American Rivers • Friends of the Earth
National Wildlife Federation

October 1, 2002

Mr. Tim Haddad
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903-4157

Mr. Roger Golden
U.S. Army Corps of Engineers
San Francisco District
333 Market Street, 8th Floor
San Francisco, California 94104

Re: U.S Army Corps of Engineers and Marin County Open Space District Draft Environmental Impact Statement/Report for the Bolinas Lagoon Ecosystem Restoration Project, California

Dear Mr. Haddad:

These comments on the June 2002 Draft Environmental Impact Statement/Report for the Bolinas Lagoon Ecosystem Restoration Project in California (DEIS/R) are submitted on behalf of American Rivers, Friends of the Earth, and the National Wildlife Federation (the "Conservation Groups").

American Rivers is a national conservation organization dedicated to protecting and restoring the nation's rivers and wetlands. American Rivers has over 30,000 members across the country, including in the state of California, and works in partnership with over 4,000 river and conservation organizations. American Rivers has two California field offices, including one in Marin County.

Friends of the Earth is the U.S. voice of an influential, international network of grassroots groups spanning 70 countries. Founded in San Francisco in 1969 by David Brower, Friends of the Earth has for decades been at the forefront of high-profile efforts to create a more healthy, just world. Friends of the Earth members were the founders of what is now the world's largest federation of democratically elected environmental groups, Friends of the Earth International.

The National Wildlife Federation is the nation's largest conservation, education organization with approximately 4 million members and supporters. The Federation has a long history of involvement with water resources development and strongly supports the protection and restoration of the nation's aquatic resources.

The Conservation Groups strongly oppose both of the alternatives recommended in the Draft Environmental Impact Statement/Report (DEIS/R) for the Bolinas Lagoon Ecosystem Restoration Project.

Bolinas Lagoon, a designated Wetland of International Importance under the Ramsar Convention, is among the most pristine tidal lagoons in California. It attracts more than 35,000 birds annually and provides critical feeding grounds and stopover habitat for migratory birds in the Pacific Flyway. At least 77 birds, fish, mammals, invertebrates, amphibians, reptiles, and plant species that are listed as threatened, endangered, or of special concern by the Federal government, the State of California, or the California Native Plant Society are found or likely to be found in the Lagoon. The Lagoon provides vital habitat to harbor seals, steelhead trout, Coho salmon, California brown pelicans, western snowy plovers, California black rails, California red-legged frogs, shorebirds, diving birds, egrets, herons, American avocets, gulls, terns, and leopard sharks. DEIS/R at 3-19, 3-29 to 3-30.

Despite the undeniable viability and ecological value of Bolinas Lagoon, the U.S. Army Corps of Engineers (Corps) has proposed two extremely destructive and virtually identical plans that will destroy existing valuable and rare habitats in an attempt to create other habitat types arbitrarily selected as somehow being "superior." The values of the lost habitat – and the very real ecological threats posed by the dredging – are simply ignored in the DEIS/R.

Under both plans, the Corps would spend more than $133 million to dredge almost 40 percent of Bolinas Lagoon (400 out of the 1,000+ acres of the lagoon). Construction would require at least 33 days of round the clock dredging for each of 9 years. DEIS/R at 2-4, 2-16. Because of the abundance of species found in the Lagoon, there is no period of time when dredging can be carried out without harming a number of sensitive species. DEIS/R at 2-4, 2-16 to 2-17. Both alternatives violate Federal law and policy. And the significant known and potential ecological harm that the dredging will cause far outweighs any of the potential "restoration" benefits identified in the DEIS/R.

The Conservation Groups strongly support efforts to bring about true ecosystem restoration. But neither of the proposed plans will do that. To the contrary, each proposed plan would severely alter the natural structure and processes of the Lagoon, and would cause far more ecological harm than good. Even the DEIS/R concludes that the "environmentally superior" alternative is to **not** undertake the project. DEIS/R at 2-28.

For these reasons, and the reasons set forth below, the Conservation Groups urge the Corps and the County of Marin to withdraw the ill-conceived plans presented in the DEIS/R. We further urge that no action of any kind be taken in connection with Bolinas Lagoon until any new plan has been reviewed and approved by a fully independent panel of experts.

A. The DEIS/R Does Not Demonstrate A Need For This Project

The DEIS/R does not demonstrate a need to construct this environmentally destructive and costly project, and it does not demonstrate that the proposed restoration effort will be ecologically successful or sustainable.

The stated premise for the restoration project is that Bolinas Lagoon is filling in due to excessive human-caused sediment loading and will become upland, and that the mouth of the Lagoon will begin closing intermittently within the next 50 years. The Corps concludes that it can address these alleged problems by increasing tidal volume and restoring intertidal and subtidal habitat in Bolinas Lagoon to an arbitrarily selected "historic" level. DEIS/R at 1-4. The DEIS/R, however, does not provide any valid support for these claims.

First, the claim that the Lagoon will fill in and become upland habitat is scientifically unsound. As the comments on this project submitted by Peter R. Baye point out, no California estuary has been converted to uplands in 10,000 years and none are poised to do so. The natural evolution of an estuary is not to upland habitat, but to estuarine mudflats and tidal marsh.

Second, the conclusion that the Lagoon is in danger of filling in was reached without taking into account the effect of sea level rise. The failure to consider the impacts of sea level rise violates the Corps' mandatory engineering regulations, and is contrary to sound science and the recognized impact of sea level rise on the Lagoon's ecology.

