testing is $10,230.

### 13.2 Naturally-occurring Asbestos Study

1. **NOA Study - Scope of Work:** An evaluation of the possible presence of Naturally Occurring Asbestos within soils along the Arroyo Grande Creek Levee project corridor will be conducted in accordance with State of California Air Resources Control Board (CARB) and San Luis Obispo County Air Pollution Control District (SLOCAPCD) requirements. The NOA Study will include a review of geologic maps of the area by a Professional Geologist (PG) registered with the State of California. A reconnaissance of the project site will also be conducted by the PG. Soil samples will be collected from surface and near surface soils along the Arroyo Grande Creek banks, levee walls, and areas of proposed expanded levee footprints. Based upon current regulatory guidance from the State of California Department of Toxic Substances Control, soil samples will be collected surface and near surface soils from 18 sample locations.
2. **Laboratory Analysis of Soil Samples:** Surface and near surface soil samples will be analyzed by laboratory accredited to perform asbestos analysis. The soil samples will be prepared using CARB Method 435, with analysis by Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) methods. Forty-four (44) soil samples collected from the site will be analyzed initially by PLM methods. Six soil samples may also be analyzed by TEM Methods.

3. **Report of Findings:** A report summarizing the geologic evaluation, soil sampling methodologies utilized, and results of the NOA study will be prepared and signed by a PG. Based upon the findings of the NOA Study, recommendations for NOA mitigation measures may be provided. The NOA Study will be provided as a separate document from the Phase I ESA.

**Task 14: NOA Mitigation Work Plan (Optional Task)**

Kleinfelder will prepare a work plan for the mitigation of NOA soils during planned dredging and other levee work for submission to the SLOCAPCD, *if requested and required based upon the results of the NOA Study*. The NOA Mitigation work plan will provide NOA mitigation measures to be implemented during earthmoving or soil disturbance at the site. The NOA Mitigation work plan should be provided to prospective contractors as a portion of the bid requirements involving any soil disturbance along the levee project. The NOA Mitigation work plan will be provided as a separate document from the NOA Study.

**Task 15: Biological Assessment – California Red-legged Frog, Tidewater Goby**

The project area contains populations of three federally listed species: steelhead, red-legged frog and tidewater goby. The County has asked for preparation of two Biological Assessment (BA) reports to comply with section 7 of the federal Endangered Species Act (ESA). One BA will address steelhead, a species under the jurisdiction of NOAA Fisheries (NMFS). The second BA will address tidewater goby and California red-legged frog under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). We propose to prepare these Biological Assessments to support the ACOE permit applications, following selection of the environmentally superior project alternative through the environmental review (EIR) process.

Swanson H+G will prepare the BA for steelhead both to draw on the experience of their fisheries biologist, John Dvorsky, and because the vegetation and sediment management component of the Waterway Management Program is designed to benefit the steelhead population in Arroyo Grande Creek. The scope of work for this task is presented in the Swanson H+G proposal.

The Biological Assessments will incorporate data and habitat mapping conducted for the project EIR and will not likely require additional fieldwork, unless required by regulatory agencies. Morro Group/SWCA Senior Biologist Geoff Hoetker will prepare the BA for tidewater goby and red-legged frog, and will consult, as needed with Swanson H+G regarding tidewater goby.

**Scope of Work**

1. A draft Biological Assessment will be prepared for U.S. Fish and Wildlife Service (USFWS) consultation with ACOE. The BA will be prepared for Alternative 3c (excluding the UPRR bridge raise).

2. The draft will be submitted to the County and to the designated USFWS representative for review.
3. A final Biological Assessment will be prepared to incorporate review comments.

**Task 16: Wetland Assessment**

Qualified Morro Group/SWCA wetland specialists will conduct a formal wetland assessment / jurisdictional determination within the project study area, once the preferred project alternatives are confirmed by the environmental review process. Wetland delineation may be performed during preparation of the EIR, as directed by ACOE during informal consultation. The Wetland Assessment will be prepared for use in permit applications.

