



A TRAINING COURSE FOR MITIGATION BANKING INTERAGENCY REVIEW TEAMS



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Reference Document: 3rd Party Mitigation Oversight & Compliance

A. Federal Policy

2006 Proposed Compensatory Mitigation Regulations

§ 332.2 Definitions.

Adaptive management means the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance. It includes the selection of appropriate measures that will ensure that the aquatic resource functions are provided and involves analysis of monitoring results to identify potential problems of a compensatory mitigation project and the identification and implementation of measures to rectify those problems.

§332.4 Planning and documentation

(c) *Mitigation plan*. [The mitigation plan must include:]

(8) *Maintenance plan*. A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

(10) *Monitoring requirements*. A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included. (See § 332.6.)

(12) *Adaptive management plan*. A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. (See § 332.7(c).)

§332.6 Monitoring

(a) *General*.

(1) Monitoring the compensatory mitigation project site is necessary to determine if the project is meeting its performance standards, and to

determine if measures are necessary to ensure that the compensatory mitigation project is accomplishing its objectives. The submission of monitoring reports to assess the development and condition of the compensatory mitigation project is required, but the content and level of detail for those monitoring reports must be commensurate with the scale and scope of the compensatory mitigation project type. The mitigation plan must address the monitoring requirements for the compensatory mitigation project, including the parameters to be monitored, the length of the monitoring period, the party responsible for conducting the monitoring, the frequency for submitting monitoring reports to the district engineer, and the party responsible for submitting those monitoring reports to the district engineer.

(2) The district engineer may conduct site inspections on a regular basis (e.g., annually) during the monitoring period to evaluate mitigation site performance.

(b) *Monitoring period.* The mitigation plan must provide for a monitoring period that is sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years. A longer monitoring period must be required for aquatic resources with slow development rates (e.g., forested wetlands, bogs). Following project implementation, the district engineer may reduce or waive the remaining monitoring requirements upon a determination that the compensatory mitigation project has achieved its performance standards. Conversely the district engineer may extend the original monitoring period upon a determination that performance standards have not been met or the compensatory mitigation project is not on track to meet them. The district engineer may also revise monitoring requirements when remediation and/or adaptive management is required.

(c) *Monitoring reports.*

(1) The district engineer must determine the information to be included in monitoring reports. This information must be sufficient for the district engineer to determine how the compensatory mitigation project is progressing towards meeting its performance standards, and may include plans (such as as-built plans), maps, and photographs to illustrate site conditions. Monitoring reports may also include the results of functional, condition, or other assessments used to provide quantitative or qualitative measures of the functions provided by the compensatory mitigation project site.

(2) The permittee or sponsor is responsible for submitting monitoring reports in accordance with the special conditions of the DA permit or the terms of the instrument. Failure to submit monitoring reports in a timely manner may result in compliance action by the district engineer.

(3) Monitoring reports must be provided by the district engineer to interested federal, tribal, state, and local resource agencies, and the public, upon request.

§ 332.7 Management.

(a) *Site protection.*

(1) The aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms, as appropriate. Long-term protection may be provided through real estate instruments such as conservation easements held by entities such as federal, tribal, state, or local resource agencies, non-profit conservation organizations, or private land managers; the transfer of title to such entities; or by restrictive covenants. For government property, long-term protection may be provided through federal facility management plans or integrated natural resources management plans. When approving a method for long-term protection of non-government property other than transfer of title, the district engineer shall consider relevant legal constraints on the use of conservation easements and/ or restrictive covenants in determining whether such mechanisms provide sufficient site protection. To provide sufficient site protection, a conservation easement or restrictive covenant should, where practicable, establish in an appropriate third party (e.g., governmental or non-profit resource management agency) the right to enforce site protections and provide the third party the resources necessary to monitor and enforce these site protections.

(2) The real estate instrument, management plan, or other mechanism providing long-term protection of the compensatory mitigation site must, to the extent appropriate and practicable, prohibit incompatible uses (e.g., clear cutting or mineral extraction) that might otherwise jeopardize the objectives of the compensatory mitigation project. Where appropriate, multiple instruments recognizing compatible uses (e.g., fishing or grazing rights) may be used.

(3) The real estate instrument, management plan, or other long-term protection mechanism must contain a provision requiring 60-day advance notification to the district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection mechanism, including transfer of title to, or establishment of any other legal claims over, the compensatory mitigation site.

(4) For compensatory mitigation projects on public lands, where federal facility management plans or integrated natural resources management plans are used to provide long-term protection, and changes in statute, regulation, or agency needs or mission results in an incompatible use on public lands originally set aside for compensatory mitigation, the public agency authorizing the incompatible use is responsible for providing alternative compensatory mitigation that is acceptable to the district engineer for any loss in functions resulting from the incompatible use.

