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**REVIEW PLAN**  
**MALIBU CREEK ENVIRONMENTAL RESTORATION FEASIBILITY STUDY**  
**LOS ANGELES DISTRICT**

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**September 2010**



**US Army Corps  
of Engineers** ®  
Los Angeles District

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**PEER REVIEW PLAN**  
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**PEER REVIEW PLAN  
MALIBU CREEK ECOSYSTEM RESTORATION FEASIBILITY STUDY  
LOS ANGELES DISTRICT**

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**1. PURPOSE AND REQUIREMENTS**

**A. Purpose.** This document outlines the review plan for Malibu Creek Environmental Restoration (Malibu Creek) Feasibility Study. This study was prepared in partial response to the Resolution adopted by the House Committee on Public Works and Transportation, dated February 5, 1992. The decision document for this study provides specific planning details necessary to identify the Federal interest in an implementation project for ecosystem restoration and for approval to design and construct the project.

Engineer Circular (EC) 1105-2-209 dated 31 Jan 2010 "Civil Works Review Policy" provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision documents through an independent review process. It complies with Section 515 of Public Law 106-554 (referred to as the "Data Quality Act "); and the Final Information Quality Bulletin for Peer Review by the Office of Management and Budget (referred to as the "OMB Bulletin. It also provides guidance for the implementation of Section 2034 of WRDA 2007 (P.L. 110-114). This Circular also presents a framework for establishing the appropriate level and independence of review and detailed requirements of review documentation and dissemination to ensure that quality compliance is comparable to cost and schedule compliance .

**B. Requirements.** All decision documents and their supporting analyses will undergo District Quality Control (DQC) and Agency Technical Review (ATR) and may also require Independent External Peer Review (IEPR), to "ensure the quality and credibility of the government's scientific information", in accordance with this circular and the quality management procedures of the responsible command. The Circular addresses review of the decision document as it pertains to both approaches and planning coordination with the appropriate Planning Center of Expertise. Coordination will be conducted with the National Ecosystem Restoration Center of Expertise (ECO-PCX). The Circular also requires that DrChecks (<https://www.projnet.org/projnet/>) be used to document all ATR and IEPR comments, responses, and associated resolution accomplished.

The types of technical review are provided below and have been redefined and renamed for consistency with recent legislation and to establish a more comprehensive lexicon. This Circular uses the terms "home district" or "home MSC" to refer to the office that has been assigned responsibility for a study or project and whose commander will sign any recommendations or decision document. Where studies are conducted by non-Federal interests, the "home district" will be the district which has the area of responsibility that contains the proposed project. In this case, the "home district" is the Los Angeles District of USACE (SPL).

(1) **District Quality Control (DQC).** DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations

before approval by the District Commander. It is expected that the MSC/District quality management plans address the conduct and documentation of this fundamental level of review. DCQ is not covered by this Review Plan.

(2) **Agency Technical Review (ATR).** ATR (which replaces the level of review formerly known as Independent Technical Review [ITR]) is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of a project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC.

(3) **Independent External Peer Review (IEPR).** IEPR is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk informed decision is made whether IEPR is appropriate for a given product. In general, most studies should undergo a Type I IEPR. The vertical team (involving the district, MSC, PCX, RMC, and HQ members) will advise the MSC Commander whether the covered subject matter meets certain criteria (described in EC 1165-2-209) where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted or whether sufficient rationale exists to support a waiver request to the Chief of Engineers. Type I IEPR is coordinated by the appropriate PCX or RMC and managed by an OEO external to the USACE. Type I IEPR panels shall evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels should be given the flexibility to bring important issues to the attention of decision makers; however, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning or reauthorization study. IEPR panels will accomplish a concurrent review that covers the entire decision document and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. Whenever feasible and appropriate, the office producing the document shall make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. The final report from the IEPR panel will be considered by the District and documentation prepared on how issues were/will be resolved before the District Engineer signs the report. The significant issues, responses, and resolutions will be presented to the CWRB with an IEPR panel member and/or OEO representative participating in the CWRB. HQUSACE will prepare a written response for all panel recommendations, which will be made available to the public on the Internet and will accompany the publication of the report of the Chief of Engineers.

The Chief of Engineers can exclude project studies from Type I IEPR under certain circumstances listed in paragraph 1.c.(3)(a). The PDT must document a deliberate, risk-informed recommendation regarding appropriate IEPR. A PDT recommendation to undergo IEPR will be submitted to the MSC commander for approval. A PDT recommendation to exclude a project study from IEPR will be forwarded to the MSC Commander for concurrence and endorsement to the respective HQ-RIT for action. The Chief of Engineer's decision and recommendation will then be documented in the review plan. The PDT's risk-informed recommendation will be

developed by explicitly considering the consequences of non-performance on project economics, the environment, and social well-being as well as indicating whether the product is likely to contain influential scientific information, or be a highly influential scientific assessment, or involve any other issues that provide a rationale for determining the appropriate level of review. The recommendation for exclusion must also make the case that the project/study is so limited in scope or impact that it would not significantly benefit from IEPR.

A Type I IEPR will be conducted for this study. No Safety Assurance Review (SAR) will be conducted for the Type I IEPR during the feasibility phase since there is not a significant threat to human life associated with the preliminary tentatively recommended plan.

The Type II IEPR, Safety Assurance Review, is required to insure public health, safety, and welfare and is conducted on design and construction activities for any hurricane, storm, and flood risk management projects, as well as other projects where existing and potential hazards pose a significant threat to human life. Other factors to consider for conducting a SAR include: project involves use of innovative materials or techniques, project design requires redundancy resiliency, and robustness, or the project has unique construction sequencing or a reduced/overlapping construction schedule. The Type II IEPR is undertaken prior to initiation of physical construction and periodically thereafter until construction activities are completed. SAR oversight is the responsibility of the MSC, Chief, Business Technical Division in coordination with District Chiefs of Construction and Operations and the PM. Decision documents that meet the criteria should incorporate the SAR into their Type I IEPR. For Type II IEPRs, the RMO is the RMC. SAR should be considered at certain milestones, including: at the record of final design in the Design Documentation Report, at the completion of Plans, Specifications, and the Cost Estimate, at the midpoint of a construction contract, prior to final inspection, and at any critical design or construction milestones. The intent of the SAR is to compliment and not duplicate the ATR. Review Plans shall include the SAR or provide an explanation as to why a SAR is not required. After receiving a SAR Report, the host District Chief of Engineering shall consider all comments contained in the report, prepare a written response, note agreement/action or disagreement/explanation, submit the report and responses to the MSC for final approval, followed by posting on the District's web site for public information.

A Type II IEPR will not be conducted for this feasibility study but will be included as part of the design (PED) phase of the project, if applicable. An SAR will be included in a future design phase for this project. It is not known what the costs will be for the SAR at this time, but cost estimates will be developed at the completion of the feasibility study to include in RP updates for the PED phase of the project. The SAR will likely be conducted between the 60% and 90% Plans & Specs submittal and cost approximately \$100,000-\$150,000.