**Scope of Work**

1. The jurisdictional limits of the waters of the U.S. within the approved biological study area will be delineated following the methodology of the *ACOE 1987 Wetland Delineation Manual* and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2006). Identified jurisdictional boundaries will be delineated and mapped, with acreages quantified using a Trimble GEO XT GPS unit capable of determining positional accuracy to ± 0.5-meter.

2. Morro Group will prepare a formal Wetland Assessment Report in a format acceptable to the County, ACOE and Coastal Commission including maps, figures, photo documentation, and field data sheets. The wetland maps will be in a format that can be overlaid with construction plans for quantification of impacts for permit applications (to be prepared under Task 18).

**Task 17: Environmental Assessment (EA)**

The County anticipates that NEPA requirements will be satisfied by an Environmental Assessment (EA) leading to a Categorical Exemption or a mitigated Finding of No Significant Impact (Mitigated FONSI). Impacts identified in the EA must be mitigable. If the EA identifies any significant environmental effects, an Environmental Impact Statement (EIS) would be required, and is not included in this scope of work. Assuming that the Lead Agency (ACOE) concurs that an EA/Mitigated FONSI is the appropriate NEPA document, Morro Group/SWCA staff will prepare the environmental documents based on information already gathered and analyzed for the EIR.

**Task 18: Permitting for WMP Program**

The implementation portion of the projects proposed for Arroyo Grande Creek flood channel is expected to fall under the regulatory authority of the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG) and the California Coastal Commission. Permits or authorizations from one or more of these agencies may be required for various components, phases or work areas proposed in the WMP. This task consists of preparing applications and processing permits for the whole of the Program proposed in the WMP, including the long-term vegetation and sediment monitoring and management activities, based on the preliminary plans for sediment removal and levee raise as they are an integral part of the whole Program. (We anticipate separate permits will be required for the initial sediment removal, levee raise and UPRR bridge projects at the actual time of construction. These separate permits are not a part of this scope of work.) Application packages will be prepared and processed by Deborah Hollowell, in consultation with Swanson H+G.
Scope of Work

1. Permit application packages will be prepared for the following agencies:

   - ACOE / Clean Water Act Section 404 Permit: Early coordination with ACOE to determine the appropriate 404 authorization required will be accomplished under Task xx, during EIR/EA preparation.

   - Section 7 consultations with both USFWS and NOAA Fisheries (NMFS) are expected for steelhead, tidewater goby and California red-legged frog. Biological Assessments will be prepared under Task 15, and will be provided along with any other information required.

   - RWQCB / Clean Water Act Section 401 Permit

   - CDFG / Section 1602 Streambed Alteration Agreement

   - Coastal Development Permit: The project area west of the Union Pacific Railroad is located within the California Coastal Zone while approximately one half of that area is within the Coastal Commission’s original jurisdiction. In 2003 the Coastal Commission permitted a minor sediment removal project with a condition that the permittee [the District] submit a comprehensive analysis, strategy and timeline for implementation of the lease environmentally damaging feasible methods for protecting public safety and existing development from floods.

      Early coordination with Coastal Commission will be accomplished under Task 4, during EIR/EA preparation, to identify all Coastal Commission issues and provide appropriate mitigation through the WMP and EIR documents, prior to permit application.

   - Caltrans Encroachment Permit: The project area crosses the Highway 1 (Caltrans) right-of-way at the Halcyon Road intersections. Early consultation will determine the need and process for obtaining Caltrans permission for work and access in the Caltrans right-of-way. Permits applications will be prepared and processed through Caltrans District 5.

2. Coordination with each agency will be provided for the above application, through the review process to receipt of approved permits.

