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November 28, 2017

Via Electronic Mail Only

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Re: Aliso Creek Mainstem Ecosystem Restoration Study Draft Integrated Feasibility Report/Environmental Impact Statement/Environmental Impact Report

Dear Ms. Lamb:

This firm represents Laguna Canyon Foundation on matters relating to the proposed Aliso Creek Watershed Ecosystem Restoration Project (“Project”). On behalf of our client and its allies in protecting the Aliso and Wood Canyons Wilderness Park—Friends of Harbors, Beaches and Parks; Laguna Greenbelt; Sea and Sage Audubon; Laguna Bluebelt Coalition; California Native Plant Society; Village Laguna; and Laguna Canyon Conservancy—we respectfully submit these comments to help ensure that the U.S. Army Corps of Engineers (“Army Corps”) and the County of Orange (“County”) fully comply with the National Environmental Policy Act (“NEPA”), 42 U.S.C. 4321 et seq., the California Environmental Quality Act (“CEQA”), Public Resources Code § 21000 et seq., and other local, state, and federal law. Laguna Canyon Foundation and its allies are deeply concerned about the Project’s extensive environmental impacts.

The Army Corps has proposed various iterations of this Project since at least 2002, in order to address the perceived ecological and other impacts associated with a degraded hydrological regime. In the intervening fifteen years, however, Aliso Creek has undergone a remarkable transformation. Significant regional and local funding has been effectively funneled toward invasive species management and eradication. Buildout and urban stormwater runoff management in the upper watershed has resulted in a

stabilization of flows through the Wilderness Park. As a result, the creek has mostly reached a dynamic equilibrium—a status that certain Army Corps studies even recognize. For this reason, the oversized, massively engineered “solution” put forth as the proposed Project is no longer necessary. Restoration and infrastructure protection efforts can instead focus on the limited areas that still demand intervention. Unfortunately, the DEIS/R utterly fails to adjust in the face of changed circumstances.

This letter, along with our proposed alternative (Exhibit 1) and the technical analysis provided by Derek Ostensen of Derek Ostensen & Associates, Environmental Consulting (Exhibit 2), constitute Laguna Canyon Foundation’s comments on the DEIS/R. We respectfully request that the Final EIS/R respond separately to each of the points raised in the technical consultant’s reports as well as to the points raised in this letter. In addition, we respectfully request that all exhibits are added to the administrative record kept by both the County and the Army Corps.

REQUIREMENTS OF THE NATIONAL ENVIRONMENTAL POLICY ACT AND THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

After carefully reviewing the Aliso Creek Mainstem Ecosystem Restoration Study Draft Integrated Feasibility Report / Environmental Impact Statement / Environmental Impact Report (“DEIS/R”), we have concluded that it fails in many respects to meet the requirements of both NEPA and CEQA. The purpose of NEPA is to inform the public and agency decisionmakers of a project’s potential environmental impact before those decisionmakers act. By requiring an EIS to provide a complete picture in advance, the drafters of NEPA expected that decisionmakers would make better decisions. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (NEPA “ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts”). The Army Corps has an obligation pursuant to NEPA to conduct its analysis “objectively and in good faith, not as an exercise in form over substance, [] not as a subterfuge designed to rationalize a decision already made . . . [and] not just to file detailed impact studies which will fill governmental archives.” *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000); *see also Earth Island Institute v. U.S. Forest Service*, 351 F.3d 1291, 1300 (9th Cir. 2003) (“NEPA requires that federal agencies “consider every significant aspect of the environmental impact of a proposed action . . . [and] inform the public that [they have] indeed considered environmental concerns in [their] decision-making process[es].”) (citations omitted).

Likewise, the EIR is “the heart of CEQA.” *Laurel Heights Improvement Ass’n v. Regents of University of California*, 47 Cal.3d 376, 392 (1988) (citations omitted). It is “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended ‘to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.’ Because the EIR must be certified or rejected by public officials, it is a document of accountability.” *Id.* (citations omitted).

Beyond merely disclosing potential environmental impacts, the environmental review statutes require agencies to develop tactics to address them. Specifically, CEQA requires the EIR not only identify a project’s significant effects, but also ways to avoid or minimize them. Pub. Res. Code § 21002.1. An EIR may not defer evaluation of mitigation to a later date. CEQA Guidelines¹ § 15126.4(a)(1)(B). NEPA’s requirements are similar: the EIS must “[i]nclude appropriate mitigation measures” and discuss the “[m]eans to mitigate adverse environmental impacts.” 40 C.F.R. §§ 1502.14(f), 1502.16(h). The statute “require[s] that an EIS discuss mitigation measures, with ‘sufficient detail to ensure that environmental consequences have been fairly evaluated.’ An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.” *South Fork Band Council of W. Shoshone of Nevada v. U.S. Dep’t of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989)).

Where, as here, the environmental review document fails to fully and accurately inform decisionmakers and the public of the environmental consequences of proposed actions, or identify ways to mitigate or avoid those impacts, it does not satisfy the basic goals of either NEPA or CEQA. *See* 40 C.F.R. § 1500.1(b) (“NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.”); Pub. Res. Code § 21061 (“The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.”). As a result of the DEIS/R’s numerous and serious inadequacies, there can be no meaningful review of the Project by either the public or the Agencies’ decisionmakers.

¹ The CEQA Guidelines can be found at Cal. Code Regs., tit. 14, § 15000 et seq.

THE TENTATIVELY SELECTED PLAN IS FLAWED AND UNNECESSARY.

This letter focuses primarily on the DEIS/R's failure to comply with CEQA and NEPA. Nevertheless, it is important to emphasize at the outset that the Tentatively Selected Plan—which proposes to significantly and permanently alter five miles of a functioning coastal riparian ecosystem—is itself flawed and unnecessary.

First, the Army Corps' entire evaluation is based on the unsupported premise that “reestablishing both the structure and function of the riverine biological resources” and “restoration of the geomorphology” are critical for any long-term success of the ecosystem. DEIS/R at 3-1. This assumption skews the DEIS/R's entire analysis of possible alternatives. Under the Army Corps' logic, any alternative that does not raise the streambed to reestablish hydrologic connections with the historic floodplain cannot succeed.

Yet, this assumption is incorrect. All relevant evidence suggests that Aliso Creek is stabilizing, without intervention at the scale proposed in any of the Army Corps' alternatives. Indeed, the Agencies' own Geomorphic Baseline Assessment indicates that ten of the twelve creek segments to be impacted by the Project are either *in dynamic equilibrium or improving*. The two remaining creek segments are expected to reach equilibrium, *without intervention*, in one to ten years. This assessment matches the recent evaluation of the Aliso Creek system completed by Tory Walker (Tory R. Walker Engineering) for the City of Laguna Beach. It is simply an error to assert that Aliso Creek requires massive engineering and restructuring for long-term success.

Second, Army Corps concludes without support that its Tentatively Selected Plan will have both minimal short-term impacts (DEIS/R at 5-48 to -61) and extensive long-term benefits (DEIS/R at 5-46 to -47 (claiming net increases in habitat units), 5-63) for biological resources. For example, the DEIS/R asserts that the “impacts to the riverine vegetation types . . . would be short (one to three years) but with long-term beneficial results commencing at year four.” DEIS/R at 5-49. Such conclusions demonstrate the hubris for which the Army Corps is well known. As detailed further below, the proposed Project is likely to result in significant short-term impacts to biological resources and may not succeed in the long-run.

Third, the Army Corps appears to adopt a “bigger-is-better” mentality, proposing a \$100 million “ecosystem restoration” project. Yet, apart from the Army Corps, and possibly the County, not a single government agency or stakeholder believes that such a massive investment is necessary to restore the ecosystem. The U.S. Fish and

Wildlife Service has stated that appropriate ecological restoration activities could be performed at “reduced cost.” *See* Exhibit 9. We understand that the California Department of Fish and Wildlife will be submitting a comment letter reaching similar conclusions. On November 14, 2017, the City of Laguna Beach voted to submit comments criticizing the Project. And recently, representatives from the South Orange County Wastewater Authority noted that the Tentatively Selected Plan is not necessary to protect their infrastructure. In an era of tight County budgets, decreased federal spending, and significant demand for government dollars, it is difficult to justify annual expenditures of close to \$4 million for a project that no one seems to want.²

Clearly, there must be a better solution to meeting Aliso Creek’s habitat restoration needs, especially given the Tentatively Selected Plan’s hefty price tag. Laguna Canyon Foundation urges the Army Corps and the County to carefully evaluate the alternative proposed in Exhibit 1.

THE DEIS/R DOES NOT COMPLY WITH NEPA OR CEQA

I. The DEIS/R Does Not Accurately Describe Baseline Environmental Conditions.

CEQA requires “a description of the physical environmental conditions in the vicinity of the project” CEQA Guidelines § 15125(a). An EIR’s description of a project’s environmental setting plays a critical part in all subsequent parts of the EIR because it provides “the baseline physical conditions by which a lead agency determines whether an impact is significant.” *Id.* “Knowledge of the regional setting is critical to the assessment of environmental impacts.” CEQA Guidelines § 15125(c). NEPA likewise requires federal agencies to include an analysis of “the alternative of no action” in the

² The Army Corps’ own policies caution against moving forward with projects that are not supported by federal and state resource agencies, local governments, and the public. ER 1105-2-100 (Planning Guidance Notebook, attached as Exhibit 7) states that “[a]n ecosystem restoration plan should be acceptable to State and Federal resource agencies, and local government. There should be evidence of broad based public consensus and support for the plan.” ER 1105-2-100 at E-38(a). *See also id.* at E-41(a) (“Restoration projects that were planned in cooperation with other Federal resource agencies, and where those agencies also have a significant role in implementing the project, using their authorities and funding, should receive higher priority *than those that do not*”) (emphasis added).

EIS. This alternative then serves as a baseline against which the effects of implementing the proposed action and other alternatives are measured.

The DEIS/R fails to provide an accurate picture of the baseline physical conditions and the likely outcome in the event no action is taken with respect to the proposed Project. Specifically, the DEIS/R contains the following conclusions about baseline conditions within the Wilderness Park:

- “the quality of aquatic, riparian, and floodplain habitat biodiversity has been adversely affected by channel incision and instability, loss of hydrologic floodplain connection, competition with invasive vegetation species, and habitat type conversion.” DEIS/R at 1-6.
- “habitat and species numbers and diversity have declined due to the loss of connectivity between habitats.” DEIS/R at 1-8.
- “linkages for aquatic species . . . are severely fragmented by manmade changes.” DEIS/R at 1-8.

The DEIS/R explains that the *Aliso Creek Watershed Management Study* (USACOE 2002) forms the basis of these conclusions. DEIS/R at 1-9. This document is fifteen years old, and present outdated information about baseline conditions on site.

For instance, the DEIS/R states that lower Aliso Creek contains “monotypic stands of invasive exotic weed species, such as giant reed (*Arundo donax*).” DEIS/R at 2-51. It notes that “[g]iant reed dominates the riparian corridor throughout Aliso Creek” *Id.* at 2-56. The DEIS/R also surmises that there will be an “increasing prevalence” of *Arundo* in the future. *Id.* at 5-91. However, between 2013 and present, regional and local funding have resulted in extensive invasive species removal and habitat restoration efforts. As detailed in Exhibit 2, these efforts have resulted in removal of several million pounds of *Arundo* in the Project area, along with the removal and disintegration of subsoil rhizomes. Nearly all *Arundo* has now been removed.³ Additional restoration

³ The DEIS/R’s discussion of these efforts is wholly inadequate. The document briefly notes the scope of eradication efforts, but then rotely dismisses them as ineffective. DEIS at 2-79 (“however, there are various methodologies being employed that may hinder meeting th[e] goal [of eradication of the giant reed] (e.g., not removing the root mass, not removing or chipping the treated biomass, or not regularly treating resprouted or newly emerged material).”). The DEIS/R provides no basis for this statement.

efforts have removed tamarisk, fan palm, Canary island date palm, pampas grass and hemlock.

According to resource experts Tory Walker and Derek Ostensen, much of the current erosion in the watershed can be connected to *Arundo*. Where it has been removed, the creekbed is returning to a more sustainable hydrology, as demonstrated by the presence of gravel and gentle slopes. These positive changes in geomorphology must be accounted for in any accurate description of current baseline conditions. Without this information, the Agencies cannot accurately create hydraulic models, erosion forecasts, and predictions of groundwater levels. Consequently, the outdated baseline infects the DEIS/R's assessment of both project need and the potential impacts of the Project, the "no action alternative" and the other alternatives. *See* Exhibit 2.

The DEIS/R also claims that, without intervention, "the streambed and channel banks would continue to erode (vertically and horizontally) in reaches that are not yet dynamically stable, until a more stable geomorphic equilibrium condition (channel size and pattern) and new very limited inset floodplain is developed. The channel evolution sequence for this system could require more than 50 years." DEIS/R at 3-41; *see also* DEIS/R at 3-3 (claiming that dynamic state of equilibrium will not be reached for "more than 50 years"). Ultimately, the DEIS/R concludes that the status quo would result in "riverine habitat of degraded function and structure, less suitable to support wildlife diversity, including species of special status." *Id.*

This description of likely future conditions under a "no action" alternative is directly contradicted by the Army Corps' own analysis. As described above and further in Exhibit 2, the Geomorphic Baseline Assessment and its Incised Channel Evolution Model establishes that the hydrogeological system is already in or close to a dynamic equilibrium. DEIS/R Appendix A-1f. Five out of twelve of the reaches are Class V (stable/dynamic equilibrium). An additional five are Class VI (aggrading), as observed by Tory Walker. Only two reaches are classified as Class IV (localized geotechnical instability), but the Assessment explains that these will reach stability within one to ten

Indeed, the Aliso and Wood Canyons Wilderness Park Resource Management Plan ("RMP") outlines the intensive efforts that have and will be taken to manage invasive plants, including development of a long-term invasive management plan, removal of pest plants on approximately 1,000 acres, restoration of native habitat, and monitoring and adaptive management. RMP at 13-14, 171-181.

years. *Id.* at 54-84. This data—contained within the DEIS/R Appendix—directly contradicts the statements in the DEIS/R regarding the No Action Alternative.

Finally, as explained in Exhibit 2, the DEIS/R relies on a Combined Habitat Assessment Protocol (“CHAP”) analysis to support its No Action Alternative conclusions. This analysis was performed in 2009, and only superficially updated in 2015. Without updated information about the current state of the creek and its associated habitat, the DEIS/R cannot accurately compare the Project and the various alternatives. *E.g.*, DEIS/R at 3-54.

The DEIS/R and its “supporting” analyses must be revised in two ways. First, the baseline data must be updated to reflect the removal of invasive plants, the ongoing restoration efforts, and the current dynamic equilibrium of the ecosystem. Second, the DEIS/R must be revised to address all inconsistencies and to revise all analyses infected by these inconsistent statements. Without fixing these two fundamental issues, the DEIS/R will continue to violate both CEQA and NEPA’s requirements.

II. The DEIS/R Erroneously Concludes that Biological Resource Impacts from the Proposed Project Will Be Less than Significant.

A. The DEIS/R Relies on Erroneous Information and Unsupported Assumptions.

An EIS must contain “high quality” information and “accurate scientific analysis.” 40 C.F.R. § 1500.1(b); *Ctr. for Biological Diversity v. U.S. Forest Service*, 349 F.3d 1157, 1167 (9th Cir. 2003). These standards require the Army Corps to ensure “the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements.” 40 C.F.R. § 1502.24. To take the required “hard look” at a proposed project’s effects, an agency may not rely on incorrect assumptions or data in an EIS. *Id.* at § 1500.1(b) (“Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.”); *Native Ecosystems Council v. U.S. Forest Service*, 418 F.3d 953, 964-65 (9th Cir. 2005); *Conservation Northwest v. Rey*, 674 F.Supp.2d 1232, 1249 (W.D. Wash. 2009). Likewise, all conclusions in an EIR prepared in compliance with CEQA must be supported by substantial evidence. Substantial evidence does not include “argument, speculation, unsubstantiated opinion or narrative, [or] evidence which is clearly erroneous or inaccurate.” CEQA Guidelines § 15384.