**(4) Policy and Legal Compliance Reviews** In addition to the technical reviews described above, decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. The technical review efforts addressed in this Circular are to augment and complement the policy review processes by addressing compliance with published Army policies pertinent to planning products, particularly policies on analytical methods and the presentation of findings in decision documents. DQC and ATR efforts are to include the necessary expertise to address compliance with published planning policy.

(5) **Planning Center of Expertise (PCX) Coordination.** The Circular outlines PCX coordination in conjunction with preparation of the review plan. Districts should prepare the plans in coordination with the appropriate PCX and appropriate consultation with the allied Communities of Practice. The MSC Commander's approval of the review plan is required to assure that the plan is in compliance with the principles of this Circular and the MSC Quality Management Plan (ER 5-1-11). The review plans must anticipate and define the appropriate level of review. All reviews are expected to be completed and documented before the District Commander signs the report. HQUSACE policy review will be completed before the draft decision and NEPA documents are released for public review and again before the Chief of Engineers signs his report. To the maximum extent practicable, reviews shall be scheduled and conducted in a manner to avoid or minimize delays in study or project completion.

(6) **Review Plan Approval and Posting.** To ensure the Review Plan is in compliance with the principles of EC 1105-2-209 and the MSC's QMP, the Review Plan must be approved by the applicable MSC, in this case the Commander, South Pacific Division (SPD). Once the Review Plan is approved, the Los Angeles District will post it to its district public website and notify SPD and the ECO-PCX.

(7) **Safety Assurance Review.** In accordance with Section 2035 of WRDA 2007, EC 1105-2-209 requires that all projects addressing flooding or storm damage reduction undergo a safety assurance review during design and construction. Safety assurance factors must be considered in all reviews for those studies. Implementation guidance for Section 2035 is under development. When guidance is issued, the study will address its requirements for addressing safety assurance factors, which at a minimum will be included in the draft report and appendices for public and agency review. Prior to preconstruction engineering and design (PED) of the identified for construction, a PMP will be developed that will include safety assurance review. Safety assurance review will also be accomplished during construction.

## **2. PROJECT DESCRIPTION**

**A. Decision Document.** The purpose of the decision document is to present the results of a feasibility study undertaken to restore the ecosystem within the Malibu Creek Watershed. The study is cost shared with the non-Federal Sponsors: State of California, Department of Parks and Recreation. The document will provide planning, engineering, and implementation details of the recommended restoration plan to allow final design and construction to proceed subsequent to the approval of the plan. The study is a General Investigations effort undertaken to evaluate structural and non-structural ecosystem restoration measures. The study will require Congressional Authorization. The study is cost shared 50 percent Federal, 50 percent non-Federal with the non-Federal Sponsor. There are no anticipated Continuing Authority Program (CAP) "spinoffs" associated with this feasibility study effort.

An interim report for the feasibility study has been completed that includes updates to the baseline (existing and future-without project) conditions analyses and formulation, comparison and evaluation of an array of alternative plans with selection of a preliminary tentatively recommended plan (F4 milestone). The next major report review milestone for the PDT is the Alternative Formulation Briefing (AFB).

**B. General Site Description.** The Malibu Creek study area is located along an approximate 10-mile length of creek between Malibu Dam to Malibu Lagoon and the Pacific Ocean, specifically, the area immediately upstream and downstream of an obsolete water supply dam on Malibu

Creek known as Rindge Dam. The lower portions of several tributaries to Malibu Creek above Rindge Dam (Cold Creek, Las Virgenes Creek) are also included in the study area with several additional aquatic habitat barriers that will be further investigated during ongoing studies.

Malibu Creek is located approximately 30 miles (mi) west of downtown Los Angeles, California. Approximately two-thirds of the watershed is located in northwestern Los Angeles County and the remaining one-third is in southeastern Ventura County. The drainage area covers approximately 110 square miles (mi<sup>2</sup>) of the Santa Monica Mountains and Simi Hills. Elevations in the watershed range from over 3,100 ft (ft) at Sandstone Peak in Ventura County to sea level at Santa Monica Bay.



**C. Project Scope.** The primary focus of this study is to address measures associated with the modification of Rindge Dam, a 100-foot high private dam completed in 1926 for orchard and farmland irrigation and domestic water supply. The reservoir filled with sediment in the 1950s and was decommissioned by the State of California in 1967. There is currently an estimated 780,000 cubic yards of sediment that have accumulated behind the dam. Rindge Dam is a barrier to aquatic and terrestrial species, blocking access to much of the watershed.

Documentation of the study process includes preparation of a combined Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to address requirements of the National Environmental Policy Act (NEPA) to comply with requirements of the Corps, the Council of Environmental Quality (CEQ) and State of California requirements of the California Environmental Quality Act (CEQA). The feasibility report also includes technical appendices that support the plan formulation and evaluation process.

**D. Problems and Opportunities.** The natural sediment regime on Malibu Creek has been disrupted since at least the 1920s with the construction of several water supply and recreational dams in the watershed. Rindge Dam and other upstream barriers block aquatic and terrestrial migratory species, isolating reaches of Malibu Creek and tributaries in the watershed and obstructing access to former spawning and rearing habitat. Water quality in the Malibu Creek watershed is also degraded due to Rindge Dam and urbanization impacts within the watershed. There is an opportunity to restore Malibu Creek to a more natural sediment transport regime; however, some local opposition exists to a restoration project that includes the potential removal or modification of Rindge Dam.

**E. Potential Restoration Methods and Estimated Project Cost.** Potential ecosystem restoration measures that have been considered include Rindge Dam modification (fishways, bypass, notching/partial removal, full removal) combined with removal of impounded sediment, beneficial reuse of beach compatible sands (beach nourishment), revegetation of disturbed construction areas with native riparian habitat, habitat restoration in other disturbed areas, removal of additional upstream habitat barriers, and non-native vegetation eradication. Estimated initial construction project costs range from \$32M to \$72M.

**F. Need for Environmental Impact Statement.** The potential project will likely have significant beneficial effects to the Nation in terms of ecosystem restoration. However, construction measures may impact some existing habitat during the time of construction for the benefit of promoting the creation or restoration of a greater area with higher quality habitat. Environmental compliance will need to be fulfilled by the preparation of an Environmental Impact Statement (EIS), and an Environmental Impact Report (EIR). Significant interagency interest is expected, as well as public interaction and potential dispute.

**G. Project Delivery Team.** The PDT is comprised of those individuals directly involved in the development of the decision document. Individual contact information and disciplines are presented in appendix B. In accordance with the PMP, it is planned that the non-Federal sponsors will contribute in-kind services for project management; public involvement, coordination and outreach; and for participation in reviews. All in-kind work products will undergo review by the PDT for a determination of adequacy; products will ultimately undergo DQC.

