Guidelines for Preparing a Compensatory Mitigation Plan

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Executive Summary

On April 10, 2008, the U.S. Army Corps of Engineers and the Environmental Protection Agency published regulations (33 CFR Parts 325 and 332) entitled, "Compensatory Mitigation for Losses of Aquatic Resources," (Mitigation Rule). One of the primary goals of these regulations was to improve the quality and success of compensatory mitigation plans that are designed and implemented to offset impacts to aquatic resources authorized by Department of the Army permits. The Mitigation Rule emphasizes the strategic selection of compensatory mitigation sites on a watershed basis and established equivalent standards for all three types of compensatory mitigation (mitigation banks, in-lieu fee programs, and permittee-responsible mitigation plans).

The Mitigation Rule also established a hierarchy that is based upon the likelihood of a mitigation plan being both successful and sustainable. Compensatory mitigation provided by an approved mitigation bank or in-lieu fee program is presumed to be environmentally preferable to permittee-responsible mitigation (PRM) because it involves larger, more ecologically valuable aquatic resources and more rigorous scientific and technical analysis. In addition, mitigation banks and in-lieu fee programs are approved and implemented prior to the adverse impacts to aquatic resources associated with individual projects, so there is less potential for temporal losses and less uncertainty regarding the success of mitigation activities.

A compensatory mitigation plan that consists of purchasing the appropriate number and type of mitigation credits from an approved mitigation bank or in-lieu fee program requires less effort to review, approve, and implement than a PRM plan. Please note there may also be substantial time savings because the permit applicant is not required to identify an appropriate mitigation site, develop a complete mitigation plan, and implement a project specific PRM plan.

Prior to preparing a compensatory mitigation plan permit applicants should consider: 1) the cost of purchasing mitigation credits versus the cost of developing and implementing a project specific PRM plan, and 2) the benefit of a transfer of a liability once a permittee secures the necessary mitigation credits versus the long term commitment necessary to successfully implement a PRM plan. Permit applicants are encouraged to consult with the Corps early in the permit application process to discuss potential compensatory mitigation alternatives.

Permit applicants that are interested in learning more about compensatory mitigation are encouraged to read the Mitigation Rule. A complete copy of the Mitigation Rule and other documents regarding Corps jurisdiction, processing of permit applications, and mitigation are available on the Charleston District website at http://www.sac.usace.army.mil/

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (Corps) reviews applications for Department of the Army (DA) permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. With the exception of projects that are specifically designed to restore or enhance aquatic resources, most activities authorized by DA permits result in adverse impacts to waters of the United States. Compensatory mitigation is necessary to offset these unavoidable impacts to aquatic resource functions and services and to meet the programmatic goal of "no overall net loss" of aquatic resource functions and services.

On April 10, 2008, the Corps and U.S. Environmental Protection Agency published regulations entitled, "Compensatory Mitigation for Losses of Aquatic Resources" (Mitigation Rule). One of the primary goals of these regulations (33 CFR Parts 325 and 332) was to improve the quality and success of compensatory mitigation plans that are designed to offset impacts to aquatic resources authorized by Department of the Army (DA) permits. The Mitigation Rule emphasizes the strategic selection of mitigation sites on a watershed basis and established equivalent standards for all types of compensatory mitigation (mitigation banks, in-lieu fee programs, and permittee-responsible mitigation plans).

This local guidance document discusses the requirements of the Mitigation Rule and replaces the Charleston District's Standard Operating Procedures for Compensatory Mitigation (RD-SOP-02-01), dated September 19, 2002. Please note this document is marked as a working draft and is subject to periodic review and modification. Permit applicants should consult the Charleston District website (http://www.sac.usace.army.mil/?action=mitigation.home) to verify they are using the most recent, approved version of this document.

1.1 APPLICABILITY: The Mitigation Rule establishes compensatory mitigation standards for activities authorized by DA permits pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. This local guidance document is applicable to DA permits authorized by the Charleston District's Regulatory Division.

The methods for calculating wetland and linear system mitigation credits that are included in Appendix C and D of this document should be used to determine the number of mitigation credits required for a proposed project or to determine the number of mitigation credits generated by a proposed mitigation plan. Please note that more rigorous analysis may be required on a case by case basis to determine whether a proposed mitigation plan will fully offset potential adverse impacts associated with a proposed project.

Once a proposed project or compensatory mitigation plan is approved using a dated version of this local guidance document, the method used to determine the number of required mitigation credits or the number of mitigation credits generated by the approved mitigation plan will remain valid unless the approved project is amended or substantially modified.

Once a mitigation bank or in-lieu fee program is established using a dated version of this local guidance document, the method used to determine the number of mitigation credits generated by the approved mitigation plan will remain valid unless the approved project is amended or substantially modified. For example, adjustments to the number of mitigation credits generated by an approved mitigation plan must be determined using the same version of this document.

Permit applicants that propose to purchase mitigation credits from an approved mitigation bank or in-lieu fee program must use the latest approved version of this document to determine the number of credits required to offset adverse impacts associated with a proposed project.

1.2 PURPOSE: This local guidance document is intended to help familiarize permit applicants with mitigation concepts, types of compensatory mitigation, and the level of effort required to develop and implement a compensatory mitigation plan. This document also provides a framework to help permit applicants prepare a complete mitigation plan that complies with the Mitigation Rule. A flowchart that identifies specific steps in the review and approval of a proposed mitigation plan is included in Appendix B of this document for your convenience.

To provide predictability and consistency in the review and approval of proposed projects, the Charleston District first developed a method to calculate the number of mitigation credits required to offset adverse impacts to aquatic resources and the number of mitigation credits generated by a compensatory mitigation plan in 1993. The Charleston District has updated the method for calculating mitigation credits for wetlands (Appendix C), which are measured on an acreage basis, and linear systems (Appendix D), which are measured on a linear footage basis to ensure that proposed compensatory mitigation plans support the programmatic goal of "no overall net loss" of aquatic resource functions and services.

The information described in this document is required to review and approve a proposed compensatory mitigation plan. Submitting a complete mitigation plan that fully offsets adverse impacts to aquatic resources may facilitate the review of a proposed project. However, nothing in this document should be interpreted as a promise or guarantee that a proposed project that includes a complete compensatory mitigation plan will be approved.

2.0 REGULATIONS AND GUIDANCE

This local guidance document has been prepared by the Charleston District's Regulatory Division using existing regulations, guidance documents, and staff experience, including lessons learned from the success and/or failure of previous compensatory mitigation plans. Every effort has been made to eliminate any potential discrepancies between this document and the Mitigation Rule. Permit applicants should notify the Charleston District immediately and request clarification before using any portion of this document that appears to conflict with existing regulations or other guidance documents.

The following regulations and guidelines are discussed briefly in this document to help permit applicants understand the difference between specific issues that must be considered during the evaluation of permit applications and compensatory mitigation plans.

2.1 SECTION 404(B)(1) GUIDELINES: The Section 404(b)(1) Guidelines for the Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230) have an important role in maintaining and restoring the physical, chemical, and biological integrity of waters of the United States. The 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative available to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

All applications for a standard DA permit must include information about alternatives, such as other layouts on the project site or other project sites that would avoid and minimize potential impacts to aquatic resources. Permit applications for projects that do not comply with the 404(b)(1) Guidelines or that are determined to be contrary to the public interest will be denied. Pre-construction notifications for activities authorized by Nationwide Permits must address avoidance and minimization of potential adverse impacts on the project site. However, they are not required to include information about other project sites.

Compliance with the 404(b)(1) Guidelines is not required for projects that only involve Section 10 activities.

2.2 MITIGATION MOA: The 1990 Memorandum of Agreement between the Department of the Army and the Environmental Protection Agency on the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (Mitigation MOA) is the basis of most regulatory guidance regarding compensatory mitigation. The Mitigation MOA establishes the sequence of avoidance, minimization, and compensation that is used by the Corps when evaluating potential impacts to waters of the United States.

The evaluation of alternatives required by the 404(b)(1) Guidelines must be completed and potential impacts to aquatic resources must be avoided and minimized to the maximum extent practicable, prior to considering a proposed compensatory mitigation plan. Compensatory mitigation may be required for any unavoidable adverse impacts to aquatic resources and to ensure the proposed project complies with the 404(b)(1) Guidelines. If a permit applicant is unable to provide the necessary compensatory mitigation, the Corps may determine that a DA permit cannot be issued for the proposed project.

2.3 MITIGATION RULE: The Mitigation Rule supersedes previous guidance documents regarding compensatory mitigation, such as the 1995 Mitigation Banking Guidance, the 2000 In-Lieu Fee Guidance, the 2002 Compensatory Mitigation Regulatory Guidance Letter, and provisions of the Mitigation MOA that relate to the amount, type, and the location of compensatory mitigation projects. All compensatory mitigation plans that are designed to offset adverse impacts to waters of the United States authorized by DA permits must comply with the Mitigation Rule.

The Mitigation Rule establishes equivalent standards for all types of compensatory mitigation, and criteria for the strategic selection of compensatory mitigation sites within the same watershed as the project site. The Mitigation Rule recognizes that the restoration and enhancement of degraded aquatic resources on a watershed basis is more likely to replace the suite of aquatic resource functions and services that are adversely impacted by activities authorized by DA permits.

The following hierarchy (33 CFR 332.3b) is based upon the likelihood of compensatory mitigation plans being both successful and sustainable:

- **Mitigation bank credits**
- **In-lieu fee program credits**

- **Permittee-responsible mitigation (PRM) under a watershed approach**
- **PRM through on-site and in-kind mitigation**
- **PRM through off-site and/or out-of-kind mitigation**

The purchase of the appropriate number and type of mitigation credits from an approved mitigation bank or in-lieu fee program is presumed to be environmentally preferable to PRM plans because these programs restore and enhance larger, more ecologically valuable aquatic resources. If a proposed project is located within the primary service area of an existing mitigation bank or in-lieu fee program, the permit applicant will normally be required to purchase the necessary mitigation credits.

Likewise, PRM plans that use a watershed approach are presumed to be environmentally preferable to other types of PRM plans because they identify and address specific aquatic resource needs of the watershed. All PRM plans must include information about the watershed (8-Digit Hydrologic Unite Code) and sub-watershed where the proposed project is located. In addition, all PRM plans should describe how the proposed mitigation activities will help maintain and improve the quality and quantity of aquatic resources within the watershed.

If addressing the aquatic resource needs of the watershed is not considered practicable, on-site and in-kind mitigation is presumed to be environmentally preferable to off-site and/or out-of-kind mitigation. Mitigation plans that restore aquatic resources that are similar (in-kind) to the impacted areas on the project site are more likely to replace the aquatic resource functions and services that are being impacted on the project site.

3.0 TYPES OF COMPENSATORY MITIGATION

One of the most important aspects of the Mitigation Rule is the establishment of equivalent standards for each type of compensatory mitigation: mitigation banks, in-lieu fee programs, and permittee-responsible mitigation (PRM). These standards ensure that all compensatory mitigation plans include the information necessary to successfully restore and enhance aquatic resource functions and services.

Please note more than one type of compensatory mitigation may be required to offset the adverse impacts associated with a proposed project. For example, a permit applicant may propose to purchase stream mitigation credits from an approved mitigation bank and to restore an impaired wetland system on the project site (if wetland mitigation credits are not available at an approved mitigation bank).

3.1 THIRD PARTY MITIGATION: Mitigation banks and in-lieu fee programs must be established and operated in accordance with the appropriate portion of the Mitigation Rule (33 CFR 332.8). They are collectively referred to as third party mitigation because they both involve off-site mitigation activities that are conducted by someone other than the permittee. Mitigation bank and in-lieu fee programs typically consist of large scale restoration projects that provide compensatory mitigation for a number of different activities authorized by DA permits.