Task 19: Development of WMP Plans/Documents

Swanson H+G, as a subconsultant to Morro Group/SWCA, will prepare the Waterway Management Plan and associated levee design plans that will constitute the proposed action which will be the subject of the environmental review and permitting for this overall scope of work. Swanson H+G will assist Morro Group/SWCA staff in agency consultation, permit preparation and alternatives review. Their detailed scope of work is presented in Attachment B. In general, their work tasks include the following:

   - Summary of Alternatives: This task consists of a technical evaluation and preparation of a brief memorandum that revisits all project alternatives that were discarded in the Flood Alternatives Analysis work, to support the justification and selection of the preferred alternative.
• **Waterways Management Plan**: SH+G will take the lead, with assistance from Morro Group, in preparation of the Draft and Final Waterways Management Plan.

• **Engineering Design**: SH+G will take the lead in preparing Preliminary Designs for the 3a and 3c Alternatives and the initial Sediment Management Approach, to the 30% design level.

• **Regulatory Permitting**: SH+G will prepare the BA for the National Marine Fisheries Service to address steelhead. As necessary, SH+G will assist Morro Group with programmatic permitting issues, for the Waterways Management Plan.

### III. EXCLUSIONS/ASSUMPTIONS TO SCOPE OF WORK

This scope of work does not include the following task items, for the reasons listed below:

1. The scope and budget for NEPA environmental documentation is included assuming preparation of an Environmental Assessment. This scope of work and budget does not include preparation of an Environmental Impact Statement.

2. It is expected that the initial sediment removal and the levee raise project will be one-time capital projects for which individual permits will be processed at a later date, as required by regulatory agencies. These capital projects permits are not a part of this scope of work.

3. No task has been included for development of construction plans for raising the UPRR bridge. It is assumed that environmental review will consider this alternative in concept only, that UPRR will prepare and process plans for this project independently, and that subsequent environmental review will be required at that time.

4. Monthly attendance at Zone 1/1A meetings is not included in the scope and budget, but monthly progress reports will be provided to the County and Zone 1/1A. Morro Group/SWCA will meet with the Zone 1/1A Technical Committee to review the draft WMP and draft EIR. Team coordination time is included in each of the tasks, and in overall project management.

5. No attendance at Coastal Commission hearings is included in this scope of work.

6. The County will file the Notice of Determination following action on the Final EIR.

The following assumptions have been considered during preparation of this scope or work:

1. Cost and contract management for geotechnical investigation is not a part of this scope of work and will be the responsibility of the County Public Works Department.

2. The preliminary geotechnical study should be available no later than July 15, 2008, as it is critical for levee design development for the WMP.

3. Cost and contract management for supplemental surveying and engineering design services are separate from this scope of work and will be the responsibility of the County Public Works Department.
4. The NEPA document required by the federal lead agency will be an Environmental Assessment (EA);

IV. SCHEDULE OF COMPLETION

A. DELIVERABLES

The EIR will be provided as a printed document for availability at the County, County library, Zone 1/1A offices in Oceano, and public libraries. The EIR also will be available electronically in PDF format for distribution on CD. For the printed document, the EIR will be printed two-sided on recycled paper at 8 1/2 x 11 vertical format with 11x17 graphic insertions when needed. Color graphics will be used where necessary to assist in understanding complex information. All documents will be in three-ring notebooks for ease in use. Working drafts for staff use also will be presented in three-ring notebook binders. Morro Group will submit the EIR master copy on CD in Microsoft Word format. In addition, Morro Group will submit the EIR in PDF format for publication on the County web page. The following number of EIRs will be reproduced:

- Administrative Draft EIR - Three (3) notebook copies with appendices and 1 CD copy.
- Draft EIR - Twenty (20) notebook copies with appendices and 50 CDs. Files in PDF format will be provided to the County for inclusion on the District web site.
- Administrative Final EIR - Three (3) notebook copies with appendices and 1 CD copy.
- Final EIR – Twenty (20) notebook copies and 50 CDs. Files in PDF format will be provided to the County for inclusion on the District web site.