The Corps' mandatory engineering regulations explicitly require the Corps to consider the potential relative sea level change "in every coastal and estuarine (as far inland as the new head of tide) feasibility study that the Corps undertakes." ER 1105-2-100 (22 Apr 2000) at E-142. The applicable engineering regulation states:

> Sea Level Rise. The National Research Council (NRC) study on sea level change (Responding to Changes in Sea Level: Engineering Implications, 1987) is a practical and rational review of data on relative sea level changes and the resulting impact on engineering structures. The study should be used by the Corps for technical guidance until more definitive data are available. The NRC study recommended that feasibility studies for coastal projects should consider the high probability of accelerated sea level rise. Since precise estimates of future sea level rise are unknown, the risks associated with a substantial rise should be addressed. **Feasibility studies should consider which designs are most appropriate for a range of possible future rates of rise. Strategies that would be appropriate for the entire range of uncertainty should receive preference over those that would**

> **be optimal for a particular rate of rise but unsuccessful for other possible outcomes.**
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> (1) **Potential relative sea level change should be considered in every coastal and estuarine (as far inland as the new head of tide) feasibility study that the Corps undertakes.** The degree of consideration that the possible change receives will depend upon the historical record for the study site. **Areas which are already experiencing relative sea level rise or where increases are predicted should undertake an analysis as part of the study.** Plans should be formulated using currently accepted design criteria.
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> (2) For now, planning should consider what impact a higher relative sea level rises rate would have on the design based on the historical rate. A sensitivity analysis should be conducted to determine what effect (if any) changes in sea level would have on plan evaluation and selection. This analysis should be based, as a minimum, on the extrapolation of the local, historical record of relative sea level rise as the low level and Curve III from the NRC report as the high level.
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> (3) If the plan selection is sensitive to sea level rise, then design considerations could allow for future modification when the impacts of future sea level rise can be confirmed. It may be appropriate to consider plans that are designed for today's conditions but that incorporate features to facilitate future changes, or plans designed for future conditions. In these cases, an evaluation of the timing and the cost of potential changes should be conducted during the plan selection process.

ER 1105-2-100 (22 Apr 2000) at E-142 (emphasis added).

In addition to violating these regulations, the failure to consider the impacts of sea level rise is contrary to sound science and the recognized historical impact of sea level rise on the Lagoon's ecology. For example, the DEIS/R states:

- "The accumulation of sediment in the lagoon is a natural process that already might have caused the lagoon to evolve into a lake or upland if it were not offset by two other processes: Global sea level rise and subsidence of the graben due to activity of the San Andreas Fault." DEIS/R at 4-3.

- "During the past 5,000 years, sea level has been rising at an average rate of about one-half foot per century." DEIS/R at 3-10.

More importantly, there is consensus in the Federal government and the scientific community sea level rise is increasing and likely will cause inundation of low lying coastal areas. This makes it far more likely that Bolinas Lagoon will inundated than filled in. According to the U.S. Environmental Protection Agency (EPA):

> Along much of California's coast, sea level already is rising by 3-8 inches per century (3 inches at Los Angeles, 5 inches at San Francisco, and 8 inches at San Diego), and it is likely to rise by another 13-19 inches by 2100. . . . . San Francisco Bay contains the most extensive salt marshes on the West Coast, most of which have been modified dramatically by dredging and filling activities. A 1-3 foot increase in seal level may move the existing salt marshes in the bay to nearby lowlands and freshwater marshes, but development probably will limit the extent to which these marshes can "migrate" to new areas.

U.S. Environmental Protection Agency, Office of Policy Planning and Evaluation, *Climate Change and California*, EPA 230-F-97-008e (September 1997).

EPA also recently concluded that sea level "is rising more rapidly along the U.S. coast than worldwide. Studies by EPA and others have estimated that along the Gulf and Atlantic coasts, a one foot (30 cm) rise in sea level is likely by 2050 and could occur as soon as 2025. In the next century, a two foot rise is most likely, but a four foot rise is possible; and sea level will probably continue to rise for several centuries, even if global temperatures were to stop rising a few decades hence." Environmental Protection Agency, *Sea Level Rise Reports*, http://www.epa.gov/globalwarming/impacts/coastal.

Scientists have also predicted that the San Francisco Bay area will suffer major habitat losses as a result of the acceleration of sea level rise along the California coast caused by global warming. That rise will potentially inundate many low-lying estuarine areas and intertidal habitats with important implications for shorebirds that depend on those habitats. Gailbraith, Hector et al., *Potential Effects of Sea Level Rise on Intertidal Habitat for Migrating Shorebirds*, http://erf.org/user-cgi/conference_abstract.pl?conference=erf2001&id=315.

Third, the DEIS/R does not provide information necessary to determine whether the Lagoon is actually degraded, and thus in need of restoration. The DEIS/R does not analyze or describe the loss of habitat area or quality, or the adverse impacts to fish and wildlife from such losses. Instead, the DEIS/R bases its entire analysis on the need to increase tidal prism – a volume measurement that bears little relation to habitat loss or restoration. The ecological value of habitat is best measured by area, not by volume, and measuring by volume overstates the expected loss of intertidal habitat. The DEIS/R also does not discuss any impacts of the alleged loss of tidal prism volume on species utilizing the Lagoon. Without this information, it is not possible to determine whether or not there is a problem that needs to be corrected, and it is not possible to justify a $133 million project – or indeed any project – to "restore" the Lagoon.

Fourth, the DEIS/R fails to provide basic information that is critical for determining the actual cause of the alleged degradation. Among many other deficiencies, the DEIS/R does not provide information on: (1) the proportion of the sediment in the Lagoon that is the result of human influence, (2) the proportion of sediment that has come from the watershed, (3) the proportion of sediment that is marine in origin, or (4) the proportion of sediment that has built up in the Lagoon as a result of the significant reduction of the size of the Lagoon's inlet.