The DEIS/R reaches three crucial conclusions regarding biological resources. First, it claims that in the no action alternative, biological resources will be harmed. Specifically, the DEIS/R asserts that riparian vegetation would “continue to degrade in quality and would become more narrow.” DEIS/R at 3-41; *see also* DEIS/R at 3-4. “Invasive species would outcompete native riparian species.” DEIS/R at 3-41; *see also* DEIS/R at 3-4. Within the creek bed, existing conditions would “promot[e] isolation of aquatic resources and degradation of aquatic habitat function and value.” DEIS/R at 3-41. The DEIS/R concludes that the “outcome would be a riverine habitat of degraded function and structure, less suitable to support wildlife diversity, including species of special status.” *Id.*

This conclusion is not supported by substantial evidence or accurate scientific analysis. As detailed in Exhibit 2, the CHAP analysis does not forecast the no action alternative correctly. It omits analysis of the ecosystem restoration projects and invasive species treatments already completed or planned for. Consequently, it portrays a bleak but unwarranted picture of future ecosystem health. Moreover, this analysis relies on assumptions about the spread of invasive species and current conditions that are unsupported. As documented in Exhibit 2, the current prevalence of invasive species is not indicative of future trends. And the observed perching effects may not be related to current hydrological conditions.

Second, the DEIS/R claims that short-term impacts to biological resources will be minimal and insignificant. *E.g.*, DEIS/R at 5-51 (“Although short-term impacts may occur as a result of proposed restoration, these potential impacts would not be long term and are considered less than significant.”). This assertion is made across the board, even with respect to sensitive or listed species. *See id.* at 5-52 (“impacts affecting amphibian and reptile distribution and habitat use would be short term, minor, and less than significant”); *id.* 5-57 (concluding that impacts to the listed tidewater goby “would be temporary and minimal”); *id.* at 5-58 (concluding that project is not likely to adversely affect southwestern pond turtles because they would be temporarily relocated).

However, as explained in Exhibit 2, these analyses fail to take into account the potential extirpation of species following a short-term absence from the site. Without an accurate assessment of this risk, the DEIS/R cannot conclude that such short-term impacts will be less than significant.

Third, the DEIS/R claims that in the long-term, the proposed project will have significant, beneficial impacts to the ecosystem. Specifically, the DEIS/R claims that “the restoration approach that would best support establishment of self-sustaining

native vegetation communities and riparian habitat for native animal species is Alternative 3.6, since it would provide the widest floodplain area and best connectivity from the channel to the floodplain.” DEIS/R at 5-63.

However, as explained in Exhibit 2, these conclusions are not supported by substantial evidence or accurate scientific information. The CHAP analysis does not take into account the temporal aspects of the proposed Project, and assumes that we can simply jump forward in time to some future state where the proposed Project is up and running. Moreover, the analysis fails to take into account the permanent habitat impacts created by the newly installed man-made structures, such as riprap.

Finally, the entire biological resource analysis is marred by a number of overarching flaws. For instance, the CHAP analysis—which the Army Corps relies on to determine the most “effective” alternative and for its less than significant impact findings—is not appropriate for assessing biological resource impacts caused by changes in hydro-geomorphology. As explained in Exhibit 2, the CHAP analysis is a wildlife-relationship model, which is not intended for making predictions based on hydro-geomorphological changes proposed here. Likewise, the DEIS/R and its appendices are rife with clearly erroneous data or missing support. These flaws are detailed further in Exhibit 2.

The DEIS/R’s failure to accurately assess the likely biological impacts of the no action alternative and the likely results of future scenarios taints the entire analysis. The identified errors and problematic assumptions must be revised in a new document so that both the public and decisionmakers can accurately assess the proposed Project and various alternatives. *See NRDC v. U.S. Forest Service*, 421 F.3d 797, 812 (9th Cir. 2005) (reliance on misleading and inaccurate assumptions “subverts NEPA’s purpose of providing decision makers and the public with an accurate assessment of [relevant] information”). The identified errors are not a mere disagreement between experts on methodology; instead, the DEIS/R repeatedly relies on assumptions and data that are simply incorrect.

B. As a Result of the DEIS/R Erroneous Conclusion that Impacts to Biological Resources Will Be Less than Significant, the DEIS/R Fails to Provide Adequate Mitigation for These Impacts.

Traditionally, projects that result in the removal or modification of habitat relied on by listed or other sensitive species require compensatory mitigation (often at ratios of 3:1 or 4:1 mitigation acres to impacted acres). Here, the DEIS/R concludes—

albeit without support—that the proposed Project will not result in any significant removal or modification of habitat.

However, based on the fatal flaws in the DEIS/R’s analysis, any revision must also assess the need for compensatory mitigation for this Project. This assessment is particularly important given the Project site’s inclusion the reserve system under the Central/Coastal Subregion Natural Communities Conservation Plan/Habitat Conservation Plan (discussed further below). As long-term protection of the site is intended to mitigate for impacts to *other* lands and resources, it is especially important that impacts to this site are properly mitigated.⁴

C. The DEIS/R Improperly Defers Analysis of Wetlands.

While the DEIS/R recognizes that wetlands are likely to be present in the Project area (DEIS/R at 2-36), the document defers any assessment of their location. *See id.* at 5-16 (“Due to the instability caused by erosion and high energy flows, size and locations of wetlands that maybe present in Aliso Creek are highly variable. Prior to each phase of construction, the project area would be surveyed for the current location of jurisdictional wetlands.”).

This approach—simply deferring assessment of a potential environmental impact to a later time—is unlawful. In preparing an EIS/R, “the agenc[ies] must determine whether any of the possible significant environmental impacts of the project will, in fact, be significant.” *Protect the Historic Amador Waterways v. Amador Water Agency*, 116 Cal.App.4th 1099, 1109 (2004); CEQA Guidelines § 15126. Neither the County nor the Army Corps’ is permitted to “hide behind its own failure to gather relevant data.” *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 311 (1988). Instead, the DEIS/R must include an adequate survey of the site for wetlands, an assessment of the possibility that such wetlands may shift over time, a determination of how the proposed Project may impact these wetlands, and proposed mitigation or alternatives to address any significant impacts. The DEIS/R has not even taken the first step toward meeting these requirements.

⁴ The Army Corps’ own policies caution against selecting an ecosystem restoration plan that, in itself, requires mitigation. ER 1105-2-100 states that “[e]cosystem restoration projects should be designed to avoid the need for fish and wildlife mitigation.” ER 1105-2-100 at E-30(d).

An EIS/R must “demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.” *Laurel Heights Improvement Ass’n v. Regents of University of California*, 47 Cal.3d 376, 392 (1988) (citations omitted). Without determining whether any wetlands are currently present on the project site, the DEIS/R fails as an informational document and must be revised.

D. The DEIS/R Fails to Adequately Discuss Impacts of the Project on Existing Mitigation Sites.

The Aliso and Wood Canyons Wilderness Park has hosted mitigation sites since at least 1989. In that year, the USFWS, CDFW, the County, and Mission Viejo Company entered an agreement to establish a wetlands habitat enhancement program and mitigation bank to mitigate for certain development projects. While this mitigation project ultimately failed, the project area contains a number of other, successful mitigation sites that may be impacted by the proposed Project. While the DEIS/R discloses the existence of these projects (*e.g.*, DEIS/R at 3-31), it fails to adequately discuss potential impacts on these projects and associated legal ramifications.

First, the Orange County Transportation Authority is pursuing compensatory mitigation in Aliso Creek for countywide transportation improvements as part of the Measure M2 Program. The DEIS/R assumes that the agencies will automatically agree to necessary modifications to the Long Term Management Plan to allow the proposed Project to move forward. DEIS/R at 3.8-2. However, it is not clear that such modifications would be legal or appropriate. The proposed Project would displace portions of the compensatory mitigation areas (DEIS/R at 4-9), rendering these sites unable to fulfill their mitigation purpose. Given that these areas were selected based on their ability to mitigate already-approved projects, it is inappropriate to now remove these areas without ensuring that sufficient mitigation can be provided elsewhere. *See* DEIS/R at 4-22 (prohibiting use of the Project for mitigation credits for other projects). The DEIS/R fails to discuss this issue.

Second, mitigation for the Laguna Hills Community Center included the creation of southwestern pond turtle habitat approximately 0.5 miles north of the South Orange County Wastewater Authority (“SOCWA”) Coastal Treatment Plant on the east side of Aliso Creek, which began in 2002. The program included creation of a turtle pond and associated wetland and upland habitat, implementation of a predator control plan, and introduction of 39 pond turtles. The DEIS/R claims that this site is “outside of the PPA” (DEIS/R at 3-31). However, the tentatively selected plan appears to include this area (or

at least come quite close to the mitigation site). DEIS/R at Figure 4.1-1. Consequently, the DEIS/R must analyze how the proposed Project might impact pond turtles that are located within the mitigation site as well as the site's functionality as future mitigation after implementation of the proposed Project.

Third, realignment of a 1,000-foot long segment of the paved SOCWA access road and trail included revegetation of 1.42 acres of native grassland and coastal sage scrub on the west side of the Creek near the Aliso Creek Wildlife Habitat Enhancement Project. The DEIS/R notes that the proposed Project will impact this site (*see* Table 3.8-2), but fails to disclose the significance of this impact or discuss any means to resolve it. This omission violates CEQA and NEPA.

III. The DEIS/R Fails to Adequately Evaluate Alternatives.

Congress passed NEPA “to protect the environment by requiring that federal agencies carefully weigh environmental considerations and consider potential alternatives to the proposed action before the government launches any major federal action.” *Lands Council v. Powell*, 395 F.3d 1019, 1026 (9th Cir. 2005). Consequently, an EIS must “inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.” 40 C.F.R. § 1502.1; *Ilio’ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1093 (9th Cir. 2006). “The alternatives analysis section is the heart of the environmental impact statement.” *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998) (internal citations and quotation marks omitted); *see* 40 C.F.R. § 1502.14.

Consideration of alternatives under CEQA is similar. Specifically, CEQA mandates that significant environmental damage be avoided or substantially lessened where feasible. Pub. Res. Code § 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126(d). Moreover, although “an EIR need not consider every conceivable alternative to a project . . . it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.” CEQA Guidelines § 15126.6(a). The “key to the selection of the range of alternatives is to identify alternatives that meet most of the project’s objectives but have a reduced level of environmental impacts.” *Watsonville Pilots Assn. v. City of Watsonville*, 183 Cal.App.4th 1059, 1089 (2010).

Accordingly, a rigorous analysis of reasonable alternatives to the Project must be provided to comply with these strict mandates. The DEIS/R fails in this regard.

A. The Purpose and Need Is Artificially Constrained.

The objectives for a project cannot be so narrowly defined so that they essentially preordain the selection of the agency's proposed alternative. For example, in *Simmons v. U.S. Army Corps of Eng'rs*, 120 F.3d 664, 669 (7th Cir. 1997), the Court noted that:

The "purpose" of a project is a slippery concept, susceptible of no hard-and-fast definitions. One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose so slender as to define competing 'reasonable alternatives' out of consideration (and even out of existence). The federal courts cannot condone an agency's frustration of Congressional will.

Despite this admonition, the DEIS/R artificially narrows the scope of the project so as to eliminate nearly all possible alternatives. The documents begins appropriately, establishing a purpose of "increas[ing] habitat function and value associated with aquatic and riparian ecosystem resources along approximately five miles of lower Aliso Creek" and a need to "diminish the adverse effects of manmade alterations affecting the lower Aliso Creek riverine system to support a healthy aquatic and riparian community, and to improve connectivity for wildlife species." The DEIS/R also notes the importance of protecting public infrastructure. DEIS/R at 1-9.

However, the DEIS/R then piles on additional purposes and needs in later sections to artificially constrain the analysis. For example, under the "Problems" heading, the DEIS/R explains that one of the primary existing "problems" is that the stream's hydrologic connection to the floodplain has been severed. DEIS/R at 1-19. It also identifies a "loss in stream sinuosity" and the "devalu[ing of] passive recreational experience[s]" as key problems. *Id.* Conversely, the DEIS/R claims that the Army Corps has the "opportunity" to "restore floodplain connection in lower Aliso Creek . . ." and "improve[] the esthetic quality of the riverine habitat." DEIS/R at 1-19. Under these strictures, only alternatives that raise the streambed to reconnect to the historic floodplain and that re-create a "pleasing" creek environment will pass muster.

The DEIS/R then goes on to identify "objectives and constraints," which likewise take viable alternatives out of consideration. For example, the specific planning objectives require the project to "promote instream connectivity (i.e. longitudinal, lateral, and vertical) to facilitate the reproductive viability of aquatic species." DEIS/R at 1-21. They also require the project to "increase floodplain function." *Id.* Finally, under a

section called “ecosystem restoration goals,” the DEIS/R claims that “restoration of geomorphology” is “require[d]” “for long-term success.” DEIS/R at 3-1.

Finally, Chapter 3 focuses on screening alternatives based on land requirements, effectiveness, efficiency, acceptability, and sustainability, as well as the results of the CHAP AAHUs analysis.⁵ DEIS/R at 3-11, 3-54. These categories again artificially limit the range of alternatives, such as by eliminating alternatives that are not “self-sustaining.” *Id.* Moreover, as detailed in Exhibit 2, the CHAP analysis contains a number of significant errors, omissions, and unsupported assumptions, which serve to artificially inflate the habitat units associated with the Corps’ preferred Project and improperly decrease the habitat units associated with the No Action alternative. All of these additional criteria act as de facto “purpose and need” limitations that severely curtail the Agencies’ consideration of alternatives, as explained in the next section. A revised and recirculated DEIS/R must loosen these strictures to allow consideration of a wider range of viable alternatives.

B. The Range of Alternatives is Improperly Narrow.

As a result of the conscripted defined purpose and need for the Project, the DEIS/R next errs by defining an overly narrow range of alternatives. The DEIS/R jumps from the No Action Alternative to an array of proposals that all require significant destruction of riparian habitat and creek function. This artificially narrow scope is unlawful.

Specifically, CEQA requires that every EIR analyze a reasonable range of potentially feasible alternatives to a proposed project. *See* Pub. Res. Code § 21100(b)(4); CEQA Guidelines § 15126.6(a); *Center for Biological Diversity v. County of San Bernardino*, 185 Cal.App.4th 866 (2010) (EIR for outdoor composting facility legally deficient for failure to consider alternative that would significantly reduce air quality impacts); *North Coast Rivers Alliance v. Kawamura*, 243 Cal.App.4th 647, 666-670 (2015). NEPA requires EISs to do the same. *See* 40 C.F.R. § 1502.14; *National Parks & Conservation Ass’n v. Bureau of Land Management*, 606 F.3d 1058, 1072 (9th Cir. 2010) (BLM’s EIS for land swap overturned for failure to analyze a “reasonable range of

⁵ Notably, these screening criteria do not include comparison of potential significant environmental impacts. This omission is contrary to CEQA (*Watsonville Pilots Assn. v. City of Watsonville*, 183 Cal. App. 4th 1059, 1089 (2010)) and NEPA (*Ilio’ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1093 (9th Cir. 2006)).

alternatives.”). To be reasonable, the range of alternatives analyzed in an EIR must provide enough variation from the proposed project “to allow informed decisionmaking” regarding options that would reduce environmental impacts. *Laurel Heights Improvement Ass’n v. Regents of University of California*, 47 Cal.3d 376, 404-05 (1988).

Here, the range of alternatives fails to provide any information about mechanisms for restoring riparian and aquatic habitat and protecting critical infrastructure without removing significant portions of the existing creek. Base Alternative 3 and its variations are the most destructive. Under these alternatives, the Army Corps would raise the existing streambed to the pre-incised stream elevation. After raising the streambed, the Army Corps would then construct a 200-foot wide channel, flanked by floodplain terraces. DEIS/R at 3-43. Within this new structure, the Army Corps would install buried large boulders and riprap stone.

However, both Base Alternatives 2 and 4 and their variations also propose significant manipulation of the existing environment. Base Alternative 2 would install an engineered and uniform trapezoidal channel within the existing incised margins. DEIS/R at 3-42. This would involve grading the entire riparian corridor. Base Alternative 4 is similar to Base Alternative 3, except that the efforts to raise the existing streambed would be moderated. DEIS/R at 3-44. Buried large boulders and riprap stone would still be installed. DEIS/R at 3-45. Even these less destructive Alternatives are ultimately winnowed out. The DEIS/R ultimately considers *only* action alternatives that would involve grading the entire stream corridor.

