

**Compensatory Mitigation Plan Requirements**  
**For**  
**Permittee Responsible Mitigation Projects**  
**St. Louis District, Corps of Engineers**  
**May 2010**

The U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency joint regulation for *Compensatory Mitigation for Losses of Aquatic Resources*, (33 CFR, Part 332 and 40 CFR 230) herein referred to as the Mitigation Rule, improves planning, implementation, and management of mitigation banks, in-lieu fee mitigation programs, and permittee-responsible mitigation projects.

The purpose of this document is to provide guidance to the permittee for the development of a compensatory mitigation plan when the district engineer determines that compensatory mitigation is required for unavoidable impacts to aquatic resources and the permittee responsible mitigation option would be the most appropriate option for offsetting those losses of aquatic resources. The level of detail within a required mitigation plan shall be commensurate with the scale and scope of the proposed impacts. The actual mitigation plan approval process is outlined in Section 3 below.

**1. Watershed Approach to Compensatory Mitigation**

A. Permittee-responsible compensatory mitigation should be determined using the principles of a watershed approach as outlined in this section.

B. In order to meet the watershed approach criterion, the permittee should define the identified watershed boundary and address how the mitigation proposal will benefit wetland and/or stream habitats, water quality, hydrologic conditions, and aquatic and/or terrestrial species needs within the identified watershed boundary.

1. The permittee must identify and briefly discuss the historic losses and the current trends of losses of aquatic resources (ie. wetland and streams) and other wildlife habitats within the watershed based on current and historic land use.
2. Identify and briefly discuss water quality issues present within the watershed.
3. Describe the immediate and the long-term needs of the watershed to improve both the wildlife habitats and the water quality and describe the suitability (technical feasibility) of the site to meet the needs of the watershed.
4. Describe the historic and the current state of the mitigation site and the adjacent lands. In addition, describe the ecological suitability (physical, chemical and biological characteristics) of the site to achieve the objectives of the mitigation plan and to improve the conditions within the identified watershed.
5. Identify and discuss the short-term and the long-term off-site threats (including water rights) within the watershed that may affect the wetland and the water quality services constructed at the mitigation site. Discuss how these threats are addressed in order to assure longevity of services at the site.

## 2. Mitigation Plan Requirements for a Permittee Responsible Mitigation

### A. Objectives

1. Specific objectives of the plan must identify:
  - a. The resources to be provided (wetlands and/or stream habitats) with species composition matching similar aquatic resources on similar landscape positions in the watershed. Classify the stream type (ephemeral, intermittent, perennial) or the stream order (1<sup>st</sup> order, 2<sup>nd</sup> order etc.), or describe the annual flow characteristics of the stream and the hydro-period for restored wetlands.
  - b. The final goal to be provided by the resource for: amount (e.g., acres, linear feet); function (e.g., channel stability, shading of the stream channel, vegetative structure, reconnect stream to floodplain); and/or services (filtering nutrients from agricultural runoff, provide quality habitat for a specific species of concern, provide flood water capacity, improve aquatic species passage),
  - c. The method of compensation (i.e., restoration, enhancement, establishment, preservation), and
  - d. The feasibility of establishing the desired resource and briefly describe how the resources provided will address the needs of the watershed.

### B. Site Selection

1. Compensatory mitigation projects shall be appropriately sited and designed to ensure that natural hydrology and landscape position will support long-term sustainability and function as a self-sustaining system. Discuss how the mitigation site is ecologically suitable for providing the desired aquatic resource functions by describing:
  - a. The hydrological conditions, soil properties, native seed source, and other physical and chemical characteristics.
  - b. The watershed-scale features such as aquatic habitat diversity, habitat connectivity, the existence of threatened or endangered species related to prior habitat loss, and other landscape scale functions.
  - c. The size and the location of the mitigation site relative to hydrologic sources (including the availability of water rights) and other ecological features.
  - d. The compatibility with adjacent land uses and any existing watershed management plans.
  - e. The reasonably foreseeable effects the compensatory mitigation project will have on ecologically important aquatic or terrestrial resources, cultural resources, or habitat for federally or state listed threatened and endangered species.
  - f. Other information as available including potential chemical contamination, impacts from land use changes including residential and/or commercial development within the watershed, and the proximity to the location of other mitigation banks, in-lieu fee mitigation project sites, or protected conservation areas within the watershed.