**H. Vertical Team.** The Vertical Team includes District management, District Support Team (DST) and Regional Integration Team (RIT) staff as well as members of the Planning of Community of Practice (PCoP). Specific points of contact for the Vertical Team can be found in Appendix A.

**I. Potential Project Challenges.** The challenge for restoration in Malibu Creek will include constructability of the project based on the physical constraints of the project area and the stability of the dam during construction while the dam is being removed. Another potential challenge is the control of invasive species. Rindge Dam currently acts as a barrier for invasive species, and management measures will need to be included to address the potential for invasive species migration. Additionally, the determination of the disposal areas presents a potential

challenge. As there is significant interagency and stakeholder interest, a consensus building approach has been implemented in the plan formulation and evaluation process in order to arrive at a viable and defensible restoration solution.

### 3. AGENCY TECHNICAL REVIEW PLAN

The District is responsible for ensuring adequate technical review of decision documents. The responsible PDT District of this decision document is the Los Angeles District. The PDT members and their area of expertise are shown in Table 1.

<b>TABLE 1. PROJECT DELIVERY TEAM MEMBERS</b>	
<b>Discipline</b>	<b>Office/Agency</b>
Project Manager	CESPL-PM-C
Budget / Programs Analyst	CESPL-RM
Planning Lead	CESPL-PD-CS
Planning Co-Lead	CESPL-PD-WW
Report Formatting/Editing	CESPL-PD-CS
Environmental Coordinator	CESPL-PD-R
Fish & Wildlife	CESPL-PD-RQ
Cultural Resources	CESPL-PD-RL
Environmental Eng/HTRW	CESPL-ED-RQ
Biological Analysis	CESPL-PD-RQ
Civil Design	CESPL-ED-DA
Structural Engineering	CESPL-ED-SG
Survey/ CADD	CESPL-ED
Mapping/GIS	CESPL-ED
Geotechnical	CESPL-ED-GG
Soils	CESPL-ED-GD
Hydraulics & Hydrology	CESPL-ED-HH
Economic Evaluation	CESPL-PD-WE
Cost Engineering	CESPL-ED-DS
Real Estate	CESPL-RE
Public Affairs Office	CESPL-PA
Office of Counsel	CESPL-OC
Sponsor PM	CA Dept of Parks & Rec

**A. General.** An ATR Manager from outside of SPD will be designated to lead the ATR process. The proposed scope of work for the ATR Process is provided in Appendix A. In general, the ATR Manager is responsible for providing information necessary for setting up the review, communicating with the Team Leader, providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team (ATRT), ensuring that the ATRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ATR has been conducted and resolved in accordance with policy.

**B. Team.** This feasibility study began in 2001. The prior (ATR) review was conducted in accordance with the SPD Quality Management Plan requirements. As such, the Albuquerque District led the first Feasibility Scoping Meeting for the baseline conditions report (F3 milestone),

with fellow ATR team members from the Corps Sacramento District and San Francisco District in June 2006. Study progress slowed following that milestone due to lack of study funding. The list of FSM (F3) ATR team members is shown below.

<b>TABLE 2: MALIBU CREEK ITR FEASIBILITY SCOPING MEETING MEMBERS</b>				
<b>First</b>	<b>Last</b>	<b>Discipline</b>	<b>Phone</b>	<b>Office/Agency</b>
Phil	Bowan	ATR Manager/Plan Formulation	(615) 736-7192	<a href="#">No longer with Corps</a>
		Civil Design		<a href="#">Not included in F3</a>
Matt	Davis	Environmental	(916) 557-6708	<a href="#">CESPK-PD</a>
Bill	Brostoff	Biology/Ecology/NEPA	(415) 977-8604	<a href="#">CESPN-ET-PA</a>
Ryan	Gronewold	Hydrology	(505) 342-3340	<a href="#">CESPA-PM-LH</a>
Patrick	Montoya	Hydraulics	(505) 342-3330	<a href="#">No longer with Corps</a>
Jacob	Gallegos	Socio-Economics	(505) 342-3426	<a href="#">No longer with Corps</a>
		Cost Engineering		<a href="#">Not included in F3</a>
		Real Estate/Lands		<a href="#">Not included in F3</a>
Richard	Perry	Cultural Resources	(916) 557-5218	<a href="#">CESPK-PD</a>
Bill	Halczak	Geotechnical Engineering	(916) 557-7427	<a href="#">CESPK-ED-GS</a>
Nat	Cox	Sponsor Ecologist		<a href="#">CA Dept of Parks &amp; Rec</a>

The SPD QMP included an additional milestone review conference for the analysis of alternatives and identification of a tentatively recommended plan (F4 milestone), to be held prior to the AFB milestone and Public Draft Report. SPL, after coordination and approval from SPD and the ECO-PCX, held another ATR review for the F4 milestone report with a review conference in February 2009. The ATR team includes some prior members and new disciplines that were used for the F4 milestone conference, prior to the ECO-PCX identification of the ATR team for the rest of the feasibility study. The F4 milestone ATR members are listed in Table 3 below.

<b>TABLE 3: MALIBU CREEK F4 MILESTONE ATR MEMBERS</b>				
<b>First</b>	<b>Last</b>	<b>Discipline</b>	<b>Phone</b>	<b>Office/Agency</b>
Jason	Shea	ATR Manager/Plan Formulation	(917) 790-8727	<a href="#">CENAN-PL-FR</a>
Ghassem	Khosrownia	Civil Design	(410) 962-6717	<a href="#">CENAB-EN-D</a>
Matt	Davis	Environmental	(916) 557-6708	<a href="#">CESPK-PD</a>
Bill	Brostoff	Biology/Ecology/NEPA	(415) 977-8604	<a href="#">CESPN-ET-PA</a>
Ryan	Gronewold	Hydrology	(505) 342-3340	<a href="#">CESPA-PM-LH</a>
Blair	Greimann	Hydraulics/Sed Transport	(303) 445-2563	<a href="#">U.S. Bureau of Reclamation</a>
		Socio-Economics		<a href="#">Not included in F4</a>
Dan	Durski	Cost Engineering	(410) 962-6723	<a href="#">CENAB-EN-DT</a>
		Real Estate/Lands		<a href="#">Not included in F4</a>
Richard	Perry	Cultural Resources	(916) 557-5218	<a href="#">CESPK-PD</a>
Bill	Halczak	Geotechnical Engineering	(916) 557-7427	<a href="#">CESPK-ED-GS</a>
Nat	Cox	Sponsor Ecologist		<a href="#">CA Dept of Parks &amp; Rec</a>

The ATRT will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.) that have not been involved in the development of the decision document, will be chosen based on expertise, experience, and/or skills, and may be supplemented by outside experts as appropriate. The ATR team leader shall be outside of SPD and ATR team members shall be outside the district office. The members will roughly mirror the composition of the PDT and should be comprised of team members with specific knowledge and experience and one team leader to consolidate ATR team comments, ensure value engineering has been addressed by the ATR team, and to provide the PDT with one primary point of contact for review discussions.

