



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

May 16, 2008

Ms. Nancy Ferris
U.S. Army Corps of Engineers,
San Francisco District
1455 Market Street
San Francisco, CA 94103-1398

Subject: Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels) Navigation Improvement Project, California.

Dear Ms. Ferris:

The U.S. Environmental Protection Agency (EPA) has reviewed the Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels) Navigation Improvement Project (Project) pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. These comments were also prepared under the authority of, and in accordance with, the provisions of the Federal Guidelines (Guidelines) promulgated at 40 CFR 230 under Section 404(b)(1) of the Clean Water Act (CWA) and EPA's ocean dumping regulations promulgated at 40 CFR 220-227 under the Marine Protection, Research and Sanctuaries Act (MPRSA). Our detailed comments are enclosed.

The NOI states that the intent of the U.S Army Corps of Engineers (Corps), and the Port of Stockton, and Contra Costa Water Agency (local sponsors) is to evaluate the efficiency of goods movement along the existing San Francisco Bay to Port of Stockton deep draft channel. The NOI further states that the proposed federal action consists of altering the depth along portions of the 75 nautical mile channel. While not stated in the NOI, EPA understands that the Project could yield approximately 25 million cubic yards of dredged material. Given the scale and scope of the Project, EPA is concerned that the proposed action, if not thoroughly evaluated and designed to address broader goals, could have highly significant adverse impacts to the San Francisco Bay (SF Bay) and Sacramento/San Joaquin Delta (Delta) ecosystems and to human uses of the Delta and its water. However, EPA also believes that this EIS is an important opportunity to advance wise planning of the SF Bay and Delta's unique resources, in a manner that optimizes many uses, including efficient goods movement. We are particularly interested in the potential impacts that this proposed Project may have on existing and planned efforts, such as

the Bay-Delta Conservation Plan and Delta Conveyance, to protect and enhance ecological resources, the human environment, water supply, water quality, and efforts for beneficial reuse of dredging material in the SF Bay and Delta.

Specific to beneficial reuse of dredging material, EPA considers the proposed Project an excellent opportunity to identify significant beneficial reuse projects in the context of a regional dredged material management plan. Beneficial reuse in a regionally managed context is particularly important due to the millions of cubic yards of material from the Project, from existing stockpiled dredge material in the Delta, and the future Sacramento Deep Water Ship Channel Project. As such, it provides a timely opportunity to further develop the San Francisco Bay and Delta Long Term Management Strategies (LTMSs) for dredged material and use the LTMSs process for coordination of permitting.

We greatly appreciate the Corps' interest in early coordination with EPA and other interested parties to develop and assess Project alternatives. Toward that end, we recommend a collaborative process to address the complexities of this effort and collectively identify critical resource issues and appropriate efforts with which to coordinate during the development of alternatives. We strongly encourage the Corps and local sponsors to initiate this collaborative approach with members of the CALFED Bay-Delta Program, Delta Vision, and the Delta and SF Bay Long Term Management Strategies (LTMSs) due to their important roles in the future of the Delta and SF Bay. In particular, it will be important to work with these efforts and their participating agencies on matters such as defining baseline conditions, alternatives formulation, and evaluation of effects in the SF Bay and Delta.

EPA looks forward to future Project coordination with the Corps on May 28th where we will discuss elements of the future Draft EIS. Please note that our detailed comments provided are focused on areas of particular interest to EPA given the information available in the NOI and at the Project website. We will continue to provide input prior to and after public release of the Draft EIS and Final EIS. Please send two copies of the Draft EIS to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at 415-972-3846 or Paul Amato, the lead reviewer for this project. Paul can be reached at 415-972-3847 or amato.paul@epa.gov.

