Public Notice

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U.S. Army Corps of Engineers Honolulu District

Reply to:
Regulatory Branch
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440

Special Public Notice

Honolulu District Compensatory Mitigation and Monitoring Guidelines

Purpose of the Special Public Notice

The Honolulu District's Compensatory Mitigation and Monitoring Guidelines will assist the District and reviewing government agencies in mitigation project evaluation, and will also assist the regulated public in planning and designing all aspects of compensatory mitigation. The guidelines will also assist in determining the success of future compensatory mitigation in replacing lost functions and values associated with regulated impacts to waters of the United States, including special aquatic sites, i.e., wetlands, mudflats, vegetated shallows, coral reefs, riffle and pool complexes, sanctuaries, and refuges.

A draft version of the guidelines was circulated via our web site as well as conventional mail on August 13, 2004, with a public comment period of 30 days. Comments from regulatory and resource agencies were reviewed and incorporated into this document as appropriate. This special public notice serves to advise the regulated public and reviewing agencies of the finalized Honolulu District Compensatory Mitigation and Monitoring Guidelines.

US Army Corps
of Engineers
Honolulu District

Honolulu District Compensatory Mitigation and Monitoring Guidelines

Authority and Applicability

The Honolulu District Compensatory Mitigation and Monitoring Guidelines are applicable to U.S. Department of the Army permits issued under the authority of Section 404 of the Clean Water Act, Section 103 of the Marine Protection, Research and Sanctuaries Act, and Section 10 of the Rivers and Harbors Act of 1899. The Corps and U.S. Environmental Protection Agency (EPA) regulations (33 CFR 230-330 and 40 CFR 230) authorize the Corps to require compensatory mitigation for unavoidable adverse impacts to waters of the U.S. and special aquatic sites, which include wetlands, mudflats, vegetated shallows, coral reefs, riffle and pool complexes, sanctuaries, and refuges. The proposed guidelines are not meant to supersede any existing, applicable Federal law, regulation or policy.

Geographic Area of Applicability

The Honolulu District Compensatory Mitigation and Monitoring Guidelines are applicable to all Department of the Army permits issued within the Pacific Ocean region, which includes the State of Hawaii, the Territories of American Samoa and Guam, and the Commonwealth of the Northern Mariana Islands. The geographic applicability of these guidelines is subject to any statutory changes enacted by the United States Congress.

Purpose of Guidelines

The guidelines will supplement, where necessary, existing national mitigation policy and procedures to adapt them for specific application to the Honolulu District area of responsibility and operation. Because of the uncertainty and risk associated with present understanding of the intricate connectivity of environmental factors within an ecosystem, and the evolving state of scientific knowledge of aquatic systems found in the Pacific region, the guidelines are not intended to be used prescriptively, in a manner that does not consider each project individually. As such, the guidelines are intended to provide broad guidance to facilitate the planning, design, execution and monitoring of compensatory mitigation actions and to establish a process for measuring the success of compensatory mitigation actions for projects within the Honolulu District. Applicants are encouraged to review these guidelines early in the project planning process and request a pre-application meeting with the Corps and appropriate Federal, state, and local authorities. During the pre-application consultation, applicants are encouraged to provide conceptual mitigation plans in order to facilitate more timely and efficient review of projects. Permit applicants will be *required* to submit mitigation plans as part of supporting documentation for their application.

Regulatory Background

The National Environmental Policy Act (40 CFR 1502-1508) requires the consideration of mitigation for adverse environmental impacts, and requires that permit decisions reflect all practicable means to avoid and minimize environmental harm from a Federal action, to include monitoring for compliance and subsequent enforcement for non-compliance with any mitigation requirement. Mitigation includes avoiding impacts to a resource, minimizing the impacts, and compensating for "unavoidable" impacts. The mitigation sequence of avoidance, minimization, and compensation forms the basis for permit application evaluation by the Corps, and should be considered by the regulated public in project planning and development. Permit applicants will develop their project plans following a process of identifying resources and taking actions, including considering practicable project alternatives, to avoid and minimize project impacts *before* considering compensatory mitigation. Compensatory mitigation cannot be used to satisfy, or otherwise pre-empt, the requirements for avoidance and minimization.