Proposals to develop mitigation banks or in lieu fee programs are reviewed and approved separate from individual projects that impact waters of the United States. The bank or program sponsor is responsible for identifying a potential mitigation site, developing a mitigation plan, obtaining the necessary approvals, and ensuring that the mitigation activities are successful. Compensatory mitigation credits are released and the sponsor is allowed to sell credits to satisfy the mitigation requirements of DA permits once they document that specific milestones and performance standards have been met.

A compensatory mitigation plan that consists of purchasing the appropriate number and type of mitigation credits from an approved mitigation bank or in-lieu fee program is presumed to be environmentally preferable, and requires less effort than developing and implementing a PRM plan. When a permittee secures mitigation credits from an approved mitigation bank or in-lieu fee program, the responsibility for conducting the necessary compensatory mitigation activities is transferred from the permittee to the mitigation bank or in-lieu fee program sponsor.

Third party mitigation plans are typically the most cost effective type of compensatory mitigation for projects that result in minimal impacts to aquatic resources, such as Nationwide Permits. If a proposed project is located within the primary service area of an approved mitigation bank or in-lieu fee program, the permittee will normally be required to purchase the appropriate number and type of mitigation credits.

Please note that there are a limited number of mitigation banks and in-lieu fee programs within the State of South Carolina. If a proposed project is not located within the service area of an approved mitigation bank or in-lieu fee program, the permit applicant will be required to develop and implement a PRM plan that offsets adverse impacts to aquatic resources.

3.2 PERMITTEE-RESPONSIBLE MITIGATION (PRM): The Mitigation Rule identifies three types of permittee-responsible mitigation (PRM) plans: PRM under a watershed approach, PRM through on-site and in-kind mitigation, and PRM through off-site and/or out-of-kind mitigation. Since PRM plans that are developed using a watershed approach are presumed to be environmentally preferable, all PRM plans must include information about the aquatic resource needs of the watershed where the proposed project is located.

In addition, all PRM plans must address the components of a complete mitigation plan as described in the Mitigation Rule (33 CFR 332.4(c)). A Permittee-Responsible Mitigation Plan Template is included in Appendix E of this local guidance document for your convenience. Permit applicants are encouraged to identify an appropriate mitigation site and to begin working on a proposed PRM plan as early as possible in the permit application process. Otherwise, the Corps may complete our evaluation of a proposed project and may not be able to issue a DA permit because the applicant has not submitted a final mitigation plan that offsets adverse impacts to aquatic resources.

3.2.1 WATERSHED APPROACH: The goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through the strategic selection of compensatory mitigation sites. Therefore, permit applicants should consider factors such as current trends in habitat loss or conversion; cumulative impacts of past development

activities; and chronic environmental problems such as flooding or poor water quality, and should use readily available information to identify potential mitigation opportunities within the same 8-digit Hydrologic Unit Code as the proposed project.

As described above, all PRM plans must also include information about the aquatic resource needs of the watershed where the proposed project is located. The level of information needed to support a watershed approach (33 CFR 332.3(c)) should be commensurate with the proposed impacts to aquatic resources. The Charleston District has identified a number of sources for information about watersheds. This information is posted on our website at www.usace.army.mil, and will periodically be updated as new information becomes available.

3.2.2 ON-SITE AND IN-KIND MITIGATION: Prior to the Mitigation Rule, on-site and in-kind activities were the most common type of compensatory mitigation on both an acreage and linear footage basis in the State of South Carolina. This was primarily the result of permit applicants proposing to protect the remaining aquatic resources on the project site as part of an overall mitigation plan. On-site preservation was often combined with the purchase of mitigation credits from an approved mitigation bank or restoration or enhancement activities to offset the adverse impacts of a proposed project.

The Corps believes that establishing upland buffers or riparian zones around the remaining aquatic resources on a project site may limit indirect or cumulative impacts associated with ongoing development activities. However, this does not offset adverse impacts to other aquatic resources and normally will not meet the preservation criteria identified in the Mitigation Rule (33 CFR 332.3(h)). For example, if the majority of the aquatic resources on a project site will be adversely impacted by a proposed project, the remaining aquatic resources may be too fragmented to contribute to the long-term sustainability of the watershed.

Please note that opportunities to conduct on-site and in-kind compensatory mitigation are not available on every project site. If there are opportunities to restore or enhance in-kind aquatic resources on the project site and the preservation of buffer zones, riparian areas, or the remaining on-site aquatic resources will protect and contribute to the success of these activities, on site and in-kind compensatory mitigation may be appropriate.

3.2.3 OFF-SITE AND/OR OUT-OF-KIND MITIGATION: If a permit applicant is unable to purchase mitigation credits from an approved mitigation bank or an in-lieu fee program, or to identify potential mitigation opportunities using a watershed approach, or to perform on-site or in-kind mitigation, the least desirable type of compensatory mitigation is off-site and/or out-of-kind mitigation. The permit applicant will be required to document why none of the other types of compensatory mitigation are considered practicable and how the proposed mitigation plan will offset the proposed impacts to waters of the United States.

This type of compensatory mitigation plan will typically not be considered acceptable. The approval of the Regulatory Division Chief will be required.

4.0 COMPENSATORY MITIGATION METHODS

Compensatory mitigation plans may generate mitigation credits using four different methods: the restoration of a former aquatic resource that is no longer considered a water of the United States, the establishment (creation) of a new aquatic resource, the enhancement of an impaired or degraded aquatic resource, or in certain circumstances preservation of an outstanding aquatic resource that is determined to be important to the long-term success and sustainability of the surrounding watershed.

Restoration should generally be the first option considered because the likelihood of success is greater than establishment and the potential gains (an increase in acreage or linear footage of aquatic resources) in terms of aquatic resource functions and services are greater than both enhancement and preservation. Although establishment may result in an increase in the acreage or linear footage of aquatic resources, this method of compensatory mitigation is discouraged by the Charleston District because of the poor overall success rate.

Enhancement should be the second option considered because improvements in aquatic resource functions and services are necessary to offset adverse impacts authorized by DA permits. Although the preservation of fully functional aquatic resources can be a valuable component of a mitigation plan, preservation activities by themselves are not considered sufficient to offset adverse impacts to aquatic resource functions and services. In accordance with Appendix C and D at least 50% of the mitigation credits generated by a proposed mitigation plan should be the result of restoration or enhancement activities.

If the preservation of fully functional aquatic resources is included as part of an overall compensatory mitigation plan, the preservation areas should help meet the aquatic resource needs of the watershed or support the success or sustainability of the proposed restoration or enhancement activities. Mitigation plans that include preservation activities must also address the following criteria that are identified in the Mitigation Rule (33 CFR 332.3(h)):

- The resources to be preserved provide important physical, chemical, or biological functions for the watershed;
- The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available;
- Preservation is determined by the district engineer to be appropriate and practicable;
- The resources are under threat of destruction or adverse modifications; and
- The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust).

5.0 COMPLETE PERMIT APPLICATION

The Mitigation Rule revised the definition of a complete permit application (33 CFR 325.1(d)). All applications for a standard DA permit must include: 1) a statement describing how impacts to waters of the United States will be avoided and minimized on the project site, and 2) either a conceptual mitigation plan or a statement explaining why compensatory mitigation should not be

required for the proposed project. This information is required prior to the Corps issuing a Public Notice for a proposed project.

Pre-construction notifications for Nationwide Permits (NWPs) must include the information necessary to demonstrate a proposed project avoids and minimizes adverse impacts to waters of the United States to the maximum extent practicable. Compensatory mitigation may be required to ensure that activities authorized by NWPs result in minimal adverse effects on the aquatic environment.

5.1 AVOIDANCE AND MINIMIZATION: The information required to demonstrate avoidance and minimization of potential adverse impacts to aquatic resources on the project site should be commensurate with the proposed impacts to aquatic resources. This information may include a statement describing how waters of the United States have been avoided and minimized, submittal of alternative layouts (on-site), and/or submittal of information about alternative sites (off-site) that were considered during the planning stages of the proposed project.

Baseline information about the project site that is submitted to the Corps to obtain a Jurisdictional Determination includes: location maps, topographic maps, soil maps, aerial photographs, a delineation of aquatic resources, and data sheets that describe the existing condition of aquatic resources on the project site. This information should be used by the permit applicant to prepare permit drawings and to evaluate on-site layouts that avoid and minimize potential impacts to aquatic resources on the project site.

Outstanding resources (rare, unique, or high quality aquatic resources) on the project site must be identified and specifically addressed in the avoidance and minimization statement for a proposed project. Permit applicants are encouraged to fully address avoidance and minimization of potential impacts to all waters of the United States on the project site and to document that a proposed project complies with the 404(b)(1) Guidelines as early as possible in the permit application process.

5.2 DETERMINATION OF CREDITS: Since the objective of compensatory mitigation is to offset adverse impacts to waters of the United States authorized by DA permits, every permit application must include information about the existing condition of aquatic resources (streams, open waters, wetlands, etc) located on the project site. This information is used to determine both the number and type of mitigation credits that will be required to offset adverse impacts associated with the proposed project.

The permit applicant should use an appropriate classification system, such as the Cowardin system (*Classification of Wetlands and Deepwater Habitats of the United States*) or the Rosgen system (*Field Guide for Stream Classification*) to identify each aquatic resource type that will be adversely impacted by a proposed project. The resource type will be used to help determine if a proposed mitigation plan offsets adverse impacts to a specific resource type or meets the aquatic resource needs of the watershed. If bottomland hardwood wetlands will be impacted by a proposed project, the proposed compensatory mitigation plan should restore or enhance bottomland hardwood wetlands.

To provide predictability and consistency in the review and approval of proposed projects, the Charleston District has developed a method to calculate the number of mitigation credits required to offset adverse impacts to aquatic resources and the number of mitigation credits generated by a compensatory mitigation plan. The method for calculating wetland mitigation credits, which are measured on an acreage basis, is included in Appendix C, and the method for calculating linear system mitigation credits, which are measured on a linear footage basis, in included in Appendix D.
In general, adverse impacts to aquatic resources should be assessed as follows:

- For impacts to wetlands use the tables and worksheets located in Appendix C to calculate mitigation credits on an acreage basis.

- For impacts to streams or rivers use the tables and worksheets located in Appendix D to calculate mitigation credits on a linear footage basis. This includes Piedmont stream systems where only bed and bank wetlands are impacted.

- For impacts to stream or riverine systems with a defined channel where impacts extend to adjacent or neighboring wetlands, use Appendix D to calculate mitigation credits on a linear footage basis for the stream or river and use Appendix C to calculate mitigation credits on an acreage basis for the wetlands.

- For impacts to seepage wetlands and braided stream systems, use Appendix C to calculate mitigation credits on an acreage basis.

Please note that wetland mitigation credits (acreage) and linear mitigation credits (linear feet) are measured using two different units. If Appendix D is used to calculate the number of required linear mitigation credits, Appendix D must also be used to calculate the linear mitigation credits generated by the proposed mitigation activities.

Permit applicants that propose to use assessment methods other than Appendix C and D of this local guidance document must schedule a pre-application meeting with the Corps to verify the proposed assessment method will provide the information necessary to evaluate both the proposed project and the proposed compensatory mitigation plan. On a case by case basis, the Corps may determine that more rigorous, detailed assessment methods and/or studies (e.g., HGM, WET, HEP) may be required to verify that a large project does not result in unacceptable adverse impacts to aquatic resources.

5.2.1 MITIGATION CREDIT ADJUSTMENT: With the possible exception of outstanding aquatic resources that are important on a watershed scale, the preservation of buffer zones, riparian areas, and the remaining aquatic resources on the project site does not meet the preservation criteria identified in the Mitigation Rule (33 CFR 332.3(h)). Therefore, the preservation of these areas does not generate compensatory mitigation credits to offset adverse impacts to aquatic resources.