The ATRT members and required areas of expertise are shown in Table 4. The PDT requests specific expertise in western region coastal and watershed systems ecology, geotechnical engineering, and hydraulic and hydrology modeling, where possible. Other ATR members, such as a construction management representative, will be added in future phases of the project, as needed.

<b>TABLE 4: ATR TEAM MEMBERS</b>					
<b>First</b>	<b>Last</b>	<b>Discipline</b>	<b>Years of Experience</b>	<b>Phone</b>	<b>Email</b>
Sue	Ferguson	ATR Manager/plan formulation		(615) 736-7192	<a href="mailto:sue.l.ferguson@usace.army.mil">sue.l.ferguson@usace.army.mil</a>
TBD		Civil design			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Biology/NEPA			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Restoration			<a href="mailto:@usace.army.mil">@usace.army.mil</a>

		Ecology/ Ecosystem Output Evaluation			
TBD		Hydraulics/hydrology			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Socio-economics			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Cost engineering			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Real estate/Lands			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Cultural resources			<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD		Geotechnical engineering			<a href="mailto:@usace.army.mil">@usace.army.mil</a>

<b>Table 4 (Continued)</b>	
<b>Discipline/Area of Study</b>	<b>ATR Expertise Required</b>
<p><u>Hydrologic Studies</u> - This Hydrology study for Malibu Creek has been completed and certified. HEC-FFA was used and discharge-frequency relationships were developed for six reaches of Malibu Creek, upstream and downstream of Rindge Dam. Since the dam is not attenuating flood flows, no hydrologic changes of significance are anticipated for the tentatively recommended plan. Some additional hydrologic modeling may be included in further studies in order to address other barriers to aquatic passage (culverts, roads, etc...) along tributaries to Malibu Creek, above Rindge Dam.</p> <p>A hydrodynamic model was developed for Malibu Lagoon, at the mouth of Malibu Creek. Three separate analyses were performed for different tidal boundary conditions, as well as seasonal variations to consider the development of a sand bar at the lagoon mouth. The lagoon hydrodynamics are dominated by flood flows originating from the Malibu Creek watershed and tidal flow entering from the lagoon inlet.</p>	<p>The ATR member should have experience using the HEC-FFA program. The level of difficulty is low for remaining efforts related to hydrologic studies. Small adjustments may be made to the hydrologic assumptions at several tributaries, upstream of Rindge Dam, to address additional aquatic barriers.</p>
<p><u>Hydraulic studies</u> - The HEC-RAS 3.1.1 was used for approximately 8 miles of Malibu Creek: 3 downstream of Rindge Dam and 5 upstream to the Century Dam area. Digital terrain models, ortho-rectified photos, previous studies and other data were used to develop the model, with cross-sections located approximately every 500-ft. Eight return period events were evaluated for a 75-year period simulation of the existing and future without project condition and an array of alternatives including full dam removal and notching, with natural transport of impounded sediment and mechanical removal of sediment. Downstream existing and future without- and with-project flood impacts were investigated, below Rindge Dam for impacts to infrastructure and habitat. Outputs of the HEC-RAS model were used as inputs for the lagoon hydrodynamic model.</p> <p>Additional hydraulic studies will focus on other barriers to aquatic passage along tributaries to Malibu Creek, above Rindge Dam. Refinements will be made, as needed to the tentatively recommended plan.</p> <p>No groundwater studies are included in this feasibility study. Groundwater changes based on the tentatively recommended plan are anticipated to be in the immediate vicinity of the impounded sediment, restoring the area to pre-dam conditions.</p>	<p>The bulk of the hydraulic analysis has been completed the Alts Analysis (F4) interim milestone report document, comparing and evaluating effects of partial and full dam removal for various alternatives.</p> <p>The ATR member should have experience in a large-scale ecosystem restoration study with the potential for dam removal, HEC-RAS modeling experience and knowledge of “flashy” watercourses in the southwest. The prior ATR team member for this effort has years of experience working for the US BOR and has provided significant support on the Matilija Dam study/project in Ventura County.</p>

<p><u>Sediment Transport Studies</u> - The HEC-6T program (ver. 5.13.20, Feb 2003) was used for one-dimensional modeling to quantify potential deposition and erosion patterns along the creek using the HEC-FFA, HEC-RAS and hydrodynamic models developed for this study. Sediment samples were collected every ¼ to ¾ of a mile, several feet in depth. Eight additional reservoir borings were used for comparison with past borings to characterize the impounded sediment behind Rindge Dam.</p>	<p>The ATR team member should (and does) have experience in evaluation of large-scale dam modification/ removal studies, natural transport of impounded sediment, and “flashy” southwest watercourses. The prior ATR member has years of experience working for the US BOR and has provided significant support on the Matilija Dam study/project in Ventura County.</p>
<p><u>Geotechnical Engineering</u> – Field surveys for characterization of bed material and impounded sediment were described above. Chemical and environmental testing was conducted on the impounded sediment behind Rindge Dam for consideration of possible beneficial reuse of all or a portion of impounded sediment (beach, nearshore, sale, etc...), and upland and ocean disposal. No hazardous contaminants were identified.</p>	<p>The ATR member should have experience in sampling protocols, lab testing and analysis and evaluation of impounded sediments. The ATR review has been completed for this effort. No additional testing is anticipated as part of this study.</p>
<p><u>ATR Manager – Plan Formulation</u> – A preliminary and secondary array of alternative measures/plans have been evaluated. Policy and ATR comments received at the F4 milestone review will be used as a guide to prepare the public draft and final reports. More investigation will be conducted on upstream barriers, refinements to the tentatively recommended plan, the ultimate fate transport of the impounded sediment and identification of recommended disposal areas.</p>	<p>Experience in formulation and evaluation of watershed-scale studies, with specific focus on ecosystem restoration, and knowledge of Southern California ecosystems is desired. The prior ATR lead has worked within the area in the past and was involved in the Matilija Dam feasibility study.</p>
<p><u>Socio-Economics</u> - A baseline economic analysis has been completed . Existing and future (baseline) no project flood conditions were evaluated as were project alternatives. Additional analyses will be needed to evaluate non-monetary benefits and detriments associated with the final array of alternatives and the tentatively recommended plan. IWR-Plan will be used for this analysis. Data will be used from the Habitat Evaluation Procedure prepared for the study for the IWR-Plan analysis.</p>	<p>The ATR member should have familiarity with IWR-Plan and general knowledge of ecosystem restoration studies in the southwest, use of HEP and other environmental evaluation tools and the general economic conditions in So Cal.</p>
<p><u>Cost Engineering</u> - An MCACES cost estimate will be prepared for the final array of alternatives.</p>	<p>The ATR member will have experience in the preparation of MCACES cost estimates.</p>
<p><u>Biology/Ecology/NEPA</u> – Numerous studies have been conducted along Malibu Creek, the lagoon, the Rindge Dam area, and upstream tributaries. All of this data was used to prepare the preliminary draft Environmental Impact Statement/Environmental Impact Report and the development of a Habitat Evaluation Procedure. Steelhead is a particular species of concern for this watershed.</p> <p>Water quality, air, noise, traffic, recreation, aesthetics, and more conditions were also addressed in the prelim draft EIS/EIR. Extensive water quality data exists for Malibu Creek. The tentatively recommended plan would have short-term adverse impacts to some of the above parameters but long-term potential benefits. The discussions are thoroughly addressed in the draft documentation.</p>	<p>The ATR member should have experience with steelhead and other aquatic and terrestrial species needs for Southern California. Comments received at the F4 conference will be used to refine the prelim draft EIS/EIR and appendices, including the HEP appendix.</p>