(5) A real estate instrument, management plan, or other long-term protection mechanism used for site protection of permittee-responsible mitigation must be approved by the district engineer in advance of, or concurrent with, the activity causing the authorized impacts.

(b) *Sustainability*. Compensatory mitigation projects shall be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. This includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context will support long-term sustainability. Where active long-term management and maintenance are necessary to ensure long-term sustainability (e.g., prescribed burning, invasive species control, maintenance of water control structures, easement enforcement), the responsible party must provide for such management and maintenance. This includes the provision of long-term financing mechanisms where necessary. Where needed, the acquisition and protection of water rights must be secured and documented in the permit conditions or instrument.

(c) *Adaptive management*.

(1) If the compensatory mitigation project cannot be constructed in accordance with the approved mitigation plans, the permittee or sponsor must notify the district engineer. A significant modification of the compensatory mitigation project requires approval from the district engineer.

(2) If monitoring or other information indicates that the compensatory mitigation project is not progressing towards meeting its performance standards as anticipated, the responsible party must notify the district engineer as soon as possible. The district engineer will evaluate and pursue measures to address deficiencies in the compensatory mitigation project. The district engineer will consider whether the compensatory mitigation project is providing ecological benefits comparable to the original objectives of the compensatory mitigation project.

(3) The district engineer, in consultation with the responsible party (and other federal, tribal, state, and local agencies, as appropriate), will determine the appropriate measures. The measures may include site modifications, design changes, revisions to maintenance requirements, and revised monitoring requirements. The measures must be designed to ensure that the modified compensatory mitigation project provides aquatic resource functions comparable to those described in the mitigation plan objectives.

(4) Performance standards may be revised in accordance with adaptive management to account for measures taken to address deficiencies in the compensatory mitigation project. Performance standards may also be revised to reflect changes in management strategies and objectives if the new standards provide for ecological benefits that are comparable or superior to the approved compensatory mitigation project. No other revisions to performance standards will be allowed except in the case of natural disasters.

(d) *Long-term management*.

(1) The permit conditions or instrument must identify the party responsible for ownership and all long-term management of the compensatory mitigation project. The permit conditions or instrument may

contain provisions allowing the permittee or sponsor to transfer the long-term management responsibilities of the compensatory mitigation project site to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager, after review and approval by the district engineer. The land stewardship entity need not be identified in the original permit or instrument, as long as the future transfer of long-term management responsibility is approved by the district engineer.

(2) A long-term management plan should include a description of long-term management needs, annual cost estimates for these needs, and identify the funding mechanism that will be used to meet those needs.

(3) Any provisions necessary for long-term financing must be addressed in the original permit or instrument. The district engineer may require provisions to address inflationary adjustments and other contingencies, as appropriate. Appropriate long-term financing mechanisms include non-wasting endowments, trusts, contractual arrangements with future responsible parties, and other appropriate financial instruments. In cases where the long-term management entity is a public authority or government agency, that entity must provide a plan for the long-term financing of the site.

(4) For permittee-responsible mitigation, any long-term financing mechanisms must be approved in advance of the activity causing the authorized impacts.

§332.8 Mitigation banks and in-lieu fee programs.

(q) Reporting.

(1) Ledger account. The sponsor must compile an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended). The ledger report must be submitted to the district engineer, who will distribute copies to the IRT members. The ledger report is part of the administrative record for the mitigation bank or in-lieu fee program. The district engineer will make the ledger report available to the public upon request.

(2) Monitoring reports. The sponsor is responsible for monitoring the mitigation bank site or the in-lieu fee project site in accordance with the approved monitoring requirements to determine the level of success and identify problems requiring remedial action or adaptive management measures. Monitoring must be conducted in accordance with the requirements in § 332.6, and at time intervals appropriate for the particular project type and until such time that the district engineer, in consultation with the IRT, has determined that the performance standards have been attained. The instrument must include requirements for periodic monitoring reports to be submitted to the district engineer, who will provide copies to other IRT members.

(3) Financial assurance and long-term management funding report. The district engineer may require the sponsor to provide an annual report showing beginning and ending balances, including deposits into and any withdrawals from, the accounts providing funds for financial assurances and long-term management activities. The report should also include information on the amount of required financial assurances and the status of those assurances, including their potential expiration.

(u) Long-term management.

(1) The legal mechanisms and the party responsible for the long-term management and the protection of the mitigation bank site must be documented in the instrument or, in the case of umbrella mitigation banking instruments and in-lieu fee programs, the approved mitigation plans. The responsible party should make adequate provisions for the operation, maintenance, and long-term management of the compensatory mitigation project site. The long-term management plan should include a description of long-term management needs and identify the funding mechanism that will be used to meet those needs.

(2) The instrument may contain provisions for the sponsor to transfer long-term management responsibilities to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager.