The Charleston District believes the preservation of upland buffers and riparian zones that protect the remaining aquatic resources on the project site as part of an overall compensatory mitigation plan should be encouraged to avoid and minimize ongoing and potential future

adverse impacts. Therefore, permit applicants that protect these areas in perpetuity using site protection instruments may be eligible for a 25% reduction in the total amount of compensatory mitigation required to offset a proposed project. Proposals that do not fully protect the remaining aquatic resources or that do not contribute to the success and/or sustainability of the adjacent watershed will not be considered eligible for this credit reduction.

The upland buffer and riparian zone widths described in Appendix C and D of this document are based on scientific literature, and will normally be considered sufficient to avoid and minimize potential indirect and cumulative impacts to the remaining aquatic resources. In order to obtain the full 25% credit reduction, the proposed acreage and/or linear footage that will be protected on the project site must be at least 3 times the acreage and/or linear footage of aquatic resources that will be impacted by the proposed project.

Additional information regarding this potential reduction in the total number of mitigation credits is included in Appendix C and D of this document.

5.3 CONCEPTUAL MITIGATION PLAN: As discussed in Section 3.0, there are two primary types of compensatory mitigation: 1) the purchase of mitigation credits from an approved mitigation bank or an in-lieu fee program, or 2) the preparation of a PRM plan. Since purchasing the appropriate number and type of mitigation credits from an approved mitigation bank or in-lieu fee program is presumed to be environmentally preferable to PRM, all conceptual mitigation plans must identify the number and type of mitigation credits required to offset the proposed impacts to aquatic resources, and must indicate whether the proposed mitigation activities meet the requirements of Appendix C and/or D of this document.

In addition, all mitigation plans must include information about the availability of mitigation credits within the same watershed as the proposed project. This information may be obtained using the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) at http://216.83.232.125:443/pls/htmldb/f?p=101. When a permit applicant selects the location of a proposed project on the interactive map located on the RIBITS website, they receive a list of approved mitigation banks that may be able to provide the necessary mitigation credits. RIBITS also includes contact information for the mitigation bank sponsor.

If the proposed project is located within the service area of an approved mitigation bank or in-lieu fee program, a conceptual mitigation plan may consist of proposing to purchase the appropriate number and type of mitigation credits from an approved mitigation bank. All permit applicants should consider the cost of purchasing the necessary mitigation credits, the benefits of transferring liability to a mitigation bank or an in-lieu fee program sponsor, and the effort required to develop and implement a PRM plan prior to submitting a conceptual mitigation plan.

If a proposed project is not located within the service area of an approved mitigation bank or in-lieu fee program or the necessary mitigation credits are not available, the permit applicant must submit a PRM plan. A conceptual PRM plan must provide specific information about the objectives of the proposed mitigation plan and enough information about the proposed mitigation activities to enable the public to provide meaningful comments. A statement indicating that the permit applicant plans to identify an appropriate PRM mitigation site within the same 8-digit HUC as the proposed project is not sufficient.

6.0 FINAL MITIGATION PLAN

Once a proposed project has satisfied the requirements of the 404(b)(1) Guidelines, the permit applicant will be required to submit a final mitigation plan. A final mitigation plan that consists of purchasing the appropriate number and type of mitigation credits from an approved mitigation bank or in lieu fee program may be identical to the conceptual mitigation plan that was submitted with the permit application.

A final PRM plan must address all of the components of a complete mitigation plan (33 CFR 332.4(c)), or provide written justification why one (or more) component is not necessary to ensure that the proposed mitigation plan is both successful and sustainable. Permit applicants are encouraged to use the Compensatory Mitigation Plan Template that is included in Appendix E of this document and to coordinate with their Corps project manager regarding a proposed PRM plan. Since there are numerous site specific differences between proposed mitigation sites all PRM plans must be evaluated on a case by case basis.

Please note that the identification of an appropriate mitigation site and the development of a final PRM plan may require an equal or greater amount of effort than developing a permit application and obtaining a DA permit for the proposed project. The permit applicant is responsible for avoiding and minimizing potential impacts to the maximum extent practicable and submitting a compensatory mitigation plan that fully offsets adverse impacts associated with their proposed project. If a permit applicant is unable to provide the necessary compensatory mitigation the Corps will not be able to issue a DA permit for the proposed project.

According to the Mitigation Rule, a general permit, such as a Nationwide Permit, may be issued prior to the approval of a final mitigation plan to meet the necessary timelines. Please note the Charleston District will require the submittal of a final mitigation plan for most activities that result in a permanent conversion or a loss of waters of the United States. **Pre-construction notifications that do not include a Final Mitigation Plan may be elevated for review as an Individual Permit to ensure that activities authorized by Nationwide Permits do not have more than minimal impacts to aquatic resources.**

7.0 IMPLEMENTING AN APPROVED MITIGATION PLAN

All DA permits and general permit verification letters that require compensatory mitigation include special conditions that describe the responsibilities of the permittee regarding compensatory mitigation. This section discusses the responsibilities of a permit applicant regarding compensatory mitigation activities after a complete mitigation plan has been reviewed and approved and a DA permit is issued for the proposed project.

7.1 PERMIT CONDITIONS: When a mitigation plan consists of purchasing mitigation credits from an approved mitigation bank or in lieu fee program, a special condition of the DA permit will identify the number and type of mitigation credits that must be purchased to offset the adverse impacts associated with the authorized project. The permittee is responsible for submitting evidence that the necessary mitigation credits have been purchased within 60 days of permit issuance or prior to beginning work authorized by the DA permit. This enables the permittee to begin work immediately upon receipt of their DA permit.

Once a permittee has secured the necessary mitigation credits from an approved mitigation bank or in lieu fee program the responsibility for providing compensatory mitigation is transferred to the mitigation bank or in lieu fee program sponsor. Since mitigation banks and in-lieu fee programs do not have an unlimited supply of mitigation credits, permitees are encouraged to secure the necessary mitigation credits and to satisfy the special conditions of their DA permit as soon as posiible.

If the necessary mitigation credits are not available when the permittee is ready to begin work, the permittee must wait until additional mitigation credits are released or coordinate with the Corps to obtain approval for an alternate mitigation plan. If the proposed project is located within the service area of another mitigation bank or in-lieu fee program, an alternate mitigation plan may consist of purchasing the necessary mitigation credits from another source. If the permittee is required to develop a project specific PRM plan there may be substantial delays before they are able to begin work on the proposed project.

When a mitigation plan consists of implementing an approved PRM plan, one or more special conditions of the DA permit will identify the specific actions that are necessary for the permittee to document the success of the approved mitigation plan.

7.2 SITE PROTECTION INSTRUMENT: Upland buffers, riparian zones, and aquatic resources that are restored or enhanced as part of an approved PRM plan must be protected using real estate instruments or other available mechanisms. Appendix F includes a model conservation easement and a model restrictive covenant that may be used to provide long-term protection to mitigation sites. These site protection instruments may also be used to protect the remaining aquatic resources on the project site from indirect and cumulative impacts, and to obtain the 25% reduction in the total number of required mitigation credits.

The real estate instrument that is used to protect the compensatory mitigation site (or the remaining aquatic resources on the project) should be reviewed and approved by the Corps prior to permit issuance as part of the final mitigation plan. In accordance with the special conditions of the DA permit, the real estate instrument and the survey plat must be recorded at the Register of Mesne Conveyance in the appropriate county and submitted to the Corps and the South Carolina Department of Health and Control within 60 days of permit issuance or prior to beginning the authorized work.

7.3 FINANCIAL ASSURANCES: Financial assurances provide a source of funding to ensure that an approved PRM plan is successful. Financial assurances may consist of a letter of credit or a performance bond that is based on cost estimates to implement and document the success of the approved PRM. If a permittee is unable to complete the necessary mitigation activities, or if the approved mitigation plan fails to meet the performance standards identified in the approved PRM plan, financial assurances may be used to conduct adaptive management or to implement alternate mitigation activities that satisfy the requirements of the approved DA permit.

Similar to site protection instruments, evidence that the financial assurances identified in the approved PRM plan have been obtained must be submitted to the Corps within 60 days of permit issuance or prior to beginning work on the proposed project. Financial assurances must

be maintained throughout the entire monitoring period for the mitigation site and may be terminated once the approved mitigation plan is determined to be successful.

Regulatory Guidance Letter 05-01, entitled "Guidance on the Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds" is included in Appendix G of this document for your convenience.

7.4 MONITORING REQUIREMENTS: General information about the existing condition of the aquatic resources on the mitigation site is required to review and approve a PRM plan. In most cases, a baseline monitoring report will be required to supplement this information and to document site conditions prior to performing restoration or enhancement work on the mitigation site. The information included in this report will vary based on the objectives of the approved mitigation plan and the performance standards that will be used to document the success of mitigation activities.

Performance standards measure the effectiveness of a mitigation plan at achieving restoration goals and offsetting the authorized impacts to aquatic resources. They must relate to the specific goals of the approved mitigation plan, and should describe criteria for measuring interim progress and determining whether the mitigation site is developing as expected. For stream systems, this may entail bringing an actively aggrading or degrading system into a state of dynamic equilibrium whereby the monitoring data will indicate stream channel stability and improved biological integrity.

Specific monitoring requirements are developed on a case by case basis and incorporated into the final mitigation plan. For wetlands, this may include installing monitoring wells and gathering at least one year of data to establish the baseline hydrology conditions prior to conducting the approved mitigation activities. Once the permittee has conducted the necessary mitigation activities, they will be required to submit a minimum of five annual monitoring reports to document any improvements to hydrology on the mitigation site. If the permittee is unable to gather the necessary data or the mitigation site does not develop as expected additional monitoring and/or mitigation activities may be required to meet the necessary performance standards.

Regulatory Guidance Letter 08-03, entitled Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Restoration, Establishment and/or Enhancement of Aquatic Resources" is included in Appendix H of this document for your convenience.

7.5 DETERMINATION OF SUCCESS: PRM plans are designed to offset adverse impacts associated with a specific project. In most cases, if a mitigation plan is implemented in accordance with the approved PRM plan and the aquatic resources located on the mitigation site meet the necessary performance standards the mitigation plan is considered a success. Once a permittee has submitted the necessary monitoring reports and documented the success of the mitigation plan, the Corps will issue a letter indicating that the permittee has satisfied the mitigation requirement for the DA permit.

Please note that the number of mitigation credits generated by a compensatory mitigation plan is a product of both the existing condition that is documented in the baseline monitoring report and the improvements to aquatic resource functions and services. If the proposed project does not meet the necessary performance standards or there is a shortfall in the number of mitigation credits generated by an approved PRM plan, the permittee may be required to conduct additional mitigation activities or to purchase mitigation credits from an approved mitigation bank or in-lieu fee program.

7.6 LONG TERM MANAGEMENT: Since many projects result in the permanent loss or impairment of waters of the United States, compensatory mitigation plans must be designed to replace aquatic resource functions and services. A long-term management plan ensures that mitigation sites will be maintained and/or protected once the necessary mitigation activities are completed and determined to be successful. Mitigation sites should be selected and mitigation plans should be designed to be self-sustaining in order to minimize future long-term management responsibilities.

Long term management requirements, such as invasive species or fire management, must be identified in the final mitigation plan. The mitigation plan should also identify the party responsible for performing any long term management activities and the source of funding for performing these activities after the monitoring of the mitigation site is completed.

8.0 CONCLUSION

The review and approval of compensatory mitigation plans is an integral part of all four goals of the Corps of Engineers Regulatory Program: 1) protecting the environment, 2) enhancing regulatory program efficiency, 3) making fair, reasonable, and timely decisions, and 4) achieving no net loss of aquatic resources. The purpose of this local guidance document is to help permit applicants prepare and implement compensatory mitigation plans that offset adverse impacts to aquatic resources authorized by DA permits.