The DEIS/R arrives at this impermissibly narrow range of alternatives by eliminating those that do not meet the overly circumscribed criteria. For example, the DEIS/R eliminates Alternative 5—which would have relied on non-structural changes to the environment—based on “uncertainty” associated with continued changes in the hydrologic system. DEIS/R at 3-15. Likewise, the DEIS/R eliminates the three USFWS alternatives⁶ based on the “inherent high risks associated with unpredictable slope failures, channel migration, and impacts to infrastructure and property from heavy sediment-laden flows potentially resulting during large storm events.” DEIS/R at 3-47. In other words, the DEIS/R eliminates all less-intensive alternatives because the Army

⁶ The DEIS/R claims that USFWS “Alternative C will be carried forward for further evaluation and comparison with other developed alternatives of the focused array.” DEIS/R at 3-48. However, this alternative does not appear in the focused array analysis.

Corps is not convinced of their future likelihood of success. Yet, given the flawed assumptions regarding the no action alternative and other future scenarios, described above, this reason provides an inadequate basis for eliminating the alternative.

C. A Revised and Recirculated DEIS/R Must Consider a Less Impactful, Less Expensive, and More Effective Alternative.

Under NEPA, “[t]he existence of reasonable but unexamined alternatives renders an EIS inadequate. *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998). Likewise, CEQA requires that agencies “mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.” Pub. Res. Code § 21002.1(b). As courts have made clear, “[a] potential alternative should not be excluded from consideration merely because it would impede to some degree the attainment of the project objectives” *Save Round Valley Alliance v. County of Inyo*, 157 Cal. App. 4th 1437, 1456-57 (2007) (quotations omitted). The Army Corps and the County cannot approve the Project as proposed if there is a feasible alternative that would substantially lessen the Project’s significant impacts.

A broad coalition of cities, community groups, environmental organizations, hydrologists and environmental scientists are joining together propose a more responsible alternative for consideration in a revised DEIS/R. The key characteristics of this alternative are proposed in Exhibit 1. This group of stakeholders is collaboratively working to refine a proposed Locally Preferred Alternative and will propose a more detailed version of this alternative to the Army Corps of Engineers and the County of Orange in the coming weeks. We urge the Agencies to delay further consideration of the proposed Project until this Locally Preferred Alternative can be presented.

The DEIS/R’s underlying documents, once examined, actually support the selection of this alternative. As discussed above, the Geomorphic Baseline Assessment suggests that widespread manipulation of the creek is not necessary to achieve a dynamic equilibrium in all stretches. Instead, as discussed in Exhibit 2, these documents recognize that there are focused, nuanced solutions that can remedy the most severe habitat and ecosystem impacts, protect critical infrastructure, *and* leave intact the existing riparian habitat. *See also* DEIS/R at App. A-1.a.2 – Attachment C (indicating only 0.5 to 1.0 miles of necessary bank protection work to protect critical infrastructure).

As a result, we urge the County of Orange to adopt the alternative presented in Exhibit 1 as its Locally Preferred Plan. This alternative will meet the identified goals at

significantly reduced economic and ecologic cost, and will ensure the County complies with CEQA's requirements for alternatives.

IV. The DEIS/R Improperly Omits Any Discussion of the Risks Posed by the Tentatively Selected Plan.

The Tentatively Selected Plan would involve a massive construction project in a fragile, complex, and rare ecosystem. *See, e.g.*, DEIS/R at 1-6 (California has lost 90-95 percent of native riparian communities). Construction efforts would involve moving 300,000 cubic yards of soil, installation of many artificial structures, replanting of native species, relocation of the southwestern pond turtle to alternate habitat, and their reestablishment on site. DEIS/R at 3-90 to -94, 5-58. Despite the inherent uncertainties and complexities of such a significant undertaking, the DEIS/R assumes that the entire project will go off without a hitch. Indeed, the selection of the Tentatively Selected Plan is premised entirely on the assumption that the Plan will result in precisely 5,775 additional habitat units. DEIS/R at 3-60.

Yet, such ecosystem restoration efforts are inherently fraught with difficulties. Indeed, the main source of degradation in Aliso Creek—the failed Aliso Creek Wildlife Habitat Enhancement Project—was initially proposed as federally sponsored ecosystem restoration project. Its ultimate failure demonstrates just how difficult it is to replace functioning natural systems with man-made ones.

The DEIS/R's failure to recognize these uncertainties is fatal. NEPA is designed to “insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug.” *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973); *see also Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, 57 Cal.4th 439, 445, 457 (2013) (an agency “abuses its discretion if it exercises it in a manner that causes an EIR's analysis to be misleading or without informational value.”). The required NEPA analysis is not confined to environmental consequences that are certain to occur. NEPA also requires agencies to analyze the environmental impacts of potentially catastrophic, but less likely, events. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 354-55 (1989) (NEPA analysis must “describe the consequences of a remote, but potentially severe impact”). Such analysis is critical to provide decisionmakers with the information needed to make decisions informed by the potential environmental impacts of their actions.

Such disclosure is required even if the precise likelihood of different outcomes is unknown. If the agency faces “incomplete or unavailable information” about

potential risks, it must comply with enumerated disclosure requirements. 40 C.F.R. § 1502.22 (setting forth the four types of information agencies must provide in such circumstances). And if the agency is faced with a disagreement among experts, it can rely on one viewpoint *only* if it discusses “any responsible opposing view.” 40 C.F.R. § 1502.9(a)-(b); *Pac. Coast Fed’n of Fishermen’s Ass’ns v. NMFS*, 482 F.Supp.2d 1248, 1255 (W.D. Wash. 2007) (“[T]he agency must not only recite dissenting opinions, it must ‘analyze,’ ‘respond to’ and ‘discuss’ them.”) (quoting *Ctr. for Biological Diversity v. USFS*, 349 F.3d 1157, 1168 (9th Cir. 2003)).

V. The DEIS/R Fails to Adequately Discuss Coordination with Other Agencies.

Chapter 6 includes a brief description of the myriad further approvals the Project will or may require. For example, the DEIS/R explains that the California Coastal Commission will require a consistency determination for the Project and that “further coordination will continue.” DEIS/R at 6-4. Likewise, the DEIS/R states that the California Department of Fish and Wildlife may adopt a Federal Biological Opinion, may prepare its own biological opinion, and/or may issue a Section 2081 take permit and/or a Section 1601 Streambed Alteration Agreement. *Id.* at 6-4. These short statements provide no information to the public or decisionmakers about the Project’s likely compliance with these permitting requirements or potential project modifications that may be required as a result.

CEQA requires more. The lead agency—here, Orange County—must “integrate CEQA review with these related environmental review and consultation requirements” to the fullest extent possible. CEQA Guidelines § 15124(d)(1)(C); *see Banning Ranch Conservancy v. City of Newport Beach*, 2 Cal.5th 918, 936-942 (2017). As the California Supreme Court recently pointed out, such integration ensures adequate evaluation of project alternatives and mitigation measures *before* the Agencies consider whether to approve the Project. If complete integration is infeasible, then the DEIS/R must nevertheless “flag[]” and “address” potential conflicts with other provisions of law, including any “competing views put forward by . . . other interested agencies.” *Id.*

This requirement is especially important where, as here, other agencies with permitting responsibilities over the proposed activity disagree about the potential environmental impacts. The USFWS submitted a comment letter critiquing the proposed Project in 2015 and offering alternatives, with the DEIS/R summarily rejects. We understand USFWS will be submitting similar comments in this comment period. Likewise, we understand CDFW is also opposed to the Project. This uniform opposition

points to unresolved environmental issues, which must be addressed in a revised and recirculated DEIS/R.

VI. The DEIS/R Improperly Defers Mitigation.

CEQA allows a lead agency to defer mitigation only when: (1) an EIR contains criteria, or performance standards, to govern future actions implementing the mitigation; (2) practical considerations preclude development of the measures at the time of initial project approval; and (3) the agency has assurances that the future mitigation will be both “feasible and efficacious.” *Communities for a Better Environment v. City of Richmond*, 184 Cal.App.4th 70, 94-95 (2010); *San Joaquin Raptor Rescue Center v. County of Merced*, 149 Cal.App.4th 645, 669-71 (2007); CEQA Guidelines § 15126.4(a)(1)(B). NEPA likewise requires adequate analysis of mitigation measures. *South Fork Band Council of W. Shoshone of Nevada v. U.S. Dep’t of Interior*, 588 F.3d 718, 727 (9th Cir. 2009).

The DEIS/R, however, repeatedly defers development of mitigation measures without meeting these requirements. For example:

- ER-1 requires the development of an “Erosion and Sedimentation Control Plan.” DEIS/R at 5-14. The mitigation measure states that this plan should “minimize the erosion effects of grading and excavation.” *Id.* A goal of “minimizing,” however, is not sufficiently concrete to serve as a performance standard – how much erosion will be allowed? At what point can the agency determine that erosion has been “minimized” sufficiently? Likewise, the DEIS/R offers no explanation for why the plan cannot be developed now.
- Bio 3 requires the agency to monitor turbidity in the Aliso Creek lagoon estuary, allegedly to protect the Tidewater Goby Critical Habitat. However, this measure offers no standards against which turbidity should be monitored, and no explanation of what must happen in the event turbidity increases.
- Bio 6 states that the project site will be surveyed and a “plan of action” will be developed to relocate southwestern pond turtles. This type of “mitigation”—where analysis and development of a plan occurs outside of the EIS/R—is precisely the type that has been repeatedly criticized by the courts. *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296 (1988);

Communities for a Better Environment v. City of Richmond, 184 Cal.App.4th 70, 94-95 (2010).

- CR-1 requires the Corps to prepare and execute a Programmatic Agreement to inventory cultural resources and mitigate adverse effects, as discussed further below. Again, this mitigation measure provides no performance standard, no explanation for why development of the measures cannot be undertaken now, and no assurance that the measure will be feasible or effective.
- TT-1 requires the contractor to prepare a Traffic Safety Management Plan, but offers no performance standards or other deferred mitigation requirements.

The Agencies must carefully review the DEIS/R to ensure that all mitigation measures meet the standards required by CEQA.

VII. The Agencies Unlawfully Intend to Prepare a Programmatic Agreement to Address Cultural Resource Impacts.

The proposed Project site contains at least twelve archaeological sites, some of which may contain buried human remains. DEIS/R at 2-83. Instead of adequately analyzing potential cultural resource impacts under NEPA and CEQA, the DEIS/R proposes to defer this analysis until after the Project is approved. However, one of the policy goals of CEQA and NEPA is to identify impacts and mitigation at the earliest feasible stage before project momentum decreases an agency's flexibility. *See Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 307 (1988); *Oro Fino Gold Mining Corp. v. County of El Dorado*, 225 Cal.App.3d 872, 884-85 (1990); *see also City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990) ("NEPA requires consideration of the potential impact of an action *before* the action takes place"). To that end, information regarding the project's impacts must be "painstakingly ferreted out." *Environmental Planning and Information Council of Western El Dorado County v. County of El Dorado*, 131 Cal.App.3d 350, 357 (1982) (finding an EIR for a general plan amendment inadequate where the document did not make clear the effect on the physical environment). Consequently, this approach is unlawful.

A. A Programmatic Agreement is Inappropriate for this Project.

Under NEPA, lead agencies may not rest on “bald conclusions,” but must take a “hard look” at the environmental impacts of a project. *Maryland-Nat’l Capital Park & Planning Comm’n v. U.S. Postal Serv.*, 487 F.2d 1029, 1040 (D.C. Cir 1973). This requirement includes a hard look at cultural resource impacts. *E.g.*, *Colorado River Indian Tribes v. Marsh*, 605 F.Supp. 1425, 1430-1434 (C.D. Cal. 1985).

Here, the DEIS/R states that analysis of cultural resources will be deferred in two ways. First, the Army Corps has hired a consultant to review five of the 12 recorded archaeological sites in late 2017. DEIS/R at 2-83. Further information about these five sites allegedly will be incorporated into the final report and will help inform future designs. However, this information is not available for the public comment period.

Second, the Army Corps proposes to rely on a programmatic agreement to satisfy its compliance with the National Historic Preservation Act (“NHPA”). DEIS/R at 5-72 to -73.⁷ Pursuant to the NHPA’s implementing regulations, a programmatic agreement sometimes may be used to defer analysis of cultural resource impacts and resolution of adverse effects on such resources. 36 C.F.R. § 800.14. However, programmatic agreements are only appropriate to “govern the implementation of a particular program” or in “certain complex project situations or multiple undertakings.” *Id.* § 800.14(b). Specifically, programmatic agreements may be used only when “effects on historic properties cannot be fully determined prior to the approval of an undertaking” or when an agency is proposing repetitive or programmatic undertakings over a wide geographic area. *Id.* § 800.14(b)(1).

These circumstances are not present here. The proposed undertaking will occur in a relatively confined area. Project alternatives all affect the same riparian corridor, so the entire affected area can be surveyed prior to selecting the alternative. Nor is the proposed project “programmatic” in nature, such that further NHPA/NEPA review would be conducted to support later approvals—the Army Corps is proposing to select a Project and move forward with construction at this time. Consequently, the Army Corp must instead complete its NHPA and NEPA analysis and mitigation requirements at this

⁷ Even if a programmatic agreement were permitted pursuant to the NHPA, the Army Corps is nevertheless required to comply with NEPA’s “hard look” requirements at this time.

time, and prepare a memorandum of agreement prior to Project approval. *E.g.*, 36 C.F.R. §§ 800.3 to 800.7.

B. CEQA Does Not Permit Deferral of Analysis of Cultural Resource Impacts.

CEQA likewise prohibits deferral of cultural resource analysis. CEQA Guideline section 15064.5(c)(1) provides that “[w]hen a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource” *Madera Oversight Coalition, Inc. v. County of Madera*, 199 Cal.App.4th 48, 81 (2011). Even if an archeological site is not an “historical resource,” the agency must determine whether the site meets the definition of a “unique archeological resource” as defined in CEQA Section 21083.2, and then analyze and mitigate impacts to the resource in accordance with the provisions of that section. The DEIS/R acknowledges these requirements, and assumes that the Project will result in significant and unmitigable impacts to cultural resources, but defers any actual analysis until after Project approval.

This “post certification [] procedure allows for an environmental decision to be made outside an arena where public officials are accountable.” *Madera Oversight Coalition*, 199 Cal.App.4th at 81-82 (citing *Communities for a Better Environment v. City of Richmond*, 184 Cal.App.4th 70, 96 (2010)). The County’s failure to make these determinations now and disclose its rationale and conclusions in the DEIS/R constitutes a failure to “proceed in a manner required by law” for purposes of section 21168.5.” *Madera Oversight Coalition*, 199 Cal.App.4th at 82.

Deferral of analysis is particularly problematic in the CEQA context because of its specific mitigation requirements for archaeological resources. CEQA Guideline section 15126.4(b) requires lead agencies to “whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature.” Likewise, CEQA requires an EIR to discuss whether the proposed project “has a significant impact on an identified tribal cultural resource” and “whether feasible alternatives or mitigation measures . . . avoid or substantially lessen the impact on the identified tribal cultural resource.” Pub. Res. Code § 21082.3(b).

Specifically, an EIR must analyze whether “preservation in place” of an archaeological site is feasible. According to the Court of Appeal, this reference to “preservation in place” as the “preferred manner” of mitigating impacts to historical archaeological resources “mean[s] that feasible preservation in place must be adopted to mitigate [such] impacts . . . unless the lead agency determines that another form of

mitigation is available and provides superior mitigation of the impacts.” *Madera Oversight Coalition*, 199 Cal.App.4th at 83-84.