Once it has been determined that project impacts have been reduced by all practicable means, compensatory mitigation may be required to ensure that the project is not contrary to the public interest. The Corps and EPA formulated policy and procedures for compensatory mitigation in compliance with the Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230). The policy and procedures are set forth in the "Memorandum of Agreement (MOA) between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines," (Mitigation MOA) dated February 7, 1990 (Appendix 1).

The Mitigation MOA explains the national goal of "no overall net loss of wetlands," and establishes the framework for compensatory mitigation in terms of loss of ecological functions and values, prescribing a minimum of one-to-one *functional* replacement with an adequate margin of safety to reflect the uncertainty and risk of expected success. The Mitigation MOA bases mitigation measures on the development of assessments and methodologies performed by qualified professionals and tailored to each site, as ecological characteristics of individual aquatic system are unique.

In June 2001, after a review of compensatory mitigation practices under the Mitigation MOA, the National Research Council (NRC) provided recommendations for improving compensatory mitigation in its document, "*Compensating for Wetland Losses Under the Clean Water Act"* (Appendix 2). To implement the NRC recommendations, a multi-agency group including the Department of the Army, U.S. Environmental Protection Agency (EPA), the Department of the Interior, the Commerce Department, the Department of Agriculture and the U.S. Department of Transportation designed the National Mitigation Action Plan, dated December 2002 (Appendix 3). The National Mitigation Action Plan is the strategic document for improving compensatory mitigation in the Honolulu District.

The first product of the National Mitigation Action plan was issuance of U.S. Army Corps of Engineers Regulatory Guidance Letter No. 02-2 (RGL 02-2), dated 24 December 2002 (Appendix 4). Subsequently, the Corps issued guidance for incorporating the NRC's recommendations into evaluation of compensatory mitigation plans (Appendix 5), and the Corps

and EPA developed a Model Multi-Agency Compensatory Mitigation Plan Checklist and Supplement (Appendix 6) to guide the development and execution of compensatory mitigation plans and to improve the success of compensatory mitigation plans. Whereas these documents are Corps policy intended for use by regulatory personnel in the review and evaluation of permit applications and proposed compensatory mitigation, they are also useful references for applicants to use in the planning and design of mitigation projects.

Implementation within the Honolulu District

The Honolulu District finds that the policy constructs established in the 1990 Mitigation MOA remain appropriate for use in Hawaii and the Pacific Ocean Region, and uses RGL 02-2 as guidance for evaluation of compensatory mitigation for all aquatic sites, including coral reefs, in its geographic area of responsibility. Mitigation feasibility or practicability will be based on Section 404(b)(1) Guidelines analysis of logistics, technology and construction costs. Mitigation success criteria will be based on performance standards contained in the RGL 02-2 and the checklist guidance referenced above.

The June 20, 1997, National Action Plan to Implement the Hydrogeomorphic Approach to Assessing Wetland Functions (62 Federal Register 119) prepared by the Department of Defense, Corps of Engineers; Department of Transportation, Federal Highways Administration; Department of Agriculture, Natural Resource Conservation Service; Environmental Protection Agency; and, Department of the Interior, U.S. Fish and Wildlife Service (Appendix 7) will serve as the foundation for the development of any functional loss and value assessment method in the Honolulu District. This decision is based on the experience of the Corps Engineering Research and Development Center (ERDC) in modifying the Hydrogeomorphic Approach for use in ecosystems other than wetlands, such as vegetated shallows and seagrass beds. The District will also consider other approaches for developing functional assessment methods, and, as appropriate, will work with Federal and state resource agencies to identify and investigate other available interim and long-term resource assessment methods in order to facilitate consistent and efficient evaluation of projects.