The Charleston District believes the equivalent standards established by the Mitigation Rule have improved the quality of all three types of compensatory mitigation (mitigation banks, in-lieu fee programs, and permittee-responsible mitigation) in South Carolina. In addition, we have observed an increase in the demand for mitigation credits from approved mitigation banks and in-lieu fee programs. We believe this demand will continue to increase as permit applicants recognize the overall cost and time required to prepare and implement a successful PRM plan.

This document is being issued as a working draft and is effective immediately. Every effort has been made to eliminate any potential discrepancies between this local guidance document and the Mitigation Rule. Permit applicants should notify the Charleston District immediately and request clarification before using any portion of this document that appears to conflict with existing regulations or other guidance documents. This document will be reviewed and updated periodically to provide permit applicants with additional guidance and tools to help them prepare and implement compensatory mitigation plans.

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Appendix A

Definitions

Definitions
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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.

Buffer means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

Compensatory mitigation means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Condition means the relative ability of an aquatic resource to support and maintain a community of organisms having a species composition, diversity, and functional organization comparable to reference aquatic resources in the region.

Credit means a unit of measure (e.g., a functional or a real measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.

Cumulative impacts means the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR §1508.7.)

DA means Department of the Army.

Debit means a unit of measure (e.g., a functional or a real measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

Functional capacity means the degree to which an area of aquatic resource performs a specific function.

Functions means the physical, chemical, and biological processes that occur in ecosystems.

Impact means adverse effect.

In-kind means a resource of a similar structural and functional type to the impacted resource.

In-lieu fee program means a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for DA permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. However, the rules governing the operation and use of in-lieu fee programs are somewhat different from the rules governing operation and use of mitigation banks. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.

Instrument means the legal document for the establishment, operation, and use of a mitigation bank or an or in-lieu fee program.

Interagency Review Team (IRT) means an interagency group of federal, tribal, state, and/or local regulatory and resource agency representatives that reviews documentation for, and advises the district engineer on, the establishment and management of a mitigation bank or an in-lieu fee program.

Mitigation bank means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

Off-site means an area that is neither located on the same parcel of land as the impact site, nor on a parcel of land contiguous to the parcel containing the impact site.

On-site means an area located on the same parcel of land as the impact site, or on a parcel of land contiguous to the impact site.

Out-of-kind means a resource of a different structural and functional type from the impacted resource.

Performance standards are observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

Permittee-responsible mitigation means an aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Reference aquatic resources are a set of aquatic resources that represent the full range of variability exhibited by a regional class of aquatic resources as a result of natural processes and anthropogenic disturbances.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riparian areas are lands adjacent to streams, rivers, lakes, and estuarine-marine shorelines. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality.

Service area means the geographic area within which impacts can be mitigated at a specific mitigation bank or an in-lieu fee program, as designated in its instrument.

Services mean the benefits that human populations receive from functions that occur in ecosystems.

Sponsor means any public or private entity responsible for establishing, and in most circumstances, operating a mitigation bank or in-lieu fee program.

Temporal loss is the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss. When the compensatory mitigation project is initiated prior to, or concurrent with, the permitted impacts, the district engineer may determine that compensation for temporal loss is not necessary, unless the resource has a long development time.

Watershed means a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.

Watershed approach means an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and locations of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by activities authorized by DA permits. The watershed approach may involve consideration of landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for DA permits.

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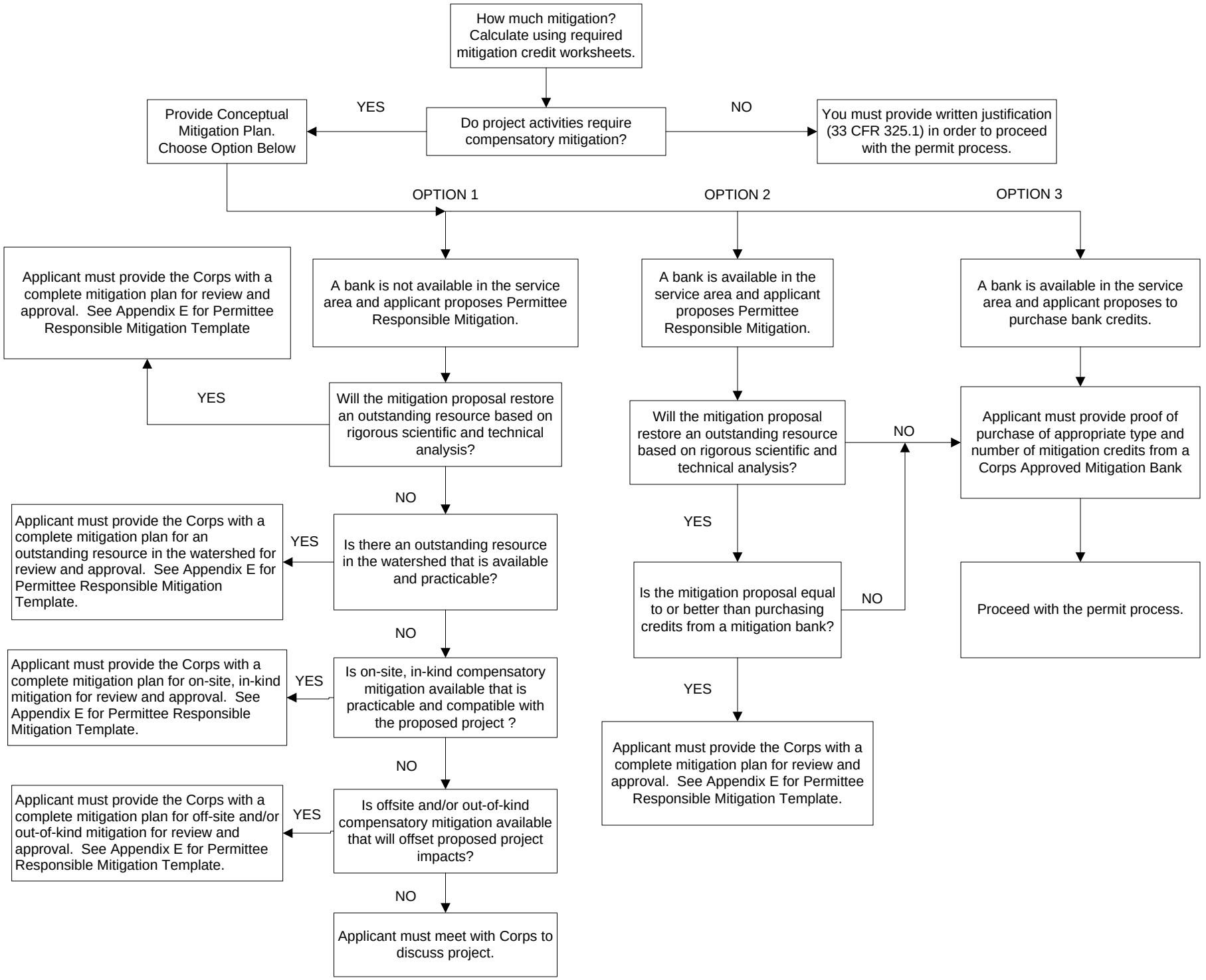
Appendix B

Flow Chart


How much mitigation? Calculate using required mitigation credit worksheets.
Do project activities require compensatory mitigation?
YES
NO
Provide Conceptual Mitigation Plan. Choose Option Below
You must provide written justification (33 CFR 325.1) in order to proceed with the permit process.
OPTION 1
OPTION 2
OPTION 3
Applicant must provide the Corps with a complete mitigation plan for review and approval. See Appendix E for Permittee Responsible Mitigation Template
A bank is not available in the service area and applicant proposes Permittee Responsible Mitigation.
A bank is available in the service area and applicant proposes Permittee Responsible Mitigation.
A bank is available in the service area and applicant proposes to purchase bank credits.
YES
Will the mitigation proposal restore an outstanding resource based on rigorous scientific and technical analysis?
Will the mitigation proposal restore an outstanding resource based on rigorous scientific and technical analysis?
NO
Applicant must provide proof of purchase of appropriate type and number of mitigation credits from a Corps Approved Mitigation Bank
NO
Applicant must provide the Corps with a complete mitigation plan for an outstanding resource in the watershed for review and approval. See Appendix E for Permittee Responsible Mitigation Template.
YES
Is there an outstanding resource in the watershed that is available and practicable?
YES
Is the mitigation proposal equal to or better than purchasing credits from a mitigation bank?
NO
Proceed with the permit process.
Applicant must provide the Corps with a complete mitigation plan for on-site, in-kind mitigation for review and approval. See Appendix E for Permittee Responsible Mitigation Template.
YES
Is on-site, in-kind compensatory mitigation available that is practicable and compatible with the proposed project ?
YES
Applicant must provide the Corps with a complete mitigation plan for review and approval. See Appendix E for Permittee Responsible Mitigation Template.
Applicant must provide the Corps with a complete mitigation plan for off-site and/or out-of-kind mitigation for review and approval. See Appendix E for Permittee Responsible Mitigation Template.
YES
Is offsite and/or out-of-kind compensatory mitigation available that will offset proposed project impacts?
Applicant must meet with Corps to discuss project.

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Appendix C

Determination of Wetland Credits

1.0 INTRODUCTION

This portion of the Charleston District's Guidelines for Preparing a Compensatory Mitigation Plan establishes a method to evaluate aquatic resources that are being adversely impacted by activities authorized by Department of the Army (DA) permits and aquatic resources that are being retored, enhanced, or preserved by a proposed compensatory mitigation plan. This general method of evaluating compensatory mitigation proposals was first adopted by the Charleston District in 1993 and has been updated to ensure that it is consistent with the 2008 Mitigation Rule.

As discussed throughout this local guidance document, the purchase of mitigation credits from an approved mitigation bank or an in-lieu fee program within the same watershed as the project site is presumed to be environmentally preferable to permittee-responsible mitigation (PRM). If the appropriate number and type of mitigation credits are available from an approved mitigation bank or in-lieu fee program, the permittee will be required to: 1) purchase the necessary mitigation credits, or 2) prepare a PRM plan that fully offsets the proposed impacts to aquatic resources and document why the proposed PRM plan is environmentally preferable to the purchase of mitigation credits.

The purchase of mitigation credits is normally the most cost effective method of providing compensatory mitigation for projects that result in minimal impacts to aquatic resources, such as projects authorized by Nationwide Permits. Prior to submitting a conceptual mitigation plan, permit applicants should consider the overall cost and the time required to prepare and implement a PRM plan. Permit applicants are encouraged to schedule a pre-application meeting with a Corps project manager if they have specific questions about their proposed project or compensatory mitigation alternatives.

Please note this local guidance document is marked as a working draft. As additional experience is gained, it is possible that individual factors and/or other aspects of these tables and worksheets will be reviewed and updated. Permit applicants should always use the most recent edition of this local guidance document. Sample projects are included in Section 5.0 to help demonstrate how a permit applicant should complete the necessary mitigation worksheets.

2.0. DETERMINATION OF WETLAND MITIGATION CREDITS

The worksheets, tables, and information included in this section should be used to calculate the number of mitigation credits required to offset adverse impacts to waters of the United States and the number of credits generated by a proposed compensatory mitigation plan. These calculations do not represent an exact or statistically proven scientific method of replacing aquatic resource functions and services. This method is based on the past experience and the best professional judgment of regulatory and resource agency staff. It is intended to establish a clear and consistent method for use by permit applicants and regulators.

Simply stated, the Proposed Mitigation Credits (PMC) must be equal to or greater than the Required Mitigation Credits (RMC). In addition, at least 50% of the required mitigation credits must be generated by restoration and/or enhancement activities.