These requirements are incompatible with the DEIS/R’s proposed tactic of delaying analysis until after selection of the Project alternative, as well as the DEIS/R’s statements that “data recovery in the form of archaeological excavation is a likely form of resource mitigation.” DEIS/R at 5-70. In order to preserve an archaeological resource in place or to substantially lessen the impacts of the Project on a tribal cultural resource, the Project may need to be designed to *avoid* such resources. This cannot be done if the County is far along in designing or constructing the Project. Consequently, just as in *Madera Oversight Coalition*, the DEIS/R’s discussion of cultural resources is legally inadequate, given that it “improperly defer[s] the formulation of actual mitigation measures to the future.” *Id.*

VIII. The DEIS/R Improperly Concludes that Recreational Impacts Will Be Less than Significant.

The proposed Project lies entirely within the Aliso and Wood Canyons Wilderness Park, which is a magnet for recreational activity throughout the region. DEIS/R at 2-98. The Wilderness Park has an extensive trail network, which is heavily used by hikers, runners, and mountain cyclists (Aliso and Woods Canyons Wilderness Park Resource Management Plan (“RMP,” attached as Exhibit 3) at 95). In particular, the Aliso Creek Trail is among the most popular in the park. *See* RMP at 117 (denoting “heavy use” and characterizing the trail as “heavily traveled”). The proposed Project will involve four years of construction immediately adjacent to this trail, and will involve trail closures throughout this period. DEIS/R at 5-97 to -99. Remarkably, however, the DEIS/R concludes that “impacts would be short term and temporary,” and therefore “less than significant.” DEIS/R at 5-99.

This conclusion is not supported by substantial evidence. One of the DEIS/R’s selected thresholds of analysis is whether the proposed Project will “result[] in *construction* or operational activities that substantially conflict with recreational uses.” DEIS/R at 5-98 (emphasis added). This threshold acknowledges the possibility that construction impacts can be significant, particularly when trails are closed due to construction. Here, however, the DEIS/R offers no analysis of how many recreational users typically use the portions of the Aliso Creek Trail that will be closed, which trails might be impacted by increased use resulting from the diversion, or whether users may

create unauthorized trails to bypass the area.⁸ Without this information, the DEIS/R's conclusion that impacts will be less than significant is unsupported speculation. *City of Hayward v. Trustees of California State University*, 242 Cal.App.4th 833, 859-60 (2015) (striking down EIR that concluded that project impacts on parklands would be "nominal" without data concerning current use or likely future use of parklands).

IX. The DEIS/R Improperly Defers Assessment of Hazardous Materials.

The DEIS/R contains only a short discussion of hazardous materials. It first notes that the Wilderness Park has been maintained as open space with intact natural resources. As a result, it claims that a Phase I Environmental Site Assessment is not "deemed necessary for the study area at this time." DEIS/R at 2-85. Based on these unsupported assumptions, the DEIS/R then concludes that it is "unlikely that any hazardous material sites would be discovered during construction" and that impacts therefore will be insignificant. DEIS/R at 5-77 to -78.

This approach is wholly inadequate. Given the significant upstream urbanization of the watershed and the potential for the creek to carry toxics, metals, and other hazardous materials to the site, the Agencies must conduct a Phase I Environmental Site Assessment and include the results in a revised and recirculated DEIS/R. This analysis is especially warranted given the Agencies' proposal to store 300,000 cubic yards of dredged soils on site, directly adjacent to recreational amenities and crucial habitat resources. Indeed, the Agencies acknowledge the need for such analysis, by requiring a Phase I ESA and HTRW hazard surveys *later* in the design process. DEIS/R at 2-86. But NEPA and CEQA do not permit such deferral. *E.g.*, *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 307 (1988) ("By deferring environmental assessment to a future date, the conditions run counter to that policy of CEQA which requires environmental review at the earliest feasible stage in the planning process.") (citing Pub. Res. Code § 21003.1; *No Oil, Inc. v. City of Los Angeles*, 13 Cal.3d 68, 84 (1974)).

X. The Proposed Project Conflicts with Land Use Plans for Aliso and Wood Canyons Wilderness Park.

The proposed Project area is subject to numerous land use plans and other requirements, including the Orange County General Plan, the Aliso and Woods Canyons Wilderness Park Resource Management Plan ("RMP," attached as Exhibit 3), and a

⁸ The RMP explains that unauthorized trail creation and use have been significant problems in the management of the park. RMP at 102.

Natural Communities Conservation Plan/Habitat Conservation Plan (“NCCP/HCP,” attached as Exhibit 4) for the central and coastal subregion. These plans both affect the ability of the County to approve this Project and implicate CEQA and NEPA requirements.

First, all County land use decisions must be consistent with all applicable land use policies, including the General Plan and all of its elements, the RMP, and the NCCP/HCP. *See Pfeiffer v. City of Sunnyvale City Council*, 200 Cal.App.4th 1552, 1562-1563 (2011); NCCP/HCP Implementing Agreement at 37. A project is inconsistent if with a plan if it conflicts with a policy that is fundamental, mandatory, and clear. *Endangered Habitats League, Inc. v. County of Orange*, 131 Cal.App.4th 777, 788 (2005) (citing *Families Unafraid to Uphold Rural Etc. County v. Board of Supervisors* (1998) 62 Cal.App.4th 1332, 1341-1342 (1998) (“*FUTURE*”)) “[A] county cannot articulate a policy in its general plan and then approve a conflicting project.” *Id.* (citing *Napa Citizens for Honest Government v. Napa County Bd. of Supervisors*, 91 Cal.App.4th 342, 379-380 (2001)). Consistency requires more than incantation; if no reasonable person could have made the consistency finding on the record before the agency, it must be set aside as arbitrary and capricious. *Id.* (citing *FUTURE*, 62 Cal.App.4th at 1338).

Second, both CEQA and NEPA require the DEIS/R to evaluate the Project’s consistency with all applicable land use plans. *See* 40 C.F.R. § 1502.16(c), *Pocket Protectors v. City of Sacramento*, 124 Cal.App.4th 903, 929-36 (2004). The DEIS/R makes a feeble attempt to comply with these requirements. Specifically, the DEIS/R notes that, with the Project, “the land use would not change as the Wilderness Park is protected as designated open space under various local city general plans as well as the . . . NCCP/HCP.” DEIS/R at 5-84. The DEIS/R continues that because the goals and objectives of the NCCP/HCP are to preserve and restore habitat, and the Project would allegedly “benefit the Wilderness Park with restoration of riparian habitat for native species,” the Project is consistent with the NCCP/HCP. *Id.*

These conclusions are not well supported. As discussed below, the proposed Project is in direct conflict with numerous land use plans and requirements, and cannot be approved by the County as currently designed. The Agencies must redesign the Project to meet these requirements. If the Army Corps insists on moving forward with its proposal, then at the very least, these inconsistencies must be discussed in a revised and recirculated DEIS/R.

Aliso and Wood Canyons Wilderness Park Resource Management Plan

- The RMP states that “integrity of [Aliso Creek and its tributary drainages] is a focus of resource management within the park.” RMP at 7. Chapter 8 addresses the park’s biological resources. RMP at 145-181. Notably, *none* of the strategies to improve biological productivity and diversity include removal of native riparian habitat and re-engineering of Aliso Creek. Instead, the Plan focuses on invasive removal, closing unauthorized trails, and replanting with natives. *Id.* Consequently, the proposed Project conflicts with the overarching strategy to protect and benefit biological resources within the Park, specifically within Aliso Creek.
- Strategy BIO-1 requires the protection and maintenance of native plant and wildlife habitat. The proposed Project will *remove* native plant and wildlife habitat, in direct conflict with this requirement. While the proposed Project includes restoration of native plants and wildlife following construction, it is not clear whether this restoration effort will be successful, as discussed above.
- Strategy BIO-2 requires that “protection, enhancement, and restoration activities [be] consistent with the adaptive management strategy of the NCCP/HCP.” RMP at 103. The DEIS/R provides no indication that the proposed Project has been designed in accordance with this strategy.
- Strategy BIO-4 requires that the data collected through the monitoring program must be analyzed and used as the basis for evaluating and guiding park management. RMP at 103. While the proposed Project includes future adaptive management (DEIS/R at 4-14 to -15), it does not appear that the current monitoring has been “used as the basis for evaluating and guiding park management,” in contravention of the RMP. As described elsewhere, the proposed Project responds to an outdated understanding of the current hydrological and biological system in Aliso Creek. Current data indicates that Aliso Creek has already reached equilibrium in many stretches, and the proposed Project is not necessary.
- Strategy LALISO-3 requires provision of a trail on the east side of Aliso Creek from Alicia Parkway to the Coastal Treatment Plan. RMP at 109. The four years of construction required for the proposed Project, and the related trail closures, will frustrate achievement of this strategy.

- Strategy LALISO-6 states: “Emphasize the ACWHEP structure as a destination point.” RMP at 109. However, the proposed Project would remove this structure.
- Strategy LALISO-10 requires OC Parks to develop checks and balances to review watershed practices. DEIS/R at 110. The DEIS/R does not discuss the development or use of these checks and balances.
- While the RMP includes a discussion of previous iterations of the Army Corps’ proposed Project (RMP at 183-192), the RMP notes that the project may potentially impact park resources. *Id.* at 199. This acknowledgment indicates the potential for the Project to conflict with the RMP, as described above. It does not give the County a carte blanche to approve the Project.
- The RMP notes that “all archaeological/cultural sites within the [Park] are considered highly significant, with site preservation a priority.” RMP at 8. Consequently, Strategy Cult-1 requires a “focused pedestrian survey” in advance of approval of any improvements in the park. RMP at 18. It likewise requires that an Orange County certified archaeologist be consulted in advance of any direct impacts and that a monitoring program be in place. RMP at 18-19. The proposed Project—which defers analysis of cultural resources until later in the process—does not meet these requirements.

Central and Coastal Subregion Natural Communities Conservation Plan/Habitat Conservation Plan

- The NCCP/HCP requires development of a Resource Management Plan for each County Park within the proposed habitat reserve system. NCCP/HCP Implementation Agreement at 56-57. Because the proposed Project conflicts with the RMP as described above, it likewise violates the NCCP/HCP.
- The proposed Project includes areas designated as both Reserve and Non-Reserve Public Open Space under the NCCP/HCP. Take of covered species is not authorized by the NCCP/HCP in either area. NCCP/HCP at II-227. Yet, the proposed Project would adversely affect listed species and their habitat, as described above.

- The NCCP/HCP states that “the kinds of uses and activities permitted within the Reserve System will be carefully controlled to protect biological resources.” NCCP/HCP at II-293. Specifically, “uses and activities other than those identified in Chapter 5 and Section 5.3.3 of the Implementation Agreement are not permitted” pursuant to the NCCP/HCP. *Id.* The DEIS/R does not explain how the proposed Project—which will adversely impact biological resources in the short-term, and may adversely impact them in the long term, qualifies as a permitted use under either Chapter 5 or the Implementation Agreement. Specifically, the proposed Project does not qualify as a “habitat enhancement, restoration or re-creation activit[y]” (NCCP/HCP at II-293) because it does not appear comply with the requirements established in Section 5.6. For example, the DEIS/R does not explain whether the proposed Project is part of the comprehensive enhancement and restoration plan prepared and managed by the non-profit management corporation. HCP at II-310.

Orange County General Plan

- The Orange County General Plan designates much of the Project site as “Open Space Reserve.” Open Space Reserve overlays are required to be “permanently preserved as and restricted to open space and compatible uses.” Land Use Element at III-20 (Exhibit 5). The proposed Project does not “preserve” the site as open space; instead it removes 5 miles of native riparian vegetation and installs numerous man-made structures.
- The Recreation Element establishes that the wilderness park must “generally appear[] to have been affected primarily by forces of nature, with the imprint of man’s work substantially unnoticeable.” Recreation Element at VII-39 to -40 (Exhibit 6). The proposed Project is inconsistent with this requirement, in that it requires removal of a 5-mile stretch of native riparian habitat and replacement with entirely man-made structures. Moreover, the proposed Project would result in the permanent storage of over 300,000 cubic yards of fill on the site. While the Army Corps intends to revegetate these areas, the DEIS/R includes no information assuring that such efforts will be successful.

XI. The Army Corps Must Follow Updated Corps Policies

The DEIS/R states that the Draft IFR was prepared to comply with the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources* (May 1983). DEIS/R at 1-1. This policy was revised, however, in 2013 and 2014. Specifically, the update was intended to expand the narrow set of parameters typically applied to evaluate water investments. It was also intended to allow the Army Corps to better support locally driven priorities. See Exhibit 8, Council on Environmental Quality, Updated Principles, Requirements, and Guidance for Water and Land Related Resources Implementation Studies (also available at: <https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/PandG>).

The DEIS/R must be revised to comply with the 2013 *Principles and Requirements for Federal Investment in Water Resources* and the 2014 *Interagency Guidelines*. In the interest of transparency and accountability, the revised EIS/R should explain the changes made in response to the application of these up-to-date guidance materials.

XII. In Making Early Financial Commitments to the Project, the County Violated CEQA.

The DEIS/R contains the following remarkable statement:

The non-Federal sponsor [Orange County] has committed to provide its share of total project costs, as well as all LERRD [Lands, Easements, Rights-of-Way, and Disposal Sites] required for the Proposed Project. The non-Federal sponsor has committed to performing all OMRR&R [Operations, Maintenance, Repair, Rehabilitation & Replacement] required for the Proposed Project. The non-Federal sponsor has also made a commitment to undertake all necessary response and remediation for CERCLA contaminants required for the proposed project, including providing lands free of soil contamination prior to construction of the project features on those lands and handling groundwater contamination during construction activities.

DEIS/R at 4-23. If accurate, these statements demonstrate that the County has violated CEQA. The County must comply with CEQA whenever it makes a discretionary decision that may have a significant effect on the environment. Pub. Res. Code § 21080. This CEQA compliance must occur at the first discretionary step toward Project approval.

Bozung v. Local Agency Formation Com., 13 Cal.3d 263, 282 (1975). (“the precise information concerning environmental consequences which an EIR affords be furnished and considered at the earliest possible stage”). Commitments to fund and build a particular project certainly qualify as preliminary discretionary steps pursuant to CEQA. Consequently, the DEIS/R must include additional information regarding the timing of these commitments and the precise nature of the County’s approval.

If the County has not yet made any firm commitments to the Project, then this section of the DEIS/R is fundamentally misleading and must be revised and recirculated.

XIII. The DEIS/R Does Not Include Elements Required by CEQA.

The DEIS/R identifies Orange County Public Works (OCPW), Environmental Resources as the non-Federal Sponsor of the Project. DEIS/R at 1. It alleges that it has been prepared to comply with CEQA, as well as state and local environmental laws and regulations. *Id.* Yet, it is clear from the scope of the document that the Agencies have made very little effort to ensure that it will pass muster under California laws.

As a preliminary matter, the DEIS/R claims that “the non-Federal Sponsor, Orange County Public Works (OCPW), Environmental Resources, is the lead agency under the California Environmental Quality Act (CEQA).” DEIS/R at 1-1. This statement is in error. A lead agency under CEQA must be the decisionmaking body of the state or local entity, not staff. CEQA Guidelines § 15050. In this case, the Orange County Board of Supervisors is the decisionmaking body that must review and consider the EIR. *Id.*

Second, the DEIS/R fails to comply with basic CEQA requirements. For instance, the DEIS/R does not specify an environmentally superior alternative, as required by CEQA. CEQA Guidelines section 15126.6(e)(2) provides that a lead agency must identify an environmentally superior alternative among the alternatives considered. *See also Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 737 (1990); *Watsonville Pilots Ass’n v. City of Watsonville*, 183 Cal.App.4th 1059, 1089 (2010) (“[T]he purpose of an alternatives analysis is to allow the decision-maker to determine whether there is an environmentally superior alternative that will meet most of the project’s objectives.”). This shortcoming is highly problematic. Identifying an environmentally superior alternative is a necessary prerequisite for the lead agency to make the findings required by CEQA. In order to approve a project that would have a significant environmental impact, an agency must make findings identifying: (1) the

“[s]pecific ... considerations” that “make infeasible” the environmentally superior alternatives, and (2) the “specific . . . benefits of the project [which] outweigh” the environmental harm. Pub. Res. Code, §§ 21002.1(b), 21081; CEQA Guidelines § 15092(b). This requirement is rendered inoperable if a lead agency is permitted to consider alternatives without identifying which of them is environmentally superior.

The DEIS/R’s failure to identify an environmentally superior alternative is therefore contrary to the very purpose of the environmental review process. The omission undermines the public’s ability to determine which alternative is environmentally superior—and therefore preferable—thus thwarting its capacity to comment on the Project and its environmental review in a meaningful way.