Copies of the Waterway Management Program documents (prepared by Swanson H+G) will be provided in the same number and format as the EIR.

The EA will be provided as both a printed document and in electronically in PDF format, as required by the ACOE. This cost estimate assumes 20 printed copies.

Other documents including the Biological Assessments, Wetland Assessment, subconsultant reports, and permit packages will be submitted to the County as separate electronic files. Except as reproduced for public review in the EIR or EA process, printed copies will not be provided, but may be reproduced by the County.

B. MEETINGS AND PUBLIC HEARINGS

Morro Group’s project director and project manager will be available to meet with County / Zone 1/1A staff on up to four occasions, including a kick-off meeting. In addition, the scope of work and cost summary includes Morro Group’s project manager attending one Board of Supervisors and one County Planning Commission public hearing. Morro Group will attend these meetings only if authorized by the County and will be prepared to respond to questions and make presentations relating to EIR analysis and document preparation.
C.  ASSISTANCE TO COUNTY STAFF

Morro Group has included costs associated with assisting County staff in preparation of the Notice of Preparation, project staff reports and Notice Completion associated with preparation and completion of the EIR through final certification.

D.  SCHEDULE

Morro Group/SWCA’s project team will initiate work on preparation of the NOP and the CEQA documentation immediately following contract authorization by the County. The schedule for completing this scope of work is provided following Table 2. In order to meet the desired goal of approved long-range permits for vegetation management in 2009, we have presented an ambitious schedule that would have the Draft EIR and Draft WMP available to public review and comment by the end of this year, with federal permitting for the WMP in process early in 2009. The schedule assumes a start date based on contract approval in April 2008, and may be affected by unforeseen delays in administrative draft review and agency review and processing.

V.  COST ESTIMATE

Billing rates for Morro Group/SWCA staff are provided in Table 1. The proposed cost to prepare the tasks included in this scope of work is summarized in the Table 2 on the following page. All work will be performed on a time-and-materials, not-to-exceed basis, and will be billed monthly.

<table>
<thead>
<tr>
<th>Name</th>
<th>Project Title</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Mary Reents</td>
<td>Project Director</td>
<td>$150</td>
</tr>
<tr>
<td>Keith Miller</td>
<td>Senior Planner / Project Manager</td>
<td>$105</td>
</tr>
<tr>
<td>Shawna Scott</td>
<td>Senior Planner</td>
<td>$105</td>
</tr>
<tr>
<td>Jaimie Jones</td>
<td>Planner</td>
<td>$65</td>
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<tr>
<td>Bob Sloan</td>
<td>Senior Biologist</td>
<td>$115</td>
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<tr>
<td>Geoff Hoetker</td>
<td>Senior Biologist / Wetlands Specialist</td>
<td>$105</td>
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<tr>
<td>Travis Belt</td>
<td>Associate Biologist</td>
<td>$95</td>
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<tr>
<td>Barrett Holland</td>
<td>Biologist</td>
<td>$75</td>
</tr>
<tr>
<td>Deborah Hollowell</td>
<td>Mapping Coordinator / Planner</td>
<td>$105</td>
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<tr>
<td>Vanessa Amerson</td>
<td>GIS Specialist</td>
<td>$75</td>
</tr>
<tr>
<td>Audrey Peters</td>
<td>Planner</td>
<td>$65</td>
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TABLE 2  
Cost Estimate Summary

