UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

October 15, 2007

U. S. Army Corps of Engineers
Honolulu District
ATTN: Mr. James Hatashima, Project Manager
Civil and Public Works Branch (CEPOH-PP-C)
Rm. 312, Bldg. 230
Fort Shafter, HI 96858-5440

Subject: Draft Environmental Impact Statement (DEIS) for the Master Plan for Deep-Draft Wharf and Fill Improvements at Apra Harbor, Guam, Mariana Islands (CEQ # 20070339)

Dear Mr. Hatashima:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed. We appreciate the Corps of Engineers deadline extension to October 15th to accept EPA's comments.

The project proposes to construct a new 1,500 linear foot deep-draft wharf along the Glass breakwater in Apra Harbor and fill approximately 17 acres of Apra Harbor to create operational backlands to support wharf operations. Based on our review, we have rated the DEIS as Environmental Objections – Insufficient Information (EO-2) (see enclosed "Summary of Rating Definitions"). Our objections are based on the significant direct impacts to the marine environment and coral reefs from project dredge and fill operations. The Preferred Alternative 1 would result in the permanent loss of some 29 acres of coral reef and impact up to 150 acres of marine habitat through sedimentation and anchor damage. We recommend evaluation of less damaging alternatives for the fill/creation of operational backlands to reduce impacts to marine resources, including coral reefs, and to demonstrate that the least environmentally damaging practicable alternative (LEDPA) available to achieve the project purpose is being pursued. Additionally, we oppose the proposed compensatory mitigation described in the DEIS as inadequate to compensate for the lost functions and values of over 150 acres of marine habitat and recommend a comprehensive approach be taken regarding marine habitat and coral reef assessment and mitigation for Apra Harbor.

EPA appreciates the opportunity to review this DEIS. EPA is available to discuss our comments and intends to work with the Corps to reduce the impacts identified above. When the FEIS is released, please send one hard copy and CD to this office at the address above (mail code: CED-2) and one hard copy and CD to Wendy Wiltse at our Honolulu Office at EPA-PICO,

300 Ala Moana Blvd., Box 50003, Room 5-152, Honolulu, HI 96850. If you have any questions, please contact me at 415-972-3846 or Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

Nova Blazej, Manager
Environmental Review Office

Enclosure: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Michael Molina, U.S. Fish and Wildlife Service
Gerry Davis, National Marine Fisheries Service
George Young, US Army Corps of Engineers
Mike Gawel, Guam Environmental Protection Agency

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

EPA DETAILED COMMENTS FOR THE MASTER PLAN FOR DEEP-DRAFT WHARF AND FILL IMPROVEMENTS AT APRA HARBOR, GUAM, OCTOBER 15, 2007

Purpose and Need/Alternatives Analysis

In addition to the dredge and fill for the construction of a new commercial wharf, the preferred alternative includes depositing 285,752 cubic yards of fill in 16.67 acres of Apra Harbor at 3 reclamation sites (p. 30). The Draft Environmental Impact Statement (DEIS) states that the Port Authority of Guam (PAG) has no specific development plans at the present time for the 3 reclamation sites, but intends to have them remain open for the eventual use as additional operating backland and container yard space in support of the wharf (p. ES-3, 29). Indeed, the criteria used to identify reasonable alternatives included the provision of 16 to 20 acres of operational backland area for container storage and other support infrastructure (p. 19, 22). The actual need for an area of this size, however, is not explained.

As the EIS states, the project will require a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (USACE). Pursuant to 40 CFR 230, the project must comply with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials, promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). The purpose of the 404(b)(1) Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by controlling discharges of dredged or fill material (40 CFR 230.1(a)). Fundamental to the guidelines is the principle that dredged material or fill material should not be discharged into the aquatic ecosystem unless it can be demonstrated that it is the least environmentally damaging practicable alternative (LEDPA) available to achieve the project purpose. The applicant bears the burden for clearly demonstrating that the preferred alternative is the LEDPA. The DEIS does not evaluate a range of alternatives for operational backland nor identify the LEDPA for this element of the project.

