United States Army Corps of Engineers

Huntington District

State of West Virginia

Compensatory Mitigation Plan Checklist

This checklist includes the components required in a compensatory mitigation plan as outlined in the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (Federal Register Vol. 73, No. 70; April 10, 2008) and in the Code of Federal Regulations (CFR) Title 33, Part 332.4.

BACKGROUND

In a Memorandum of Agreement (MOA) signed February 6, 1990 between the United States Army Corps of Engineers (Corps) and the United States Environmental Protection Agency, mitigation was defined as a sequential process of avoiding, minimizing and compensating for adverse impacts to the aquatic ecosystem. Compensatory mitigation is required for unavoidable adverse impacts to the aquatic ecosystem that cannot reasonably be avoided or further minimized in order to replace those aquatic ecosystem functions that would be lost of impaired as a result of a Corps-authorized activity.

A compensatory mitigation plan is required for a general permit, individual permit, mitigation bank, or in-lieu fee program. Final compensatory mitigation plans must include the 12 components listed below. The Corps may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the mitigation project.

The purpose of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by Corps permits. The Corps will determine what compensatory mitigation is required based on the practicability of replacing the aquatic functions lost as a result of the permitted activity. Permit applicants are responsible for proposing an appropriate compensatory mitigation option commensurate with the amount and type unavoidable impacts. Compensatory mitigation may be performed using methods of restoration, enhancement, establishment, and in certain cases preservation in order to successfully improve aquatic resource functions.

Compensatory mitigation should generally be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services, taking into account watershed scale features (e.g., aquatic habitat diversity, habitat connectivity, hydrologic sources, land use trends/compatibility, ecological benefits).

Pursuant to the 2008 Final Rule on Compensatory Mitigation (33 CFR 332), the Corps will consider the type and location options for compensatory mitigation in the following order:

1. Mitigation bank credits, when permitted impacts are located in the service area of an approved mitigation bank with appropriate number and resource type of credits available;
2. In-lieu fee program credits, when permitted impacts are located in the service area of approved in-lieu with appropriate number and resource type of credits available;
3. Permittee-responsible mitigation under a watershed approach, where likely to be successful and sustainable to maintain and improve the quality and quantity of aquatic resources within the watershed;
4. Permittee-responsible mitigation through on-site and in-kind mitigation, when considering the practicability and compatibility with the proposed project; and
5. Permittee-responsible mitigation through off-site and/or out-of-kind mitigation, where an opportunity is identified that has a greater likelihood of offsetting the permitted impacts or is environmentally preferable to on-site or in-kind mitigation.

CONTENTS OF COMPENSATORY MITIGATION PLAN

I. **Objectives –** the purpose of this section is to outline the goals and objectives of the compensatory mitigation plan. Goals should clearly define the intended result of the proposed compensatory mitigation in terms of aquatic ecosystem functions and hydrologic conditions within a watershed context. Objectives should be a list of specific, measurable outcomes of the compensatory mitigation that can be used to demonstrate whether or not the goals of the compensatory mitigation plan have been achieved.

   A. Discussion of the aquatic resource type(s), amount and functions impacted by the authorized work and comparisons to the aquatic resource type(s), amount and functions that will be provided at the compensatory mitigation site(s)
   B. The method of compensation (restoration [i.e. re-establishment or rehabilitation], establishment [i.e. creation], enhancement, and/or preservation [i.e. protection])
   C. Objectives statement should describe the loss(es) of aquatic functions on the authorized impact site and compare that to the amount of compensatory mitigation (i.e. linear feet, acres, WV Stream and Wetland Valuation Metric, version 2.1 [WVSWVM] scores, West Virginia Stream Condition Index [WVSCI] scores, the U.S. Environmental Protection Agency Rapid Bioassessment Protocols For Use in Streams and Wadeable Rivers (EPA 841-B-99-002) Habitat Assessment Value parameters [RBP HAV] scores) needed to offset the unavoidable impacts to waters of the United States
   D. Objectives must be specific, measurable and attainable (i.e. stream/wetland classification, linear feet, acres, WVSWVM scores, WVSCI scores, RBP HAV

scores)

E. How the anticipated functions of the mitigation project will address watershed needs

II. **Baseline Information –** this section should include a description of the ecological conditions for the proposed mitigation project site(s) and the impact site for projects requiring a Corps permit. The description should include the location, type, functions, and amount of adverse or beneficial impacts on the aquatic environment and other resources. Baseline information should generally include the following components:

A. Project and Mitigation Location Map(s)
B. Watershed(s)
C. Size (i.e. linear feet and acreage of streams, wetland and pond acreage), slopes, elevations, drainage areas, soils and vegetation, and site hydrology for the proposed impact and mitigation site(s)
D. Aquatic resource type (i.e. emergent, scrub-shrub or forested wetlands, open waters such as rivers, ponds, intermittent and perennial stream, and ephemeral streams)
E. Pre-existing conditions
    1. A delineation of waters of the United States on the proposed mitigation project site(s)
    2. Functional Assessment (e.g., WVSWVM Microsoft Excel spreadsheets) for proposed impact and mitigation sites
        i. Individual assessment methodologies utilized within the state of WV and incorporated into the WVSWVM for streams include:
            a. RBP HAV scores;
            b. WVSCI Scores;
            c. the Corps' Engineer Research and Development Center's Operational Draft Regional Guidebook for the Functional Assessment of High-gradient Ephemeral and Intermittent Headwater Streams in Western WV and Eastern Kentucky; and
            d. water quality data (pH, conductivity and dissolved oxygen).
    3. Stream patterns, profiles, dimensions
    4. Width, quality and density of riparian buffers
    5. Descriptions of historic and existing plant communities
        a. Dominant plants in each vegetation stratum
    6. Soil conditions
    7. Historic and existing hydrology
    8. Recent land disturbance history
    9. Physical, chemical, biological and geomorphological characteristics of aquatic resources proposed to be impacted and mitigated
    10. Known existing and proposed uses of the mitigation site(s)
    11. Presence of existing waters of the U.S. in mitigation site(s)
    12. Site photographs, including historic aerials if applicable to

compensatory mitigation plan

13. Other characteristics appropriate to the type of resource proposed as compensation

III. **Site Selection -** In this section, provide a detailed explanation of the selection process, including any constraints and associated factors used in determining the proposed mitigation site(s). The proposed mitigation site(s) should be ecologically suitable for providing the desired compensatory aquatic resource functions and be adjacent to existing aquatic resources or where aquatic resources previously existed. In addition, the proposed mitigation site(s) should generally be located within the same watershed as the proposed impacts.

A. Provide a general location map showing the locations of the impact and mitigation site(s)
B. Describe the factors considered during the site selection process and plan formulation
C. Consideration of watershed needs (i.e. habitat diversity, connectivity, land use trends, and compatibility with watershed uses)
D. On-site alternatives (where applicable)
E. Practicability of accomplishing ecologically self-sustaining aquatic resource restoration (i.e., re-establishment and rehabilitation), establishment (i.e., creation), enhancement, and/or preservation (i.e., protection) at the mitigation project site(s)
F. Detailed discussion on the likelihood of success and risk of failure
G. Discussion of other ecological considerations such as surrounding land use, adjacency to other protected lands, endangered species considerations, non-native species concerns, and other relevant ecological factors
D. How the chosen mitigation site contributes to the specific aquatic resource needs of the impacted watershed
E. Can the stated goals and objective be practicably achieved considering cost, existing technology and logistics?

IV. **Credit Determination Methodology -** In accordance with 33 CFR 332.4(c)(6), the determination of credits includes a description of the number of functional credits to be provided by compensatory mitigation as well as a brief explanation of the rationale for this determination. In cases where appropriate functional or condition assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required (provide methodology and results as an attachment). If a functional or condition assessment or other suitable metric is not used, an acreage or linear foot compensation ratio will be presented by the permittee and evaluated by the Corps. In some cases, a mitigation ratio greater than one-to-one is necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired

aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site.

A. An evaluation of mitigation debits and credits including a table showing calculations should be included as an attachment
B. For permittee-responsible mitigation, this section should include an explanation of how the mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity
C. For those permittees meeting mitigation obligations through multiple mitigation types (e.g., permittee-responsible mitigation as well as purchase of credits from a mitigation bank or in-lieu fee program), this section should include a description of how the credits for each mitigation type were calculated in order to demonstrate that the total functional impacts are compensated by the total functional credit generated by all the mitigation types. If one of the mitigation types includes the use of credits from an approved mitigation bank or in-lieu fee program, the permittee should describe how the number and resource type of credits were determined.

V. **Mitigation Work Plan -** The mitigation work plan should contain a detailed description of the proposed compensatory mitigation activities, with emphasis on documenting that the proposed mitigation work will achieve the stated ecological goals and objectives and support the restoration, establishment, enhancement, and/or preservation of the desired aquatic resource functions. Figures illustrating details of the mitigation work plan should be included as an attachment. Detailed written specifications and work descriptions for the mitigation project should include:

A. Geographic boundaries of proposed mitigation sites
    1. Maps and drawings
B. Construction Methods, timing, and sequence
C. Water source(s) and connectivity to existing aquatic resources
D. Methods for establishing the desired plant community
E. Planting success criteria, including initial densities for each habitat type
F. Allowances for natural regeneration
G. Plans for control of exotic invasive vegetation
H. Elevations and slopes
I. Erosion control measures
J. Proposed Grading Plan
K. Soil management
L. For stream mitigation projects, the mitigation work plan should include other relevant information such as:
    1. Geomorphology & special stream structure(s) (discuss the type of structures that would be installed in the created/restored/enhanced channel and what purpose they will serve)
    2. Channel Form (stream patterns, profiles, and dimensions)