The DEIS/R nevertheless baldly concludes that the Lagoon has been degraded by excessive human-induced sediment loading into the Lagoon. The DEIS/R ignores information that tends to contradict this conclusion. For example, the DEIS/R and Draft Feasibility Report dismiss out of hand the impacts of reducing the size of the Lagoon's inlet as a cause of what the DEIS/R contends is excess sediment loading in the Lagoon. But this dismissal is contradicted by a host of evidence in the record.

For example, the DEIS/R states that the tidal exchange transports hundreds of thousands of cubic yards of sediment per year both in and out of the Lagoon, dwarfing the contribution of sediment from the watershed. DEIS/R, Volume II at 5-56. Moreover, more sediment is carried out of the lagoon on outgoing tidal currents than is carried in by incoming tidal currents. DEIS/R at 3-12. The DEIS/R also concludes that the size of the inlet or entrance channel to the Lagoon is related to the size of the tidal prism. DEIS/R at 3-16. The "[i]nlet opening conditions strongly influence depth, duration, and frequency of inundation throughout the lagoon, and the extent and distribution of habitats." DEIS/R, Volume II, Engineering Appendix at 20. "The smaller the channel opening, the faster the water must move through the entrance channel to equilibrate the elevations." DEIS/R at 3-16.

The DEIS/R furthers concludes that the Seadrift and Seadrift Lagoon developments "affected the lagoon's hydrology. Houses and trees, dredging and filling, and seawalls and riprap have reduced, and for some processes, stopped ocean functions in the lagoon. Tidal circulation to the southeastern portion of the lagoon was restricted by the dredging and filling of 56 acres that occurred in 1960." DEIS/R, Volume II at 4-26. This had the effect of preventing the flushing of sediments out of the lagoon. *Id*.

The potential for increasing tidal prism – the stated goal of the project – by increasing the inlet size was demonstrated in 1993, when a causeway and dump was removed from the Lagoon's southern end. This led to an estimated increase in tidal prism in the lagoon of 435,000 cubic feet due to increased tidal circulation. DEIS/R at 3-12.

Without an accurate assessment of the actual cause of the alleged degradation, it is not possible to develop a responsible plan to restore the Lagoon's ecosystem functions, structure, and dynamic processes.

B. The Alternatives Proposed In The DEIS/R Will Not Restore Bolinas Lagoon, But Instead Pose A Grave Threat To The Ecological Health Of Bolinas Lagoon

The Conservation Groups strongly support true ecosystem restoration. But neither of the alternatives proposed in the DEIS/R can be properly classified as ecosystem restoration.

As discussed above, despite the undeniable viability and value of Bolinas Lagoon, the Corps has proposed two extremely destructive and virtually identical plans that will cause far more ecological harm than good. For example, the DEIS/R identifies 18 potentially significant impacts of the project, including the loss of at least 100 acres of jurisdictional wetlands. In addition, so many species utilize the Lagoon throughout the year that there is no time when dredging will not cause harm to a sensitive species. DEIS/R at 2-16. Even the DEIS/R concludes that the "environmentally superior" alternative is to not undertake the project. DEIS/R at 2-28.

In addition, the Corps will not undertake any mitigation for many of the significant impacts that the dredging will cause, including:

- the loss of 100 acres of jurisdictional wetlands;
- the significant impacts caused by loss of habitat for the California black rail, a species listed as threatened by the state of California;
- the significant impacts to benthic communities and the species that feed on benthic organisms;
- the significant impacts to the designated critical habitat of the Federally threatened California red-legged frog;
- the significant impacts caused by changing the circulation patterns within the lagoon (for example, dredging could create large fetid pools that will not fill or drain properly adversely effecting water quality).

DEIS/R at ES-6; 2-30 to 2-38.

The proposed alternatives do not even meet the Corps' definition of an ecosystem restoration project. According to the Draft Feasibility Report, the "purpose of Civil Works ecosystem restoration activities is to restore significant ecosystem function, structure and dynamic processes that have been degraded. . . . The intent of restoration is to reestablish the attributes of a natural, functioning, and self-regulating system." Draft Feasibility Report at 1-1. The proposed plans do none of these things.

Rather than restore the natural functioning of a self-regulating system, the plans proposed by the Corps are designed to force Bolinas Lagoon into an arbitrarily selected earlier stage in its ecological development.[1] In the process, existing valuable and rare

[1] Even if the proposed restoration goal was appropriate – which we believe it is not – the project would still destroy valuable and rare existing habitat with no guarantee of successfully recreating the habitat it seeks to restore. As the California Regional Water Quality Control Board has so aptly noted: "The

habitats would be destroyed in an attempt to create other habitat types arbitrarily selected as somehow being "superior." Each plan also would severely alter the natural structure and processes of the Lagoon.

For example, the DEIS/R acknowledges that the proposed dredging has the potential to "dramatically" alter the natural structure of the Lagoon, and is significantly different than the natural processes of subsidence and sea level rise that have served to preserve the Lagoon to date. According to the DEIS/R:

> [S]ubsidence and sea level rise differ from dredging in that the first two increase depth over the entire area of the lagoon, while dredging increases depth in certain selected portions of the lagoon. Subsidence during an earthquake is a sudden event, while sea level rise is almost imperceptibly slow. But neither process substantially alters the shape of the bottom of the lagoon, so that established channels, islands, and deltas retain their forms and locations. **Dredging, on the other hand, could dramatically alter the shape of the lagoon bottom, allowing for the creation of new channels and lowering or removing existing high points** to achieve a desired effect. With this ability to reshape the lagoon comes a degree of uncertainty about the effects of the change.

DEIS/R at 4-3 (emphasis added).