Proposed Mitigation Credits (PMC) ≥ Required Mitigation Credits (RMC)

and,

Proposed Restoration and Enhancement ≥ 50% RMC

When a proposed project results in adverse impacts to more than one wetland system the required mitigation credits for each adverse impact are calculated separately on the worksheet and added together to determine the total required mitigation credits. Likewise, when a compensatory mitigation plan restores, enhances, and/or protects more than one aquatic resource, the mitigation credits generated by each mitigation activity is calculated separately on the worksheet. The mitigation credits generated by all of the mitigation activities are added together to determine whether the total PMC is greater than the total RMC, and the mitigation credits generated by restoration and enhancement activities are added together to determine whether they generate more than 50% of the total RMC.

3.0. DEFINITION OF FACTORS USED IN TABLES AND WORKSHEETS.

Credit Schedule is a factor that recognizes both the timing and the likelihood of the successful implementation of a proposed mitigation plan. Compensatory mitigation plans should typically be implemented in advance of or concurrent with the activity causing the authorized impacts to the maximum extent practicable. Related terms include:

> **Before.** Compensatory mitigation provided by released credits from an approved Mitigation Bank or In-Lieu Fee Program. For permittee-responsible mitigation plans, the compensatory mitigation activities (land clearing, vegetative plantings, hydrologic improvements, etc.) are completed before the adverse impacts occur.
>
> **Concurrent**. The majority (>50%) of the mitigation activities (land clearing, vegetative plantings, hydrologic improvements, etc.) are conducted at the same time as the adverse impacts.
>
> **After**. The proposed mitigation plan is approved prior to the adverse impacts. However, the majority (>50%) of the mitigation activities (land clearing, vegetative plantings, hydrologic improvements, site protection, etc.) are not scheduled to occur until after the adverse impacts.
>
> **Not Applicable**. The proposed mitigation plan is reviewed and approved after the adverse impacts occur. For example, an after-the-fact compensatory mitigation plan that is developed to resolve an enforcement action.

Cumulative Impact is defined by the National Environmental Policy Act as the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The total acreage of permanent and temporary wetland impacts are added together to determine the value (0.1 - 2.0) of the cumulative impact factor for a proposed project. The same value is used to calculate the RMC for each adverse impact associated with the proposed project.

Dominant Impact categories are defined as follows.

Clear means to remove vegetation without disturbing the existing topography of the soils.

Draining means ditching, channelization, or excavation that results in the removal of water from an aquatic area causing the area, or a portion of the aquatic area, to change over time to a non-aquatic area or a different type of aquatic area.

Dredge means to dig, gather, pull out, or excavate from waters of the United States.

Fill means depositing material used for the primary purpose of replacing an aquatic resource with dry land or changing the bottom elevation of a water body or wetland.

Impound means to collect or confine the flow of a riverine system by means of a dike, embankment, or other man made barrier. Impoundments may result in the formation of ponds, lakes, reservoirs, detention basins, etc, or they may limit the reach of high waters, such as levees or flood dikes.

Shading means to shelter or screen by intercepting radiated light or heat. Examples of projects causing shading impacts include bridges, piers, and buildings on pilings.

Duration means the length of time the adverse impacts are expected to last. For example, if a forested wetland is cleared to construct a temporary access road it will take more than 10 years for a similar forested canopy to develop.

Existing Condition means the degree of disturbance relative to the ability of a site to perform its physical, chemical, and biological functions. This factor evaluates site disturbances relative to the existing functional state of the system.

Fully functional means that the typical suite of functions attributed to the aquatic resource type are functioning naturally. Existing disturbances do not substantially alter important functions. Examples include: pristine (undisturbed) wetlands, aquatic resources with non-functional ditches or old logging ruts with no effective drainage, or minor selective cutting.

Partially impaired means that site disturbances have resulted in partial or full loss of one or more functions typically attributed to the aquatic resource type but functional recovery is expected to occur through natural processes. Examples include: clear-cut wetlands, aquatic areas with ditches that impair but do not eliminate wetland hydrology, or temporarily cleared utility corridors.

Impaired means that site disturbances have resulted in the loss of one or more functions typically attributed to the aquatic resource type and functional recovery is unlikely to occur through natural processes. Restoration activities are required to facilitate recovery. Examples include: areas that have been impacted by surface drainage and converted to pine monoculture or agriculture, areas that are severely fragmented, or wetlands within maintained utility corridors.

Very impaired means that site disturbances have resulted in the loss of most functions typically attributed to the aquatic resource type and functional recovery would require a significant restoration effort. Examples include: filled areas, excavated areas, or effectively drained wetlands (hydrology removed or significantly altered).

Kind is a factor used to compare the functions and services of an impacted aquatic resource with the functions and services of a potential mitigation site. Permit applicants should use the Cowardin system (*Classification of Wetlands and Deepwater Habitats of the United States*) or a similar assessment method to identify the aquatic resource type of each area that will be

adversely impacted by the proposed project and each area that will be restored, enhanced, or protected by the proposed mitigation plan. This information should be used to support your determination regarding Kind.

> **In-kind** means a resource of a similar structural and functional type to the impacted resource.
> **Out-of-kind** means a resource of a different structural and functional type from the impacted resource.

On a case by case basis, mitigation plans that use a watershed approach and demonstrate that a proposed mitigation activity would be "environmentally preferable" may be assigned the numerically greater In-Kind value. Mitigation plans that restore or enhance aquatic resources that are Out-of-Kind must include justification why the proposed mitigation activities offset the adverse impacts associated with the proposed project.

Location is a factor used to compare the location of the impacted aquatic resource and the potential mitigation site. Mitigation sites should be located within the same Level III eco-region (coastal plain, sandhills, piedmont, or mountain), the same major drainage basin, and the same 8-digit Hydrologic Unit Code (HUC) as the impacted aquatic resource. Mitigation sites that are not located within the same eco-region will generally not be acceptable. Related terms include:

> **8-Digit HUC** means within the same eco-region and 8-digit HUC as the impacted aquatic resource.
> **Adjacent 8-Digit HUC** means within the same eco-region and in an 8-digit HUC that is adjacent to the 8-Digit HUC where the project impacts will occur.
> **Drainage Basin** means within the same eco-region and major drainage basin as the impacted aquatic resource.
> **Case by Case** exceptions means outside the same eco-region and/or major drainage basin as the impacted aquatic resource, and must be approved by the Division Chief.

Lost Type categories are based on the suite of functions that they perform and are defined as follows.

Type A means:

- Tidal vegetated systems
- Riverine systems including headwaters and riparian zones
- Intertidal flats
- Shallow subtidal bottoms
- Bottomland hardwoods

Type B means:

- Seeps and bogs
- Savannahs and flatwoods
- Depressions
- Pocosins and bays

Type C means:

- Man-made lakes and ponds
- Vegetated lake littoral
- Impoundments
- Shallow cove areas

Habitat types that are not categorized will be evaluated on a case-by-case basis with consideration of any comments provided by the resource agencies.

Net Improvement (NI) is an evaluation of the net level of functional enhancement or restoration to an aquatic site associated with a proposed mitigation action. This factor is evaluated using a sliding scale, with values ranging from 0.1 for low-level enhancement to 3.0 for excellent restoration.

Examples of low NI include: wildlife habitat enhancement (prescribed burning, water control manipulation), invasive species management, and erosion and sediment control.

Examples of moderate NI include: planting cleared wetlands to speed succession and increase species diversity, hydrological enhancement (breaching causeways or dikes, increasing the number and/or size of culverts in causeways, plugging ditches in impaired wetlands.

Examples of high NI include: fill removal, restoration of native wetland plant communities in converted wetlands, and hydrological restoration (complete causeway or dike removal, plugging and/or removal of ditches in effectively drained wetlands, restoration of braided creek system and natural sheet flows).

Priority Category is a factor that recognizes the importance of aquatic resources that provide valuable functions and services on a watershed scale, that occupy important positions in the landscape, or that are considered important because of their rarity. Adverse impacts to primary priority areas should be avoided and minimized to the maximum extent practicable.

Primary priority areas include:

- National Estuarine Sanctuaries
- Wild and Scenic Rivers.
- Designated Shellfish Grounds
- Outstanding Resource Waters
- Essential Fish Habitat
- Trout waters
- All tidal waters
- Anadromous fish spawning waters
- State Heritage Trust Preserves
- National Wildlife Refuges
- Waters officially designated by State or Federal agencies as high priority areas
- Old growth climax communities that have unique habitat structural complexity likely to support rare communities of plants or animals

And the following categories of rare aquatic systems:

- Hillside Herb Bog
- Upland Bog
- Atlantic White Cedar Bog
- Depression Meadow
- Piedmont Seepage Forest
- Limestone Sink
- Pine Savannah
- Interdune Pond

Secondary priority areas include the following categories of vulnerable or uncommon aquatic systems that do not fall into the designated primary priority category:

- Carolina Bay
- High Elevation Seep
- Bay Forest
- Salt Shrub Thicket
- Waters on the 303(d) list
- Swale Pocosin
- Pond Cypress Pond
- Seepage Pocosin
- Upland Depression Swamp Forest

Tertiary priority areas include the following categories of aquatic systems that do not fall into the designated primary priority category:

- Bald Cypress-Tupelo Gum Swamp
- Swamp Tupelo Pond
- Pocosin (other than seepage or swale)
- Bottomland hardwood
- Non-alluvial Swamp Forest
- Pond Pine Woodland
- Pine flatwoods

Note: descriptions of these community types may be found in Appendic C and The Natural Communities of South Carolina, Initial Classification and Description (Nelson, John B).

Temporal loss is the time lag between the loss of aquatic resource functions associated with permit activities and the replacement of those functions through restoration or enhancement of aquatic resources at the mitigation site.

Upland Buffers help maintain the physical, chemical, and biological integrity of the adjacent aquatic resources. Upland buffers also avoid and minimize potential secondary and cumulative adverse impacts to proposed mitigation sites associated with the future development of the project site and/or surrounding properties. The following issues should be considered when evaluating upland buffers:

- Upland buffers must be established adjacent to all restored, enhanced, or protected wetlands to the maximum extent practicable.
- Upland buffers that are not vegetated (agricultural fields, cleared areas, etc) must be planted with appropriate species and monitored to ensure that a mature, natural community develops within the buffer area.
- Upland buffers that generate compensatory mitigation credits or that are used to obtain a reduction in the number of required mitigation credits may not be subdivided. Lot lines are not allowed within buffer areas.
- Upland buffers may not be acceptable if their potential benefit to the adjacent aquatic resources is of questionable value due to shape, condition, location, inadequate or excessive width, or other reasons.

Upland buffers are considered part of the proposed mitigation activity. If an aquatic resource is being restored or enhanced, the upland buffer counts toward the total restoration or enhancement mitigation credits. If an aquatic resource is being preserved, the upland buffer counts toward the total preservation mitigation credits.

On a case by case basis, an upland buffer that is located adjacent to a preserved area may be considered an enhancement activity if the permit applicant develops appropriate performance standards, monitors the adjacent aquatic resource, and demonstrates the upland buffer has enhanced aquatic resource functions and services within the adjacent wetland system.

Minimum upland buffer widths vary based on factors such as land use and slope. An upland buffer value will be assigned to areas that meet both the minimum width and the minimum average width requirements identified in the tables below. The upland buffer value may be increased if the upland buffer widths are increased to meet the ratios identified in Step 1.

The following steps should be used to determine the upland buffer value that will be used in the Proposed Wetland Mitigation Credit Worksheet:

Step 1: Use the Minimum Upland Buffer Width table below to determine the minimum mean buffer width and net improvement value for your proposed or existing land use.