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<tbody>
<tr>
<td>1</td>
<td>Project Management</td>
</tr>
<tr>
<td>2</td>
<td>Notice of Preparation - EIR</td>
</tr>
<tr>
<td>3</td>
<td>Public Scoping Meeting</td>
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<td>4</td>
<td>Agency Consultation</td>
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<td>5</td>
<td>Admin Draft EIR</td>
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<td>6</td>
<td>Draft EIR</td>
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<td>7.1</td>
<td>Admin Final EIR</td>
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<tr>
<td>7.2</td>
<td>Findings</td>
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<td>Final EIR</td>
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<tr>
<td>9</td>
<td>Public Hearing</td>
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<td>10</td>
<td>Special-status Plant Surveys</td>
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<tr>
<td>11</td>
<td>Cultural Resources - Phase 1</td>
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<tr>
<td>12</td>
<td>Cultural Resources - Section 106*</td>
</tr>
<tr>
<td>13.1</td>
<td>Hazardous Materials - Phase 1 ESA*</td>
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<tr>
<td>13.2</td>
<td>Hazardous Materials – NOA*</td>
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<tr>
<td>14</td>
<td>(NOA Mitigation Workplan - optional)*</td>
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<tr>
<td>15</td>
<td>Biological Assessment for CRLF, tidewater goby</td>
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<td>16</td>
<td>Wetland Assessment</td>
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<td>17</td>
<td>Environmental Assessment - EA (NEPA)</td>
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<td>18</td>
<td>Permitting - WMP, Sediment Removal. Program levee</td>
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<td>19</td>
<td>Swanson – WMP (Attachment A) *</td>
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TOTAL $509,971

* includes 10% markup on subconsultant charges
insert project schedule
Attachment A: WMP Scope of Work – Swanson H+G
Attachment B: Resumes - SWCA Cultural Staff
CINDY ARRINGTON, M.S., RPA
Program Director, Cultural Resources

Education
- M.S., Historical Archaeology, California State University, San Jose, 2002
- B.A., Anthropology, California State University, San Jose, 1998

Registration / Certification
- Registered Professional Archaeologist (National), 2002
- Certified for search, recovery, and identification of human remains; University of Nevada, Reno, 2000
- Certified Open Water Diver
- HazMat 40 hour Training

Expertise
- Project management
- Cultural resources management
- CEQA, Section 106 compliance
- NEPA compliance
- Human osteology
- Pathological analysis
- Forensic criminal and anthropological analysis
- Regulatory compliance and permitting in 21 states

Selected Projects
- Program Manager, County of Sacramento, Department of Environmental Review and Assessment On-call Contract; CA
- Project Manager, Qwest Communications Cultural Resources On-call; Multiple Counties in California
- Assistant Project Manager, Easton Environmental Impact Report (EIR); Sacramento County, California
- Project Manager, Cosumnes Power Plant Project Environmental Monitoring; Sacramento County, California

Ms. Arrington is the cultural resources program director for SWCA's Sacramento, California, office. She has more than 13 years of experience in cultural resources management (CRM). Her professional experience encompasses a wide range of activities in the field, laboratory, and office, dealing with precontact, protohistoric, and historic resources. Her field experience includes an extensive background in the management of cultural resources compliance for large-scale construction projects, underwater archaeology, human osteology, and paleopathological analysis. She is experienced with the regulatory framework in 21 states and has managed 1,400 miles of linear construction in California alone.

Ms. Arrington has extensive experience in multi-disciplinary team management in the environmental profession. Expertise in project performance and compliance with federal, state, and local regulations; implementation of environmental mitigation monitoring plans for complex construction projects; preparation of reports; and direction of cultural resources surveys, excavation, and coordination with Native American groups.

Ms. Arrington’s CRM office experience includes permitting in 21 states; writing, layout, and formatting of National Environmental Policy Act and California Environmental Quality Act-level P/A and site reports; computer-aided mapping and graphics production; coordination of maps for records searches; records searches at California Historical Resources Information System (CHRIS) Information Centers; and communication with the Native American Heritage Commission.