The DEIS/R also fails to comply with other mandatory CEQA elements. For example, the DEIS/R does not meaningfully discuss the Project’s growth-inducing effects (CEQA Guidelines § 15126.2(d)),⁹ energy use (CEQA Appendix F) or potential to result in mandatory findings of significance (CEQA Guidelines § 15065), nor does it include the required brief summary (CEQA Guidelines § 15123). Without these analyses, the County cannot proceed in the manner required by law, and will commit a prejudicial abuse of discretion if it moves forward without revision and recirculation of the DEIS/R. *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal.4th 412, 426 (2007).

These myriad CEQA violations call into question whether the County has invested any reasonable effort into preparation of the DEIS/R. Given the County’s role in reviewing and ultimately approving this Project, the Army Corps cannot unilaterally drive the environmental review. The DEIS/R must also “reflect the independent judgment of the [CEQA] lead agency,” here, the County of Orange. CEQA Guidelines, § 15084(e); *Friends of La Vina v. County of L.A.*, 232 Cal.App.3d 1446, 1452 (1991) (lead agency may adopt EIR materials drafted by others “so long as the agency independently reviews, evaluates, and exercises judgment over that documentation and the issues it raises and

⁹ The DEIS/R briefly claims that the Project “does not induce growth” because it only “protect[s] existing services and restore[s] historic natural conditions.” DEIS/R at 5-119. However, if the Project is implemented and works as proposed, it will remove current obstacles to population growth or other activities by protecting sewer and water infrastructure (which would otherwise require expensive investments from the supervising agencies, thus increasing cost and decreasing demand) and by decreasing the impact of further upstream urbanization on the affected habitat.

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addresses”); *California Native Plant Society v. City of Santa Cruz*, 177 Cal.App.4th 957, 979 (2009) (“An agency may utilize staff or ‘consultants to prepare the EIR’ but it ‘must use its independent judgment’ in considering the information.”).

Laguna Canyon Foundation urges the County to undertake the required independent evaluation of the Project and the alternative proposed in Exhibit 1 before taking any additional steps to certify the FEIS/R. The Army Corps asks the County to commit to spending nearly \$35 million over the course of 10 years to construct a project with detrimental environmental and recreational impacts and little known benefit. This is a fool’s errand, particularly in times of severe budget constraints.

CONCLUSION

Due to the short timeframe provided for comments on the DEIS/R and the complexity of the proposed Project, LCF submits these preliminary comments to urge the Army Corps and the County to reconsider its Tentatively Selected Plan. However, LCF reserves the right to submit more detailed comments, supported by expert testimony and additional evidence, prior to the Army Corps’ and the County’s consideration and final approval of the Project.

Sincerely,

SHUTE, MIHALY & WEINBERGER LLP



Sara A. Clark

cc: Hallie Jones, Laguna Canyon Foundation (hallie@lagunacanyon.org)
Derek Ostensen, Derek Ostensen & Associates (derekostensen@me.com)

Exhibits:

Exhibit 1: Proposed Alternative

Exhibit 2: Letter from Derek Ostensen, Derek Ostensen & Associates, to Sara Clark (Nov. 28, 2017)

Exhibit 3: Aliso and Wood Canyons Wilderness Park Resource Management Plan

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Exhibit 4: Central and Coastal Subregion Natural Communities Conservation Plan/Habitat Conservation Plan (Including Implementation Agreement)

Exhibit 5: County of Orange General Plan, Land Use Element and Land Use Map

Exhibit 6: County of Orange General Plan, Recreation Element

Exhibit 7: ER 1105-2-100 (Planning Guidance Notebook)

Exhibit 8: Council on Environmental Quality, Updated Principles, Requirements, and Guidance for Water and Land Related Resources Implementation Studies

Exhibit 9: August 28, 2015 Letter from Scott Sobiech to Colonel Kirk Gibbs re: Planning Aid Letter for the Proposed Aliso Creek Mainstem Ecosystem Restoration Project, Orange County, California.

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EXHIBIT 1

Proposed Locally Preferred Alternative

A broad coalition of cities, environmental scientists, community groups, engineers, hydrologists and environmental organizations are joining together to propose a more responsible alternative for consideration in a revised DEIS/R.

This proposed Locally Preferred Alternative includes the following project characteristics:

- Removal of stream reaches which are stable and/or aggrading and which are demonstrating improving, upward habitat quality trajectories from the scope of the Project. Reaches to be removed include: 7, 8, 11 (with the exception of the immediate vicinity of the Joint Regional Water Supply System (JRWSS)) and the lower half of 12 below the grade control structure.
- Elimination of the following items from the scope of the Project:
 - a) Large-scale removal of habitat and wildlife;
 - b) Excavation, grading and contouring of the creek bed and banks;
 - c) Raising the streambed elevation by adding extensive fill; and
 - d) Disposal of large amount of excavated soil in the Wilderness Park.
- Within reaches 4, 5, 6, 9, 10, the JRWSS portion of 11, and the upper half of 12, limit habitat and wildlife impacts from armoring/rip rap/steel piling to areas essential for infrastructure protection and habitat resources, as further determined with input from an array of stakeholders (including coalition members, wildlife agencies, and the County). Carefully consider the least impactful infrastructure protection measures in order to protect sensitive wildlife and habitat. Based on the DEIS/R appendix, these areas likely total between 0.5 and 1 mile of Aliso Creek. Include environmentally sensitive natural grade controls, such as cobble, and design engineered structures to incorporate functional habitat as part of their design to the greatest extent feasible.
- Redesign, remodel and/or replace the ACWHEP with a structurally stable engineering solution that allows for increased vegetation.
- Eliminate paving of East-bank SOCWA maintenance Road.
- Adequately fund and implement a large scale Aliso Creek Habitat Restoration Plan that further builds on the extensive habitat restoration successes achieved in Aliso Creek since 2012. The Habitat Restoration Plan should include ongoing treatment of invasive species, adaptive management and revegetation of native species.

- Provide compensatory mitigation for temporary and permanent habitat impacts associated with infrastructure protection.
- Implement high-quality long-term monitoring and performance standards of natural resources within Aliso Creek.
- Evaluate and, if appropriate based on review of potential impacts, implement low-impact, natural creek enhancements which increase diversity of habitat, wildlife, geomorphology and hydraulics within the creek. These include but are not limited to plugs/riffles, cobbles and pools. Consideration should also be given to how these low-impact measures can also contribute to long term stability of the creek system.
- To the extent practical and cost-effective, redesign, remodel and/or replace engineered structures currently lacking habitat with structurally stable engineering solutions that allow for increased functional habitat as part of their design. Opportunity areas include the two large drop structures near the skate park, the grade control structure near Pacific Park Drive in the upper half of Reach 12, and several large areas of barren rip rap near Avila Road, among others.
- Design and implement features that enhance the scenic and recreational features of Aliso and Wood Canyons Wilderness Park. Consider modifications to AWMA Road and adjacent trail alignments which improve the Park user experience, while also balancing SOCWA and Park Ranger access needs.

We believe this alternative will have the following benefits:

- Significantly reduced project cost, based on the elimination of large-scale excavation, contouring, creek bed fill, grading, and disposal.
- Short and long-term protection of significant biological and cultural resources within the Project site.
- Long-term infrastructure protection.
- Short and long-term protection of the scenic resources of Aliso Creek and the adjacent Wilderness Park.

EXHIBIT 2

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Habitat Restoration / Conservation Land Acquisition / Regulatory

November 28, 2017

Sara Clark
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email: clark@smwlaw.com

Re: Review of Aliso Creek Mainstem Ecosystem Restoration Study Draft
Integrated Feasibility Report / Environmental Impact Statement /
Environmental Impact Report

Dear Ms. Clark:

As requested, Derek Ostensen & Associates have reviewed the Aliso Creek Mainstem Ecosystem Restoration Study Draft Integrated Feasibility Report / Environmental Impact Statement / Environmental Impact Report (“DEIS/R”), published by the Army Corps of Engineers and the County of Orange in September 2017.

Our review focused on the technical adequacy of the biological, hydrological, and geomorphological analyses contained in the DEIS/R and its appendices. In particular, we reviewed: the DEIS/R, Appendix B-2 (Combined Habitat Assessment Protocols, Fish and Wildlife Habitat Assessment Final Report, Existing Baseline Conditions, 50-Year Future Without Project, and Three Ecosystem Restoration Alternatives) and Appendix A-1f (Geomorphology).

Combined Habitat Assessment Protocols Review

Our review of the DEIS/R’s Combined Habitat Assessment Protocols (“CHAP”) reports revealed significant deficiencies that must be addressed prior to approval of the proposed Project and its related environmental documentation by the Army Corps of Engineers and the County of Orange. These issues are summarized below.

1. **Inadequate Baselines.** All three Combined Habitat Assessment Protocols (CHAP) Reports (Existing Baseline Conditions, 50-Year Future Without Project, and Three Ecosystem Restoration Alternatives) use profoundly outdated, inaccurate and incomplete data to form their analyses, resulting in the CHAP reports being

fundamentally unreliable for use in CEQA/NEPA.

A comparison of the 2009 Draft CHAP Reports to the supposedly updated 2015 CHAP Reports indicates numerous identical items which evidence that the 2015 reports were only superficially updated in 2015 and do not reflect current conditions, as required by CEQA/NEPA. Specifically:

- Numerous restoration projects ongoing in Project Area are not included. These directly and significantly affect the Habitat Unit values and other key CHAP analyses.
- From 2013 – 2017, extensive *Arundo* removal work has occurred within the USACE Project Area which has directly and immensely affected creek habitat, wildlife, hydrology, geomorphology, as well as the CHAP KEC's, CHAP KEF's and other important components of the CHAP analysis. This includes the removal of one of Orange County's largest *Arundo* infestations – several million pounds of *Arundo* biomass has been removed from the creek bed, banks and floodplains within the USACE Project Area.
- Extensive additional invasive species including but not limited to eucalyptus, tamarisk, fan palm, Canary island date palm, pampas grass and hemlock have been removed from the USACE Project Area. These removals and their importance to the CHAP analysis have not been adequately considered.
- The CHAP analysis does not consider the widespread impact of Polyphagous Shot Hole Borer (PSHB) and Kuroshio Shot Hole Borer (KSHB), which are affecting trees and shrubs throughout the Project Area (OC Parks: 2016).
- The CHAP analysis does not consider the significant impact of 1990's-era damage to the ACWHEP irrigation system. This irrigation system was being used to establish habitat downstream of the ACWHEP.
- The CHAP analysis does not consider significant hydrologic and geomorphic changes which have occurred in the years since the CHAP report was completed.
- Unacceptably antiquated data is used throughout the CHAP analysis. This outdated information does not convey current conditions.

2. **Geological Baseline Assessment.** All three Combined Habitat Assessment Protocols (CHAP) Reports (Existing Baseline Conditions, 50-Year Future Without Project, and Three Ecosystem Restoration Alternatives) misrepresent the current and future Hydrology and Geomorphology of Aliso Creek. This is the result of not factoring current conditions, as outlined in Item 1 above, and also mischaracterizing the conclusions of the USACE's own Geological Baseline Assessment (Tetra Tech: 2014).

The CHAP Reports erroneously claim that:

“With the federal government (or other entities) taking no action to restore ecosystem functions or values in Aliso Creek, further degradation of the ecological system would continue within the study area.”

We have provided a detailed response to the Geomorphic Baseline Assessment in the next section. Nonetheless, a few excerpts are relevant here as brief examples of the inaccuracy and unreliability of the CHAP Baseline and 50-Year Future Without Project forecasts. USACE's own 2014 Geomorphic Baseline Assessment concludes that Aliso Creek has already reach a point of dynamic equilibrium throughout the great majority of the USACE Project Area. Two lingering degradational areas, such as a portion of the segment downstream of the ACWHEP, are already stabilizing according to the report:

- “The potential for future vertical degradation of Aliso Creek is limited, except in a few locations where incision into clay outcrops is ongoing (i.e., approximately RM 2.9 and RM 6.1). The creek is currently hung up on these outcrops, but future incision is expected to be no more than three to four feet, an amount that should occur in no more than approximately 10 years, assuming future hydraulic conditions are similar to past conditions.”
- “The significance of these results is that the ultimate bed profile will closely resemble the existing profile and where localized changes are expected to occur, the magnitude and extent of the incision is expected to be relatively minor compared to degradation that has occurred since 1980.”

The USACE Geomorphic Baseline Assessment emphasizes that only two of the twelve studies reaches are in a Class IV degradational state. The remaining ten reaches are stable or stabilizing as Class V and Class VI and will exhibit average slopes similar to the existing slopes. The two Class IV reaches will self-stabilize against further degradation within 1 to 10 years:

“Other than reaches categorized as Class IV, the expectation is that future bed profiles will exhibit average slopes similar to the existing slopes. The magnitude of incision immediately downstream of the bedrock was calculated to be 1.1 feet for a 0.45 percent non-eroding slope and 4.1 feet for a 0.30 percent non-eroding slope. Given the calculated rates of incision through the clay units, and assuming future hydraulic conditions are similar to recent past conditions, the expected degradation may occur in approximately 1 to 10 years. Once the non-eroding slope is reached, no further degradation is expected.”

Out of the twelve reaches studied for degradation by the ICEM, five were identified is Class V (aggradation begins to occur in a steady progression to Class VI).

A further five of the twelve studied reaches were determined by the ICEM to have effectively reached equilibrium as a Class VI. Class VI is an equilibrium channel reflecting a dynamic balance between sediment supply and transport capacity formed within the widened channel.

The CHAP Reports ignore or mischaracterize these determinations and disregard the USACE's own conclusions that ten of twelve reaches in the Project Area are aggrading as Class V or have attained dynamic equilibrium as Class VI.

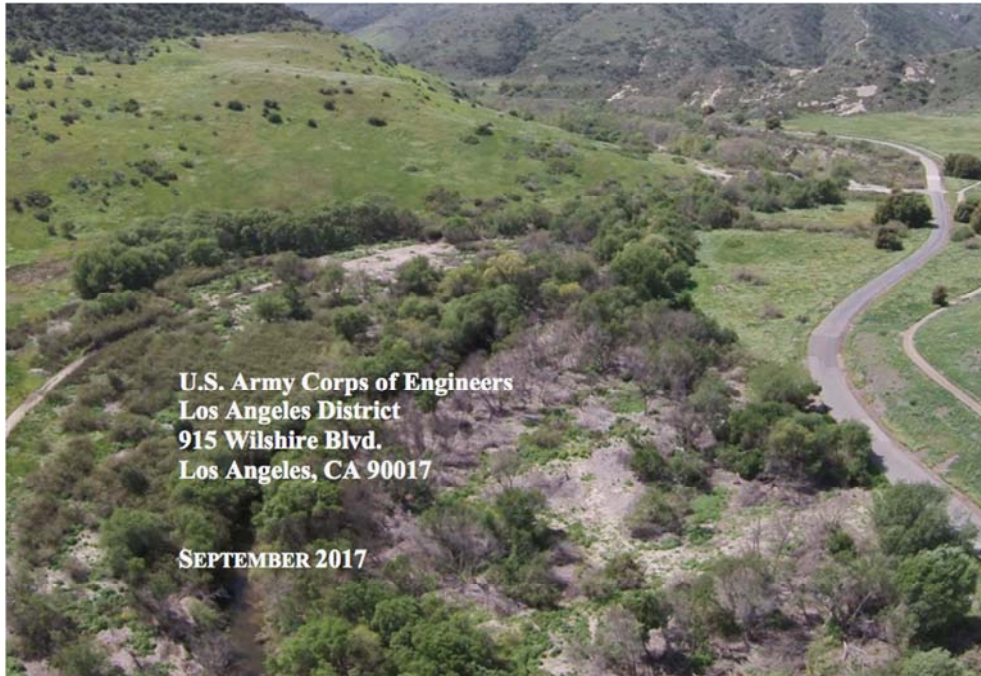
Rather than addressing degradation-caused habitat loss in the "few locations" (Tetra Tech: 2014) where degradation continues to occur and incorporating a discount as a result of it being minor and stabilized within "approximately 10 years" with "no further degradation...expected" (Tetra Tech: 2014) – the CHAP Reports forecast continuing degradation over 25 and 50 year timeframes. This unsubstantiated forecast by CHAP ecologists is directly contradicted by the Army Corps' own studies.