MINIMUM UPLAND BUFFER WIDTHS AND VALUES FOR WETLANDS

Land Use	Required Minimum Width (ft) (ALL)	Required Minimum Average Width (ft)		
		1:1 Ratio Buffer Value = 0.5	2:1 Ratio Buffer Value = 0.7	3:1 Ratio Buffer Value = 1.0
Single Family Residential	15	25	50	75
Multi-Family Residential	15	40	80	120
Commercial/ Golf Course/Agricultural	25	50	100	150
Industrial/Landfill	25	75	150	225
Other Categories	case-by-case			
*Widths are based on linear, constant elevation measurement				

Step 2: Multiply the Buffer Value determined in Step 1 by the appropriate factor in the table below (based on the percentage of the wetland perimeter that is buffered). Please note the Area Protected by Buffer is based on the aquatic resource that will be protected on the proposed mitigation site. If the permit applicant does not have sufficient control to protect all or a portion of an aquatic resource, the proposed mitigation site should not be eligible for preservation or upland buffer credits.

FINAL UPLAND BUFFER VALUE

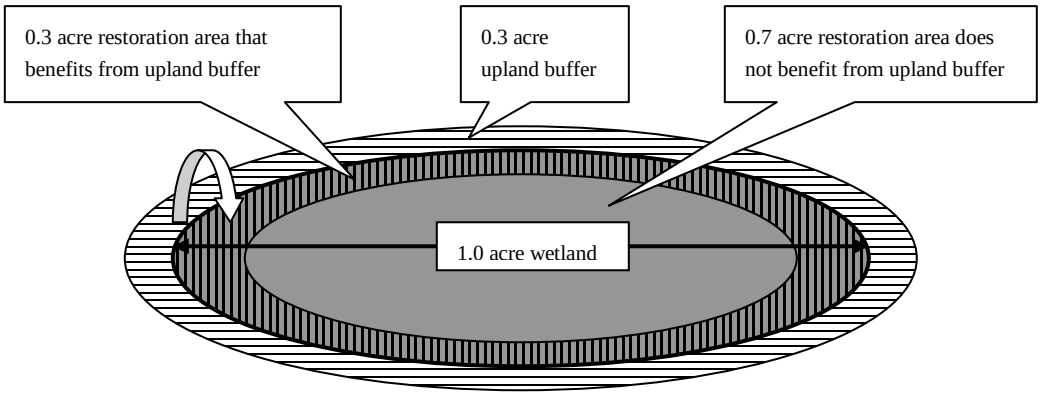
Area Protected By Buffer	Upland Buffer Formula
More than 95%	1.0 x Upland Buffer Value
25 to 95%	$\frac{\text{\% Area Protected}}{100}$ x Upland Buffer Value
Less than 25%	Determined and allowed only on a case-by-case basis

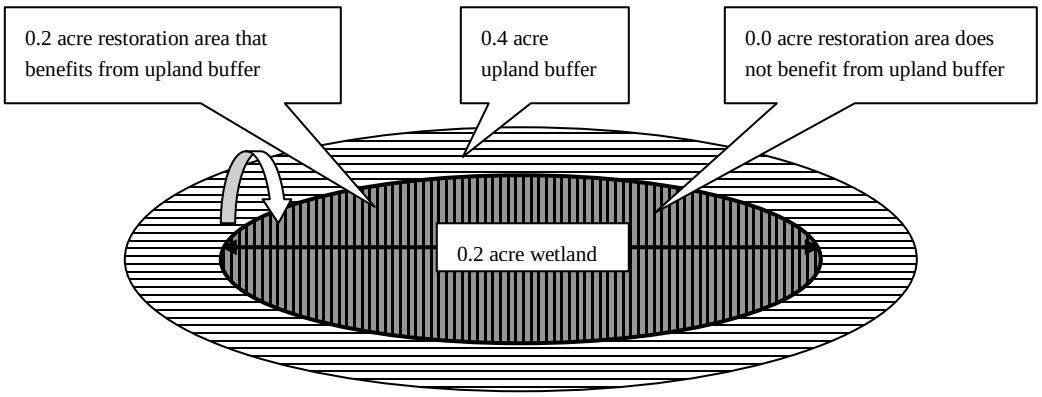
Step 3: Enter the Final Upland Buffer Value determined in Step 2 on the Proposed Wetland Mitigation Credit Worksheet.

The primary purpose of an upland buffer is to help protect restored, enhanced, or preserved aquatic resources. If the acreage of the upland buffer is greater than or equal to the acreage of the protected aquatic resource, the sum of the mitigation factors should be multiplied by the total acreage of the protected aquatic resource to determine the total mitigation credits.

If the acreage of the upland buffer is smaller than the acreage of the protected aquatic resource, the sum of the mitigation factors is multiplied by the total acreage of the upland buffer to determine the total mitigation credits for areas directly protected by the upland buffer. The remainder of the protected aquatic resource should be multiplied by the sum of factors (excluding the upland buffer value) in a separate column on the worksheet.

Upland Buffer Diagrams





4.0 TABLES AND WORKSHEETS

REQUIRED WETLAND MITIGATION CREDIT TABLE

FACTORS	OPTIONS					
Lost Type	Type C 0.2	Type B 2.0	Type A 3.0			
Priority Category	Tertiary 0.5	Secondary 1.5	Primary 2.0			
Existing Condition	Very Impaired 0.1	Impaired 1.0	Partially Impaired 2.0	Fully Functional 2.5		
Duration	0 to 1 year 0.2	1 to 3 years 0.5	3 to 5 years 1.0	5 to 10 years 1.5	Over 10 years 2.0	
Dominant Impact	Shade 0.2	Clear 1.0	Drain 2.0	Dredge 2.5	Impound/ Flood 2.5	Fill 3.0
Cumulative Impact	< 0.25 Acre 0.1	0.25-0.99 Acres 0.2	1.0-2.99 Acres 0.5	3.0-9.99 Acres 1.0	≥10.0 Acres 2.0	

Note: The cumulative impact factor for the overall project should be included in the sum of factors for each impacted area on the Required Wetland Mitigation Credit Worksheet.

REQUIRED WETLAND MITIGATION CREDIT WORKSHEET

Factor	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Lost Type						
Priority Category						
Existing Condition						
Duration						
Dominant Impact						
Cumulative Impact						
Sum of Factors	R_1 =	R_2 =	R_3 =	R_4 =	R_5 =	R_6 =
Impacted Area	A_1 =	A_2 =	A_3 =	A_4 =	A_5 =	A_6 =
R x AA=						

Required Wetland Mitigation Credits = Σ (R x A) = ____

PROPOSED WETLAND MITIGATION CREDIT TABLE

Factors	Options				
Net Improvement	0.0** ----------to ---------- 3.0 (see Section 3.0 for examples of potential values)				
Upland Buffer	0.0 ----------to ---------- 1.0 (see Section 3.0 for examples of potential values)				
Credit Schedule	Not Applicable 0**	After 0.1	Concurrent 0.3	Before 0.5	
Temporal Loss	Not Applicable 0**	0 to 5 years -0.1	5 to 10 years - 0.2	10 to 20 years -0.3	Over 20 years -0.4
Kind	Out of Kind 0		In Kind 0.4		
Location	Case by Case 0	Drainage Basin 0.1	Adjacent 8-Digit HUC 0.2	8-Digit HUC 0.4	

**Use this option to calculate credit for Preservation.

PROPOSED WETLAND MITIGATION CREDIT WORKSHEET

Factor	Area 1	Area 2	Area 3	Area 4	Area 5
Net Improvement					
Upland Buffer					
Credit Schedule					
Temporal Loss					
Kind					
Location					
Sum of Factors	M_1 =	M_2 =	M_3 =	M_4 =	M_5 =
Mitigation Area	A_1 =	A_2 =	A_3 =	A_4 =	A_5 =
M × A=					

Proposed Wetland Mitigation Credits = $\sum$ (M x A) = ____

WETLAND MITIGATION SUMMARY WORKSHEET

Mitigation Summary Worksheet For Permit Application #_____

I. Required Mitigation

		Credits	Acres
A.	Required Mitigation Credits		
B.	Has the permittee protected the remaining on-site aquatic resources? The permittee may be eligible for a 25% reduction in Required Mitigation Credits (A x 0.25).		
C.	Total Required Mitigation Credits = A – B		

II. Third Party Mitigation Credit Summary

		Credits	Acres
D.	Restoration and/or Enhancement		
E.	Preservation		
F.	Total Third Party Mitigation = D+ E		

III. Permittee-Responsible Mitigation Credit Summary

		Credits	Acres
G.	Restoration and/or Enhancement		
H.	Preservation		
I.	Total Permittee-Responsible Mitigation = G + H		

IV. Proposed Mitigation Summary

		Credits	Acres
J.	Total Restoration and/or Enhancement = D + G		
K.	Total Preservation = E + H		
L.	Total Proposed Mitigation = F + I		

V. Local Compensatory Mitigation Goals

	Yes	No
PMC $\geq$ RMC Are the Credits in Row L greater than or equal to Row C?		
PMC Restoration and/or Enhancement $\geq$ 1/2 RMC Are the Credits in Row J greater than or equal to 50% of Row C?		

5.0 SAMPLE PROJECT AND MITIGATION PLANS

The following sample project was created to help show permit applicants how to complete the Required Wetland Mitigation Credit Worksheet. This sample project describes several different types of adverse impacts to aquatic resources and the factors and values that are used to determine the Required Mitigation Credits. Please note that proposed projects are reviewed on a case by case to determine appropriate values for specific adverse impacts.

5.1 Sample Project

The proposed project consists of the construction of a single-family residential subdivision and golf course in a rapidly developing area of the coastal plain. The project site has historically been managed for timber production and primarily consists of upland pine plantation, bottomland hardwood swamp, and headwater forest.

Adverse Impact Area 1
Permanent fill in 5 acres of bottomland hardwood wetlands for the construction of improvements to existing access roads.

In this case, both the Priority Category (Tertiary) and the Lost Type (A) are determined by the wetland type, bottomland hardwoods. The Existing Condition (Partially Impaired) is based on the location (adjacent to existing roadways) and hydrology (road side ditches and culverts) of the wetland areas that will be impacted. The Dominant Impact (Fill) and Duration (Over 10 Years) are self explanatory because wetlands will be permanently converted into uplands to widen existing roadways. Cumulative Impact ($\geq$ 10 acres) is based on the total acreage of impacts for the entire project (Adverse Impact Area 1-4). These values are used to complete the Adverse Impact Area 1 portion of the worksheet.

Adverse Impact Area 2
Permanent clearing of 2 acres of fully functional bottomland hardwood wetlands for the construction of golf fairways.

As described above, both the Priority Category (Tertiary) and the Lost Type (A) are determined by the wetland type, bottomland hardwoods. The Existing Condition (Fully Functional) is based on the location and condition (undisturbed) of the wetland areas that will be impacted. The Dominant Impact (Clear) and Duration (Over 10 Years) are self explanatory because existing wetlands will be permanently cleared and converted into a scrub-shrub wetland system. Cumulative Impact ($\geq$ 10 acres) is based on the total acreage of impacts for the entire project (Adverse Impact Area 1-4). These values are used to complete the Adverse Impact Area 2 portion of the worksheet.

Adverse Impact Area 3
Permanent fill in 0.25 acres of a headwater forest to construct a recreational pond/impoundment.

The Priority Category (Tertiary) and the Lost Type (A) are determined by the wetland type, headwater forest. Headwater forest is considered tertiary priority because it does not fall into one of the designated priority categories. The Existing Condition (Slightly Impaired) is based on the condition (clear-cut) of the wetland areas that will be impacted. The Dominant Impact (Fill) and Duration (Over 10 Years) are self explanatory because existing wetlands will be filled to construct a permanent embankment. Cumulative Impact ($\geq$ 10 acres) is based on the total

acreage of impacts for the entire project (Adverse Impact Area 1-4). These values are used to complete the Adverse Impact Area 3 portion of the worksheet.