Sincerely,



For

Nova Blazej, Manager
Environmental Review Office

cc:

Mr. Richard Aschieris, Port Director, Port of Stockton
Ms. Roberta Goulart, Executive Officer, Contra Costa Water Agency
Mr. Will Travis, Director, Bay Conservation and Development Commission
Ms. Jessica Hamburger, Bay Conservation and Development Commission

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Mr. Bruce Wolfe, Executive Officer, San Francisco Bay Regional Water Quality Control Board
Mr. Les Grober, State Water Resources Control Board, Division of Water Rights
Mr. Sergio Guillen, Department of Water Resources
Mr. Paul Marshall, Department of Water Resources
Mr. Leo Winternitz, Deputy Director Strategic Planning
Ms. Pamela Creedon, Executive Officer, Central Valley Regional Water Quality Control Board
Ms. Linda Fiack, Executive Director, Delta Protection Commission
Mr. Chuck Armor, Regional Manager, California Department of Fish & Game
Ms. Sandy Morey, Regional Manager, California Department of Fish & Game
Ms. Maria Rea, Area Supervisor, National Marine Fisheries Service
Mr. Dick Butler, Area Supervisor, National Marine Fisheries Service
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Colonel Thomas C. Chapman, District Engineer, U. S. Army Corps of Engineers,
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Lieutenant Colonel Craig Kiley, District Engineer, U.S. Army Corps of Engineers,
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Brigadier General John McMahon, South Pacific Division Engineer,
U.S. Army Corps of Engineers
CALFED Agencies

Purpose and Need

The purpose and need statement in the EIS should be clearly stated and briefly describe the underlying purpose and need to which the U.S. Army Corps of Engineers (Corps) is responding in proposing alternatives, including the proposed action. (40 C.F.R. 1502.13.) The statement of purpose and need should explain why the Corps and Port of Stockton and Contra Costa Water Agency (local sponsors) are undertaking the proposed Project and the objectives that the action is intended to achieve. Based on information provided in the NOI, at a minimum, it appears that the purpose and need of the Project are to improve the efficiency of goods movement along the shipping channels and address existing inefficiencies. The EIS should clarify whether the purpose and need includes expansion of existing facilities at the Port of Stockton, or other locations along the channels, and why this is needed, or whether this is considered a connected action for the purposes of the EIS.

Range of Alternatives

According to the NOI and information on the project web site, the overall range of alternatives to be considered in the EIS includes No Action (maintaining the current channel dimensions), Changing Channel Dimensions (including widening/reconfiguring, as well as deepening), and Alternate Transportation Methods for moving goods from San Francisco Bay (SF Bay) to the Port of Stockton. We note that there would be a significant difference in terms of environmental impacts from deepening or reconfiguration, in different locations along the 75-mile project. In particular, channel deepening or reconfiguration may have relatively less impact in the "downstream" reaches (lower Baldwin Ship Channel areas from the SF Bay through the Carquinez Strait) than in "upstream" reaches (from Suisun Bay through the Stockton Ship Channel). In order to reasonably evaluate impacts and benefits, the EIS should include multiple alternatives within the Changing Channel Dimensions category.

The EIS should also describe the planning horizon that the Project alternatives are intended to serve. In other words, describe how long the Corps and local sponsors intend the Project alternatives to serve the Project needs stated in the EIS.

We strongly recommend that the definition of the baseline conditions for "no action" (that is, without project conditions) be coordinated with the CALFED agencies that are also conducting impact analyses for proposed projects affecting the Delta. In particular, establishing common baseline assumptions regarding water management projects and their operations is an important step in modeling water movement into and within the Delta and provides a common basis for evaluating impacts of alternatives. Use of a common baseline will also assist evaluation of effects of the Corps' project in combination with other proposed projects affecting the Delta.

Regional Coordination

Because of the scale and scope of the Project, as well as potential environmental effects, EPA strongly encourages the Corps and local sponsors to coordinate with current efforts, plans and projects currently underway to address ongoing environmental concerns in the Delta and Bay. Among these are the CALFED California Bay-Delta Program, Delta Vision, and the Delta and SF Bay Long-Term Management Strategies (LTMSs). As you know, the Corps as well as EPA already participate in CALFED and LTMS coordination efforts while the local sponsors are part of the Delta Vision stakeholder subcommittee. EPA contacts for these efforts are Ms. Carolyn Yale at (415) 972-3482, for CALFED and Mr. Brian Ross, at (415) 972-3475 for the LTMSs.

Dredging

Commitment to Beneficial Reuse of Dredged Material

The EIS should include a commitment to either beneficially reuse directly, or make available for beneficial reuse, all dredged material generated as a result of the project, to the maximum extent practicable. This should explicitly include any and all previously-dredged material that must be excavated from existing placement sites to provide capacity for dredging and initial placement of additional material from the project. (See further discussions regarding LTMSs, and Cumulative Effects, below.)