The CHAP Reports also claim that incision is causing the water table to lower, with resulting habitat impacts. Specifically:

"Riparian vegetation (trees and shrubs) have died in some spots and continue to show die back from being perched. This suggests that lowering the water table may result in native vegetation root systems being unable to acquire the necessary water for their maintenance and viability."

The CHAP Reports do not provide substantiation for this claim.

Such claims of trees being perched are consistent with other unsubstantiated USACE claims in photos, presentations and documents. This includes the photo below used by USACE on the cover of their Aliso Creek IFR/EIR/EIS, which purports to show degraded habitat resulting ostensibly from perching and incision/degradation. However, if the USACE's goal is to demonstrate via a photo its dubious claims of perched and degrading habitat, the photo they selected is not a wise or informed choice.



The location of this photo a few hundred feet upstream of the ACWHEP structure is one of the most stable creek segments of the entire Project Area.

Consider the USACE's own analysis of Reach 7, where this photo is located:

“Reach 7 has served as a sediment sink, storing bed material transported from the upstream watershed (Figure 3-46). Consequently, bank heights in Reach 7 are relatively low...and incision is not as pronounced as in other parts of the project reach. Bank materials are composed of alluvial sands and gravels at the downstream end of the reach, transitioning to valley fill where the channel is more incised at the upstream end. The bed material is primarily depositional sands and fine gravels as seen in Figure 3-48, although coarse gravel and cobble plugs and cobble riffles were observed (Figure 3-49). The average bed slope through Reach 7 is 0.25 percent (0.0025 feet / foot). It is noteworthy that Reach 7 exhibits some sinuosity – the value of 1.2 is relatively high compared to other reaches in the study area. The bottom width ranges from 12 to 37 feet, with an average of 20 feet. This reach is in Class VI of the ICEM where the channel is both vertically and laterally stable.”

Here is the Field Survey photo of Reach 7 provided in the USACE Geomorphic Baseline Assessment. The USACE's own caption notes the "low, vegetated banks" which exhibit many ideal creek conditions – and clearly not a state of degradation.



Figure 3-48. Low, vegetated banks typical of Reach 7

Here is a second photo of Reach 7 from the same report, noting beneficial “cobble riffles in Reach 7.” Natural cobble riffles are an excellent feature of natural creek systems and often demonstrate stability.



Figure 3-49. Cobble riffle observed in Reach 7

A more likely reasons for the tree die-off shown in the misrepresented USACE IFR/EIS/EIR cover photo is Polyphagous Shot Hole Borer, which has inundated Aliso and Wood Canyons Wilderness Park, causing fusarium-related die-off of hundreds of trees (OC Parks: 2016).

In addition, the area shown was nearly 100% infested with *Arundo* from the 1960's through 2014. Infestations of such magnitude have been shown to cause willow mortality and to leave expanses of barren habitat following removal. Active and passive restoration measures are currently underway to treat any *Arundo* resprouts and secondary invasives in this area, as well as revegetate *Arundo*-cleared areas with native habitat.

Downstream of the ACWHEP structure, the USACE and CHAP Reports have made similar unsubstantiated assertions. For example, the CHAP Reports note:

“Tree die-back has been observed downstream of the ACWHEP structure resulting from perched root systems.”

Yet the CHAP Reports fail to acknowledge that the USACE's own data in its 2014

Geomorphic Baseline Assessment contradicts this claim and, in contrast to the CHAP Reports, actually provide supporting data:

“Review of the time-sequential thalweg profiles of Aliso Creek (USACE 2009) indicates that the major incision downstream of the ACWHEP structure occurred in response to the flood events of the 1990s that included the flood of record in 1998, and there has been very little adjustment since that time in spite of the occurrence of a number of sizable floods in 2003, 2005, 2008 and 2010. Additionally, the increased baseflow as a result of the urbanization of the watershed support extensive riparian vegetation that have become established along the inset floodplain (i.e. a hydrologically-connected depositional surface adjacent to the bed of the incised channel), thereby providing “effective cohesion” to the bed and bank materials (Gellis et al. 1991). An approximately 25- year recurrence interval peak flow in 2010 was unable to dislodge this vegetation, and field observations clearly indicate that the vegetation is inducing overbank sedimentation on the developing inset floodplain that is essential to establishment of a new dynamic equilibrium state. The already established vegetation is likely to persist even under drought or reduced base flow conditions because of the proximity of the current channel bed to shallow groundwater.”

As noted in the discussion of Reach 7, other factors causing tree die-off are more likely the cause, including Polyphagous Shot Hole Borer and Arundo infestation. In addition, a key potential die-off cause which is unique to the tree canopy downstream of the ACWHEP is the failed 1990's-era ACWHEP mitigation. This mitigation is known for its construction of the ACWHEP drop structure, but what is less known is that the mitigation also constructed an irrigation system supplied by headworks at the ACWHEP. The irrigation system was intended to support thousands of cottonwood, sycamore and willow trees installed downstream of the ACWHEP. When the irrigation system was damaged as a result of a late-1990's (approximately 1998) storm, no further irrigation to the planted trees was provided.

In addition, many of the planted trees were installed far above the riparian corridor in areas more conducive to transitional or upland habitat and lacking adequate natural hydrology to support willows and cottonwoods. As a result, mortality has been significant following the failure of the irrigation system. Remaining trees exhibit stress that should be expected when considering their inappropriate planting locations outside the main riparian corridor. Regardless, the USACE's and CHAP Reports' claims that tree die-off in this area is the result of incision and that conclusion is not factually supported.

3. **CHAP Modeling.** The discussion in Item 2 above is indicative of the fact that the CHAP Reports are not adequate for forecasting future habitat reductions based on

hydro-geomorphology. CHAP was developed as a wildlife-relationship model and is not adequately developed nor peer-reviewed to credibly make hydro-geomorphology predictions. Accordingly, the hydro-geomorphology sections of the CHAP Baseline Conditions and CHAP Future Without Project Reports are inadequate for CEQA/NEPA purposes.

4. **No Action Alternative.** The “CHAP Three Restoration Alternatives” report fails to model Alternative 1 (No Action), resulting in an incomplete analysis of all Alternatives per CEQA/NEPA requirements. Moreover, given the the extensive errors, mischaracterizations and inaccuracies regarding key components of the Harman et al (2006) Stream Functions Pyramid – such as not properly including conclusions from the USACE’s reports on Aliso Creek geomorphology, hydrology and hydraulics, as discussed above – indicate that the CHAP Report is not capable of providing a credible factual analysis of Alternative 1 under the Stream Function Pyramid.
5. **Future Degradation under the No Action Alternative.** The CHAP Reports make bold claims that Habitat Units will dramatically degrade over 25- and 50-year timespans, ultimately resulting in substantially fewer Habitat Units. The Baseline Habitat Unit calculation is forecast to degrade by more than 2,000 Habitat Units over 50 years. The CHAP Reports rely on GIS polygons and a scoring rubric to make this claim. However, dozens of the GIS polygons projected to decline in habitat value are part of existing, well-funded ongoing habitat restoration projects. Habitat value in these polygons will clearly improve over time rather than degrade, as claimed by the CHAP Reports.

These habitat restoration projects include large segments of the CHAP Study Area and constitute habitat areas being restored with funding from the California Coastal Conservancy, habitat mitigation projects, non-profit foundation grants, community replanting and habitat management volunteer efforts, County of Orange funding, State Water Board funding, City of Aliso Viejo funding, City of Laguna Hills funding, City of Laguna Woods funding and many others. These projects have provided, and will continue to provide, extensive improvements in Habitat Units throughout the Study Area – yet the CHAP Reports do not mention them or their clear long term habitat improvements, and instead forecast substantial habitat degradation in these areas.

6. **Geographic Scope.** The CHAP Existing Baseline Conditions and Future Without Project analyses do not accurately compare Baseline Conditions and Future Without Project projections to the USACE Project Area.

Specifically, the CHAP Baseline Conditions and Future Without Project Habitat Unit polygons and related analyses do not align to the USACE Project Area. The CHAP Study Area extends all the way north to the I-5 and includes extensive acreage and Habitat Units outside the USACE Project Area. Dozens of GIS polygons that comprise the CHAP Baseline Conditions and Future Without Project calculations are

incorrectly used in CHAP analyses. The CHAP Reports' narratives claim that these GIS polygons have been clipped to only the USACE Project Area, but further investigation of the GIS polygon spreadsheets and maps indicates this is not true. Accordingly, the calculations of the Baseline Conditions and Future Without Project are fundamentally skewed.

7. **Arundo eradication.** The CHAP Reports claim that invasive *Arundo* continues to be a leading contributor to Habitat Unit degradation within the Study Area. However, all *Arundo* within the USACE Project Area has been eradicated and is being regularly treated for any resprouts.

Consequently, the Existing Baseline Conditions and Future Without Project CHAP Reports must be revised to eliminate *Arundo* presence as a contributing factor to Habitat Unit values. *Arundo* has been removed from the Project Area and long term funding is in place to ensure it does not reinfest the Project Area.

8. **Substantial Evidence.** Numerous CHAP Analyses, Appendices, Figures and Tables lack supporting substantiation, provide incomplete or inaccurate data, or fail to describe how data and conclusions are determined. For example:
 - All supporting data and analyses used to prepare Habitat Unit values are not provided. Instead, limited and incomplete data is provided.
 - Analysis listing *Arundo* as present, such as Table D3 and others, is no longer accurate following removal of all *Arundo*.
 - Supporting documentation showing all analysis for KEFs and KECs is not provided.
 - There appear to be several percent cover and relative cover errors in Table D1 Verification Transect Data Polygon. These errors effect Habitat Unit values.
 - It is not clear how *Arundo* is factored into calculations of Habitat Units. *Arundo* is separated into its own column. However, its use in the calculations is not explained adequately.
 - Maps of GIS polygons showing all polygons with corresponding Habitat Units are not provided.
 - Maps of 50-year Future Without Project are not provided.
 - Extensive ongoing invasive species treatment including but not limited to tamarisk, fan palm, Canary island date palm, pampas grass and hemlock have not been adequately considered.
9. **Habitat Evaluation Team.** The CHAP Future Without Project report notes that because "some speculation is required to forecast a 50-years time frame, the outcomes that are illustrated will generate further discussions with the Aliso Creek Ecosystem Restoration Habitat Evaluation Team thus detailing a consensus approach to the future without project conditions and the assessment in a final draft of this report. Reasonable predictions were made so that plausible scenario for evaluating change over the next 50-year period within the study area could be accomplished." It is not accurate that "reasonable predictions were made," as

further discussed in this memorandum, and there is no discussion for Public Review/Comment of whether and how a “consensus approach” was determined by the Habitat Evaluation Team.

Furthermore, the numerous flaws of the CHAP Reports make it clear that the Habitat Evaluation Team is inadequate for the task. If it is to provide any further work on the Aliso Creek CHAP Reports, it is clear that the Habitat Evaluation Team should be modified to include participation and input from local ecology experts and representatives from the USFWS and CDFW.

10. CHAP Future without Project Criteria Review: “Potential Non-Viable Wildlife Populations.” The CHAP analysis inappropriately links its “Future Without Project” predictions to a number of already-declining or extirpated species. This is a highly misleading tactic. Most or all of the species noted by the CHAP analysis are already extirpated from Aliso and Wood Canyons Wilderness Park, primarily due to urbanization and other anthropogenic impacts only loosely related to the creek itself. Several of the species CHAP claims will disappear unless the massive USACE Project is built, such as golden eagle and burrowing owl, have long been absent from Aliso and Wood Canyons Wilderness Park. Claiming that grizzly bear – a species absent for over a hundred years – would be extirpated in the “Future Without Project” is nearly on par with the CHAP claim that golden eagle and burrowing owl depend on the USACE Project for species continuity in Aliso Creek. Other species that the CHAP claims will experience substantial declines, such as coast horned lizard and mule deer, are only partially correlated to riparian habitats (in contrast to more riparian-specific species such as least Bell’s vireo). It is quite a scientific stretch to forecast that their populations will decrease unless the USACE Project is constructed. Adequate substantiation of these claims and other forecasted Future Without Project species declines are not provided. Mitigating considerations, such as the other information provided in this analysis regarding ongoing habitat restoration and long-term habitat improvements throughout the Project Area, are vital ecological considerations for any forecasting effort yet were not factored into the CHAP species predictions.

The major consequence of this faulty analysis is that the ultimate CHAP Future Without Project report weights its flawed species extirpation/decrease arguments against CHAP Habitat Unit values in preparing the CHAP Future Without Project forecasts. As noted in the CHAP analysis:

- “Three species that have the potential for non-viable populations within the study area were identified during the first 25-year period. Additionally, three other species were identified to decrease during this time frame; the effect of losing species contributes to the decline in wildlife habitat values.”
- “In the 25-50 year future without project time period, it was determined that two additional species would have the potential of non-viable population within

the study area. Additionally, seven other species were identified to decrease during this time frame. The identified species are shown below in Table 2. The two non-viable species identified were removed from the CHAP 50 year future without project species list that feeds into calculating the CHAP Habitat Units (HUs). The CHAP 50 year without project species list is developed from the 25 year future without project species list, therefore the species removed from 25 year analysis are also removed from the 50 year analysis. The functionality of all five species projected to be extirpated from the study area is lost from the 50 year future without project habitat value.”

Thus, Habitat Unit values are negatively affected by inappropriate and inadequately supported species decline assumptions and calculations.

11. CHAP Future without Project Criteria Review: “Fire Interval.” The CHAP Reports’ reliance consideration of a major wildfire affecting the Project Area within a 50-year period is flawed in a number of ways, including:

- The CHAP Report claims that *Arundo* will be a major cause and exacerbating factor in the forecasted future Aliso Creek wildfire, noting an: “...increasing prevalence of fire prone invasive species such as Giant reed (*Arundo donax*), which burns at intense heats when dry due to its habit of growing in dense monotypic stands. After fires *Arundo* sprouts quickly from a rhizomatous mat up to three feet thick, crowding out other species. Studies show *Arundo* has the potential to increase intensity, severity, and frequency of fires in riparian areas; ultimately converting the fire regime to that of one found in invasive grassland areas (Dwire and Kauffman 2003).”

As previously noted, all *Arundo* in the Project Area has been removed and is no longer a factor in potential future wildfires. *Arundo*’s negative impact on CHAP Habitat Value calculations should be removed.

- The CHAP Report notes “climate change” as a fire risk factor. This is not relevant to the Future Without Project conditions, as this issue would likewise apply to the Future With Project with regard to fire risk.
- The CHAP Report notes “potential vegetation types becoming older, more senescence,” as a risk factor. This is not relevant to the Future Without Project conditions, as this issue would likewise apply to the Future With Project, whose habitat would likewise reach a similar age and senescence.
- The CHAP Report notes that the forecasted fire would “cause the habitat for riverine breeding birds to be lost for up to five years” as a risk factor. Even if the CHAP Reports’ very speculative and inadequately justified 50-year wildfire concept is granted as a thought experiment, how is its forecasted loss of riverine breeding habitat for 5 years different than the USACE’s own habitat impacts

resulting from its Proposed Project? Consider that the Future With Project would entail comprehensive removal of all riparian breeding habitat during 4+ years of construction and numerous years of planting and adaptive management before riverine breeding habitat would be established for breeding purposes.

- The CHAP Report improperly assumes that active and passive restoration would not occur in the aftermath of the hypothetical fire event. The CHAP Report assumes that *Arundo* (which no longer exists in the Project Area) will suddenly reappear decades since being eliminated and active restoration of native habitat will not occur following a fire event. As indicated by the 1993 Laguna Canyon fire, active restoration of the burn area by agencies and ecologists occurred extensively and ensured an excellent resurgence of native habitat without substantial non-native invasion or habitat degradation.
- Figure 2 of the CHAP Future Without Project report shows a hypothetical fire encompassing nearly the exact area of the USACE project. It is obvious that, even in the speculative event of a wildfire occurring in Aliso and Wood Canyons Wilderness Park sometime in the next 50 years, it would not burn nearly the exact USACE Project Area. The CHAP Reports have manipulated data to accommodate the USACE Project Design.
- The concept itself of a wildfire affecting the Project Area within the next 50 years is tenuous. A major wildfire in Aliso and Wood Canyons Wilderness Park has not occurred in recorded history. This is due to a variety of factors, one of the most important being that there are very few typical ignition sources in the Wilderness Park. The Park is closed to vehicular traffic and is bordered generally by lightly-trafficked residential streets. Alicia Parkway, Pacific Park Drive and Moulton Parkway comprise the primary adjacent thoroughfares, but these are far on the periphery of the Wilderness Park and thus fires originating from cigarette butts or other factors are more easily contained. The large-scale removal of *Arundo* from the creek within the Wilderness Park has greatly reduced the risk of a homeless encampment igniting a fire.