> *Recommendation:* The Final EIS (FEIS) should include and analyze a reasonable range of alternatives for container storage and support infrastructure space, per the 404(b)(1) Guidelines. Alternatives should include upland solutions such as a mixture of on- and off-site space, space made available by shifting some operations from the existing Commercial Port to the new facility, the open commercial port lands directly east of wharf F-6 proposed for containment of dredge spoils (p. 31), the damaged portions of wharf F-5 that are unable to support operations (p. 39), the portion of Cabras Island planned to further expand the container yard (p. 35), and filling a smaller portion of the land reclamation sites.
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> The FEIS should also evaluate a range of alternatives for disposal of the projected volume of dredged material. The 404 permit applicant bears the burden for clearly demonstrating that the preferred alternative for disposal of dredged material is the LEDPA, and that alternative disposal sites in upland areas have been evaluated.

Compensatory Mitigation for Coral Impacts

EPA agrees that the preferred alternative would result in significant adverse impacts to marine habitats (p. 178). The permanent loss of coral reef ecosystem under the preferred alternative is estimated at 28.83 acres (p. 176). In addition, temporary impacts from sedimentation, turbidity,

and anchor damage may be as high as 127 acres. Coral reef ecosystems are in decline worldwide and are threatened with further degradation from overfishing, pollution, climate change, and other stresses. Significant impacts of this magnitude should first be minimized.

Compensatory mitigation will be required per CWA Section 404 for any unavoidable impacts to coral reefs due to filling, temporary impacts from dredging, and for construction-related impacts. The compensatory mitigation described in the DEIS (p. 186-188) is inadequate to compensate for the lost functions and values of over 150 acres of marine habitat, including coral reefs. The DEIS proposes fish aggregation around pier pilings and coral transplantation as compensatory mitigation. Pier pilings can only compensate for a very small portion of the functions of the coral reef ecosystem that presently exists at the impact site, and this proposal has not been scaled using a Habitat Equivalency Analysis (HEA).

The DEIS also proposes coral transplantation as part of the compensatory mitigation plan. EPA considers transplantation of moveable corals from within the project footprint to be a "best management practice" required for all projects that permanently impact corals. We encourage transplantation but do not recommend crediting transplantation toward compensatory mitigation. Any compensatory mitigation project will need to be a major effort such as watershed reforestation, construction of stormwater treatment facilities, establishment and enforcement of a permanent marine protected area, etc.

> *Recommendation:* EPA recommends that any compensatory mitigation to coral reefs be scaled using Habitat Equivalency Analysis (HEA) to determine the appropriate size of the mitigation project. HEA should take into account the extent of temporary and permanent impacts, recovery time, and uncertainty of success.
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> EPA recommends a comprehensive approach be taken regarding marine habitat and coral reef assessment and mitigation for Apra Harbor, especially since several wharf projects that involve impacts to coral reefs in Apra Harbor are in planning stages. An assessment and ranking of coral reef condition and marine habitats throughout the harbor for use in avoiding future marine construction is recommended, as well as a coordinated approach for mitigation, possibly by the establishment of a coral mitigation bank or fund. A coordinated approach, rather than project by project, would promote significant mitigation projects with a higher likelihood of success and survival in perpetuity. The project proponent should also coordinate efforts with the mitigation workgroup that is working on a mitigation strategy for the future military buildup.
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> A compensatory mitigation plan should be prepared in accordance with the Honolulu District Army Corps of Engineers Mitigation and Monitoring Guidance in close cooperation with local Guam agencies, EPA, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, and the Corps of Engineers. The mitigation plan should include funding and specify responsible parties to ensure success of the mitigation in perpetuity.
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> The mitigation should include a monitoring plan for a minimum of 5-10 years. Given the slow recovery time of coral reefs (decades to hundreds of years), monitoring may be

required for decades to determine the success of the project. Monitoring must be scientifically based and designed to measure progress toward specific performance standards, as identified in the mitigation plan.