As importantly, the DEIS/R recognizes – though it does not properly evaluate – that the dredging will cause significant adverse impacts and has the potential to cause far more harm than acknowledged. For example, the DEIS/R recognizes that the dredging could alter the circulation patterns in the lagoon, creating enormous fetid pools within the Lagoon that will not properly drain or fill. As discussed in more detail below, the DEIS/R does not evaluate these and other significant impacts. DEIS/R at 2-32.

The known and potential environmental harms of the proposed alternatives are enormous, and outweigh any potential benefits of the project. The known impacts and the uncertainty of any benefits demonstrate that neither proposed alternative would restore the Bolinas Lagoon Ecosystem.

C. The DEIS/R Is Fatally Flawed And Does Not Satisfy The Requirements Of The National Environmental Policy Act

An environmental impact statement is more than a mere disclosure document. It is intended to help public officials make decisions that are based on an understanding of

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success rate for restoration projects, especially those involving lagoons, has not been well established and not enough time has passed for most wetland restoration projects to determine whether or not they will be successful." Comment Letter from the California Regional Water Quality Control Board on the Bolinas Lagoon DEIS/R, August 8, 2002 at 2.

environmental consequences, and take actions that protect, restore and enhance the environment. Indeed, the primary purpose of the National Environmental Policy Act (NEPA) is to ensure that high quality environmental information is available to public officials and citizens **before** decisions are made and actions are taken.

Unfortunately, the many flaws and omissions in the DEIS/R prevent such informed decisionmaking in connection with this project. As a result, the Corps has proposed two alternatives without the mandated careful consideration of detailed information concerning the significant environmental impacts of this project. In addition to failing to demonstrate a need for the project and for failing to propose a true restoration project, the DEIS/R contains numerous flaws and omissions that are discussed in detail below.

(1) The DEIS/R Fails To Adequately Evaluate Alternatives

The DEIS/R evaluates only two alternatives (and the legally mandated no action alternative) both of which are virtually identical and produce the same end result – the dredging of almost 40 percent of Bolinas Lagoon. As the DEIS/R acknowledges, the two alternatives differ only in the amount of material to be excavated from Pine Creek Gulch, and that difference is minimal. DEIS/R at 2-3. As importantly, both alternatives will cause significant harm to highly valuable wetlands and mudflats, will harm a number of sensitive species, and will adversely impact designated critical habitat.

The alternatives analysis is also at odds with the Corps' fundamental mission and policy objectives. Rather than protecting the environment, and particularly wetlands, as mandated by the Corps' mission and policy objectives, both alternatives would significantly harm highly valuable wetlands and other aquatic habitat. Environmental protection is "one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects." Water Resources Development Act of 1990, 33 U.S.C. § 2316(a). The Corps is the agency primarily responsible for implementing Section 404 of the Clean Water Act, and the Clean Water Act Section 404(b)(1) Guidelines, which are designed to protect our vital wetland and other aquatic resources. As discussed above, the Corps also has a statutorily mandated goal of no net loss of the nation's wetlands. 33 U.S.C. § 2317(a)(1).

The analysis of alternatives to a proposed project is the "heart of the environmental impact statement." 40 C.F.R § 1502.14. An EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a) (emphasis added). As importantly, the alternatives analysis "must be undertaken in good faith; it is not to be employed to justify a decision already reached." *Citizens Against Toxic Sprays, Inc. v. Bergland*, 428 F.Supp. 908, 933 (D.Or. 1977).

To meet these requirements, an agency must undertake a "thorough consideration of **all** appropriate methods of accomplishing the aim of the action" and an "intense consideration of other more ecologically sound courses of action." *Environmental Defense Fund, Inc. v. Corps of Engineers of U.S. Army*, 492 F.2d 1123, 1135 (5th Cir.

1974) (emphasis added). While an EIS need not explore every conceivable alternative, it must rigorously explore all reasonable alternatives that are consistent with the agency's basic policy objective and that are not remote or speculative. A viable but unexamined alternative renders an EIS inadequate. *E.g. Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 814 (9th Cir. 1999). In addition, an alternative may not be disregarded merely because it does not offer a complete solution to the problem. *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972).

Failure to look at an appropriate range of alternatives likewise renders an alternatives analysis inadequate. *E.g. Resources Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1993). The range of alternatives that must be considered is determined by the nature and scope of the proposed action. Thus, the greater the impacts and scope of the proposed action, the greater the range of alternatives that must be considered. *Alaska Wilderness Recreation and Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995). The range of alternatives considered is **not** sufficient if each alternative has the same end result. *State of California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982) (holding that an inadequate range of alternatives was considered where the end result of all eight alternatives evaluated was development of a substantial portion of wilderness).

An alternatives analysis is particularly problematic where, as here, the agency "failed to consider an alternative that was more consistent with its basic policy objectives than the alternatives that were the subject of final consideration." *Muckleshoot Indian Tribe*, 177 F.3d at 813-14.

The DEIS/R alternatives analysis does not comply with NEPA. The DEIS/R does not rigorously and objectively evaluate all reasonable alternatives. Indeed, a number of reasonable alternatives identified in the Draft Feasibility Report were dismissed out of hand prior to preparation of the DEIS/R. The DEIS/R also does not evaluate a full range of alternatives, as each alternative evaluated has the same end result. In addition, the DEIS/R evaluates only alternatives that fail to comply with the Corps' basic environmental and wetland protection mandates. As a result, the DEIS/R alternatives analysis does not comply with NEPA.