3. Natural stream design techniques, i.e. classification system
4. Riparian area plantings
5. Existing and anticipated hydrologic conditions

VI. **Performance Standards -** In accordance with 33 CFR 332.5, performance standards should be ecologically-based criteria that will be used to determine whether the mitigation project is achieving its objective(s). The performance standards must be based on attributes that are unbiased, measurable, and verifiable. Acceptable performance standards may include:

A. Variables or measures of functional capacity described in functional or condition assessment methodologies (i.e. stream/wetland classification, linear feet, acres, WVSWVM scores, WVSCI scores, RBP HAV scores)
B. Measurements of hydrology or other aquatic resource characteristics
C. Planting success criteria (e.g., percent coverage, survival rates, species richness, etc.)
D. Comparisons to reference aquatic resources of similar type and landscape position

VII. **Site Protection -** In accordance with 33 CFR 332.7(a) this section should include a description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the mitigation project site(s). Long-term protection may be provided through real estate instruments (e.g., conservation easements) held by entities such as federal, tribal, state, or local resource agencies; non-profit conservation organizations; and private land managers. Other means of long-term site protection include restrictive covenants or the transfer of title to the aforementioned entities. For government property, long-term protection may be provided through federal facility management plans or integrated natural resources management plans. Provide a copy of the long-term legal protection instrument (e.g., conservation easement, deed restriction, transfer of title) as an attachment. In addition, identify the party(ies) responsible for protecting the mitigation site(s) and their role (e.g., site owner, easement owner, maintenance implementation). If more than one party will be involved in site protection, identify the party with primary responsibility. 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 in advance of, or oncurrent with, the activity causing the authorized impacts. The real estate instrument, management plan, or other long-term protection mechanism should:

A. stipulate that the mitigation areas shall be properly marked and shall not be disturbed, except by those activities that will not adversely affect the intended extent, condition and function of the mitigation areas
B. prohibit incompatible uses (e.g., clear cutting) that might otherwise jeopardize the objectives of the compensatory mitigation project
C. include a map depicting the boundary of each protected mitigation area,

including adjacent riparian and upland buffer areas

VIII. **Maintenance Plan -** The maintenance plan should include a description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

A. Measures to control predation/grazing of mitigation plantings
B. Temporary irrigation for plant establishment
C. Replacement plan
D. Structure maintenance/repair
E. Other applicable maintenance plan components

IX. **Monitoring Requirements -** Monitoring requirements should provide a description of monitoring parameters to be used to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting of results to the Corps must be included. See the Corps Regulatory Guidance Letter 08-03 and the Huntington District's Annual Monitoring Report Checklist for information on monitoring and reporting requirements. The following information should be provided:

A. Description of the parameters to be monitored (e.g., derived from performance standards), frequency/timing of monitoring, length of monitoring period, and the party responsible for conducting monitoring. The monitoring period must be sufficient to demonstrate that the compensatory mitigation has met performance standards, but generally not less than five years.
B. Reporting program description, including the frequency and timing for submitting reports to the Corps, the party responsible for submitting reports to the Corps, and the contents of the monitoring report (e.g., overview of project/monitoring, evaluation of whether mitigation performance standards are being met, description of any maintenance activities conducted, recommendations for remedial measures, monitoring data, as-built plans, maps, photographs, conclusions and other information to determine how the compensatory mitigation project is progressing towards meeting its performance standards).

X. **Long-term Management Plan** - The long-term management plan is a description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource. Any provisions necessary for long-term financing must be addressed in the original permit or instrument. 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. For permittee-responsible mitigation, any long-term financing mechanisms must be approved in advance of the activity causing the authorized impacts. The section should include the following information:

A. Party(ies) responsible for ownership and long-term management
B. General provisions of operation (e.g., types of uses allowable and/or restricted, infrastructure to be maintained, vegetation/wildlife management, etc.)
C. Description of long-term management needs
D. Annual cost estimates for these needs
E. Identification of funding mechanism used to meet those needs

XI. **Adaptive Management -** The adaptive management plan is a strategy used to address foreseeable or unforeseen changes in site conditions or other components that adversely affect compensatory mitigation success. The section should include the following information:

A. Party(ies) responsible for adaptive management
B. Potential remedial or corrective measures in the event mitigation does not meet the goals, objectives, and/or performance standards
C. Guidelines for revising compensatory mitigation plans and implementing remedial measures (e.g., coordinating with and obtaining approval from the Corps)

XII. **Financial Assurances -** This section should include a description of the financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed, in accordance with its performance standards. Financial assurances may be in the following forms:

A. Performance bonds
B. Escrow accounts
C. Casualty insurance
D. Letters of credit
E. Legislative appropriations for government sponsored projects
F. Other appropriate instruments, subject to the approval of the Corps