### C. Site Protection Instrument

1. Describe the ownership, legal arrangements that will be used to ensure the long-term protection of the proposed mitigation site. Include the draft real estate instrument as an appendix to the mitigation plan document.
  - a. Long-term protection of private property may be provided through real estate covenants such as conservation easements, held by approved entities such as federal, tribal, state or local resource agencies, nonprofit conservation organizations, or private land managers. In addition, long-term protection could be achieved through transfer of title of the mitigation land to such entities listed above or other restrictive covenants that are determined to afford sufficient protection by the Corps of Engineers. A conservation easement, deed restriction, or restrictive covenant must, where practicable, establish an appropriate third party (e.g., governmental or nonprofit resource management agency) the right to enforce site protections and provide the third party the resources necessary to monitor and enforce the site protections.
  - b. The long-term protection mechanism must contain a provision requiring 60-day advance notification to the Corps of Engineers 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.
  - c. For government property, long-term protection may be provided through federal facility management plans or integrated natural resources management plans as long as those plans are compatible with restrictive covenants specified on non-government property. If, as a result of a change in statute, regulations, or agency needs or mission results in an introduction of an incompatible use of the compensatory mitigation land, the public agency authorizing the incompatible use must provide alternative compensatory mitigation acceptable to the Corps of Engineers for any loss in functions resulting from the incompatible use.
  - d. 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 Corps of Engineers in advance of, or concurrent with, the activity causing the authorized impacts at the permit site.
  - e. The Conservation Easement and Deed Restriction Forms are attached in Appendix A.

### D. Baseline Information

1. Describe the ecological characteristics of the proposed mitigation site.
  - a. Include historic and existing plant communities, historic and existing hydrology, and existing soil conditions.
  - b. Include map(s) identifying the boundary of the proposed mitigation site with coordinates (Latitude and Longitude in decimal degrees).
2. Conduct a wetland delineation using the appropriate Regional Supplement or if a supplement is not implemented in a geographic area of the State use the routine delineation methods as described in the Corps of Engineers 1987 Wetland Delineation Manual.

3. Describe the existing hydro-system connectivity between any stream channel(s) and any adjacent wetland(s). Include a discussion on the connectivity of any wetland(s) and stream channel(s) to downstream perennial waters.

#### E. Determination of Credits

1. For permittee-responsible mitigation, this section should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.
  - a. Wetland impact and mitigation types shall be identified to the Cowardin class (e.g., PFOs, PSS, PEM). In the absence of a condition or functional assessment method, wetland credits will be determined based on a combination of land area and the method of compensation (restoration, enhancement, establishment, and/or preservation), with a maximum credit value given not to exceed 1 credit for each 1 acre gain in wetland area. Upon implementation of a functional or condition assessment method in the State of Missouri or Illinois the approved methodology will be used to assess wetland credits, within the respective State.
  - b. Upland buffers next to wetlands that provide habitat connectivity and other ecological functions may also generate compensatory mitigation credits because of their contribution to the ecological functions of the overall mitigation site. The Corps will determine on a case-by-case basis when buffers are essential to maintaining the ecological viability of adjoining aquatic resources, and thus eligible to produce compensatory mitigation credits. Credits will be determined on a percentage of land area, habitat connectivity, and ecological functions to be included as buffer until a condition or functional assessment methodology is approved for the State.
  - c. Stream type (ephemeral/intermittent/perennial) the number of stream mitigation credits created by site improvements are determined by stream type, location, condition, in-stream improvements and linear feet of channel at the mitigation site. These factors are determined using the State of Missouri Stream Mitigation Method (for projects in the State of Missouri) or the Illinois Stream Mitigation Method (for projects in the State of Illinois) both of which derive values expressed in credit.
  - d. Riparian areas are critical components of stream ecosystems that provide important ecological functions, and directly influence the functions of streams, especially in terms of habitat quality and water quality. Therefore, it is important for mitigation sites containing streams and other open waters to include riparian areas as part of the overall compensatory mitigation project. In such cases, compensatory mitigation credits should also be awarded to riparian areas in accordance with the State of Missouri or the State of Illinois Stream Mitigation Methods.