Dredging and Placement Volumes and Environmental Effects

Neither the NOI nor the project web site gives any information about the range of volumes of dredged material the various alternatives might generate. However, we understand that approximately 25 million cubic yards of material could potentially be dredged if deepening were to occur to the currently-authorized dimensions throughout the Project. Different alternatives may look at more volume or less volume, but clearly this would be a major dredging project and would likely be the largest to occur in the Delta for decades. Because the volume of dredging associated with each alternative has direct bearing on the degrees of impact, the EIS should address potential impacts of dredging, the initial placement of the dredged material, and the potential for beneficial reuse. The EIS alternatives analysis should consider:

- dredging effects on in-stream water quality (degree and duration of resuspension at the dredging sites);
- dredging effects on potential entrainment of fish;
- dredging effects on sediment quality (post-dredge surface chemistry compared to pre-dredge surface chemistry; this may vary by depth and area dredged);
- dredging effects on air quality (during construction/placement);
- disposal/placement effects resulting from the need to excavate and move previously-dredged material to recreate capacity at existing placement sites;
- disposal/placement effects resulting from placement or stockpiling of previously-dredged material removed from existing placement sites;
- disposal/placement effects resulting from the need for new initial placement sites (impacts would vary by site and by number of sites needed);

- disposal/placement effects resulting from directly placing material at any other (final) placement sites;
- disposal/placement effects on air quality (during drying at initial placement sites, and during any excavation/stockpiling of previously-dredged material);
- disposal/placement effects on surface water quality resulting from return flow from contained placement sites;
- disposal/placement effects on ground water quality resulting from leachate from placement sites;
- disposal/placement effects on volume of material made available for various beneficial reuse options;
- disposal/placement effects resulting from potential future land use of any material placed (or left, for existing material) where it is not easily available for reuse.

The EIS should also estimate the volume and frequency of future operations and maintenance (O&M) dredging needs. The commitment to facilitating beneficial reuse should extend to future maintenance dredging, as well. (Also see Cumulative Effects, and Dredged Material Management Program, below.)

Dredged Material Quality and Testing Issues

Substantial sediment quality data needs to be collected for this project. In particular, sediment quality data must be sufficient to identify the suitability for and impacts of placement in all of the alternative locations to be considered for material from the various reaches of the project. Existing data known to EPA are not adequate for this purpose. The Corps and local sponsors should coordinate with the California State Water Resources Control Board regarding their extensive sediment sampling, planned for the spring/summer of 2008 throughout the Delta, in support of the State's Sediment Quality Objective (SQO) development. These data may be of significant use in focusing the additional testing needed for the Project.

Presently, information presented on the Project web page identifies eight potential (existing) placement sites, including seven contained areas in and near the Delta as well as the San Francisco Deep Ocean Disposal Site (SF-DODS). Testing requirements for the SF-DODS would be quite different from the other contained placement sites. In addition, sediment testing for initial placement sites may differ from the testing needed for final or subsequent placement sites (reuse). The Corps and the local sponsors should commit to close coordination of testing needs for this project with the interagency LTMS working groups. The EIS should specifically commit to assisting the Delta LTMS in generating sediment and water quality data to support development of a broad dredged material management plan for the Delta, including the effort to identify pre-dredge testing that may be adequate to determine suitability for both initial placement and subsequent reuse. (See further discussions regarding LTMSs, and Cumulative Effects, below.)

In addition to the kinds of testing done, the resolution of the sampling and testing is an important issue. It may be that sediment sampling can be conducted in phases, with certain areas initially receiving lower-resolution sampling and analysis, followed by higher-resolution sampling and analysis in areas of concern based on the initial testing or existing information.

Otherwise, survey-level testing (e.g., a single sample taken every mile along the channel center line) alone would not be adequate to determine volumes of material that may be suitable for initial placement at different sites, because it may not capture any reasonable degree of potential heterogeneity throughout the project area. Instead, sampling locations should be focused in order to represent the specific material to be dredged (more sampling in shoaled areas where greater dredging volume exists), and also focused on any areas of known or suspected contaminant sources or sinks. In addition, cores from each sample location should be vertically divided with separate analyses performed on portions of the cores representing the different alternative dredging depths the EIS will consider, in each project reach.