(2) The DEIS/R Abjectly Fails To Evaluate The Impacts To Threatened, Endangered, And Sensitive Species

The DEIS/R abjectly fails to evaluate the impacts of this project on threatened, endangered, and sensitive species. Despite identifying at least 77 birds, fish, mammals, invertebrates, amphibians, reptiles, and plant species that are listed as threatened, endangered, or of special concern by the Federal government, the State of California, or the California Native Plant Society that are found or likely to be found in Bolinas Lagoon, the DEIS/R contains virtually no analysis whatsoever of the impacts of the project on these species. DEIS/R at 3-29 to 3-30.

The Corps has not provided any of the necessary biological assessments on these species, and has not completed necessary formal consultation under the Federal

Endangered Species Act. These analyses must be completed and carefully considered before the Corps decides whether or how to proceed with the Bolinas Lagoon Project.

(3) The DEIS/R Abjectly Fails To Analyze The Extent To Which Adverse Effects Can Be Avoided By Mitigation Measures

The DEIS/R does not discuss mitigation in detail. Instead, it either concludes that no mitigation will be undertaken for a number of significant impacts, or it states that mitigation plans will be developed in the future. No mitigation will be undertaken for any of the following significant impacts that the proposed alternatives will cause:

- the loss of 100 acres of jurisdictional wetlands;
- the significant impacts caused by loss of habitat for the California black rail, a species listed as threatened by the state of California;
- the significant impacts to benthic communities and the species that feed on benthic organisms;
- the significant impacts to the designated critical habitat of the Federally threatened California red-legged frog;
- the significant impacts caused by changing the circulation patterns within the lagoon (for example, dredging could create large fetid pools that will not fill or drain properly adversely effecting water quality).

According to the Corps, mitigation will not be required for the loss of 100 acres of jurisdictional wetlands because: (1) on-site mitigation is not physically possible; (2) because there are no acceptable potential mitigation sites close to Bolinas Lagoon, off-site mitigation would be inconsistent with County policies; (3) mitigation would be so expensive that it would prevent the Corps from proceeding with the project; and (4) loss of black rail salt marsh habitat cannot be mitigated because no mitigation is planned. DEIS/R at 4-15 to 4-16. These circular excuses are unacceptable.

Moreover, as discussed below, failure to require mitigation for these impacts violates the Clean Water Act, the Clean Water Act Section 404(b)(1) Guidelines, and the NEPA implementing regulations. The failure to mitigate also flies in the face of the Corps' statutorily mandated "interim goal of no overall net loss of the Nation's remaining wetlands base, as defined by acreage and function." Water Resources Development Act of 1990, 33 U.S.C. § 2317(a)(1).

The failure to discuss mitigation also violates NEPA. As the U.S. Supreme Court has made clear, an EIS must "discuss the extent to which adverse effects can be avoided." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-352 (1989). To satisfy this requirement, "mitigation must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated." *Id*. at 352. As the Court noted, this is because:

> omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA.

> Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects. An adverse effect than can be fully remedied by, for example, an inconsequential public expenditure is certainly not as serious as a similar effect that can only be modestly ameliorated through the commitment of vast public and private resources.

Id. Mitigation also must be discussed in sufficient detail to determine (1) whether it can successfully ameliorate the environmental impacts of the proposed project, (2) the likelihood of success of the proposed mitigation, and (3) the cost that the mitigation will entail.

The DEIS/R violates NEPA because it does not include a detailed discussion of mitigation. The failure to discuss mitigation shows that the DEIS/R has not taken the mandated "hard look" at the environmental impacts of the proposed action and alternatives to the action, and fails to provide "a clear basis for choice among options by the decisionmaker." 40 C.F.R. § 1502.14.

(4) The DEIS/R Fails To Adequately Evaluate A Host Of Identified Risks And Potential Impacts Of The Proposed Alternatives

The DEIS/R fails to evaluate a host of identified and potential impacts of both dredging plans. These unknown consequences could far outweigh any potential benefits of the project, and when combined with the known adverse impacts of the project call for the immediate withdrawal of the proposed plans. For example, the DEIS/R:

- Does not evaluate the changes in sediment transport and water circulation that will occur as a result of the dredging (no post-dredging sediment transport or hydrologic modeling has been undertaken).

- Does not evaluate the impacts of the dredging and loss of habitat on the birds, mammals, fish, amphibians, and plants that use and exist in and around the Lagoon. These species include, but are by no means limited to, harbor seals, steelhead trout, Coho salmon, California brown pelicans, western snowy plovers, California black rails, California red-legged frogs, shorebirds, diving birds, egrets, herons, American avocets, gulls, terns, and leopard sharks. DEIS/R at 3-19, 3-29 to 3-30.

- Ignores the significant impacts of disturbance and loss of habitat from the dredging plan on species that use the Lagoon, and particularly the impacts of dredging disturbance and loss of haul out sites on harbor seals, a species that is highly susceptible to disturbance.

- Does not evaluate the toxicity of sediments to be dredged from the Lagoon and the effects of resuspension of any toxic sediments on the health of the Lagoon's biological resources and human visitors, despite acknowledging that toxic compounds may be present in some of the Lagoon's sediments.

- Does not adequately evaluate the impacts of the proposed dredging and loss of wetlands on water quality, despite acknowledging that water quality impacts could be significant.

- Does not evaluate the adverse impacts of utilizing ocean disposal, and does not evaluate the impacts of utilizing the limited disposal capacity of the ocean disposal and landfill sites for this project.

- Does not adequately evaluate the adverse impacts of the significant additional truck traffic that will be result from implementation of either proposed alternative.

- Does not adequately evaluate the air quality and noise impacts of the project.