(3) The instrument or approved mitigation plan must address the financial arrangements and timing of any necessary transfer of long-term management funds to the steward.

(4) Where needed, the acquisition and protection of water rights should be secured and documented in the instrument or, in the case of umbrella mitigation banking instruments and in-lieu fee programs, the approved mitigation site plan.

2003 Model Compensatory Mitigation Plan Checklist

- Site Protection and Maintenance
 - Maintenance plan and schedule

- Monitoring Plan
 - Provide monitoring schedule, identify party (ies) and responsibilities
 - Specify data to be collected, including assessment tools and methodologies

- Adaptive Management Plan
 - Identify party (ies) and responsibilities
 - Remedial measures (financial assurances, management plan, etc.)

6. *Site Protection and maintenance*

- c. Maintenance plan and schedule (e.g. measures to control predation/grazing of mitigation plantings, temporary irrigation for plant establishment, replacement planting, structure maintenance/repair, etc.).

7. *Monitoring Plan*

- a. Party(ies) responsible for monitoring. If more than one, identify primary party.
- b. Data to be collected and reported, how often and for what duration (identify proposed monitoring stations, including transect locations on map).
- c. Assessment tools and/or methods to be used for data collection monitoring the progress towards attainment of performance standard targets.
- d. Format for reporting monitoring data and assessing mitigation status.
- e. Monitoring schedule.

8. *Adaptive Management Plan*

- a. Party(ies) responsible for adaptive management.
- b. Identification of potential challenges (e.g., flooding, drought, invasive species, seriously degraded site, extensively developed landscape) that pose a risk to project success. Discuss how the design accommodates these challenges.
- c. Discussion of potential remedial measures in the event mitigation does not meet performance standards in a timely manner.
- d. Description of procedures to allow for modifications of performance standards if mitigation projects are meeting mitigation goals, but in unanticipated ways.

2003 Operational Guidelines for Creating or Restoring Self-Sustaining Wetlands

§A. 5.: Conduct early monitoring as part of adaptive management.

Develop a thorough monitoring plan as part of an adaptive management program that provides early indication of potential problems and direction for correction actions. The monitoring of wetland structure, processes, and function from the onset of wetland restoration or creation can indicate potential problems. Process monitoring (e.g., water-level fluctuations, sediment accretion and erosion, plant flowering, and bird nesting) is particularly important because it will likely identify the source of a problem and how it can be remedied. Monitoring and control of nonindigenous species should be a part of any effective adaptive management program. Assessment of wetland performance must be integrated with adaptive management. Both require understanding the processes that drive the structure and characteristics of a developing wetland. Simply documenting the structure (vegetation, sediments, fauna, and nutrients) will not provide the knowledge and guidance required to make adaptive “corrections” when adverse conditions are discovered. Although wetland development may take years to

decades, process-based monitoring might provide more sensitive early indicators of whether a mitigation site is proceeding along an appropriate trajectory.

There are many factors that may positively or negatively influence aquatic resources and the functions they provide, such as urbanization, farming or grazing. Wetlands and other aquatic resources are often subject to a wide range and frequency of events such as floods, fires and ice storms. As with all natural systems, some things are beyond control. Well-crafted mitigation plans, however, recognize the likelihood of these events and attempt to plan for them, primarily through monitoring and adaptive management. In addition, it is important to realize the mobile nature of wetlands and streams. They change over time and over the landscape in response to internal and external forces.

Monitoring and adaptive management should be used to evaluate and adjust maintenance (e.g., predator control, irrigation), and design remedial actions. Adaptive management should consider changes in ecological patterns and processes, including biodiversity of the mitigation project as it evolves or goes through successional stages. Trends in the surrounding area must also be taken into account (i.e., landscape/watershed context). Being proactive helps ensure the ultimate success of the mitigation, and improvement of the greater landscape. One proactive methodology is incorporation of experimentation into the mitigation plan when possible, such as using experimental plots within a mitigation site with different controls, replication, different treatments, inputs, etc., to determine if specific mitigation efforts are meeting the desired goals.

ADDITIONAL RESOURCES

U.S. Army Corps of Engineers. October 10, 2008. *Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Creation, Restoration, and/or Enhancement of Aquatic Resources*. Regulatory Guidance Letter No. 08-03.

http://www.usace.army.mil/CECW/Documents/cecwo/reg/rqls/rql08_03.pdf

U.S. Government Accountability Office. September 2005. *Wetlands Protection: Corps of Engineers Does Not Have an Effective Oversight Approach to Ensure that Compensatory Mitigation is Occurring*. GAO-05-898.