A post-construction assessment of the actual impacts to corals should also be conducted. This assessment will assist in the planning, HEA calculations, and implementation of management practices for future marine construction projects in Guam. If impacts in excess of those accounted for in the compensatory mitigation plan are found, additional mitigation should be implemented.

Water Quality Sedimentation Impacts

Suspended sediment from dredge and fill activities can settle out of the water column and smother corals and other benthic invertebrates (p. 176) as well as re-suspend contaminants in the water column (p. 138). Coral polyps and larvae are particularly vulnerable to suspended sediment, and re-suspended contaminants can chemically alter coral gametes and larvae and prevent normal fertilization and development. Sediment deposits on coral and rock also prevent recruitment of juvenile corals.

The DEIS indicates that project sedimentation could impact over 102 acres of marine habitat with deposition on over 20 acres (p. 176). EPA has objections regarding this level of impact and strongly recommend strict adherence to best management practices (BMPs) during dredging to minimize water quality impacts.

Recommendation: The following BMPs should be included in the FEIS and Record of Decision. The FEIS should attempt to quantify the environmental benefits of BMP implementation and, as stated above, include a post-construction assessment of actual impacts so knowledge of BMP effectiveness can be utilized for future projects.

- The active dredge area should be contained within floated silt curtains that extend to the harbor bottom, bubble curtains, and/or sheet piles.
- Monitoring and surveillance should occur regularly during dredging hours to ensure that no turbidity plume is escaping from the containment area.
- EPA recommends that monitoring and surveillance be conducted by an independent party.
- If conditions are too rough or windy to contain the plume, dredging should cease until conditions subside.
- Dredging should cease during periods of coral spawning.

Air Quality

The proposed project site is located in the 3.5 kilometer radius Piti Power Point nonattainment area for sulfur dioxide (SO2). This means that the area currently does not meet health-based National Ambient Air Quality Standards for this pollutant. The DEIS does not provide estimates of SO2 emissions associated with the operational phase of the project. It does not discuss applicability of general conformity or whether the project would result in emissions that exceed de minimis emissions thresholds. The DEIS also does not discuss applicability of nonattainment New Source Review (NSR) permitting requirements.

Because of the nonattainment status, it is especially important that the proposed project include mitigation measures to reduce emissions of SO2 during both the construction and operational phases. The DEIS identifies dust control measures that could be used during construction to reduce particulate emissions from dust sources, but no measures are identified to reduce sulfur dioxide emissions during either the construction or operational phases of the project. Diesel combustion from ships is a significant source of sulfur dioxide.

> *Recommendation:* Include estimates of operational emissions of SO2 in the FEIS and discuss these results in terms of general conformity and NSR permitting requirements. A useful resource for estimating pollutant emissions from shipping and port-related sources can be found at: http://www.westcoastdiesel.org/wkgrp-marine.htm#management. EPA recommends that the project proponent contact Guam EPA and EPA Region 9 to discuss applicability of nonattainment NSR for this new stationary source.
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> The FEIS should identify mitigation measures to reduce marine vessel SO2 emissions in the immediate harbor area to the fullest extent feasible, as well as emissions from other operating sources including commercial harbor craft, cargo handing equipment and trucks. Emissions reductions from ships can occur through a combination of cleaner fuel, engine modifications, add-on retrofits and other measures. "Hotelling" emissions from large marine vessels can be reduced by "cold ironing" (where a cleaner alternative source of power is provided to ships at dock) or using clean fuels in installed generators. In addition, switching fuel from 2.7% to 1.5% sulfur fuel oil within 40 nautical miles of port can reduce sulfur dioxide emissions by 44%[1]. We note that the Piti Power Plant switches to low sulfur fuel when certain meteorological conditions result in increased sulfur dioxide levels. EPA recommends the project include a comparable plan as a mitigation measure for this project to reduce air quality impacts.

Utilities / Project Description

The project will require construction of a new central wastewater lift station and upgrades to the potable water distribution system (p. 67), as well as additions to the power distribution system and a utility service transformer that would connect to a future utility power source (p. 68). The project also requires Route 11 to be raised along the wharf backland area by 5 feet to match the proposed grade of the deep-draft wharf deck. These project elements are necessary for operation of the deep-draft wharf but are not included in the project description in the DEIS.