(5) The DEIS/R Fails To Evaluate The Cumulative Wetland Losses And Fails To Provide The Necessary Quantified And Detailed Information On The Cumulative Impacts That Have Been Examined

The DEIS/R does not evaluate the cumulative impacts of the loss of 100 acres of wetlands (including tidal marsh) that will be occur if either proposed alternative is implemented with the already significant wetland losses in the region. The DEIS/R also does not evaluate the cumulative impacts on fish and wildlife utilizing those wetlands habitats. The DEIS/R also does not provide any quantified or detailed information on the cumulative impacts it has examined.

The DEIS/R must consider the cumulative impacts of the project. 40 C.F.R. § 1508.25(c). A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7; *see, e.g*., *Neighbors of Cuddy Mountain v. U. S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998); *Resources Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1306 (9th Cir. 1993); *LaFlamme v. F.E.R.C.*, 852 F.2d 389, 401-02 (9th Cir. 1988).

In analyzing cumulative impacts "quantified or detailed information is required" so that the courts and the public can be assured that the Corps has taken the mandated hard look at the environmental consequences of the Project. *Neighbors of Cuddy Mountain*, 137 F.3d at 1379; *Natural Resources Defense Council v. Callaway*, 524 F.2d at 87. "Detail" also is "required in describing the cumulative effects of a proposed action with other proposed actions." *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999). A cumulative impacts analysis that contains only "[v]ery broad and general statements devoid of specific, reasoned conclusions" does not satisfy NEPA. *Id*. at 811; *Neighbors of Cuddy Mountain*, 137 F.3d at 1379.

The DEIS/R does not comply with NEPA because its cumulative impacts analysis does not evaluate cumulative wetland impacts, and does not provide detailed information on other cumulative impacts.

(6) The DEIS/R Fails To Consider Fish And Wildlife Coordination Act Report Recommendations

The DEIS/R fails to include the Fish and Wildlife Coordination Act report for this project. As a result, the DEIS/R does not – and cannot – consider the recommendations set forth in the Coordination Act report, as required by law. The Coordination Act report should be reviewed by the Corps and any recommendations in the Coordination Act report should be adopted by the Corps before release of a DEIS/R to the public for review and comment. The Coordination Act report is an extremely valuable tool to assist the public in meaningfully commenting on a project, and should be made available to the public at the same time as DEIS/R and Draft Feasibility Report are released for public comment.

D. The Proposed Alternatives Violate Federal Law And Policy

Under either proposed alternative, at least 100 acres of jurisdictional wetlands, including salt marsh habitat, which is vital for the Federally endangered California clapper, and the California black rail, a State listed threatened species. Mudflats and vegetated shallows also will be destroyed by the project.

The proposed alternatives also likely will destroy or adversely impact critical habitat for the California red-legged frog, a Federally listed threatened species. Unit 12 of this designated critical habitat includes "watersheds within and adjacent to Bolinas Lagoon, Point Reyes, and Tomales Bay in Marin and Sonoma Counties." This critical habitat unit "contains one of the largest known populations of California red-legged frogs" and "[e]ssential breeding habitat is dispersed throughout the unit." 66 Fed. Reg. at 14635 (March 13, 2001). Though a potential settlement of litigation may result in the remand of the critical habitat designation of the California red-legged frog, the existing designation remains in place pending a hearing on a proposed consent decree in *Home Builders Associations of Northern California v. Norton*, Civil Case No. 01-1291 (RJL) (D.D.C. July 19, 2002) (order vacating approval of consent decree entered July 2, 2002). Moreover, even if the critical habitat designation is remanded, it is highly likely that critical habitat designation would be re-imposed for this area since it contains one of the largest known California red-legged frog populations.

The DEIS/R proposes no mitigation for any of these and other adverse impacts.

As discussed below, for at least these reasons, the proposed alternatives violate the Clean Water Act, the nation's wetlands policies, and the Corps' mitigation mandates.

(1) The Proposed Alternatives Violate The Clean Water Act

In carrying out its civil works activities, the Corps must comply with the mandates of Section 404 of the Clean Water Act, and the Section 404(b)(1) Guidelines.[2] 33 U.S.C. § 1323; 33 C.F.R. § 336.1(a). The 404(b)(1) Guidelines prohibit the Corps from proceeding with the Bolinas Lagoon Project if it "will cause or contribute to significant degradation of the waters of the United States." 40 C.F.R. § 231.10(c). Under the Guidelines, effects that contribute to significant degradation include:

> (1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on . . . fish, shellfish, wildlife, and special aquatic sites.
>
> (2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems . . . .
>
> (3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or
>
> (4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

Id.

Critically, the 404(b)(1) Guidelines prohibit the Corps from proceeding with a civil works projects that will adversely impact the aquatic ecosystem, if a less damaging practicable alternative is available. 40 C.F.R. § 230.10(a). The Guidelines also prohibit the Corps from proceeding with this project if it will jeopardize the continued existence of any Federally listed threatened or endangered species, or if it will result in the likelihood of the destruction or adverse modification of designated "critical habitat" under the ESA. 40 C.F.R. § 230.10(b)(3).

In addition, no discharge shall be permitted "unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem." 40 C.F.R. § 230.10(d). Both the 404(b)(1) Guidelines and NEPA implementing regulations require mitigation for wetland impacts that cannot be avoided. Both call for avoiding the wetland impact altogether if the proposed project is not water dependent or if alternatives exist. If the project is water dependent and no alternatives exist, the impact should be minimized by modifying the project. If

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[2] Notwithstanding the "Guidelines" nomenclature, compliance with the Section 404(b)(1) Guidelines is mandatory. *E.g.*, Regulatory Guidance Letter (RGL 93-2), 60 Fed. Reg. 13709 (March 1995) (stating that the Guidelines are binding regulations).

modification is not possible, the impact should be rectified by restoring the environment. 40 C.F.R. § 1508.20; 40 C.F.R. § 230.10(d).