As the Cosumnes Power Plant Project Manager, Ms. Arrington organizes and oversees all aspects of biological, cultural, and paleontological monitoring and planning during all phases of construction and work on the associated natural gas pipeline. This highly visible project has specific conditions for approvals, sensitive resource issues, and strict procedural requirements. Management involves interfacing with governmental, private enterprise, and Native American community representatives to balance conflicting priorities and ensure timely and efficient completion of all tasks. Furthermore, Ms. Arrington concurrently directed 52 linear construction projects in seven states simultaneously for Quest Communications Inc., managing all crews, monitors, Native American participants, and participating government agency personnel, and ensuring compliance with all governmental regulatory agencies.
Mr. Covert is an archaeologist in SWCA’s Pasadena, California, office with more than five years of experience in cultural resources management. He has conducted archaeological excavations, surveys, and monitoring, supervised wet screening areas, organized and catalogued washed material, sorted excavated material, and recorded sites and artifact locations with hand-held GPS.

Mr. Covert’s fieldwork experience includes the excavation, removal, transportation, and reburial of Native American ancestors within a project site while working in cooperation with Native American wishes and concerns. He has worked on multiple projects within Orange County, Los Angeles County, Riverside County, San Diego County, and Imperial County, ranging from initial survey to archaeological excavation and monitoring. Duties have included survey, shovel test pits, excavation of units, and dry/wet screening, and monitoring. His experience in the laboratory includes sorting artifacts and ecofacts such as marine shell, and preparing analyzed artifacts for curation.

Office experience includes the preparation of cultural resources survey reports as well as archaeological and built environment resource site records. He has processed newly recorded and updated site information for use in technical reports and coordinated field and report preparation efforts with multiple employees working in SWCA’s Sacramento, Mission Viejo, Denver, and Albuquerque offices.

Mr. Covert has worked with agencies and clients including the U.S. Army Corps of Engineers, the U.S. Department of Interior Bureau of Land Management (BLM), Cleveland National Forest, Anza-Borrego Desert State Park, cities and counties, and private landowners. He has also prepared maps for projects related to land and wetland conservation, presentations, and the update of conservation easement files using Arc View GIS.

### Education
- **B.A., Environmental Studies / Planning, Sonoma State University; Cotati, California**
- **A.S., Natural Sciences, Citrus College; Glendora, California**
- **A.A., Liberal Studies, Citrus College; Glendora, California**

### Registration / Certification
- **Certificate of Completion, Citrus College Forestry Program, 1996**

### Selected Projects
- **Sunrise Powerlink, Transmission Line Cultural Resources Survey; San Diego and Imperial Counties, California**
- **Camp Pendleton Archaeological Evaluation and National Register Eligibility Investigation of Site CA-SDI-13,665; Camp Pendleton, San Diego County, California**
- **Entrega Pipeline Cultural Resources Program and Data Recovery; Albany, Carbon, Laramie, and Sweetwater Counties, Wyoming**
- **BlueFire Ethanol, Cultural Resources Survey; Lancaster, Los Angeles County, California**
- **Pine Valley Estates, Archaeological Resources Monitoring; Chino Hills, San Bernardino County, California**
- **Temecula Lane Project, Cultural Resources Monitoring and Mitigation; Temecula, Riverside County, California**
- **41st & Alameda Cultural Resources Survey and Site Evaluation; Los Angeles, California**
- **Peppertree Heights Archaeological Site Evaluations; Hemet, Riverside County, California**
AMANDA MARTINEZ, M.A., RPA
Project Manager, Cultural Resources

Education
- M.A., Anthropology, New Mexico State University, 2005
- B.S., Anthropology, California Polytechnic State University, Pomona, 2001

Registration / Certification
- Registered Professional Archaeologist (National), 2007

Expertise
- Project management
- Cultural resources management
- NEPA compliance
- Ceramic analysis
- Lithic analysis
- Geographic Information Systems
- Regulatory compliance and permitting in three states

Selected Projects
- Project Manager, County of Sacramento, Department of Environmental Review and Assessment; California
- Field Director, Laguna Madre Seismic Survey of 240 square miles; Cameron County, Texas
- Assistant Project Manager, 10,500 Acre McGregor Range Survey on Fort Bliss Military Reservation; multiple counties; New Mexico
- Assistant Project Manager, 11,000 Acre Survey on Fort Bliss Military Reservation; multiple counties, New Mexico and Texas
- Assistant Director, Coordination between the National Park Service and Chiricahua Native American groups.