<p><u>Real Estate</u> – A Real Estate Plan will be prepared for the final array of alternatives and a Gross Appraisal will be prepared for the tentatively recommended plan. The majority of land interests are under the ownership of the study Sponsor, the State of California (Dept of Parks and Rec). More detailed effort is required for determination of use of one of three proposed upland disposal sites (site A), outside of the park boundary. Mechanical transport of the impounded sediment will also require real estate studies of use of Malibu Creek/Las Virgenes Road, and adjacent alignments.</p>	<p>The ATR member should have experience in the preparation of REP’s and Gross Appraisals.</p>
<p><u>Civil/Structural Design</u> – Studies to date have included analysis of staged and full dam removal actions including: removal and disposal of concrete; dewatering; diversion and control of water; options for impounded sediment removal, transport and disposal; restoration actions, and analysis of other alternatives such as fishways and other dam modifications. More detailed effort will be conducted on the final array of alternatives, including refinements to the above-mentioned details (approx 30% design), and potential removal of additional upstream barriers.</p>	<p>The ATR member should have experience in large-scale dam removal projects.</p>
<p><u>Dam Safety</u>- The Corps conducted visual inspections of Rindge Dam in 2005 and did not see evidence of significant deterioration after nearly 80 years. Therefore, the dam was assumed to remain in-place for the future without project condition without need for major repairs/rehabilitation. The CA Dept. of Water Resources’ Division of Safety of Dams (DSOD) conducted a safety inspection in 1992 that was reviewed for consistency with Corps findings. As stated in that report, the dam and reservoir are not in danger of sudden failure at the present time. Corps hammer tests of the concrete face indicated no immediately obvious deterioration of the concrete compromising the dam integrity.</p>	<p>No additional dam safety analyses will be conducted for the feasibility phase. Further studies may be conducted in the PED phase of the project. ATR review should include comments on a phased removal of the dam potentially included in a recommended plan description. This will be addressed by the Civil/Structural Design and Geotech ATR members.</p>
<p><u>Cultural Resources</u> – Rindge Dam has been evaluated and determined eligible for listing in the National Register of Historic Places (NRHP). This does not preclude removal or preservation of the dam. A section 106 consultation process is ongoing and an MOA will be prepared. Information will likely include a Historic American Engineering Record (HAER) documentation, or other public interpretation. A detailed NRHP evaluation appendix is included in the report appendices.</p>	<p>The ATR member should have familiarity with the NRHP process.</p>

**C. Timing and Schedule.** The tentative schedule for the ATR process for this document follows the timeline below. Note that current Sponsor funding issues may delay progress on future milestones. The schedule in the table below assumes that cost-share issues will be resolved in FY10 and work on the feasibility study will resume in FY11 (Oct 2010).

<b>TABLE 5: ATR MILESTONES</b>		
<b>Review Milestone</b>	<b>ATR Team Involvement</b>	<b>Scheduled/Actual Date</b>
SPD Planning Milestone F1		October 2001
ATR of Draft F3 Report	<b>ITR Team (table 2)</b>	June 2006
SPD Planning Milestone F3/Feasibility Scoping Meeting	<b>ITR Team (table 2)</b>	July 2006
ATR of Draft F4 Report	<b>ATR Team (table 3)</b>	Dec 2008-Jan 2009
F4 Milestone Review Conference	<b>ATR Team (table 3)</b>	Feb 2009

ATR of Draft AFB Report	<b>New ECO-PCX ATR Team</b>	May-June 2011
SPD Planning Milestone F4a/Alternative Formulation Briefing (AFB)	<b>New ECO-PCX ATR Team</b>	August 2011
AFB Policy Memo Issued		September 2011
Model Approval/Certification	<b>Team assigned by ECO-PCX</b>	May-November 2011
ATR of Draft Report	<b>New ECO-PCX ATR Team</b>	March-April 2012
IEPR	<b>To be identified by ECO-PCX</b>	July-December 2011
In Progress Review (IPR)	<b>New ECO-PCX ATR Team (if needed)</b>	TBD
Public Review of Draft Report		June-August 2012
Civil Works Review Board (CWRB)	<b>New ECO-PCX ATR Team</b>	November 2012
State and Agency Review of Draft Report		December 2012- January 2013
ATR of Final Report	<b>New ECO-PCX ATR Team</b>	April 2013
Final Report Submission		June 2013

Throughout the study, the team has held planning briefings to ensure planning quality. Senior staff and subject matter experts from the PDT District and members of the vertical team attended the briefings and provided comments on the product to date.

**D. Funding.** The PDT district shall provide labor funding by cross charge labor codes. Funding for travel will be provided by way of a government order, if necessary. The Lead Planner will work with the ATR team leader to ensure that adequate funding is available and is commensurate with the level of review needed. The current cost estimate for this review is in the range of \$20,000 to \$30,000. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charges occurring.

The ATR team leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes. Reviewers shall monitor individual labor code balances and alert the ATR team leader to any possible funding shortages.

#### **4. INDEPENDENT EXTERNAL PEER REVIEW PLAN**

**A. General.** This decision document will present the details of a feasibility study undertaken to solve a water resource problem as described in Section II. An IEPR will be conducted for the following reasons:

- (1) Cost – The total project cost will likely exceed \$45 Million. Current estimated implementation costs range from \$31.5M to \$73M. Cost refinements for the tentatively recommended plan will be made as the study progresses.
- (2) Environmental Impact Statement – The NEPA compliance document will include preparation of an EIS and will also comply with state of California (California Environmental Quality Act - CEQA) requirements for preparation of an Environmental Impact Report (EIR). This will be a combined EIS/EIR document.