Adverse Impact Area 4
Permanent flooding in 3 acres of a headwater forest to construct a recreational pond/impoundment.

The Priority Category (Tertiary) and the Lost Type (A) are determined by the wetland type, headwater forest. As described above, headwater forest is considered tertiary priority because it does not fall into one of the designated priority categories. The Existing Condition (Slightly Impaired) is based on the condition (clear-cut) of the wetland areas that will be impacted. The Dominant Impact (Flood) and Duration (Over 10 Years) are self explanatory because existing wetlands will be filled to construct a permanent embankment. Cumulative Impact ($\geq$ 10 acres) is based on the total acreage of impacts for the entire project (Adverse Impact Area 1-4). These values are used to complete the Adverse Impact Area 4 portion of the worksheet.

REQUIRED WETLAND MITIGATION CREDITS WORKSHEET

	Area 1 (Roads)	Area 2 (Fairways)	Area 3 (Recreational Pond)	Area 4 (Recreational Pond)
Lost Type	3.0	3.0	3.0	3.0
Priority Category	0.5	0.5	0.5	0.5
Existing Condition	2.0	2.0	2.0	2.0
Duration	2.0	2.0	2.0	2.0
Dominant Impact	3.0	1.0	3.0	2.5
Cumulative Impact	2.0	2.0	2.0	2.0
R = Sum of Factors	12.5	10.5	12.5	12.0
AA = Impact Area	5.0	2.0	0.25	3.0
Product = R x AA	62.5	21.0	3.125	36.0

Required Wetland Mitigation Credits = (R x AA) = 122.6

Please note the values in the mitigation worksheet are measured in tenths and wetland impacts are usually measured in hundredths (e.g. 0.25 acres of fill). Once the mitigation credits required for each activity have been added together, the Total Required Mitigation Credits should be rounded and expressed in tenths.

5.2 Proposed Compensatory Mitigation Plans

Since the purchase of mitigation credits from an approved mitigation bank or in-lieu fee program is presumed to be environmentally preferable, all compensatory mitigation plans must include information about the availability of mitigation credits. In addition, all permittee-responsible mitigation plans plans must include information about the watershed where the proposed project is located and potential mitigation sites that may meet the aquatic resource needs of the watershed (See Appendix E - Compensatory Mitigation Plan Template).

The following sections discuss two different compensatory mitigation plans that are designed to offset the adverse impacts associated with the Sample Project. Each of these compensatory mitigation plans includes information about assumptions that were used to determine whether a proposed mitigation plan is consistent with the Mitigation Rule. Please note that compensatory mitigation plans are evaluated on a case by case basis to determinine whether they offset adverse impacts associated with a proposed project.

5.2.1 Proposed Third Party Mitigation Plan

Once the permit applicant has calculated the required mitigation credits for the proposed project, they should use the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) at http://216.83.232.125:443/pls/htmldb/f?p=101 to obtain information about approved mitigation banks and in-lieu fee programs that may be able to provide the appropriate number and type of mitigation credits.

Since RIBITS is a national website the permit applicant must use the drop down menu in the bottom left hand corner of the RIBITS homepage to select Charleston District from the list of USACE (Corps) Districts. Once a permit applicant has selected the Charleston District they can use the navigation menu to obtain information about approved mitigation banks and ILF programs. Additional information about using RIBITS is available on the Mitigation page on the Charleston District's website.

The Sample Project requires the purchase of 122.6 freshwater wetland compensatory mitigation credits. Since more than 50% of the required mitigation credits must be restoration and/or enhancement credits, a proposed third party mitigation plan must consist of the purchase of at least 61.3 restoration and/or enhancement credits and a total of 122.6 mitigtaion credits. Examples that meet this requirement include: 1) the purchase 122.6 restoration credits, 2) the purchase of 40 restoration credits, 30 enhancement credits, and 52.6 preservation credits, or 3) the purchase of 61.3 enhancement credits and 61.3 preservation credits.

Determination of Wetland Credits
Working Draft, Subject to Change
Last Revised, October 7, 2010

WETLAND MITIGATION SUMMARY WORKSHEET

Permit Application #_Sample Project – Third Party Mitigation Plan_

I. Required Mitigation

		Credits	Acres
A.	Required Mitigation Credits	**122.6**	**11.65**
B.	Has the permittee protected the remaining on-site aquatic resources? The permittee may be eligible for a 25% reduction in Required Mitigation Credits (A x 0.25).		
C.	Total Required Mitigation Credits = A – B	**122.6**	**N/A**

II. Third Party Mitigation Credit Summary

		Credits	Acres
D.	Restoration and/or Enhancement	61.3	TBD
E.	Preservation	61.3	TBD
F.	Total Third Party Mitigation = D+ E	122.6	TBD

III. Permittee-Responsible Mitigation Credit Summary

		Credits	Acres
G.	Restoration and/or Enhancement		
H.	Preservation		
I.	Total Permittee Responsible Mitigation = G + H		

IV. Proposed Mitigation Summary

		Credits	Acres
J.	Total Restoration and/or Enhancement = D + G	61.3	TBD
K.	Total Preservation = E + H	61.3	TBD
L.	Total Proposed Mitigation = F + I	122.6	TBD

V. Local Compensatory Mitigation Goals

	Yes	No
PMC $\geq$ RMC Are the Credits in Row L greater than or equal to Row C?	X	
PMC Restoration and/or Enhancement $\geq$ 1/2 RMC Are the Credits in Row J greater than or equal to 50% of Row C?	X	

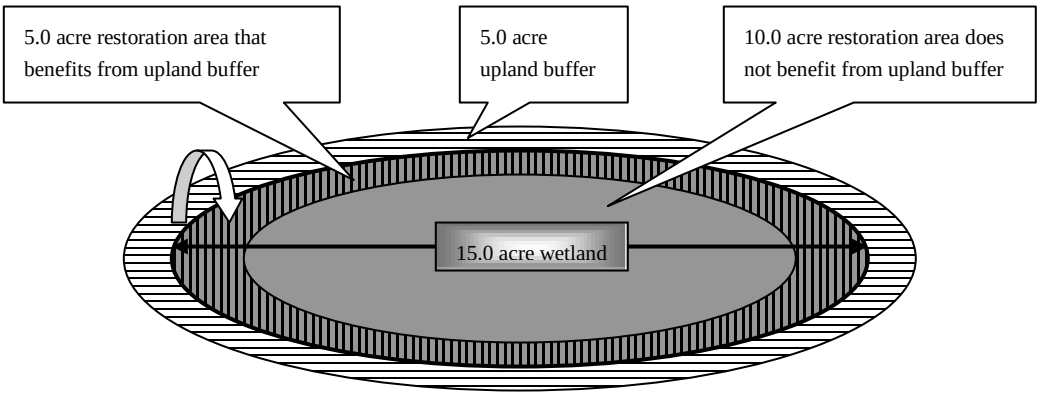
5.2.2 Proposed Permittee Responsible Mitigation (PRM) Plan

As described above, all compensatory mitigation plans must include information about the availability of mitigation credits. In addition, all PRM plans must include information about the watershed where the proposed project is located and potential mitigation sites that may meet the aquatic resource needs of the watershed (See Appendix E - Compensatory Mitigation Plan Template). For the purpose of this example we assume the appropriate number and type of mitigation credits are not available from a mitigation bank or in-lieu fee program and the proposed PRM plan addresses the aquatic resource needs of the watershed where the proposed project is located.

Mitigation Activity 1

The proposed compensatory mitigation plan includes the restoration of 15-acres of headwater forest on the project site that was previously converted to pine plantation. The proposed mitigation activities include the removal of existing pines, site preparation, planting native species, and plugging ditches. The majority of the restoration area will be protected by a 25-foot average width upland buffer (5 acres). In this example, the permit applicant is only able to establish an upland buffer around a portion of the wetland system (80%) because an existing cleared right-of-way is located along one side of the restoration area.

Net Improvement is considered Moderate (2.0) because the proposed mitigation plan will enhance hydrology within an existing wetland system and will re-establish the natural hardwood canopy. The proposed Upland Buffer is the minimum width necessary based on the adjacent land use (0.5) and only protects 80% of the restoration area (0.5*0.8 = 0.4). Credit Schedule (Concurrent) is based on the proposed mitigation work schedule. Temporal Loss (Over 20 years) is based on the time required to re-establish a fully functional wetland system with a mature hardwood canopy. Kind (In-Kind) is based on the wetland type (bottomland hardwood) that will be impacted on the project site and the wetland type (headwater forest) that will be restored at the mitigation site. Since the mitigation site is located on the project site, the Location is within the same 8-Digit HUC. These values are used to complete the Proposed Wetland Mitigation Credit Table.



Proposed Wetland Mitigation Credit Table

Factor	Restoration (Buffer)	Restoration
Net Improvement	2.0	2.0
Upland Buffer	0.4	0
Credit Schedule	0.3	0.3
Temporal Loss	-0.3	-0.3
Kind	0.4	0.4
Location	0.4	0.4
Sum of Factors	$M_1 = 3.2$	$M_1 = 2.8$
Mitigation Area	$A_1 = 5$	$A_1 = 10$
M × A=	16.0	28.0

Total Restoration Credits = 44.0

Mitigation Activity 2

The permit applicant has proposed to preserve 100-acres of partially impaired bottomland hardwood forest on the project site. As described in Section 3.0 (Existing Condition), functional recovery of partially impaired aquatic resources is expected to occur as a result of natural processes. The proposed preservation areas will be fully protected by a 50-foot average width upland buffer (15 acres).

For this example, we assume the Corps has reviewed the permit applicant's proposal and has determined this area is not an appropriate compensatory mitigation site because of concerns about the long-term success and sustainability of the proposed preservation area. Although the proposed preservation area is relatively large (115 acres including upland buffers), it is located within a rapidly developing area and will likely be adversely impacted by the development of the project site and adjacent properties.

Although this area is not eligible to generate compensatory mitigation credits, the permit applicant has proposed to avoid and minimize future impacts by protecting the existing jurisdictional wetlands and an upland buffer with a site protection instrument in order to receive a reduction in required mitigation credits. The potential 25% Mitigation Credit Reduction is discussed further in Section 5.2.3 of the main document.

The acreage of the preserved wetland (100 acres) is more than 3 times the acreage of the proposed adverse impacts (10.25 acres). As on the Mitigation Summary Worksheet (Sample Project - B) the Required Mitigation Credits (122.6) is reduced by 30.65 credits. Therefore, the Total Required Mitigation Credits is 91.95 credits.

Mitigation Credit Summary

The proposed restoration activities (Mitigation Activity 1) are expected to generate 44 mitigation credits. Since the proposed project is not located within the service area of an apporoved mitigation bank, the permit applicant must identify and conduct additional mitigation opportunities that generate 48 mitigation credits to meet the total required mitigation credits (91.95 credits). Since at least 50% of the Total Required Mitigation Credits must be generated by restoration and/or enhancement activities, the additional mitigation activities must generate at least 2 more restoration and/or enhancement credits. The remaining 46 mitigation credits may be generated by restoration, enhancement, or preservation activities.