12. **CHAP Future without Project Criteria Review: “Spread of Invasive Plant Species.”** According to the CHAP Reports, “[i]nvasive plant species information for baseline conditions was originally collected for three structural levels in each polygon; the grass/forb layer/ the shrub layer, and the tree layer. A value was determined and recorded for each layer using the percent breakout in Table 3.” There are extensive data inaccuracies throughout these layers.

The CHAP Reports note that:

“Eucalyptus and fan palm have great enough presence throughout the study area that the habitat evaluation team chose to increase the invasive adjustment factor for trees by one category per 25 year

analysis period.”

These species have been extensively eradicated from the Project Area and new sprouts are being regularly treated. More than 150 eucalyptus and fan palm trees have been eliminated from the Project Area. A eucalyptus grove does still exist outside the Project Area in a tributary near the Sulphur Creek confluence. However, this grove is planned for removal in the near future.

- 13. CHAP Future without Project Criteria Review: “Planned Development, Mitigation and Restoration.”** The CHAP Reports note “Planned development, mitigation and restoration” as considerations as part of the 50-year Habitat Unit forecast; however, it is not specified how most items in this criterion are scored. Additional clarification of how this item affects the 50-year Without Project analysis is needed.

The CHAP analysis notes “The Orange County Transportation Authority (OCTA) Measure M habitat restoration is assumed to take place in the CHAP calculations.” However, review of the CHAP GIS polygons indicates that numerous areas within the OCTA Measure M habitat restoration are NOT included in the CHAP analysis. In addition, numerous other ongoing habitat restoration efforts are not included in the CHAP analysis, including large projects funded by the City of Aliso Viejo, State Coastal Conservancy, private donors, and others.¹ These omissions incorrectly skews the CHAP conclusions.

In addition, the effects of passive restoration and habitat improvement are not factored at all. Numerous studies indicate that removal of *Arundo* and other high-priority invasives from riparian areas results in substantial passive recruitment of native habitat.

- 14. CHAP Future without Project Criteria Review: “Loss of Riparian Habitat.”** The CHAP Reports incorrectly claims that “there would be a continued loss of riparian habitat within the study boundary, which is the willows/cottonwood vegetation type. They are mostly confined to areas where there is already deep incision of the streambed and bank.” However, the CHAP Habitat Unit analysis then forecasts a uniform degradation of Habitat Units across the Project Area. If, as the CHAP Report itself says, “the upper and lower portions of Aliso Creek will remain stable,” then riparian habitat losses should not be forecast to occur in a uniform manner across all CHAP GIS polygons.

- 15. CHAP Future without Project Criteria Review: “Connectivity.”** The CHAP Report

¹ The Appendix includes a map of ongoing Aliso Creek Watershed Restoration projects. Derek Ostensen & Associates created this map; permission for it to be used in the CHAP Report was not requested. Moreover, this map was not intended to document every single restoration effort in the watershed for purposes of an EIR/EIS and should not be used as such. It is highly incomplete for purposes of documenting all the many ongoing habitat restoration efforts occurring as part of the ongoing Aliso Creek Watershed Restoration.

uses “Connectivity” as a criterion in its 50-year forecast. Connectivity is cited as “an important ecological parameter when evaluating conservation and restoration opportunities (SCAG 2014). Moving across fragmented landscapes can prevent dispersal of animals to other suitable habitat as well as influence species abundance and gene flow. Without project action, then these disconnects would continue to persist and impede aquatic species connectivity.” Connectivity is indeed an important function; however, there are limited species in Aliso Creek which require aquatic connectivity. Numerous other terrestrial and aquatic wildlife species already have functional connectivity.

The CHAP analysis does not explain how much weight it gives to the small number of species currently limited by connectivity problems in Aliso Creek. In addition, the CHAP analysis fails to adequately cite how much connectivity is needed for specific species. As previously noted, blanket generalizations of how connectivity affects numerous species are not scientifically accurate due to the varying territories, foraging and breeding characteristics of different species.

16. CHAP Future without Project Criteria Review: “Landslides.” Landslides are discussed as a criterion; however, it is unclear from the CHAP analysis how they affect the Habitat Unit calculations. It is implied by the CHAP analysis that landslides are a negative factor in the CHAP Habitat Unit scoring. However, the USACE’s Geomorphic Baseline Assessment notes landslides as important contributors to Aliso Creek’s stabilizing inputs:

- “Colluvial inputs to the valley bottom, particularly through landslides, have provided an ample supply of gravels and cobbles to the creek, and tributary/gulley confluences continue to be sources of coarse material. These coarse materials are being concentrated into natural grade controls throughout the study area.”
- “Numerous modern and ancient landslides have been mapped in the hills along both sides of Aliso Creek (Morton et al. 1974). The locations of the landslides, especially in the reach below the ACWHEP structure may explain the presence of clay-rich units (i.e., SC, CL) that dominate the valley fill sediments, and that were described as possibly being weathered bedrock on the basis of borings and seismic refraction profiles (Diaz, Yourman and Associates 2009). Field observations along Aliso Creek clearly demonstrate the importance of these clay units to both bed and bank stability.”

This inconsistency must be adequately explained.

17. Assessment of Positive Changes. CHAP only looks at negative factors in its criteria – what about the numerous positive factors currently occurring independent of the USACE Project?

18. Future Projections. CHAP claims to be a nuanced approach for carefully calculating wildlife and habitat relationships to provide a detailed assessment of existing and future habitat conditions at a fine level of resolution within an ecosystem restoration context. CHAP claims to “use multiple species and their habitat functions in its evaluation; and account for actual habitat types, structural conditions and key environmental correlates within the Aliso Creek Study Area, based on a field inventory of these habitat components.” However, a detailed review of the CHAP methodology determines the myriad inadequacies and flaws of the CHAP methodology as applied to Aliso Creek. For example, the CHAP 50-year analysis without project predicts “a general trend of declining habitat values” and shows a nearly straight line of decline across a 50-year timespan. Such a uniform “straight line” trend across the entire Project Area is highly unlikely when one considers realistic site conditions including the following:

- 230+ GIS polygons were calculated by the CHAP Future Without Project Results. Each of these GIS polygons comprises a different and unique range of ecosystem functions, habitat quality, wildlife and other attributes. There is significant variation among GIS polygons -- the 50-year Future Without Project Habitat Unit forecasts should reflect that. For example, consider the fact that large segments of Aliso Creek are noted by the USACE to be geomorphically stable with moderately sloped banks and adequate groundwater. Extensive native riparian vegetation is present with very little invasive species. These polygons should demonstrate little or no Habitat Unit degradation over 50-years – yet the CHAP analysis forecasts equal degradation for such a high-quality GIS polygon as for another of far less quality. All Habitat Unit polygons are treated far too similarly to constitute a well-substantiated scientific analysis.
- As previously noted, ongoing restoration efforts that have directly improved GIS polygons and which will continue to improve them over short and long periods of time are not factored into the CHAP analysis. These polygons would likewise not follow the “straight line” forecast of the faulty CHAP analysis.
- The CHAP forecast of continued degradation without factoring any potential improvements is further questionable when one considers the progression of Aliso Creek towards greater habitat values from 1939 – Present. As noted in the USACE Geomorphic Assessment:

“The more recent increase in the dry season baseflow of Aliso Creek restores a perennial flow regime that provides a year-around water source for vegetation growing in the riparian areas along the channel. This water source has allowed willows, sycamore, and cottonwood trees to thrive in an environment where they would otherwise not flourish. The influence of the baseflow on the abundance and density of riparian vegetation is apparent when comparing aerial photographs from the late 1930s,

mid 1960s, and 2009. Examples from the reach containing the ACWHEP structure are shown in Figures 2-1 through 2-3. Note the absence of established riparian vegetation other than brush until the 2009 photograph.”

Clearly, Habitat Units have improved in abundance over time – including during the period of most substantial degradation and incision between the 1970’s and 1990’s. That Habitat Units would increase rather than decrease during this degradational and unstable period is fundamentally at odds with the CHAP forecasts, which fail to consider positive inputs.

19. **Southwestern Pond Turtle.** The CHAP “Three Ecosystem Restoration Alternatives” report does not consider potential extirpation of southwestern pond turtle (SWPT) in the Project Area as a result of USACE project impacts, such as removal of existing SWPT habitat followed by grading, filling and contouring the creek.
20. **Restoration Uncertainty.** The CHAP “Three Ecosystem Restoration Alternatives” report does not properly consider the difficulty of getting certain species in reestablish in the Project Area following large-scale demolition of all habitat and 4+ years of construction.
21. **Temporary and Permanent Project Impacts.** The CHAP “Three Ecosystem Restoration Alternatives” report does not properly account for the Temporary and Permanent Impacts of USACE Project in its Habitat Unit projections. For example, the temporary disturbance of the project over nearly a decade is not factored. The Permanent Impacts resulting from the addition of armoring, rip rap and other engineered features are not adequately considered.
22. **Single Source.** The CHAP Reports rely primarily on prior studies by its own author, O’Neil. It is not accepted practice for complex projections of Habitat Value, species decreases related to potential stressors, and other key data inputs to be derived primarily from a single source – particularly when conclusions are used to guide such an environmentally impactful project as the USACE Project. The CHAP Reports’ analysis excessively relies on a single source, is inadequately peer-reviewed and makes sweeping forecasts which are not properly substantiated by the referenced sources. The resulting CHAP conclusions are neither objective nor independent.

Geomorphology Review

23. **Outdated Analysis.** Significant changes to creek conditions since the study and related field analyses were performed cause the 2014 Geomorphic Baseline Assessment to be fundamentally outdated, flawed and unreliable. The bulk of the Geomorphic Baseline Assessment analysis and related field investigations were conducted in 2009 – nearly ten years ago. Substantial changes to creek conditions have occurred since that time.

For example, between 2011 and present, extensive invasive species and habitat restoration work has occurred within the USACE Project Area that has directly and immensely affected creek hydrology and geomorphology. This includes the removal of one of Orange County's largest *Arundo* infestations – several million pounds of *Arundo* biomass has been removed from the creek bed, banks and floodplains within the USACE Project Area. Extensive subsoil rhizomes have also been removed or have disintegrated, substantially affecting short term and long term creek hydrology and geomorphology.

The *Arundo*, which was present in vast quantities throughout all important geomorphology features, has affected creek hydrology and geomorphology in the following ways:

- *Arundo* grows densely together and becomes comprehensively interwoven with thatch to act as a dam (similar to a beaver dam). Large infestations, such as were present in Aliso Creek, prevent natural hydrologic and geomorphic processes that would occur in the absence of *Arundo* infestation. *Arundo* confines creek flows to a single channel, which causes extensive additional incision and erosion (Rountree: 1991; Bell: 1997; Brinke: 2010; Frandsen et al: 1993);
- Due to its dam effect, *Arundo* prevents normal hydrologic regimes from overtopping banks and accessing floodplains, which substantially affects hydrology and geomorphology (Abichandi: 2007; Bell: 1997; Brinke: 2010; Frandsen et al: 1993);
- *Arundo* rhizomes occupy the vertical and lateral profile of the creek bed, creek bank and floodplain in large quantities that retain soil, cobble and other key geomorphic features. As *Arundo* is eliminated and the rhizomes disintegrate, geomorphic features previously restricted by *Arundo* become actively engaged in natural hydrologic and geomorphic processes again (Bell: 1997; Brinke: 2010; Abichandi: 2007; Frandsen et al: 1993);
- *Arundo* is known to create much more vertical bank profiles versus native riparian vegetation (Abichandi: 2007; Bell: 1997; Brinke: 2010; Frandsen et al: 1993);
- *Arundo* consumes and evapotranspires much larger quantities of water than native riparian vegetation (Abichandi: 2007).

Extensive additional invasive species including tamarisk, fan palm, Canary island date palm, pampas grass and hemlock have been removed from the USACE Project Area. These removals and their relevance to the Geomorphic Baseline Assessment have not been adequately considered.

In addition, a historic drought from 2011 – 2016 created a period of data anomaly that is not consistent with general annual rainfall conditions. Accordingly, the effects of the *Arundo* and invasive species removal on geomorphology and hydrology could not be seen under typical conditions until the winter of 2016/2017, when more normal rainfall occurred. The geomorphology and hydrology changes to Aliso Creek as a result of the *Arundo* and invasive species removal were significant and are not

reflected in any of the EIR/EIS analysis or Appendices. For example, extensive sediment deposition was seen throughout the Project Area, as demonstrated in Photos 1 and 2 below.



Photo 1. Extensive Sediment Deposition Seen During 2016/2017 Winter



Photo 2. Extensive Sediment Deposition Seen During 2016/2017 Winter

The essential information discussed above in Item 23 directly affects the validity of all analysis in the Geomorphic Baseline Assessment, including the hydraulic models, erosion forecasts and groundwater level predictions.

24. **Geomorphic Baseline Assessment Reveals Stable Creek.** Significantly, the Geomorphic Baseline Assessment concludes that the majority of the Project Area is NOT significantly degrading and is either currently stable, is reaching a dynamic equilibrium, or will generally experience only localized geotechnical instability. These conclusions of the Geomorphic Baseline Assessment directly contradict numerous other sections of the EIR/EIS and its Appendices, which frequently claim that destructive degradation of the Project Area is occurring and will soon eradicate acres of habitat and cause millions of dollars of damage. As noted in the Geomorphic Baseline Assessment (emphasis added):

- **“The potential for future vertical degradation of Aliso Creek is limited,** except in a few locations where incision into clay outcrops is ongoing (i.e., approximately RM 2.9 and RM 6.1). The creek is currently hung up on these outcrops, **but future incision is expected to be no more than three to four feet,** an amount that should occur in no more than approximately 10 years, assuming future hydraulic conditions are similar to past conditions.”
- **“The significance of these results is that the ultimate bed profile will closely resemble the existing profile and where localized changes are expected to occur, the magnitude and extent of the incision is expected to be relatively minor** compared to degradation that has occurred since 1980.”
- “Both localized (colluvial) and more widespread (fluvial) deposition of sediment on the inset floodplain will reduce the effective heights of the banks to the point where they no longer exceed the critical height and this, combined with reduced bank angles, will ultimately lead to bank stabilization.”

As part of an Incised Channel Evolution Model (ICEM), the Geomorphic Baseline Assessment analyzes all reaches of the USACE Project Area to determine its potential for further degradation. Directly contradicting the EIR/EIS’s claims of drastic future degradation, the Geomorphic Baseline Assessment ICEM analysis does not identify a single reach in the Project Area that meets the ICEM standard for a Class III:

“Reaches in Class III are expected to continue to incise until the bank heights become so steep that the banks become geotechnically unstable. Bank failure occurs when the bank

height exceeds the critical bank height (Little et al. 1981; Watson et al. 1988).”

Out of twelve Aliso Creek reaches analyzed for degradation by the ICEM, a mere two were classified as susceptible to future incision under Class IV:

“The transition between Reaches 5A and 5B and Reach 11 are the **only geomorphic reaches in Class IV.**”

It seems obvious that the concept of spending 100 million dollars, bulldozing 5 miles of habitat and dumping 300,000 cubic yards of soil in a sensitive wilderness park to correct two Class IV issues is ludicrous. It is further unjustifiable when one considers that the USACE Geomorphic Baseline Assessment forecasts that the Class IV reaches will self-stabilize against further degradation within 1 to 10 years:

“Other than reaches categorized as Class IV, the expectation is that future bed profiles will exhibit average slopes similar to the existing slopes. The magnitude of incision immediately downstream of the bedrock was calculated to be 1.1 feet for a 0.45 percent non-eroding slope and 4.1 feet for a 0.30 percent non-eroding slope. Given the calculated rates of incision through the clay units, and assuming future hydraulic conditions are similar to recent past conditions, **the expected degradation may occur in approximately 1 to 10 years. Once the non-eroding slope is reached, no further degradation is expected.**”

Out of the twelve reaches studied for degradation by the ICEM, five were identified as Class V in which aggradation begins to occur in a steady progression to Class VI.