The proposed alternatives and the DEIS/R violate Clean Water Act Section 404 in a number of ways. First, the proposed alternatives clearly violate the Section 404(b)(1) Guidelines due to the magnitude and severity of the adverse impacts on the aquatic ecosystem, including loss of wetlands, mudflats, and vegetated shallows. Second, the proposed alternatives violate the Section 404(b)(1) Guidelines because they will result in the likely destruction or adverse modification of designated critical habitat for the California red-legged frog. Third, the proposed alternatives violate the Section 404(b)(1) Guidelines because less damaging alternatives are available (many of which were briefly discussed and dismissed in the Draft Feasibility Report). Fourth, the proposed alternatives violate the Section 404(b)(1) Guidelines and the NEPA implementing regulations because appropriate practicable steps have not been taken to minimize the potential adverse impacts, and because no compensatory mitigation is required. Fifth, the DEIS/R does not contain an evaluation of the project's compliance with the Clean Water Act Section 404(b)(1) Guidelines as required by law, and it does not provide the information needed to comply with the Section 404(b)(1) Guidelines.

(2) The Proposed Alternatives Violate The Mitigation Requirements Of The Water Resources Development Act

The DEIS/R and Draft Feasibility Report violate the requirements of the Water Resources Development Act of 1986, 33 U.S.C. § 2283(d)(1). This provision prohibits the Corps from submitting a proposal for a civil works proposed to Congress unless it contains a "specific plan to mitigate fish and wildlife losses created by such project" or includes a "determination by the Secretary that such project will have negligible adverse impact on fish and wildlife." 33 U.S.C. § 2283(d)(1).

Despite being labeled an ecosystem restoration project, the DEIS/R acknowledges that each proposed alternative will have significant adverse impacts to wetlands and to fish and wildlife. However, neither the DEIS/R nor the Draft Feasibility Report includes the mandatory specific plan to mitigate for these significant harms. Instead, the DEIS/R and Draft Feasibility Report state that no mitigation will be attempted. As a result, the Draft Feasibility Report and DEIS/R violate the mandates of the Water Resources Development Act.

(3) The Bolinas Lagoon Project Violates Executive Order 11990

Since 1977, the Corps, and every other federal agency, has been directed to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values in carrying out agency responsibilities. Protection of Wetlands Executive Order (Executive Order 11990), *reprinted in* 42 U.S.C. § 4321. As importantly, Executive Order 11990 provides that each federal agency:

> shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

Id. at Section 2(a). The term "new construction" is defined to include "draining, dredging, channelizing, filling, diking, impounding and related and any structures or facilities begun or authorized after the effective date" of the Executive Order. *Id*. at Section 7(b).

The courts have held that this Executive Order requires a federal agency to make a specific finding that no practicable alternative to the proposed action exists, a duty that goes beyond those required by NEPA. *City of Carmel By-The-Sea v. United States Dep't of Transportation*, 123 F.3d 1142, 1167 (9th Cir. 1997). The courts have also held that Executive Order 11990 is judicially enforceable and should be given the full force and effect of law. *City of Carmel*, 123 F.3d at 1166; *City of Waltham v. United States Postal Service*, 786 F. Supp. 105, 131 (D. Mass. 1992).

The Bolinas Lagoon Project clearly violates this enforceable Executive Order. Both proposed alternatives involve extensive "new construction" in wetlands (as defined by the Executive Order), and the DEIS/R and Draft Feasibility Report do not – and cannot – make the requisite findings as to practicable alternatives and minimization of harm. As a result, the Corps cannot proceed with either proposed alternative.

(4) Both Alternatives Violate The Statutorily Mandated No Net Loss Of Wetlands Policy And The Corps' Environmental Protection Mission

The country has a well-established policy of no net loss of the nation's wetlands. This policy, which was established by the first Bush Administration,[3] is codified as to the Corps in the Water Resources Development Act of 1990:

> There is established, as part of the Corps of Engineers water resources development program, an interim goal of no overall net loss of the Nation's remaining wetlands base, as defined by acreage and function, and a long-term goal to increase the quality and quantity of the Nation's wetlands, as defined by acreage and function.

33 U.S.C. § 2317(a)(1). In addition, one of the Corps' primary missions is protection of the environment:

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[3] The Clinton Administration added to this policy a goal of achieving a net gain of 100,000 acres of wetlands each year beginning in the year 2005.

> The Secretary shall include environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects.

33 U.S.C. § 2316(a).

Both proposed alternatives violate these mandates.

E. The Corps Should Withdraw The Proposed Alternatives And Should Not Proceed With Any New Plans For Bolinas Lagoon Unless And Until The DEIS/R and Draft Feasibility Report Are Evaluated By A Fully Independent Panel Of Experts

The Bolinas Lagoon Project will cause significant adverse environmental harm to the Bolinas Lagoon ecosystem, and has the potential to virtually destroying the ecological health of this wildlife paradise. This project will cost taxpayers more than $133 million plus an additional $200,000 for operations and maintenance for each of the next 50 years.[4] Draft Feasibility Report at 6-3. This makes the Bolinas Lagoon project one of the most expensive ecosystem restoration efforts in the country. Indeed, this project would be among the most expensive of all new Corps projects. Only 6 percent of Corps projects authorized in the last two Water Resources Development Acts were projected to cost more than $100 million.

The impacts and cost of this project mandate that it be reviewed by a fully independent panel of experts before the Corps recommends this project (or any variation of this project) for construction, and before Congress authorizes the project for construction. The expert panel should examine and comment on the technical analyses used by the Corps to justify its recommended plan(s). As importantly, the panel should evaluate whether the Corps' interpretation of its analyses and the conclusions based on its analyses are reasonable.