Some of the specific goals of the sediment testing should include:

- determining where dredged material may be initially placed;
- determining whether any special management actions are needed at any of the placement sites;
- determining what reuses (final placement types) the material may be suitable for;
- determining whether any placement sites may need to be designed/operated to segregate dredged material of different qualities (differing suitability) or whether different placement sites should be assigned different qualities of material.

EPA looks forward to working with the Corps and the local sponsors to develop an appropriate Sampling and Analysis Plan (SAP) that will address the various needs of the project.

In addition to pre-dredging sediment testing issues, the EIS should reflect consideration of the TMDL being developed by the Central Valley Regional Water Quality Control Board to address mercury in the Delta and the adopted SF Bay Mercury TMDL. The mercury TMDLs may place certain constraints on not only the reuse, but also the dredging, of sediments that contain elevated levels of mercury. The EIS should also specifically discuss the potential for mercury methylation to occur at initial placement sites, and in other reuse situations.

Finally, USACE and the project sponsors should coordinate with the LTMSs, and specifically with the California Department of Water Resources (DWR) and the Regional Water Quality Control Boards (RWQCB), regarding groundwater monitoring that may be needed at both existing and potential new initial placement sites for dredged material. DWR in particular may be in a position to partner with the Corps and/or the local sponsors to collect appropriate groundwater monitoring data.

Dredged Material Placement

Management of as much as 25 million cubic yards of dredged material will be a huge undertaking, even if construction is conducted in phases over several years. As noted above, EPA strongly recommends that the EIS commit to beneficial reuse of all the dredged material generated by the Project, or to making all the material available for beneficial reuse, to the maximum extent practicable. This includes any material excavated from existing placement sites to re-create disposal capacity for the Project. To even begin to realize such a commitment will require placing material at environmentally appropriate locations that are in proximity to potential/likely reuse areas, or at least at locations that are easily accessible to future users via barge, truck, or rail. Ideally, material would be placed at such locations directly during the

dredging process, as opposed to needing to rehandle material after dredging. This reduces impacts associated with moving material multiple times, including air emissions, noise, cumulative effects to surface and groundwater (if any). Of course, it also reduces costs. However, it may not be possible to manage all the material without rehandling. In that case, either a combination of existing sites plus new sites, or entirely new sites, would be needed. To the extent that any new initial placement sites are needed, they should be located in areas near reuse needs or at least be accessible to others so that reuse is facilitated.

To consider how to manage dredged material from the Project in a manner that maximizes the reuse or potential for reuse, the following questions should be considered as part of the alternatives development for the EIS:

- What would the economically optimal project look like with respect to placement sites? If hydraulic dredging is used, how close together should initial placement sites be, and how do the existing sites match up with this ideal?
- Direct placement at beneficial reuse sites should be done where possible. With this in mind, which such sites can be specified up front as being practicable to use (e.g., Montezuma? Hamilton?), and for what reaches/volumes?
- For initial placement sites, what is the current capacity at existing sites, and where are these sites relative to dredging (which are feasible to reach)?
- For initial placement sites, would excavation of previously dredged material generate sufficient capacity at feasible locations without the need for new sites? If not, for what volume, at a minimum, are new sites needed?
- Is there an optimal mix of new and existing initial placement sites, in terms of economic benefit?
- Is there an optimal mix of new and existing initial placement sites, in terms of minimizing the severity of direct environmental impacts?
- What mix of either consolidated stockpiles and/or initial placement sites would best facilitate the availability of the most dredged material for beneficial reuse? For example, identify a limited number of locations where material could be initially placed (or for existing material, excavated and stockpiled) so that it would be easily accessible for transport by road, rail, or barge for reuse at locations throughout the Delta.

The EIS should address how initial placement sites would need to be managed, in order to facilitate later reuse of the material placed in them. For example, would individual sites need to be able to accept and keep separate different qualities of dredged material (e.g., separate areas for material that is suitable for any kind of reuse, versus material with more restricted suitability)? Or would different sites be designated to manage only specific material types? Other placement site management needs should also be addressed, including any need for special engineering, surface or ground water monitoring, etc. Similar discussions should be provided for any consolidated stockpile areas that may be proposed, as well.