Class VI is an equilibrium channel reflecting a dynamic balance between sediment supply and transport capacity formed within the widened channel. A further five of the twelve studied reaches were determined by the ICEM to have effectively reached equilibrium as a Class VI. In stark contrast to the claims of the EIR/EIS, that equals ten of twelve reaches in the Project Area aggrading as Class V or already having attained dynamic equilibrium as a Class VI – not catastrophically degrading as the USACE claims.

Even the worst area of degradation in the entire Project Area – the segment downstream of ACWHEP – is stabilizing according to the Geomorphic Baseline Assessment:

- “In Aliso Creek, one of the key questions is whether further vertical degradation is expected or whether the channel is beginning to establish

a new, stable morphology. Observations made during October 2009 and February 2010 (after the January 2010 flood with an estimated recurrence interval of 25-years) indicate that Aliso Creek downstream of the ACWHEP structure is beginning to stabilize. Key field observations include the stability of coarse gravel and cobble plugs/riffles after the major January flood event, the establishment and persistence of tules and cattails within these plugs/riffles, the lack of woody debris jams (indicating woody vegetation was not uprooted), and the presence of sand splays (relatively recent, localized deposits of sand on surfaces of bars and floodplains) and deposition in overbank areas.”

- “Observations made in October 2009 and February 2010 confirmed the abundance of sand splays (relatively recent, localized deposits of sand on surfaces of bars and floodplains) on the inset floodplain, indicating the aggradation process has already started in most reaches downstream of the ACWHEP structure.”
- “Review of the time-sequential thalweg profiles of Aliso Creek (USACE 2009) indicates that the major incision downstream of the ACWHEP structure occurred in response to the flood events of the 1990s that included the flood of record in 1998, and there has been very little adjustment since that time in spite of the occurrence of a number of sizable floods in 2003, 2005, 2008 and 2010.”
- “Based on these indicators, it appears the bed elevation between the SOCWA Treatment Plant and ACWHEP may be stabilizing, likely due to the influence of natural grade controls. Later discussion (Section 6.1) confirms the stabilizing trend.”

25. Stabilizing Creek. The USACE proposes a uniformly destructive approach of removing nearly all habitat across a 5-mile stretch of Aliso Creek, excavating 588,000 cy of soil, filling the creek 10-20 feet, and recontouring and armoring it, as if that type of uniform approach matches uniform conditions of degradation and habitat loss. The reality presented in the Geomorphic Baseline Assessment is that much of the creek is stabilizing, has already reached equilibrium, or is aggrading. The EIR/EIS does not adequately parse these areas out for its projections of habitat loss and damage, nor for its alternatives.

For example, the Geomorphic Baseline Assessment notes that a number of existing natural features present opportunities to limit future degradation. It notes that these features should be studied further, yet the DEIR/S fails to do so:

“As noted in the H&H Appendix, **factors such as bedrock**

outcrops and channel widening may limit future degradation of the bed, and these factors were recommended for further analysis under the No Action Plan Alternative.”

The EIR/EIS should evaluate in a more nuanced and detailed manner which segments of Aliso Creek truly merit engineered solutions versus segments which can be remedied with lower-impact or natural alternatives, and also which segments are already on a trajectory towards habitat and geomorphologic improvements. The proposed alternatives all rely on engineered solutions requiring vast environmental impacts.

26. Other Implications. The conclusions of the Geomorphic Baseline Assessment are used as a building block for numerous other key studies and analysis in the EIR/EIS. Accordingly, the flaws of the Geomorphic Baseline Assessment cause several other EIR/EIS documents and Appendices to have invalid, unreliable or incomplete analysis. Studies which must be updated and revised due to their reliance on or mischaracterization of the conclusions in the Geomorphic Baseline Assessment include:

- Aliso Creek Draft IFR Main Report
- Appendix A-1 Geotechnical
- Appendix A-2 Hydrology and Hydraulics
- Appendix A-3 Cost Engineering
- Appendix B – Environmental
- Appendix C – Economics
- Appendix D – Real Estate

27. Existing Impacts of Engineered Structures. Engineered structures – nearly all of which had USACE involvement in their design, permitting or construction – are the main source of degradation in the creek, as noted by the USACE’s own Geomorphic Baseline Assessment. Yet astonishingly, the USACE proposes to dramatically increase the amount of engineered structures in the creek. The USACE also claims that maintenance of these engineered structures will entail minimal environmental impacts and annual costs – an extremely dubious claim considering the substantial adverse impacts and large costs of other existing engineered structures in Aliso Creek.

As noted by the Geomorphic Baseline Assessment:

“The figure provides a visual comparison of the vertical changes in the profiles through time. The most significant changes occur at the drop structures, culverts, and other drainage facilities installed since 1967. A brief description of significant changes in the profile follows, proceeding

upstream along the profile.”

The analysis must be revised to more accurately account for the realistic impacts, degradation and costs likely to result from engineered structures.

Conclusion

Our review of the DEIS/R and its appendices for the Aliso Creek Mainstem Ecosystem Restoration Study revealed several substantial issues affecting the validity of the conclusions presented in that document. A modified analysis of the areas’ biologic, hydrology and geomorphology must be prepared, and that updated analysis must be incorporated into a revised environmental document.

We hope this information is useful. If you have questions concerning anything presented here, please feel free to contact me at derekostensen@me.com.

Sincerely,

Derek Ostensen

STATEMENT OF QUALIFICATIONS

DEREK OSTENSEN & ASSOCIATES ENVIRONMENTAL CONSULTING

PRINCIPAL

Derek Ostensen has 15 years of experience in the following areas of expertise:

- Watershed restoration design and implementation
- Habitat and wildlife analysis, including habitat suitability, connectivity and structural diversity
- Ecosystem restoration of denuded or invaded lands
- Biological monitoring and reporting
- Conservation land use planning, including City, County, State and Federal open space areas
- Biotechnical Reports
- Conservation land prioritization and acquisition
- Single-site mitigation coordination, design and implementation
- Programmatic (multi-site) mitigation planning and implementation
- Real property negotiations and escrow processing
- Public nature/park design and construction
- Coordination with wildlife agencies and other permitting agencies. Permit preparation.
- Open space land management, PAR analysis, endowments.
- Land use entitlement processing
- Project Management, including wilderness land improvement and restoration projects
- Identification of grant, donor and other funding opportunities

To date, Ostensen has worked closely with a number of non-profit, government, and private clients to assist their efforts in conservation planning, acquisition, restoration and mitigation. These efforts have resulted in the preservation or enhancement of more than 17,000 acres of open space lands throughout California, comprising a broad diversity of sensitive habitat and State and Federally-listed species.

Ostensen has substantial experience working with clients to coordinate complex mitigation and conservation projects involving numerous wildlife agencies, municipalities and non-profit partners. His career has focused on California habitat and species, spanning a range of riparian, upland, montane and desert habitats, including mulefat and willow scrub, southern maritime chaparral, coastal sage scrub, native grassland, high desert chaparral, oak woodland, freshwater marsh, and others. This experience has provided a thorough understanding of the dynamics of these sensitive

Education

B.A. University of California
Santa Cruz
Summa cum Laude

M.S. University of Florida
Forest Resources,
Conservation and
Ecological Restoration

Awards

2008 *Award of Excellence
in Environmental
Planning, City of
Laguna Beach*

2008 *Award of Excellence
in Environmental
Planning, American
Planning Assoc. (APA)*

habitats, the techniques involved in preserving and restoring them, and the numerous species and natural functions that form California ecosystems.

Building on extensive field work in mitigation and conservation planning, ecosystem restoration and habitat acquisition, as well as a Masters of Science in Forest Resources, Conservation and Ecological Restoration, Ostensen is qualified in species-focused conservation strategies, mitigation design and implementation, preparation of wildlife agency permits, HMMP preparation and adaptive management strategy, habitat restoration management and regional conservation strategies. His Masters studies focused in particular on restoration of the Aliso Creek Watershed, including its habitat resources and challenges, and its potential for successful long term viability.

Ostensen works on a consistent basis with agencies pertinent to Southern California conservation efforts, including the CA Department of Fish and Wildlife, US Fish and Wildlife Service, US Geological Survey, OC Parks, Wildlife Conservation Board, State Natural Resources Agency, Bureau of Land Management, US Forest Service, regional non-profit conservation entities, and others.

HABITAT RESTORATION AND MITIGATION - SELECTED PROJECTS

PROJECT: **Tehachapi Renewable Transmission Project (TRTP)**
CLIENT: **Southern California Edison**
REFERENCE: **Ann Gildersleeve, Project Manager**

Identification of acquisition and restoration opportunities to fulfill LBVI and other species mitigation credit needs related to the Edison TRTP effort, which links sustainable energy sources (wind and solar) to the Southern California power grid.

PROJECT: **Pacifica San Juan On-Site and Off-Site Mitigation**
CLIENT: **Lehman Brothers and LV Pacific Point**
REFERENCE: **Steve Letterly, Project Manager**

Coordination with USFWS and Client to identify 15 different potential mitigation scenarios (conservation land acquisitions and habitat restorations) which would satisfy the mitigation needs of the residential development project. Successful identification of suitable mitigation scenarios, followed by coordination with numerous agencies and jurisdictions for acceptance and implementation of the final mitigation plan.

PROJECT: **OCTA Measure M Programmatic Mitigation/2C Ranch**
CLIENT: **Orange County Transportation Authority (OCTA) and City of San Juan Capistrano**
REFERENCE: **Ayako Rauterkus, City of SJC Project Manager**

Collaborated with City Council, City staff and the Open Space Commission to develop a comprehensive Open Space Master Plan for the City. Subsequently identified potential funding sources to implement the plan, including a partnership with OCTA in

which programmatic mitigation credit needs could be satisfied through the restoration of degraded habitat in City-owned open space. Project Manager for resulting 55-acre mitigation restoration in San Juan Capistrano, restoring 13-acres of creek habitat with a focus on LBVI, as well as 40-acres of upland CSS with a focus on CAGN.

PROJECT: San Diego TransNet Programmatic Mitigation/Sage Hills
CLIENT: The Conservation Fund
REFERENCE: Scott Ferguson, Director of Southern CA Programs

Assisted The Conservation Fund with the processing and completion of the 234-acre Sage Hills acquisition in the San Marcos/Elfin Forest area of the North San Diego County MSHCP area. The project involved funding from the San Diego Association of Governments (SANDAG) for programmatic mitigation related to its TransNet transportation improvement effort in San Diego County. Coastal California gnatcatcher and associated coastal sage scrub habitats on the property were particular focuses of the project.

PROJECT: Aliso Creek Watershed Restoration
CLIENT: Orange County Transportation Authority (OCTA); Laguna Canyon Foundation (LCF); Others
REFERENCE: Hallie Jones, LCF Executive Director, 949.497.8324

Worked with OCTA, CDFW, USFWS, regional cities, County of Orange, Laguna Canyon Foundation and ten other partners to identify and implement a watershed-scale restoration of the Aliso Creek Watershed. The effort includes grant funding from the State and private sources, as well as programmatic mitigation for species and habitat credits, including from the Measure M Program. The resulting watershed restoration has completed or initiated habitat restoration across the majority of Aliso Creek, which is a Federally-impaired waterway and has been targeted for restoration improvements since the 1980s though lacked funding. Since 2010, Ostensen has worked with local and regional partners to identify and obtain more than \$6,000,000 in grant and mitigation funding to restore the watershed. Restoration efforts commenced in 2012 and more than 4,000,000 pounds of invasive species have been removed to date across the 19.7 mile creek. Significant habitat improvement and functional ecosystem lift has occurred.

PROJECT: OCTA Measure M Programmatic Mitigation/Big Bend
CLIENT: Orange County Transportation Authority (OCTA) and Laguna Canyon Foundation (LCF)
REFERENCE: Hallie Jones, LCF Executive Director, 949.497.8324

Identified and secured mitigation funding to restore and permanently preserve via deed restriction a critical wildlife corridor linking 22,000 acres of sensitive habitat in the Coastal NCCP. Project Manager for restoration of the 4 acre site restoring coastal sage scrub, riparian and oak woodlands habitat supporting CAGN, LBVI, and other listed species.

CONSERVATION LAND ACQUISITION - SELECTED PROJECTS

PROJECT: Saddle Creek Acquisition and Restoration
CLIENT: The Conservation Fund
REFERENCE: Scott Ferguson, Southern CA Director, 949.494.8034

Assisted The Conservation Fund in acquisition of a \$18,000,000, 306-acre property adjacent to the Central NCCP which supported a large amount of CSS habitat and several documented gnatcatcher (CAGN) occurrences. The property also functions as a vital wildlife corridor for a number of species, including mountain lion.

PROJECT: Coastal NCCP Conservation Land/Habitat Acquisitions
CLIENT: CA Coastal Conservancy and Laguna Canyon Foundation
REFERENCE: Mary Fegraus, Project Manager, 949.497.1660

Worked with project partners, including the State Coastal Conservancy, OC Parks, Trust for Public Land and The Conservation Fund to acquire 10 properties totaling \$13,000,000 and 350 acres supporting a wide range of listed species, including LBV, CAGN, SWFFF and others. The properties have been added to the Coastal NCCP.

PROJECT: San Diego Multiple Species Habitat Conservation Plan
CLIENT: The Conservation Fund
REFERENCE: Scott Ferguson, Southern CA Director, 949.494.8034

Assisted The Conservation Fund in the preservation of 2,000+ acres across several property acquisitions for addition to the San Diego MSHCP. Each project required close coordination with the wildlife agencies, local partners and funders. Total acquisitions approximated \$50,000,000 over several years.

PROJECT: Central NCCP Conservation Land/Habitat Acquisitions
CLIENT: Trust for Public Land (TPL)
REFERENCE: Bob Flewelling, Senior Project Manager

Assisted TPL in processing and completing more than 5,000 acres of conservation land acquisitions under a grant provided by the State of CA Wildlife Conservation Board for conservation of critical habitat supporting coastal California gnatcatcher and other State and Federally-listed species.

PROJECT: Preserving Wild California Program
CLIENT: Resources Legacy Fund/The Conservation Fund
REFERENCE: Scott Ferguson, Southern CA Director, 949.494.8034

Assisted Resources Legacy Fund in identifying and completing several thousand acres of conservation land acquisitions, supporting habitat and sensitive species across San Diego, Imperial and Riverside counties.

CLIENT LIST

CALIFORNIA HIGH SPEED RAIL AUTHORITY
CALTRANS
CENTER FOR NATURAL LANDS MANAGEMENT
CHINO HILLS STATE PARK
CITY OF ALISO VIEJO
CITY OF LAGUNA BEACH
CITY OF RANCHO SANTA MARGARITA
CITY OF SAN JUAN CAPISTRANO
COUNTY OF ORANGE – OC PARKS
COUNTY OF ORANGE – OC WATERSHEDS
INDIAN RIVER PRESERVE
LAGUNA BEACH COUNTY WATER DISTRICT
LAGUNA CANYON FOUNDATION
LAGUNA HEIGHTS HOA
LEHMAN BROTHERS
LETTERLY ENVIRONMENTAL AND LAND PLANNING MANAGEMENT
OLEN PROPERTIES
ORANGE COUNTY CONSERVATION CORPS
SAN JUAN CAPISTRANO OPEN SPACE FOUNDATION
SOUTH COAST WATER DISTRICT
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
SOUTHERN CA EDISON
TAYLOR MORRISON HOMES
THE CONSERVATION FUND
THE RANCH AT LAGUNA BEACH
THE TRUST FOR PUBLIC LAND

ADDITIONAL CREDENTIALS

CERTIFIED CALIFORNIA RAPID ASSESSMENT METHOD - RIVERINE
QUALIFIED APPLICATOR CERTIFICATE (QAC) FOR CA HERBICIDE
UC DAVIS HERBICIDE CALIBRATION CERTIFICATE