Over the past few years, two National Academy of Sciences panels and the Army's own Inspector General have concluded that the Corps has an institutional bias for approving large and environmentally damaging structural projects, and that its planning process lacks adequate environmental safeguards. National Research Council, *New Directions in Water Resources Planning for the U.S. Army Corps of Engineers*, 1999, at 4, 21, 61-63; National Research Council, *Inland Navigation System Planning: The Upper Mississippi River-Illinois Waterway*, 2001, at 25-28; 53-54; US Army Inspector General, *Report of Investigation*, Case 00-019, 2000, at 7-8. Less environmentally damaging, less costly, nonstructural measures that would result in the same or better outcomes are routinely ignored or given short shrift.

The National Academy of Sciences, the Army Inspector General, the General Accounting Office and numerous other independent reviewers also have revealed fundamental and critical technical flaws in the Corps' analyses of highly controversial and expensive projects. These problems are so severe that in July of this year, the Corps' Director of Civil Works, Maj. Gen. Robert Griffin, announced that the Corps was losing its capacity to make sound recommendations on projects to Congress.

During just the past two years, the well-documented and highly publicized problems with the Corps' planning process have included the following:

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[4] The very real likelihood of significant cost overruns could make this project far more costly.

- The Army Inspector General concluded that the Corps had deceptively and intentionally manipulated data in an attempt to justify a $1.2 billion expansion of locks on the Upper Mississippi River. In short, the Corps had "cooked the books."

- The Corps was forced to suspend the $311 million Delaware River Dredging project when the GAO found severe problems with the Corps' economic analysis, acknowledging deficiencies in its planning even before the final GAO report was released. When the GAO report revealed that project benefits had been overstated by an incredible 200 percent – at most $13.3 million annual benefits vs. the Corps' calculated $40.1 million – the Corps could not even explain its own analysis, blaming $4.7 million of the differential on a computer error.

- A newspaper's six-month review of the economics of the $188 million Columbia River channel deepening project revealed that the Corps had overestimated the project's benefits by 140 percent. The Corps told the public that the project would return $2.10 for each dollar of public money invested. The Portland *Oregonian* found that the project would return just 88 cents for each tax dollar spent. Just a few days before the *Oregonian* series ran – and after the *Oregonian* had shared its findings with the Corps – the Corps advised the paper that it would be reexamining the cost-benefit analysis.

- An independent economic analysis of the Corps' proposal to construct the $181 million Yazoo Backwater pumping plant shows that the Corps overestimated just the agricultural benefits by $144 million, and claimed almost $3 million in annual benefits that are explicitly prohibited by the Corps' own rules. The Environmental Protection Agency working with the U.S. Geological Survey demonstrated that the project will drain and damage almost 10 times more wetlands than estimated by the Corps, and concluded that the wetlands assessment and hydrologic models used by the Corps were fundamentally flawed and not scientifically appropriate. EPA also concluded that the project as planned is not authorized by Congress.

- In a recent review of the $62 million Big Sunflower River dredging project, the Corps did not bother to evaluate the human health risks associated with dredging and disposing of more than 8 million cubic yards of toxaphene contaminated sediments from 104 miles of the river bottom. The Corps did not even acknowledge the existence of the toxaphene contamination, despite the fact that the state has issued a fish consumption advisory for the river due to toxaphene and DDT contamination.

- The Corps was forced to acknowledge that the $90 million Chesapeake & Delaware Canal deepening project was not economically justified, after the *Washington Post* wrote about four retirees documenting dozens of flaws in the Corps' economic analysis of the project, including a "basic math error that boosted the benefit-cost ratio from a failing 0.65 to a passing 1.21."

As a result of these disclosures, five separate bills have been introduced in this Congress that would reform the planning process of the Corps. Each of these bills would require independent peer review of costly or controversial Corps projects.

In July 2002, the National Academy of Sciences also concluded that Corps studies of costly or controversial projects "should be subjected to independent review by objective, expert panels." National Academy of Sciences, *An Assessment of U.S. Army Corps of Engineers Methods of Analysis and Peer Review for Water Resources Project Planning* (July 2002). The National Academy found that such independent peer review is necessary to ensure that proposed Corps projects are based on valid environmental and economic analyses. To prevent conflicts of interest, the National Academy concluded that independent reviewers "should not be selected by the Corps and should not be employed by the Corps," and that the independent review process "should be overseen by an organization independent of the Corps." The National Academy further recommended that the reviewers look at more than whether the Corps' numbers add up. The National Academy urged that reviewers be authorized to "evaluate whether interpretations of analysis and conclusions based on analysis are reasonable."

The flaws in the DEIS/R – and the known and potential devastating impacts of the Corps' proposed alternatives – warrant the immediate withdrawal of those alternatives. Moreover, no action of any kind should be taken in connection with Bolinas Lagoon until any new plan has been reviewed and approved by a fully independent panel of experts.

F. Conclusion

Numerous other technical flaws with the DEIS/R have been identified in the comments submitted by the Environmental Action Committee of West Marin, Peter R. Baye, Orrin Pilkey, Peter H. Raven, the California Department of Fish and Game, the California Coastal Commission, the California Regional Water Quality Control Board, and the U.S. Environmental Protection Agency.

For the reasons set forth above, the Conservation Groups urge the Corps and the County of Marin to withdraw the ill-conceived plans presented in the DEIS/R. We further urge that no action of any kind be taken in connection with Bolinas Lagoon until any new plan has been reviewed and approved by a fully independent panel of experts.

Sincerely,

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