Until a functional loss and value methodology is developed for the applicable aquatic site under review, compensatory mitigation in the Honolulu District will be based on an acreage calculation with a typical requirement of, at a minimum, **one replacement acre for every one acre of waters of the U.S. lost**. If the functions and values of the aquatic resource to be impacted are high, but the project is in compliance with the Section 404 (b)(1) Guidelines and is not found to be contrary to the public interest, the project may be permitted with a higher mitigation ratio requirement. Also, the time lag between authorized project impacts and a completed, successful mitigation project, as well as the risk of that mitigation project's not being successful, will also be considered when determining appropriate mitigation acreage ratios. Time lag and risk will also be incorporated into any functional assessment methodologies developed and used in the Pacific region. Further, **after-the-fact authorizations may require a higher mitigation ratio to offset the temporal loss of resource functions**. The Corps will determine the final ratio for each application after consultation with the applicant and applicable resource agencies.

Although the national compensatory mitigation guidance was developed principally for projects involving wetlands, the Honolulu District finds that those policies and guidance are broad and

flexible enough to apply to all waters of the U.S., including special aquatic sites identified in 40 CFR 230. These special aquatic sites include wetlands, mudflats, vegetated shallows, coral reefs, riffle and pool complexes, sanctuaries, and refuges. Because of the unique nature of coral reef systems, separate guidance specific to coral reefs in the Pacific region may be developed in order to better protect the resource and more efficiently serve the regulated community. The Corps is an active participant in interagency efforts such as the Hawaiian Islands Working Group, established as a vehicle to implement the mandates of Executive Order 13089 on Coral Reef Protection and the U.S. Coral Reef Task Force, with the goal of making mitigation for impacts to coral reefs more effective. Streams in Hawaii and in the Pacific region also offer a unique and challenging resource for which separate, more specific guidance may be developed. As such guidelines are developed, through a process of stakeholder input and interagency coordination, they will be made available to the regulated community.

Determining Appropriate Mitigation Approach

Currently, no wetland mitigation banks are available for use by the regulated public in Hawaii, American Samoa, Guam, or the Commonwealth of the Northern Mariana Islands. The Honolulu District encourages the development of new mitigation banks. The multi-agency Federal Guidance for the Establishment, Use and Operation of Mitigation Banks, contained in 60 Federal Register 228, dated 28 November 1995 (Appendix 8), and Federal Guidance on the use of In-Lieu-Fee Arrangements for Compensatory Mitigation Under Section 404, Clean Water Act and Section 10, Rivers and Harbors Act (Appendix 9) are available to anyone who wishes to develop a mitigation bank or in-lieu-fee compensatory mitigation proposal. The State of Hawaii's Department of Transportation is currently developing a wetland mitigation bank for its projects.

Alternatives to the mitigation bank or in-lieu fee arrangement are project-specific mitigation proposals that include on-site mitigation, off-site mitigation, or some combination of both. Consistent with RGL 02-2, the mitigation site should be adjacent to or contiguous with the impact site when practicable in order to preserve locally important functions such as local flood control or a specific, unique wildlife habitat. Off-site mitigation should occur when on-site mitigation is not practicable, or when an off-site mitigation project would provide a greater environmental benefit within the watershed than on-site. For instance, a restoration project adjacent to an existing conservation area would most likely be more successful than an on-site mitigation project in a rapidly urbanizing area that would ultimately be subjected to disturbance from surrounding development and isolated hydrologically.