- (3) The project has significant interagency interest. Agencies including US Fish and Wildlife (USFWS), California Department of Fish and Game (CDFG), The National Marine Fisheries Service (NMFS) Local and State agencies along with several other agencies have actively participated in the Technical Advisory Committee (TAC) meetings to discuss project alternatives and have provided general preliminary support for the project.
- (4) Some local residents have expressed concern that implementation of the preliminary tentatively recommended plan (Rindge Dam removal) would increase the risk of flooding below the dam in the lower two miles of Malibu Creek, including the city center and affluent communities. This area currently experiences flooding in portions of reaches downstream of Rindge Dam. This problem and planning constraint is included in the overall study, however the primary focus of the study remains ecosystem restoration with minimization of downstream flood risk impacts to local communities.
- (5) Descendants of the Rindge family have expressed concern for preserving the historic significance of Rindge Dam. Educational and aesthetic measures have been included in the preliminary tentatively recommended plan to recognize the importance of Rindge Dam in the historical development of the area.

**B. IEPR Method.** It is recommended that the IEPR include members with experience in large dam and sediment removal, and associated ecosystem restoration. The review panel should be composed of individuals with expertise in western region coastal and watershed systems ecology, geotechnical engineering, and hydraulic and hydrology modeling. The entire feasibility report with appendices will be provided to the IEPR team. The members should be comprised of four team members and one team leader. It is not anticipated that the public, including scientific or professional societies, will be asked to nominate potential external peer reviewers. It is recommended that the panel conduct a site visit if possible. A representative of the panel will attend the Civil Works Review Board.

The IEPR will be conducted by a contractor and managed by the ECO-PCX. The ECO-PCX will follow the process established in EC 1105-2-209 in managing the IEPR.

**C. Timing and Schedule.** The IEPR will be conducted after AFB ATR review but begin prior to the public and agency review of the public draft report. The IEPR is scheduled to begin in the summer of 2011 at an estimated cost of \$125,000 to \$150,000. Following is the draft schedule for the IEPR:

Task	Schedule
ECO-PCX Prepares IEPR Scope of Work	April-May 2011
IEPR Contract Awarded	June 2011
IEPR Review Initiated	July 2011
Final IEPR Report Submitted	December 2011
PDT Submits Clarifying Questions to Contractor	February 2012
Contractor Submits Responses to Clarifying Questions	March 2012

**D. Project Risks.** For the assessment of risk, there is a potential risk to public safety during construction phase and removal of Rindge Dam. An evaluation must be taken, and appropriate measures must be developed to minimize risk to public safety during the detailed design (PED) and construction phases of the project, including a Safety Assurance Review (SAR). The dam does not currently act as a water retention structure, however project performance will be

monitored to ensure that the risk of flooding is not increased downstream of the dam beyond current levels.

The potential for migration of invasive species upstream and downstream of Rindge Dam will need to be evaluated and appropriate measures taken to minimize risk of invasive species establishing in areas where they do not currently exist. Risk associated with ecosystem restoration consists of weighing the benefits and uncertainties associated with using one restoration technique over another with regard to project cost, performance or ecological success. Monitoring with respect to project performance and achieving an output objective will be required. The effectiveness of revegetation efforts and eradication of exotic species are also uncertainties that need to be monitored, and as a result an adaptive management plan will need to be developed. It is not anticipated that the project will have significant adverse economic, environmental, and social affects to the nation.

**E. Magnitude of Risks.** For reasons described in the preceding paragraphs, the magnitude of this project is determined as moderately high.

**F. Level of Influential Scientific Information.** The document is not likely to contain a highly influential scientific assessment. The study will seek to provide ecosystem restoration through the removal of Rindge Dam and additional smaller impassable fish barriers upstream of Rindge Dam. The dam and additional upstream barriers are not currently acting as a water retention barriers and therefore do not provide significant level of flood protection or changes to hydraulic conditions. As a result, the removal of the proposed barriers would return to a more natural sediment transport regime within the watershed.

**G. Products for Review.** The full IEPR panel will receive the entire draft feasibility report, environmental impact statement and all technical appendices concurrent with public and agency review. The final report to be submitted by the IEPR panel must be submitted to the PDT within 60 days of the conclusion of public review. A representative of the IEPR panel must attend any public meeting(s) held during public and agency review of the draft report. The Los Angeles District will draft a response to the IEPR final report and process it through the vertical team for discussion at the Civil Works Review Board (CWRB). An IEPR panel member must attend the CWRB. Following the CWRB, the Corps will issue final response to the IEPR panel and notify the public.

**H. Communication and Documentation.** The communication plan for the IEPR is as follows: DrChecks review software will be used to document IEPR comments and aid in the preparation of the Review Report. Comments should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same key parts as described for ATR comments in Section 3. The OEO will be responsible for compiling and entering comments into DrChecks. The IEPR team will prepare a Review Report that will accompany the publication of the final report for the project and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and

- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the IEPR panel no later than 60 days following the close of the public comment period for the draft decision document. The report will be considered and documentation prepared on how issues were resolved or will be resolved by the District Commander before the district report is signed. The recommendations and responses will be presented to the CWRB by the District Commander with an IEPR panel or OEO representative participating, preferable in person.

## **5. PUBLIC AND AGENCY REVIEW**

Release of the draft document for public review will occur after issuance of the AFB policy guidance memo and concurrence by HQUSACE. Whenever feasible and appropriate, the District will make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. ATR and IEPR reviewers will be provided with all public comments.

Public review of this document will begin approximately two months after the completion of the ATR process and issuance of the HQUSACE policy guidance memo. The estimated time frame for this review is June 2012. The public review period will last 45 days with a public meeting held approximately two weeks into the review period. There may be possible public concerns regarding this project but no specific issues have been raised to date. The public review of necessary State or Federal permits will also take place during this period.

A formal State and Agency review will occur after the release of the final report is approved by the Civil Works Review Board. However, intensive coordination with these agencies will occur concurrently with the planning process. There may be possible coordinating parties' regarding this project but no specific issues have been raised to date. Upon completion of the review period, comments will be consolidated in a matrix and addressed, if needed. A summary of the comments and resolutions will be included in the document.

## **6. MODEL CERTIFICATION**

**A. General.** Most of the models used in the study have either been developed by, or for, the Corps. The Engineering Computational Models used for this study include the following:

- MCACES: This is a cost estimating model that was developed by Building Systems Design Inc. The Army Corps of Engineers began using this model in 1989.
- HEC-FFA, HEC-RAS and HEC-6T: The Hydrologic Engineering Center's Flood Frequency Analysis (HEC-FFA) computer program was used to prepare a discharge-frequency analysis. The HEC-FFA program is based on the "Guidelines For Determining Flood Flow Frequency, Bulletin, 17B", by the Hydrology Subcommittee, revised September 1981. The techniques presented in Bulletin 17B have been adopted for all Federal planning involving water and related land resources. The HEC-RAS computer program was utilized to simulate the hydraulics for each flood. The function of this model is to complete one-dimensional hydraulic calculations for a full network of natural and man made channels. The HEC-6T "Sediment in Stream Networks" computer

program was used to conduct the numerical sediment transport modeling in this study. The HEC-6T model was developed by Mr. William Thomas of Mobile Boundary Hydraulics, Clinton, Mississippi and is widely used by the Corps of Engineers.