<http://www.gao.gov/new.items/d05898.pdf>



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<http://www.nab.usace.army.mil/Regulatory/Mitigation/FinalMitigationGuidelinesNov04.pdf>
- Buffalo District, U.S. Army Corps of Engineers. "Mitigation and Monitoring Guidance." October 2004. (Includes Mitigation Plan Checklist.)
<http://www.lrb.usace.army.mil/regulatory/mitigation.htm>
- Charleston District, U.S. Army Corps of Engineers. "Mitigation Standard Operating Procedures" September 2002
<http://www.sac.usace.army.mil/?action=mitigation.home>
- Chicago District, U.S. Army Corps of Engineers. "Chicago District 2004 Mitigation Requirements." 2004. (Includes guidance on monitoring and performance standards.)
<http://www.lrc.usace.army.mil/co-r/mitgr.htm>
- Detroit District, U.S. Army Corps of Engineers. "Detroit District U.S. Army Corps of Engineers Mitigation Guidelines and Requirements." December 2008. (Includes guidance on monitoring and performance standards, and a mitigation plan checklist.)
<http://www.lre.usace.army.mil/functions/rf/html/MitigationGuidelinesDec2008.pdf>
- Fort Worth District, U.S. Army Corps of Engineers. "Draft Mitigation Guidelines." December 24, 2003. (Includes guidance on monitoring and performance standards, and a mitigation plan checklist.)
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- Little Rock District, U.S. Army Corps of Engineers. "Compensatory Mitigation Guidelines and Standard Operating Procedures" June 2006.
<http://www.swl.usace.army.mil/regulatory/pdf/compensatorymitigationguidelines.pdf>
- Los Angeles District, U.S. Army Corps of Engineers. "Final Mitigation Guidelines and Monitoring Requirements." April 29, 2004. (Includes Mitigation Plan Checklist.)
http://www.spl.usace.army.mil/regulatory/mmg_2004.pdf
- Louisville District, U.S. Army Corps of Engineers. "Mitigation Guidelines." September 22, 2004. (Includes Mitigation Plan Checklist and guidance on monitoring.) Currently under revision
- Memphis District, U.S. Army Corps of Engineers. "Mitigation Guidance and Monitoring Guidelines." September 24, 2004. (Includes Mitigation Plan Checklist.)
<http://www.mvm.usace.army.mil/regulatory/guidelines/Mitigation.Guidelines.pdf>
- Mobile District, U.S. Army Corps of Engineers. "Habitat Success Criteria/Credit Release Schedule/Monitoring." Undated.
https://samribits.sam.usace.army.mil/bank_estab.php
- New England District, U.S. Army Corps of Engineers. "New England District Mitigation Guidance." January 12, 2007. (Includes guidance on monitoring.)
<http://www.nae.usace.army.mil/reg/Mitigation%20Plan%20Checklist%20Guidance.pdf>
- New Jersey Department of Environmental Protection. "Mitigation Project Monitoring Reports: Checklist for Completeness." April 2003.
http://www.nj.gov/dep/landuse/forms/wmm_checklist.pdf
- "Mitigation Project Monitoring Reports for Tidal Wetland: Checklist for Completeness." August 2000.
http://www.nj.gov/dep/landuse/forms/twmm_checklist.pdf
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Norfolk District, U.S. Army Corps of Engineers. "Norfolk District Corps and Virginia Department of Environmental Quality Recommendations for Wetland Compensatory Mitigation: Including Site Design, Permit Conditions, Performance and Monitoring Criteria." July 12, 2004.

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"Draft Template Mitigation Banking Instrument." April 21, 2008. (Includes wetland mitigation bank monitoring requirements.)

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http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/PN/Draft_MBI_Template_2008/MBI_Template_PN_2008.htm

Omaha District, U.S. Army Corps of Engineers. "The U.S. Army Corps of Engineers' Guidance for Compensatory Mitigation and Mitigation Banking in the Omaha District." August 2005. (Includes guidance on monitoring.)

<https://www.nwo.usace.army.mil/html/od-r/mitbnk.htm>

Philadelphia District, U.S. Army Corps of Engineers. "Draft Compensatory Mitigation Guidelines." December 13, 2003. (Includes guidance on monitoring.)

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Portland District, U.S. Army Corps of Engineers. "Compensatory Mitigation Monitoring Reports." November 2008.

<http://www.nwp.usace.army.mil/op/g/docs/documents/Mitigation%20Guidelines%20and%20Monitoring%20Requirements.pdf>

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"Standard Mitigation Monitoring Report Form (Template)"

<http://www2.mvr.usace.army.mil/Regulatory/>

Sacramento and San Francisco Districts, U.S. Army Corps of Engineers.

"Mitigation and Monitoring Proposal Guidelines." December 30, 2004. (Includes Mitigation Plan Outline.)

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/pdf/Mitigation_Monitoring_Guidelines.pdf

Savannah District, U.S. Army Corps of Engineers. "Standard Operating Procedure: Compensatory Mitigation." March 2004. (Includes Mitigation Plan Checklist and guidance on monitoring.)

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