Finally, based on the estimated volume and frequency of O&M dredging (see Dredging and Placement Volumes, above), the EIS should address how material generated by future O&M dredging would be managed. As noted, the commitment to facilitating beneficial reuse should extend to future maintenance dredging, as well. Up front identification of environmentally

appropriate placement locations that are feasible for future O&M dredging needs, while at the same time making the material accessible for future reuse should be a priority. (See Cumulative Effects, and Dredged Material Management Program, below.)

CALFED Delta Levee Stability Program

Dredged material associated with the Project (both material dredged for deepening, and any previously-dredged material that may be excavated to re-create capacity for initial management of the deepening material) could be a significant resource for work undertaken by the existing Delta Levee Stability Program. The EIS should describe this program, and how management of dredged material from the project could be managed to facilitate the program's goals.

Cumulative Effects of Dredging

Virtually all of the above dredging comments will apply directly to the upcoming Sacramento Deep Water Ship Channel (Sacramento DWSC) project as well. The Sacramento DWSC project will reportedly generate another 7 million cubic yards or more of dredged material, and between the two deepening projects the potential for cumulative effects is significant. The two would generate the vast majority of reasonably foreseeable dredging in the Delta for the next decade or more. Regarding dredged material specifically, consider all the "Dredging and Placement Volumes" issues listed above. In addition, the EIS should consider:

- cumulative acreage needed for initial placement sites;
- cumulative habitat and water quality impacts of dredging, including timing and discharge related impacts, and of developing new placement sites;
- air quality effects of dredging, transporting, and rehandling the cumulative volume from both projects, including both previously-dredged and new (Project) material, plus future O&M;
- cumulative availability of dredged material from both projects, including previously-dredged material along each project, for beneficial reuse.

Maintenance dredging needs, and management of the O&M material, should be considered cumulatively with other maintenance dredging needs in the Delta, including the proposed Sacramento DWSC but also including existing navigation and flood control dredging projects. The EIS should present estimated future maintenance dredging of the proposed project in light of compiled statistics on overall maintenance dredging throughout the Delta now (volumes, locations, and placement sites). (Also see Dredged Material Management Program, below)

Facilitating a Dredged Material Management Program for the Delta

As noted, the Stockton and Sacramento DWSC projects together likely represent the vast majority of dredging that may be conducted in the Delta for years to come. As a result, how these projects manage their dredged material will effectively determine regional dredged material management. For example, the Stockton project alone could provide a significant proportion of the sediment needed in the Delta to repair and maintain levees, and to restore habitat. Considering the millions of cubic yards of previously-dredged material stockpiled at a number of locations around the Delta, and combined with the proposed Sacramento DWSC, dredged material could supply an even greater proportion. Making as much of that material as

possible available and accessible should be a major component of any regional dredged material management plan.

Developing and using the appropriate, accessible sites and potentially consolidating previously-dredged material from less accessible sites cannot feasibly be undertaken by individual future dredging projects (especially O&M projects) in a piecemeal fashion. This kind of task can, however, be feasibly undertaken by large Civil Works projects with specific Congressional funding (and of course appropriate local cost-sharing). These sediment management considerations should be directly incorporated into the EIS's action alternatives, as project features eligible for projects funding as opposed to the traditional approach wherein "lands, easements, and rights-of-way" for upland/contained placement sites are considered mainly the responsibility of local sponsors to provide.

Water

Generally, baseline and impact analyses for water quality and interpretation of the significance of water quality changes on biological resources and other beneficial uses should be coordinated with the CALFED agencies and the related CALFED programs. For example, the CALFED Science Program has for several years been working with the Ecosystem Restoration Program to refine understanding of Delta habitat, stressors, and biological responses to these conditions. The importance of Delta water quality as a source of drinking water and as the environment for many important aquatic species, including five species of fish listed under the Endangered Species Act, places a spotlight on water quality analyses for the EIS.

Water Quality

The Project has the potential to significantly impact water quality in the Delta and San Francisco Bay. In order to monitor and report water quality impacts as well as effectiveness of water quality mitigation measures, the Corps and local sponsors should first develop an appropriate water quality monitoring plan. Adequate monitoring of water quality during Project activities should be based on a plan designed specifically for the Project using existing sampling protocols as appropriate. In order to fully assess potential impacts, the monitoring plan should establish baseline conditions including characterization of ambient physical, chemical and biological water quality conditions in the Delta and SF Bay. Existing monitoring data from non-Project sources, combined with additional characterization data should be considered. We recommend that you coordinate with the State Water Resources Control Board and Central Valley and San Francisco Bay Regional Water Quality Control Boards, which have jointly committed to developing a comprehensive regional monitoring program for the Delta, as one component of a Delta Strategic Plan.