Ms. Martinez is the cultural resources project manager for SWCA's Sacramento office. She has more than six years of professional experience. Her professional experience encompasses a wide range of activities in the field, laboratory, and office, dealing with precontact, protohistoric, and historic resources. Her field experience includes an extensive background in the management of cultural resources compliance for large-scale seismic projects and project on military reservations. She is experienced with the regulatory framework in three states.

Ms. Martinez has extensive experience in team management in the environmental profession. Expertise in project performance and compliance with federal, state, and local regulations; preparation of reports; and direction of cultural resources surveys, excavation, and coordination with Native American groups.

In the field, Ms. Martinez has led crews of up to 15 members, surveyed more than 20,000 acres, recorded more than 200 archaeological sites, both historic and prehistoric, and excavated a large pueblo in New Mexico. In the laboratory, she has organized crews to analyze artifacts, soils, flotation samples, carbon samples, dendrochronology samples, chipped stone, ground stone, ceramics and more.

Ms. Martinez’s CRM office experience includes permitting in three states; writing, layout, and formatting of National Environmental Policy Act, site forms, and site reports; computer-aided mapping (expertise in ArcMap 9.2) and graphics production; and communication with multiple Native American groups, including the Bureau of Indian Affairs and the Native American Heritage Council.

As SWCA’s Project Manager, Ms. Martinez organizes and oversees all aspects of cultural resources investigations. Management involves interfacing with governments, private enterprise, and Native American community representatives to balance conflicting priorities and ensure timely and efficient completion of all tasks.
ROBERT S. RAMIREZ, M.A., RPA
Archaeologist / Assistant Project Manager

Education
- M.A., Anthropology, San Diego State University, 2001
- B.A., Anthropology, University of California, Davis, 1994
- A.A., Social Science, Sacramento City College, 1992

Registration / Certification
- Register Professional Archaeologists
- County of Riverside-approved Principal Investigator

Expertise
- Cultural resources management
- Southern California archaeology
- CEQA and Section 106/NHPA compliance studies
- Prehistoric lithic artifact analysis

Selected Projects
- Assistant Project Manager/Cultural Resources Specialist, Mammoth Crossing Project; Town of Mammoth Lakes, Mono County, California
- Cultural Resources Specialist, Palmdale Water District Master Plan; Palmdale, Los Angeles County, California
- Cultural Resources Specialist, EIS/EIR for the Sunrise Powerlink Project, California Public Utilities Commission; San Diego and Imperial Counties, California
- Cultural Resources Specialist, Santa Rosa Water Reclamation Facility Expansion Project, Rancho California Water District; Riverside County, California
- Archaeologist, Cachuma Lake Project; Santa Barbara County, California

Mr. Ramirez is a cultural resources assistant project manager in SWCA’s Pasadena office. He has more than 13 years of professional experience in cultural resources management (CRM) in California and Nevada. He routinely conducts cultural resources work in support of development, infrastructure, and multidisciplinary environmental projects, in compliance with the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA/Section 106).

His professional experience includes small- to large-scale cultural resource surveys, testing programs involving California Register of Historical Resources/National Register of Historic Places eligibility evaluations, and the mitigation of significant impacts through data recovery programs.

Mr. Ramirez has supervised large and small field crews and completed technical reports of archaeological studies including various cultural and environmental settings, phases of work, and reviewing agencies. He has conducted lithic artifact and shell bead analysis as well as archival research and Native American consultation. He has extensive experience with both prehistoric and historic burials.