Additional information on utility infrastructure capacity for the project should also be included. For example, it is not clear whether there is sufficient water available for the project. The DEIS states that potable water service would be provided via a connection to the existing 12" diameter pipe adjacent to the site along Route 11, and that water requirements for post-Panamax vessels are estimated to be approximately 1,000 gallons per minute (gpm); however, the DEIS also states that Cabras Island is serviced by the Guam Waterworks Authority and the U.S. Navy, and the GWA line has a capacity of 250 gpm (p. 66). The DEIS does not demonstrate that adequate potable water for the project is available.

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[1] Fournier, Anthony. 2006. "Controlling Air Emissions from Marine Vessels: Problems and Opportunities, Available: http://www.westcoastdiesel.org/files/sector-marine/Fournier%20Marine%20Emissions%20Problems%20and%20Opportunities.pdf

The DEIS states that the anticipated vessel sanitary sewer discharge would flow to the Hagatna Treatment Plant (p. 67). We note that the Hagatna Treatment Plant is currently operating under a waiver from meeting secondary wastewater treatment requirements, per Clean Water Act Section 301(h). The current waiver application does not account for an increase in flow from the project and could affect continuance of the waiver depending on the characteristics and volume of wastwater to be discharged to the Hagatna Treatment Plant.

- *Recommendation:* In the FEIS, include the descriptions of all utility upgrades necessary for construction and operation of the project in the project description in Chapter 2 and elsewhere, and assess impacts from these elements of the project. Provide detailed information regarding potable water system capacity and power sources. Identify the quantity and source of fill needed to raise the road by 5 feet. Indicate whether the Hagatna wastewater treatment plant has sufficient capacity to receive wastewater loads from the project, and identify whether the collection system is sufficient to handle the additional flows. Discuss how the project may impact the current 301(h) waiver and what coordination and planning has occurred with the Hagatna Treatment Plant. Clarify whether the existing power distribution line along Route 11 has sufficient capacity for berthing post-Panamax vessels, or if the 2nd proposed power system would only be needed for Nimitz Class Air Craft Carriers.

Project Schedule / Need for Supplemental EIS

The DEIS indicates that project construction will occur between 2021 and 2025 (p. 8). Because construction will occur so far in the future, the FEIS will need to be carefully reexamined prior to construction to determine if the criteria in 40 CFR 1502.9 compel preparation of an EIS supplement. Council on Environmental Quality guidance states that if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts, a supplemental EIS must be prepared for an old EIS so that the agency has the best possible information to make any necessary substantive changes in its decisions regarding the proposal (40 Most Asked Questions, #36). Because of the substantial changes that are planned in relation to the relocation of the Marine Corps forces to Guam by the Department of Defense, it is likely that significant new circumstances will be identified.

Recommendation: EPA recommends that the Port Authority of Guam and/or the Corps of Engineers plan for the financial resources that will be needed to supplement the FEIS, as necessary, prior to project construction. In the FEIS, discuss the process that will be used for reevaluating the FEIS for supplementation.

Cumulative Impacts

The DEIS does not include the relocation of Marine Corps forces to Guam as a reasonably foreseeable future action. This project will substantially impact Guam's infrastructure and land use and includes pier/waterfront improvements for berthing a transient nuclear aircraft carrier which will include dredge and fill operation in Apra Harbor. The project will increase the total permanent population by at least 15% not including up to 20,000 contract laborers or Navy transient aircraft carrier personnel.

Recommendation: In the FEIS, update statements that predict future commercial, industrial and residential growth patterns to occur at similar rates as the recent past. Identify the magnitude of the Marine Corps relocation project in terms of potential impacts to resources and infrastructure and growth inducement, and consider these impacts in the cumulative impacts analysis. This reevaluation would be appropriate for a supplemental EIS closer to the date of construction, as mentioned above.