In addition to describing baseline line conditions, the EIS should assess potential direct, indirect and cumulative impacts to water quality from Project activities such as sediment dredging and disposal, and describe how the water quality monitoring plan will be used to measure these impacts. The analysis in the EIS should describe CWA Section 303(d) listings of impaired water bodies and Total Maximum Daily Loads (TMDLs), such as for dissolved oxygen (DO) and mercury that are under development or adopted for the Delta and SF Bay, and describe how the Project could potentially affect these impairments. Of particular relevance to the

proposed Project is the adopted TMDL/Basin Plan Amendment addressing low DO in the Stockton Deep Water Ship Channel and the fact that existing channel configuration contributes to this impairment. The EIS should consider potential impacts on DO levels in the lower San Joaquin River. This analysis should clearly state assumptions regarding implementation of all aspects of the TMDL (improving ship channel geometry, management of oxygen demanding substances, and River flows). We also recommend that the Corps consider if low DO can be reduced through changes in channel geometry associated with Project alternatives.

Hydrodynamics

Channel deepening is expected to affect the hydrodynamics of the Delta and SF Bay. The EIS should describe these effects and the modeling used to inform the determinations. The EIS should also discuss the potential for altered hydrodynamics to directly, indirectly and cumulatively affect water quality, biological resources, and other resources influenced by hydrodynamic conditions in the Project area. EPA is particularly concerned with effects to dissolved oxygen and salinity concentrations that could result from changes to hydrodynamics from channel deepening. The Corps and local sponsors should include a long-term monitoring component of the water quality sampling plan that will take these effects into account.

Mitigation

In addition to baseline and effects analysis, the EIS should describe avoidance and mitigation measures to address water quality degradation from the Project. Mitigation should be focused on meeting water quality standards and compliance with the CWA and the Porter-Cologne Water Quality Control Act. The Central Valley and SF Bay Regional Water Quality Control Boards should be consulted as well as EPA, in the development of mitigation measures and the water quality monitoring plan. Results of this coordination should be described in the EIS.

Water Supply

Because of the importance of the Delta to water supply in California, the EIS should include an analysis and discussion of how the alternatives could affect water supply conditions within both a water delivery and water quality context.

Biological Resources

The Sacramento San Joaquin Delta (Delta) is a biologically diverse ecosystem that will be affected by the Project. Several human induced factors have resulted in degradation of Delta habitats resulting in the federal and state listings of several threatened and endangered species that could be further affected by the Project. The EIS should describe baseline habitat conditions and species that occur or could occur in the Project area, and areas that could be affected by Project activities. Special emphasis should be on federally listed species protected under the Federal Endangered Species Act. Currently the U.S. Fish and Wildlife Service, California Department of Fish and Game, National Marine Fisheries Service, California Department of Water Resources, U.S. Bureau of Reclamation and a number of water contractors are engaged in a major effort to formulate a "Bay Delta Conservation Plan" that will address participants' obligations pursuant to the Federal and California Endangered Species Acts (FESA and CESA).

Likewise, the Corps and local sponsors will need to plan sufficient time and resources to address compliance with the FESA and CESA and describe this in the EIS.

The Corps should also describe species that are protected by the California Endangered Species Act. The Corps should conduct a rigorous analysis of potential Project effects on both habitats and species, including direct, indirect and cumulative impacts and describe mitigation measures to address any unavoidable impacts of the Project on biological resources. The EIS should describe coordination efforts with the U.S Fish & Wildlife Service, National Marine Fisheries Service, and the California Department of Fish & Game and consistency with appropriate state and the federal laws implemented by these agencies.

Of particular interest is the potential impact of the project on pelagic fishes in the Delta and San Francisco Bay. The Corps should refer to the work of the Interagency Ecological Program (IEP) on pelagic organism decline (POD) that has occurred in recent years. The Corps is encouraged to consult with EPA and should contact Mr. Bruce Herbold at (415) 972-3460 to further discuss this issue.