A watershed approach should be a key factor driving decisions on the type and location of mitigation used to offset adverse impacts of an activity. Mitigation site selection should take into account the position of both the impact site and proposed mitigation site within the watershed. Further, mitigation should allow for in-kind replacement of functions, i.e. a freshwater marsh should not be replaced with a pond, impacts to seagrass beds should not be mitigated by hydrological restoration of a stream. The biological, physical and chemical functions of the impact site, such as wildlife habitat, water quality, flood attenuation, etc., should be reflected in the selection of the mitigation site(s). Mitigation sites should generally be in the same watershed as the impact site and as close in proximity as possible. In the State of Hawaii, the Honolulu District will require as a ground rule that off-site mitigation should, at a minimum, occur on the same island as the impact site. **Also, out-of-kind mitigation projects such as monitoring,**

research, or education may be a component of a compensatory mitigation plan, but are not, by themselves, sufficient as mitigation.

Types of mitigation projects include preservation, enhancement, restoration, creation, or a combination of any of these. Restoration and enhancement projects are generally more cost effective and have a greater chance for success than creation projects. Restoration projects can yield the greatest benefit for the aquatic environment because they provide an increase in overall aquatic resource acreage as well as an increase in aquatic resource function, whereas enhancement increases functions but does not result in an overall increase in acreage. Preservation results in no increase in acreage or function, and will only be accepted in exceptional circumstances. Buffers may be included in the mitigation approach to help ensure success of a mitigation project. Again, each project will be evaluated individually, balancing the need for the project with the public interest and, particularly, considering the uniqueness of each site and its location and function within the regional landscape, with the goal of being consistent with Federal law, policy and guidance.

Components of Mitigation Plan

A mitigation plan and monitoring reports will be required for mitigation projects approved as part of a Department of the Army (DA) authorization, to ensure that the mitigation project meets its goals and is consistent with conditions of the DA approval. The mitigation plan should outline quantifiable performance standards that can be used to evaluate success in achieving the desired goals of the mitigation and to determine compliance with the DA permit conditions. It is the applicant's responsibility to develop a complete mitigation project, including the identification of performance standards and monitoring protocols.

Performance standards can include hydrological, vegetative, faunal and soil measures, such as plant richness, percent exotic/invasive species, extent of open water, and water inundation/saturation levels. These are considered structural monitoring parameters. Process monitoring, such as water level fluctuations, plant flowering, bird nesting, or sediment accretion and erosion rates, can provide valuable information on the level of function a system has achieved, identify negative trends within the project more quickly, and indicate how to possibly amend the mitigation design to meet the desired goals much faster than structural monitoring alone. If a functional assessment method was used in determining the project impacts ("debits") and the subsequent mitigation requirement ("credits"), the same method can also be incorporated into the monitoring plan and can provide a replicable, quantitative tool for evaluating compliance with the mitigation requirement.

A monitoring program will be required with a reporting frequency sufficient for an inspector to determine compliance with performance standards and identify remedial action as necessary. Monitoring will be required for an adequate period of time, normally five to ten years. The concept of adaptive management will apply to the monitoring program, whereby the information provided by monitoring events will be used to modify, improve or rethink the performance standards or the compensatory mitigation plan to ensure success. The mitigation plan should also contain a contingency plan should it be determined that the mitigation project is not successful.

Mitigation plans should, at a minimum, include adequate drawings of pre- and post- conditions, to include cross-sections showing existing and final elevations. If planting is necessary, a planting plan to include species, number and size of individual plants to be installed, as well as their locations within the site, will be required. Methods to temporarily control erosion and turbidity should be outlined, as well as equipment and methods to be used during establishment of the site. Maintenance plans should include methods of invasive species control (plant and animal). Plans should outline maintenance procedures for controlling predation/grazing of mitigation plantings, temporary irrigation for plant establishment, replacement of plantings, and structure maintenance/repair, etc.

A work plan and schedule will be required to ensure that the project proceeds in a timely manner. Mitigation should be designed such that the functions lost through project impacts are replaced concurrently through the mitigation project. Depending on the goals of the mitigation project, the aquatic functions to be replaced may not be fully realized immediately. This time lag must be incorporated into the mitigation plan.