#### F. Mitigation Work Plan

1. Describe in detail the specifications and work descriptions of the compensatory mitigation project, including, but not limited to the geographic boundaries of the project; construction methods; timing; and sequence.
2. Describe the sources of water, including connections to existing waters and uplands, and anticipated seasonal water depths in the wetland (water budget).

3. Describe the methods for establishing the desired plant community and plans to control undesirable plant species, including species composition and type of plantings (i.e. seeding, propagules, seedlings, saplings, etc.) and height of saplings. If trees are being planted, include a plan for control of wildlife damage.
4. Include any grading plan identifying the location and the elevation of the constructed features proposed.
5. For stream projects include existing channel cross-sections, proposed alterations to the stream channel and/or stream banks, a description of in-stream structures including materials used for improvements, dimensions and elevations, and riparian plantings.

#### G. Operation and Maintenance Plan

1. A description and a schedule of maintenance required to maintain the viability of the mitigation site once the initial construction is completed [e.g. mowing timing and frequency, herbicide (application method, timing, type, and frequency), irrigation plan, passive water control structures, supplemental irrigation source, in-stream structures]

#### H. Performance Standards

1. Describe the ecological, administrative, and adaptive management standards that will be used to determine whether the compensatory mitigation project is achieving its objectives. The standards must be based on attributes that are objective and verifiable. They must be based on the best available science that can be measured or assessed in a practicable manner. The standards should take into account the expected stages of the aquatic resource development process in order to allow early detection of potential problems and appropriate adaptive management. The use of reference aquatic resources (least disturbed and exhibiting the highest levels of functions in the service area) is encouraged to establish performance standards. This approach can help ensure that the performance standards are reasonably achievable, by reflecting the range of variability exhibited by the regional class of aquatic resources as a result of natural processes and anthropogenic disturbances.
2. The performance standards should relate to the objectives of the mitigation site, so that the project can be quantitatively and/or qualitatively evaluated to determine if it is developing into the desired resource type, providing the expected functions and/or services, and attaining any other applicable metrics. Examples include:
  - a. Structural Measures:
    - Description-size, classification (HGM, Cowardin, Rosgen) of aquatic resource(s).
    - Hydrology-duration, periodicity,
    - Soils-hydric indicators, redoximorphic features,
    - Vegetation-dominants, species composition, density, coverage,
    - Stream–status of structures and structural integrity, sinuosity, cross-section, bank full width, particle size (e.g. no significant change in D50 size particle silt, sand, gravel, cobble), longitudinal profile.
  - b. Indicators of attainment or condition: snag density, foliage height, diversity, basal area, degree of shading, channel profile,

## I. Monitoring Requirements

1. Monitoring must be conducted by the permittee or their authorized agent in order to determine if the compensatory mitigation project is on track to meet performance standards and used as a measure to determine if adaptive management is needed.
2. The mitigation site must be monitored for a period not less than five years after final construction and planting. Extending the monitoring period beyond the five year minimum may be required depending on:
  - a. Resource type (e.g., forested wetlands, riparian corridors, bottomland hardwood forests, wet prairie).
  - b. Adaptive management measures occurring after initial site work (e.g., planting of additional trees, adjustments/re-building of in-stream structures to address stream stability).
3. The mitigation plan must include: the parameters to be monitored, monitoring methods and procedures, a schedule for monitoring; the party responsible for conducting the monitoring and, if separate, the party responsible for submitting the monitoring report; and permission for the Corps to participate in the monitoring process if requested.
4. Upon a determination by the Corps that performance standards have not been met or the compensatory mitigation project is not on track to meet them, the monitoring period may be extended. The Corps may also revise monitoring requirements when remediation and/or adaptive management are required.

## J. Long-term Management Plan

1. Describe how the mitigation site will be managed after performance standards have been achieved to ensure the long-term sustainability of the resources, including a description of long-term management needs, annual cost estimates for these needs, identify the funding mechanism that will be used to meet those needs and the party responsible for carrying out the long-term management activities.
2. The permittee is encouraged to transfer the long-term management responsibilities for the mitigation site to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager, as long as the entity is approved by the Corps. If the entity is identified in the instrument they shall be signatory to the instrument.
3. In cases where the long-term management entity is a public authority or government agency, that entity shall provide a plan or give an indication how long-term financing will be established, and include a written stewardship commitment specifying commitment to long-term management and maintenance and a plan for financing.
4. Non-governmental organizations shall demonstrate that long-term financing mechanisms will be implemented. In cases where long-term financing for long-term management of compensatory mitigation projects is necessary, district commanders should consider the need to make inflationary adjustments and certain financial assumptions such as total return assumptions and

capitalization rates (e.g. endowments, or Consumer Price Index adjustments in the case of annual payments).