As part of the discussion of biological resources, the EIS should also consider the potential for the Project to introduce, distribute, or in any way increase the presence of non-native invasive species in the Delta and SF Bay. Special control measures should be described to prevent impacts from invasive species that could result from the Project.

Air Quality

The EIS must adequately assess air quality impacts of the Project and minimize these impacts through adequate mitigation measures. The proposed Project area falls within both the SF Bay Area and the San Joaquin Valley air basins (Air Basins). Both of these basins are designated nonattainment for national ambient air quality standards (NAAQS) including ozone (O₃), particulate matter smaller than 2.5 microns (PM_{2.5}) and particulate matter smaller than 10 microns (PM₁₀). The SF Bay Area basin is designated marginal nonattainment for 8-hour O₃ and moderate nonattainment for 1-hour O₃. The San Joaquin Valley air basin is designated serious nonattainment for 8-hour O₃, extreme nonattainment for 1-hour O₃, nonattainment for PM_{2.5} and serious nonattainment for PM₁₀.

The EIS should provide a discussion of the baseline air quality conditions in the Project area and the Air Basins, a description of federal and state air quality regulations, and a rigorous assessment of direct, indirect, and cumulative effects of the proposed Project on air quality. The analysis of air quality impacts should include direct and indirect impacts from construction and operation and maintenance (including dredge spoil disposal activities), as well as cumulative impacts from construction, any increased ship traffic, new capacity for larger ships due to channel deepening, and increased throughput and traffic at and around the Port of Stockton. The expected timing and frequency of dredging and transporting of dredged material should be identified in the EIS. The Corps should describe in the EIS specific commitments to mitigate emissions that will prevent further degradation of air quality in the Air Basins. In short, the cumulative impacts analysis should consider all new sources of emissions that are likely to result from the federal action of deepening the ship channels and commit to mitigation measures that

minimize air quality impacts to the maximum extent feasible (alternative fuels, electrification, minimizing diesel truck trips, etc). An estimate of the air quality benefits that result from each mitigation measure proposed should be included in the EIS. The EIS should also describe coordination with EPA, California Air Resources Board, Bay Area Air Quality Management District, and the San Joaquin Valley Air Pollution Control District intended to reduce air quality impacts in the Air Basins.

The EIS should describe whether the project will or will not meet general conformity requirements with the associated state implementation plans for the Air Basins. If the federal action is determined to potentially interfere with the attainment of Clean Air Act NAAQS, the Corps is required to conduct a conformity analysis to determine the likelihood and extent of interference. The Corps is encouraged to consult with EPA and should contact Ms. Rebecca Rosen of the Air Division at (415) 947-4152.

Environmental Justice

The Corps should identify any environmental justice communities that could be affected by the Project and assess potential impacts and impact avoidance measures. Because the Project could result in increased air quality impacts and increased traffic at the Port of Stockton, there is potential to disproportionately impact low income and minority communities that may occur in and around the Project area. Disproportionate impacts to environmental justice communities should be avoided and mitigated to the fullest extent practicable. The Corps is encouraged to consult with EPA and should contact Ms. Lily Lee at (415) 972-3795.

Cumulative Impacts

Port expansion at Stockton (and attendant effects such as those associated with increases in ship, truck and rail traffic) should be evaluated in the EIS as a connected action. But in addition, the potential for the deepening to facilitate port expansion at other locations along the channel (starting from San Pablo Bay) needs to be considered. Beyond that, potential cumulative effects from the Sacramento DWSC need to be addressed as do growth-inducing effects resulting from channel deepening. These include not only possible port expansion at Sacramento, but also among other things cumulative increases in ship, truck and rail traffic, cumulative impacts to water quality, water flow ("plumbing"), sensitive species, habitat quality, invasive species populations, air quality, and sensitive receptors such as environmental justice communities.

Climate Change Impacts

The Intergovernmental Panel on Climate Change (IPCC) estimates that the global average sea level will rise by 7.2 to 23.6 inches by 2100, relative to 1980-1999 levels, under a range of scenarios (<http://www.epa.gov/climatechange/science/futureslc.html>). Given the conclusion that sea levels are rising, the EIS should discuss how projected rise could have an effect on the proposed Project. The EIS should provide a qualitative discussion of the effects of rising water surface elevations and climate-induced sediment supply modifications on dredging requirements in the Delta and San Francisco Bay. Whether this would occur within the projected Project timeframe should be considered.