In addition to his CRM experience, Mr. Ramirez has experience with Maya archaeology in Belize and Mexico. He has conducted laboratory analysis and reported on the obsidian blade industry of the prehistoric Maya.
**NANCY E. SIKES, Ph.D., RPA**

**Lead Principal Investigator – Cultural Resources**

Dr. Sikes is the Principal Investigator for the Cultural Resources Program at SWCA’s California offices. She is an archaeologist with over 20 years of experience in a wide range of world areas and research settings. Dr. Sikes is certified by the Register of Professional Archaeologists and the County of Orange (California), is certified as a Cultural Resources Specialist (CRS) by the California Energy Commission, and is permitted by the State Antiquities Sections in Nevada and Utah and the Bureau of Land Management (BLM) in four western states (California, Oregon, Utah, and Washington). Dr. Sikes has attended workshops on federal (NHPA, NEPA) and state (CEQA, S.B. 18) laws, as well as on archaeological prospection (remote sensing). She holds Research Associate status with the National Museum of Natural History, Smithsonian Institution, with which she had a six-year association as a visiting scientist after receiving her Ph.D.

Dr. Sikes has been a principal investigator, senior scientist, and project manager for over 15 years. She has participated in all aspects of cultural resource management projects in northern and southern California, Nevada, Utah and Wyoming, and in historic preservation projects in Nevada. Her projects have included regulatory compliance, EIR preparation, and mitigation of prehistoric, historic, and natural resources for large-scale construction and development projects. Her cultural resources management experience encompasses a wide range of activities in the field, laboratory, and office, dealing with prehistoric and historic resources for private or state and federal regulatory agencies.

As a Principal Investigator, Dr. Sikes guides SWCA’s scientific efforts, develops treatment plans and research designs under CEQA and Section 106 guidelines, conducts significance evaluations, and provides expertise and overall quality control on complex cultural resources projects, such as large excavations. Depending on the project, Dr. Sikes also acts as an environmental specialist or project manager. Other responsibilities at SWCA include agency, client and Native American consultation, preparation of proposals and budgets, overseeing file searches, surveys, site testing, data recovery and lab analysis, producing and editing technical reports, and producing EIR sections.

Further, Dr. Sikes provides technical expertise as an environmental specialist in the formation and description of soil profiles (geomorphology/formation processes) and chemistry of soils within archaeological sites; interpretation of stable isotope studies on prehistoric diets, soils/paleosols, and carbonates; paleoenvironmental reconstruction of material from soil or sediment cores; and guidance in the choice of geophysical techniques on a project-specific basis. She has applied her expertise to the study of numerous archaeological sites ranging in age from the late Holocene in the western United States to the early Pleistocene in East Africa, including Olduvai Gorge.

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**Education**

- Ph.D., Anthropology, University of Illinois at Urbana-Champaign, 1995
- A.M., Anthropology, University of Illinois at Urbana-Champaign, 1990
- B.A., with distinction, Anthropology/Museology, University of Nevada-Reno, 1985

**Registration / Certification**

- Registered Professional Archaeologist (National), 2002
- Certified Archaeologist (CA), Orange County, 2003
- Cultural Resources Specialist (CA), California Energy Commission, 2003

**Expertise**

- CEQA, Section 106 compliance
- Cultural resources management
- EIR/EIS preparation
- Soil profiles and soil chemistry
- Stable isotope analysis: prehistoric diets and environmental reconstruction
- Geophysical techniques

**Selected Projects**

- Cultural Resources Specialist, Cosumnes Power Plant, Sacramento Municipal Utility District, Sacramento County, California
- Principal Investigator, Qwest Network Construction Project, California (statewide covering 1,431 linear miles)
- Principal Investigator, Travertine - La Quinta Development; Riverside County, California
- Principal Investigator, Camp Pendleton Archaeological Evaluation and Eligibility Investigation of Site CA-SDI-13,665 for the U.S. Navy–Southwest Division; San Diego County, California
- Principal Investigator, Easton Project EIR; Sacramento County, California