**B. Selection of Ecosystem Output Method.** A Habitat Evaluation Procedure (HEP) was used as a planning tool for the comparison and evaluation of alternative plans to the baseline conditions. The HEP used for this study was based on prior analyses conducted in support of a similar dam modification study SPL prepared for Matilija Dam, a 195-foot high obsolete water supply dam at the headwaters of the Ventura River, located approximately 44 miles northwest of Rindge Dam. The Malibu PDT worked with a multi-agency Technical Advisory Committee (TAC) to develop and evaluate preliminary alternatives using a HEP assessment for the last interim (F4 milestone) report product. The PDT sought assistance from interested resource agency stakeholders (e.g., U.S. Fish & Wildlife Service, California Department of Fish and Game, National Marine Fisheries Service), the Sponsor and other agencies in the development of the HEP. The Matilija Dam Ecosystem Feasibility Study (2004) HEP was used as a model for this study's HEP based on similar proposed actions related to potential removal of large dams and associated restoration, similar habitat and species listings, and general TAC understanding and acceptance of methods used for the Matilija study.

The habitat evaluation method used for this study was developed through a series of consensus-building meetings with the Malibu Creek TAC that began in 2004. The TAC was made up of a team of experts representing federal, state, and local agencies with expertise in the principles of wildlife biology, fisheries, and restoration of estuarine and riverine systems, as well as knowledge of the Malibu Creek Ecosystem. In 2008, following a gap in progress on the feasibility study, the TAC was reconvened and a series of four TAC meetings were held in June and July. The focus of these meetings was to use a consensus-building approach when developing the HEP and updating prior quantitative habitat valuations for baseline (existing and future without project) conditions and study alternatives. In general, the TAC was able to reach a consensus on the most important environmental issues related to the feasibility study. The varied expertise of the members of the Malibu Creek TAC was fully utilized in this analysis.

**C. HEP.** In general, HEP is a habitat-based evaluation procedure developed by the USFWS (1980) that is used to quantify biological resources of concern. Based on models known as habitat suitability indices for certain species or habitat types, variables are identified and assigned a score on a scale of 0 – 1.0 (lowest to highest value). An equation in which variables are weighted as to their importance is used to obtain a numerical score or Habitat Suitability Index (HSI). This score is then multiplied by the acres of habitat to determine Habitat Units (HUs) for the selected species or habitat type. Through a series of TAC meetings, the modified HEP assessment for Malibu Creek described below was developed based on the HEP assessment recently used in support of the Matilija Dam Ecosystem Restoration Feasibility Study. Similar to the Matilija Environmental Working Group, the Malibu TAC reached consensus on variables that represent important components of environmental restoration of the Malibu Creek ecosystem, one of the last remaining habitats that support the federally-endangered southern steelhead trout (Dagit and Abramson, 2007). A fundamental understanding of the TAC was that a key element of any restoration program for Malibu Creek should address aquatic habitat and aquatic connectivity with steelhead as an indicator species, while considering multiple species habitat needs, as well as considering other important features of a healthy ecosystem, including riparian habitat quality, hydrology, and sediment regime.

**D. Malibu Creek Feasibility Study HEP:** Three primary ecosystem components were considered to be equally important for the evaluation of habitat in support of the Malibu Creek

Ecosystem Restoration Feasibility Study: aquatic habitat value, riparian habitat value, and natural processes, with each component made up of two or more quantifiable variables. Following standard HEP design, each variable was given a numerical rating or value between 0 and 1.0 and then used to calculate an overall score to identify the quality of habitat, which was then multiplied by the amount (acreage) of that habitat to obtain the Habitat Units (HUs) for each habitat type. All variables and scoring were developed by the TAC using a consensus-based approach, best available science, and best professional judgment.

The aquatic habitat value includes three variables that address the structural composition of in-stream habitat (boulders, rock ledges, woody debris, etc.) that provide in-stream shelter to fish, as well as a variety of substrates and topographic features (pools, riffles, etc...). A steelhead variable was used to include references to aquatic habitat present, but also considered invasive predators, impaired water quality, impaired benthic community, and other limiting factors for steelhead (NOAA, 2007). The final variable addressed the importance of aquatic connectivity and natural and man-made barriers to fish passage.

The riparian habitat value considers four variables including the percent of native vegetation, non-native vegetation, listed species, and adjacent land use within the study area along Malibu Creek from Malibu Dam to the Malibu Lagoon. The natural processes component of the HEP addresses the hydrologic and sediment transport regimes. Total habitat value scores are added together and multiplied by associated acreages to calculate habitat units. Technical models (hydrology, hydraulic, sediment transport), field surveys of Malibu Creek, tributaries, and Malibu Lagoon were used in the development of the HEP. Three target years were used for analysis of the baseline conditions, and comparison and evaluation of alternative plans: target years 0, 10 and 50.

The TAC, and focused sub-groups, met frequently to quantify the HEP variables. A detailed HEP appendix is currently available for the review team. The work to date also includes a barrier and habitat assessment of upstream tributaries to Malibu Creek. Future study work will expand use of the HEP to the lower portion of several tributaries upstream of Rindge Dam where additional barriers may be addressed along Cold Creek and Las Virgenes Creek.

**E. Model Certification.** The ECO-PCX has responsibility for approving ecosystem output methodologies for use in ecosystem restoration planning and mitigation planning. The ECO-PCX will need to certify or approve for use each regionally modified version of these methodologies and individual models and guidebooks used in application of these methods. The PDT will coordinate with the ECO-PCX during the study to identify appropriate model certification approval requirements.

Discussions between SPL and the ECO-PCX have led to the understanding that the modified HEP model used for this study would require model certification. At this time, the PDT proposes to continue with the use of the HEP model described above, however there is concern regarding the additional time and cost associated with certification of the model, currently estimated to be approximately \$125k - \$150k, requiring approximately 3-6 months for review and approval. If other ecosystem evaluation models are certified for the region (CHAP or HGM) by the ECO-PCX prior to the end of FY10, the PDT may opt to revise prior work and use one of those models for this study. The Corps (SPL) will consider the pros and cons of this decision in consultation with the Sponsor, followed by coordination with the ECO-PCX and MSC (SPD) staff.

Sponsor funding is a major constraint and concern for completion of this study and the Corps is working cooperatively with the Sponsor and other stakeholder interests to address possible study

cost escalations, where possible. It is also understood that it may cost more to start over with a new ecosystem output model than to continue forward as planned with the HEP and necessary model certification. The PDT will continue future discussions with the ECO-PCX to keep staff fully aware of any proposed changes, and will revise the RP, as needed, to reflect those future changes.

**F. Method.** In accordance with the EC 1105-2-407, Planning Models Improvement Program: Model Certification, the Engineering models will be approved for use through the SET program. In accordance with CECW-CP Memo “Policy Guidance on Certification of Ecosystem Output Models” dated 13 August 2008; the District intends to submit a Model Assessment to the ECO-PCX to substantiate the theoretical soundness and computational accuracy of the model. The ECO-PCX will determine the level of review and certification based on the assessment.