The risk of a project's not being successful must also be incorporated into the mitigation plan. High-risk projects, such as creation of wetlands from an upland with an artificial source of hydrology such as irrigation, should be avoided. In the best of circumstances, the maintenance of such systems would be a long-term expense that would require constant funding, and, at worst, the project would fail, causing the permittee to fall out of compliance with the requirements of the permit and be subject to the expense of implementing alternative mitigation.

For project-specific mitigation activities, applicants will be required to identify a responsible party for performing the mitigation work and for providing both short- and long-term monitoring and maintenance. Assurance of financial responsibility for monitoring and maintenance of the mitigation project will also be required. This may be accomplished through a letter of credit, performance bond, special taxing districts, or other special funding. Further, mitigation projects must remain intact in perpetuity. Various mechanisms exist to ensure perpetual existence of a natural area, including conservation easements, restrictive covenants, deed restrictions, or a transfer in fee title. Transfer of ownership to a suitable conservancy organization or government agency is also an option. Although there are currently no established protocols for this within the Honolulu District, the District encourages applicants to consider establishing such partnering when developing mitigation proposals.

The applicant's mitigation plan will be forwarded to other Federal, state and local agencies for review and comment. A mitigation plan will not be approved without interagency review. **Further, a DA permit will not be issued prior to submission, review and approval of a mitigation plan.**

Note: Copies of the reference documents listed below are not maintained at the Honolulu District office. With the exception of Appendix 2, persons who wish to obtain copies of the reference documents may do so by either accessing the electronic version via the World Wide Web (link provided), or by requesting a hard copy from the Regulatory Branch office (Phone: 808-438-9258). For Appendix 2, an electronic version of this publication is available on the World Wide Web through the National Academies Press. Alternately, a printed copy can be requested from the inter-library loan program at the Hawaii State Public Library.

APPENDICES

1- *Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines*. U.S. Army Corps of Engineers and Environmental Protection Agency (EPA). 6 February 1990.
http://www.usace.army.mil/inet/functions/cw/cecwo/reg/moafe90.htm

2 – National Academy of Sciences. *Compensating for Wetland Losses Under the Clean Water Act*. National Academies Press. Washington, D.C. 2001.
http://www.nap.edu/books/0309074320/html/

3 - *National Mitigation Action Plan*. Department of the Army, EPA, Department of the Interior, Department of Agriculture, the National Oceanic and Atmospheric Administration (NOAA) and the Federal Highway Administration. December 2002.
http://www.mitigationactionplan.gov/map1226withsign.pdf

4 - *Regulatory Guidance Letter No. 02-2 (RGL 02-2)*. U.S. Army Corps of Engineers. 24 December 2002.
http://www.usace.army.mil/inet/functions/cw/cecwo/reg/RGL2-02.pdf

5 - *Incorporating the National Research Council's Mitigation Guidelines into the Clean Water Act Section 404 Program*. U.S. Army Corps of Engineers. 29 October 2003.
http://www.mitigationactionplan.gov/nas404program.pdf

6 - *Model Multi-Agency Compensatory Mitigation Plan Checklist and Supplement*. U.S. Army Corps of Engineers and EPA. 7 November 2003.
http://www.mitigationactionplan.gov/checklist.pdf

7 - *National Action Plan to Implement the Hydrogeomorphic Approach to Assessing Wetland Functions*. Department of Defense, Corps of Engineers; EPA; Department of Transportation, Federal Highways Administration; Department of Agriculture, Natural Resource Conservation Service (NRCS); Department of the Interior, Fish and Wildlife Service (USFWS). 20 June 1997.
http://www.epa.gov/fedrgstr/EPA-WATER/1997/June/Day-20/w15959.htm

8 - *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks*. Corps of Engineers, EPA, NRCS, USFWS, and NOAA. 28 December 1995.
http://www.saj.usace.army.mil/permit/mitigation/fr28nov95.pdf

9 - *Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act*. Corps of Engineers, EPA, USFWS, and NOAA. 7 November 2000.
http://www.saj.usace.army.mil/permit/mitigation/fed_reg_inlieufee.pdf