5. The Corps prefers that the land stewardship entity be identified in the mitigation plan however the Mitigation Rule provides the permittee the flexibility to identify the entity at a later time. In this instance, the sponsor will be responsible for long-term management until the sponsor identifies a long-term stewardship entity and that entity is approved by the Corps.

#### K. Adaptive Management Plan

1. Describe strategy to address unforeseen changes in site conditions or other components that adversely affect the mitigation site's success, including the party or parties responsible for implementing the adaptive management measures.
2. Circumstances that may qualify for adaptive management include an inability to construct the mitigation site in accordance with the approved mitigation work plans, monitoring or other information reveals the site is not progressing towards meeting its performance standards, possible remedial measures that result in site modifications, design changes, revisions to maintenance requirements, revised monitoring requirements.

#### L. Financial Assurances

1. Describe the financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed in accordance with the proposed performance standards.
2. The amount of financial assurances, approved by the district engineer, will be determined by the size (number of mitigation credits required) and the complexity of the mitigation site, the likelihood of project success, the past performance of the permittee to successfully construct aquatic resource restoration projects, and any other factors the Corps deems appropriate.
  - a. The rationale for determining the amount of the required financial assurances must be documented in the mitigation plan and may include; costs for land acquisition, planning and engineering, legal fees, mobilization, construction, monitoring, and maintenance. An alternative to providing an itemized cost analysis, would be to provide the cost of replacement mitigation through the purchase of credits from an approved mitigation bank or in-lieu-fee program whose service area includes the Department of the Army permit site.
3. The financial assurances may be in the form of performance bonds, escrow accounts, casualty insurance, letters of credit, or other appropriate instruments approved by the district engineer. The financial assurances must be in the form that ensures the district engineer will receive notification at least 120 days in advance of any termination or revocation.
4. For performance bonds or letters of credit a standby trust account must be established. All amounts paid by the financial assurance provider must be paid directly to the standby account for distribution by the account trustee in accordance with the Corps' instructions.
5. Financial assurances may be phased out once the mitigation site has been determined by the Corps to be successful in accordance with its performance

standards. Otherwise, the assurance shall remain in place until the Corps determines performance standards have been achieved.

6. The mitigation plan must clearly specify the conditions under which the financial assurances are to be released to the sponsor, and/or other financial assurance provider.

### **3. Approval of the proposed mitigation plan.**

#### **A. Application for a Department of the Army (DA) Permit**

1. For activities involving discharges of dredged or fill material into waters of the United States, the permit application must include a statement describing how impacts to waters of the United States, at the project site, are to be avoided and minimized. The application must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts.

#### **B. Standard "Individual" DA Permits.**

1. The permittee-responsible mitigation plan must be approved by the Corps of Engineers prior to the issuance of the DA Permit.
  - a. The special conditions of the DA Permit will include:
    - Identification of the party responsible for providing the compensatory mitigation and the party responsible for the long-term management of the mitigation area if different from the permittee.
    - Incorporation, by reference, the final mitigation plan approved by the Corps of Engineers that includes all items described in section 2(A-L) above.

#### **C. Nationwide/General DA Permits**

1. For a Nationwide/General Permit activity requiring mitigation, the permittee must demonstrate that permittee-responsible mitigation is ecologically/environmentally preferable to the use of a mitigation bank or an in-lieu fee program.
  - a. The verification that the proposed activity is authorized by one of these types of permits must include a special condition that describes the compensatory mitigation proposal and a special condition that prohibits the commencement of work in waters of the United States until the final mitigation plan is approved by the Corps of Engineers.
  - b. The degree to which the mitigation plan items, included in section 2(A-L), are addressed is commensurate upon the level of impact to waters of the United States that is associated with the proposed project.