## **7. COST ENGINEERING DIRECTORY OF EXPERTISE COORDINATION**

Congressional Authorization is required; therefore coordination with the Cost Engineering Directory of Expertise (DX) will be needed. The district will coordinate with the Cost Engineering DX at the Walla Walla District to conduct reviews (ATR) of cost estimates, construction schedules and contingencies. The Cost Engineering DX will assign the reviewer(s) to the ATR team and will utilize USACE personnel and/or the private sector to assure highly qualified persons are available to conduct these reviews. In cases where the Cost Engineering DX identifies the need for IEPR, it will inform the district and will assist with establishing the cost for the IEPR.

## **8. PCX COORDINATION**

The lead PCX for this document is the National Ecosystem Planning Center of Expertise (ECO-PCX). This review plan will be submitted through the PDT District Planning Chief to the ECO-PCX Director, Operations Director, for review and eventual concurrence. The ECO-PCX will manage the review of the ATRT and the IEPR. The approved review plan will be posted to the ECO-PCX website. Any public comments on the review plan will be collected by the Office of Water Project Review (OWPR) and provided to the PDT District for resolution and incorporation, if needed.

**9. APPROVAL**

The PDT will carry out the review plan as described. The Team Leader will submit the plan to the PDT District Planning Chief for approval. Coordination with PCX will occur through the PDT District Planning Chief. Signatures by the individuals below indicate approval of the plan as proposed.

_____	_____
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	Date

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**REVIEW PLAN  
MALIBU CREEK, CALIFORNIA  
ECOSYSTEM RESTORATION FEASIBILITY STUDY  
LOS ANGELES DISTRICT**

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**APPENDIX A**

**PROJECT DELIVERY TEAM MEMBERS**

<b>Discipline</b>	<b>Office/Agency</b>	<b>Name</b>
Project Manager	CESPL-PM-C	Kathy Anderson
Budget / Programs Analyst	CESPL-RM	Dan Culhane
Planning Lead	CESPL-PD-CS	Marriah Abellera
Planning Co-Lead	CESPL-PD-WW	Jim Hutchison
Report Formatting/Editing	CESPL-PD-CS	Marriah Abellera
Environmental Coordinator	CESPL-PD-R	Jodi Clifford
Fish & Wildlife	CESPL-PD-RQ	Larry Smith
Cultural Resources	CESPL-PD-RL	John Killeen
Environmental Eng/HTRW	CESPL-ED-RQ	Larry Smith
Biological Analysis	CESPL-PD-RQ	Larry Smith
Civil Design	CESPL-ED-DA	Santiago Munoz
Structural Engineering	CESPL-ED-SG	Mike Vahabzedah
Survey/ CADD	CESPL-ED	Alan Nichols
Mapping/GIS	CESPL-ED	Alan Nichols
Geotechnical	CESPL-ED-GG	Mark Chatman
Soils	CESPL-ED-GD	Chris Sands
Hydraulics & Hydrology	CESPL-ED-HH	Kerry Casey
Economic Evaluation	CESPL-PD-WE	Ben Nakayama
Cost Engineering	CESPL-ED-DS	Juan Dominguez
Real Estate	CESPL-RE	Pete Garcia
Public Affairs Office	CESPL-PA	Jay Field
Office of Counsel	CESPL-OC	Elizabeth Moriarty
Sponsor PM	CA Dept of Parks & Rec	Suzanne Goode

## ATR TEAM MEMBERS<sup>1</sup>

Name	Discipline	Phone	Email
TBD	ATR Lead/Plan Formulation		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Civil Design		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Biology/NEPA		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Hydrology/Hydraulics and Sediment Transport		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Socio-Economics		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Cost Engineering <sup>2</sup>		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Real Estate		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Cultural Resources (Archeology)		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Geotechnical Engineering		<a href="mailto:@usace.army.mil">@usace.army.mil</a>
TBD	Geology		<a href="mailto:@usace.army.mil">@usace.army.mil</a>

<sup>1</sup> All ATR team members are at senior level positions of their respective disciplines and have a minimum of 10 years experience in their field of expertise.

<sup>2</sup> The cost engineering team member nomination will be coordinated with the Cost Estimating Directory of Expertise (DX) as required. The Directory will decide if the cost estimate will need to be reviewed by Directory Staff.

## INDEPENDENT EXTERNAL PEER REVIEW PANEL

Name	Discipline	Phone	Email
TBD	Hydrology		
TBD	Hydraulic Design/Sediment Transport		
TBD	Ecological Sciences		
TBD	Geotechnical Engineering		

## VERTICAL TEAM

Name	Discipline	Phone	Email
Paul Bowers	District Support Team Mgr	415-503-6556	<a href="mailto:Paul.w.bowers@usace.army.mil">Paul.w.bowers@usace.army.mil</a>
Ken Zwickl	Regional Integration Team	202-761-4085	<a href="mailto:Kenneth.J.Zwickl@usace.army.mil">Kenneth.J.Zwickl@usace.army.mil</a>

## PLANNING CENTER OF EXPERTISE

Name	Discipline	Phone	Email
Jodi Staebell <sup>1</sup>	Operations Director, ECO-PCX	309-794-5448	<a href="mailto:Jodi.K.Staebell@usace.army.mil">Jodi.K.Staebell@usace.army.mil</a>
Eric Thaut	Program Manager, FRM-PCX	415-503-6852	<a href="mailto:Eric.W.Thaut@usace.army.mil">Eric.W.Thaut@usace.army.mil</a>

<sup>1</sup> Primary PCX is ECO-PCX, who will coordinate with FRM-PCX as appropriate.



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
SOUTH PACIFIC DIVISION, U.S. ARMY CORPS OF ENGINEERS  
1455 MARKET STREET  
SAN FRANCISCO, CALIFORNIA 94103-1399

20 Sept 2010

CESPD-PDS-P

MEMORANDUM FOR Commander, Los Angeles District, ATTN: Ms. Kathleen Anderson,  
CESPL-PM-C

Subject: Review Plan for the Malibu Creek Environmental Restoration Feasibility Study,  
Los Angeles District

1. The attached Review Plan has been prepared in accordance with EC 1165-2-209. The Review Plan has been coordinated with the DST. CESPD-PDS-P will serve as the interim RMO.
2. The Review Plan addresses and includes independent external peer review.
3. We hereby approve this Review Plan, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.
4. Point of contact for this action is Mr. Paul Bowers, CESPD-PDC, 415-503-6556, paul.w.bowers@usace.army.mil.

***Building Strong on the Cornerstone of the Southwest!***

A handwritten signature in black ink, appearing to read "Christine Altendorf", written over a horizontal line.

Dr. Christine Altendorf, PhD, P.E., SES  
Director of Programs

Encl