Determination of Wetland Credits
Working Draft, Subject to Change
Last Revised, October 7, 2010

WETLAND MITIGATION SUMMARY WORKSHEET

Permit Application #_Sample Project- Permittee-Responsible Mitigation Plan_

I. Required Mitigation

		Credits	Acres
A.	Required Mitigation Credits	**122.6**	**11.65**
B.	Has the permittee protected the remaining on-site aquatic resources? The permittee may be eligible for a 25% reduction in Required Mitigation Credits (A x 0.25).	**30.65**	**100**
C.	Total Required Mitigation Credits = A – B	**91.95**	**TBD**

II. Third Party Mitigation Credit Summary

		Credits	Acres
D.	Restoration and/or Enhancement		
E.	Preservation		
F.	Total Third Party Mitigation = D+ E		

III. Permittee-Responsible Mitigation Credit Summary

		Credits	Acres
G.	Restoration and/or Enhancement	44	15
H.	Preservation		
I.	Total Permittee Responsible Mitigation = G + H	44	15

IV. Proposed Mitigation Summary

		Credits	Acres
J.	Total Restoration and/or Enhancement = D + G	44	15
K.	Total Preservation = E + H		
L.	Total Proposed Mitigation = F + I	44	15

V. Local Compensatory Mitigation Goals

	Yes	No
PMC $\geq$ RMC Are the Credits in Row L greater than or equal to Row C?		X
PMC Restoration and/or Enhancement $\geq$ 1/2 RMC Are the Credits in Row J greater than or equal to 50% of Row C?		X

Working Draft, Subject to Change
Last Revised October 7, 2010

Summary of Wetland Types

Aquatic Resource Type
Working Draft, Subject to Change
Last Revised October 7, 2010

The following is a brief description of the major systems of wetlands under the Cowardin system, *Classification of Wetlands and Deepwater Habitats of the United States*.

Marine – Open ocean overlying the continental shelf and coastline exposed to waves and currents of the open ocean shoreward to (1) extreme high water of spring tides; (2) seaward limit of wetland emergents, trees, or shrubs; or (3) the seaward limit of the Estuarine System, other than vegetation. Salinities exceed 30 parts per thousand (ppt).

Estuarine - Deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the ocean, with ocean-derived water at least occasionally diluted by freshwater runoff from the land. The upstream and landward limit is where ocean-derived salts measure less than .5 ppt during the period of average annual low flow. The seaward limit is (1) an imaginary line closing the mouth of a river, bay, or sound; and (2) the seaward limit of wetland emergents, shrubs, or trees when not included in (1).

Riverine - All wetlands and deepwater habitats contained within a channel except those wetlands (1) dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) which have habitats with ocean-derived salinities in excess of .5 ppt.

Lacustrine - Wetlands and deepwater habitats (1) situated in a topographic depression or dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses, or lichens with greater than 30% areal coverage; and (3) whose total area exceeds 8 hectares (20 acres); or area less than 8 hectares if the boundary is active wave-formed or bedrock or if water depth in the deepest part of the basin exceeds 2 m (6.6 ft) at low water. Ocean-derived salinities are always less than .5 ppt.

Palustrine - All nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and all such tidal wetlands where ocean-derived salinities are below .5 ppt. This category also includes wetlands lacking such vegetation but with all of the following characteristics: (1) area less than 8 ha; (2) lacking an active wave-formed or bedrock boundary; (3) water depth in the deepest part of the basin less than 2 m (6.6 ft) at low water; and (4) ocean-derived salinities less than .5 ppt.

The majority of the adverse impacts authorized by Department of the Army permits occur within the following three classes of the Palustrine system:

> ***Forested Wetland-*** Forested Wetlands are characterized by woody vegetation that is 6 m tall or taller. They normally possess an overstory of trees, an understory of young trees or shrubs, and a herbaceous layer.
>
> ***Scrub-Shrub Wetland-*** Scrub-Shrub Wetlands include areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Scrub-Shrub Wetlands may represent a successional stage leading to Forested Wetland, or they may be relatively stable communities. They are one of the most widespread classes in the United States and are known by many names, such as shrub swamp, bog,and pocosin.

Emergent Wetland- Emergent Wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. Emergent Wetlands are known by many names, including marsh, meadow, fen, prairie pothole, and slough. Areas that are dominated by pioneer plants which become established during periods of low water are not Emergent Wetlands and should be classified as Vegetated Unconsolidated Shores or Vegetated Streambeds.

Working Draft, Subject to Change
Last Revised October 7, 2010

Appendix D

Determination of Stream Credits

Determination of Stream Credits
Working Draft, Subject to Change
Last Revised June 24, 2011

1.0 INTRODUCTION

Compensatory mitigation for linear aquatic systems (streams) will require some form of stream restoration or enhancement action. Activities that constitute restoration or enhancement include, but are not limited to, stream channel restoration, bank stabilization, in-stream habitat recovery, and structure removal. A minimum of 50% of compensatory mitigation credits must be generated by stream channel restoration or enhancement activities. Remaining credits may be provided by riparian buffer enhancement/preservation. These activities should be designed with the goal of improving habitat, improving water quality, and maintaining biological and morphological integrity. For additional information on stream restoration methods, please refer to Rosgen 1996, The Federal Stream Restoration Working Group 1998, and United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) 1996. For additional information on stream classification, restorations, and regional curves, please reference the website for the North Carolina State University Stream Restoration Program at: http://www.bae.ncsu.edu/programs/extension/wqg/srp/index.html. In addition, a manual on field techniques for stream measurements entitled "Stream Channel Reference Sites: An Illustrated Guide to Field Technique" may be downloaded from the Forest Service website: http://www.treesearch.fs.fed.us/pubs/20753.

2.0 DEFINITION OF FACTORS USED IN TABLES AND WORKSHEETS

Credit Schedule is a factor that recognizes both the timing and the likelihood of the successful implementation of a proposed compensatory mitigation plan. Compensatory mitigation plans should typically be implemented in advance of or concurrent with the activity causing the authorized impacts to the maximum extent practicable. Related terms include:

> **Before.** Compensatory mitigation provided by released credits from an approved Mitigation Bank or In-Lieu Fee Program. For permittee-responsible mitigation plans, the compensatory mitigation activities (land clearing, vegetative plantings, hydrologic improvements, etc.) are completed before the adverse impacts occur.
>
> **Concurrent.** The majority (>50%) of the mitigation activities (land clearing, vegetative plantings, hydrologic improvements, etc.) are conducted at the same time as the adverse impacts
>
> **After.** The proposed mitigation plan is approved prior to the adverse impacts. However, the majority (>50%) of the mitigation activities (land clearing, vegetative plantings, hydrologic improvements, etc.) are not scheduled to occur until after the adverse impacts.
>
> **Not Applicable.** The proposed mitigation plan is reviewed and approved after the adverse impacts occur. For example, a mitigation plan that is developed to resolve an enforcement action.

Cumulative Impact is defined by the National Environmental Policy Act as the impact on the environment, which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency, or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Projects that result in impacts to 6000 linear feet or less of stream channel will be assigned a cumulative impact factor between 0.1 and 1.5. Projects that result in impacts to greater than 6000 linear feet of stream channel will be assigned a cumulative factor of 3.0.

Dominant Impact categories are defined as follows.

Armor refers to riprap, bulkhead, or other rigid methods to contain stream channels.

Clear refers to activities, such as clearing streambank vegetation without disturbing the existing topography or soil stratigraphy. Mitigation for impacts associated with clearing may be required if the impact occurs as a result of, or in association with, an activity requiring a permit.

Culvert refers to routing a stream through pipes, box culverts, or other enclosed structures for a distance of 100 feet or less. Culverts should be designed to allow unimpeded natural stream processes such as sediment transport and fish migration. The width, height, and gradient of a proposed opening should be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. The culvert bottom including headwalls and toe-walls should be embedded to a depth of no less than 12 inches below ground line. If rock runs throughout the culvert area, a bottomless culvert should be used. Culvert extensions where the cumulative length of the existing culvert and the additional extension exceeds 100 feet will be considered a pipe impact.

Detention/Weir refers to placing a weir in a stream to slow or to divert water when bankfull is reached. The structure should be designed to allow ingress and egress of aquatic organisms and to pass flows below bankfull stage.

Fill refers to the permanent placement of fill material in a stream channel.

Impound/Flood means to convert a flowing system to a still water system such as a reservoir, pond, or lake. Installation of a dam that modifies the stream to facilitate sediment control and/or stormwater management is considered impoundment. For creation of still water systems, the footprint of the impoundment structure is considered a Fill impact and the footprint of the pool is considered an Impound/Flood impact.

Morphologic change means to channelize, dredge, or otherwise alter the established or natural dimension, pattern, or profile of a stream.

Pipe refers to routing or diverting a stream through a pipe, culvert, or other enclosed structure for a distance greater than 100 feet.

Shade refers to intercepting or blocking sunlight. Examples of projects causing shading impacts include bridges, piers, and buildings constructed on pilings at such elevation that vegetation will be impacted.

Utility crossings refer to open cut construction or other pipeline/utility line installation methods that require disturbance of the streambed and reestablishment of pre-project contours after installation.

Duration means the length of time the adverse impacts are expected to last.

Temporary means impacts will occur for a period of one year or less and restoration of the aquatic system will occur following termination of the permitted activity.

Recurrent refers to repeated impacts of short duration (such as on-channel 24-hour storm detention).

Permanent means project impacts will occur for a period of greater than one year.

Existing Condition is the functional state of a stream reach prior to project impacts or mitigation actions. Existing Condition will be determined using steps listed below.

Steps to determine the appropriate value for existing condition:

1. **Refer to functional assessment sheets in Appendix D. Complete the appropriate form (low-gradient or high-gradient streams).**

2. **Determine the category for the functional assessment score:**

If the score is:	The value is:	And the existing condition is:
16 to 20	1.5	Fully Functional
11 to 15	.75	Partially Impaired
6 to 10	.50	Impaired
Less than 6	.10	Very Impaired

3. **Record value on Adverse Impact Factors worksheet (Section 3.0) under Existing Condition.**

Fully functional indicates the physical geomorphology of the reach is stable and is representative of an appropriate stream hydrograph for the topographical setting. The biological community is diverse and unimpaired by excessive anthropogenic inputs; streams with listed species, primary trout streams, and streams identified as highly diverse are considered fully functional.

Partially Impaired indicates stability and resilience of the stream or river reach has been compromised, to a limited degree, through partial loss of one or more of the integrity functions (chemical, physical, biological). System recovery could occur naturally

Impaired stream indicates there is a very moderate loss of system stability and resilience characterized by loss of at least one integrity function. Recovery is unlikely to occur naturally and further damage is likely unless restoration is undertaken.

Very Impaired stream indicates there is a severe loss of system stability and resilience characterized by the loss of two or more integrity functions. Functional recovery will require a significant restoration effort.

Location is a factor used to compare the location of the impacted aquatic resource and the potential mitigation site. Mitigation sites should be located within the same Level III eco-region (coastal plain, sandhills, piedmont, or mountain), the same major drainage basin, and the same 8-digit Hydrologic Unit (HUC) as the impacted aquatic resource. Mitigation sites that are not located within the same eco-region and 8-digit HUC may not be acceptable. Related terms include:

8-Digit HUC means within the same eco-region, 8-digit HUC, and same major drainage basin as the impacted aquatic resource.

Adjacent 8-Digit HUC means within the same eco-region, same major drainage basin, and in an 8-digit HUC that is adjacent to the 8-Digit HUC where the project impacts will occur.

Drainage Basin means within the same eco-region and major drainage basin as the impacted aquatic resource.

Case by Case exceptions means outside the same eco-region and/or major drainage basin as the impacted aquatic resource, and must be approved by a Branch Chief or the Division Chief.

Net Improvement is an evaluation of the net level of functional lift to an aquatic resource resulting from a proposed mitigation action. This factor is evaluated based on anticipated functional improvement with values of 0.5 for minimal functional improvement, 1.0 for moderate functional improvement, 2.0 for significant functional improvement, and 3.0 for maximum functional improvement.

Steps to determine the appropriate value for Net Improvement:

1. **Refer to functional assessment sheets in Appendix D.**

2. **Complete the appropriate form (low-gradient or high-gradient streams) for the proposed restoration reach.**

3. **Complete the appropriate form (low-gradient or high-gradient streams) for the reference reach.**

4. **Determine your final score by inserting the scores from 2 and 3 (above) into the formula below:**

   Reference Reach Score (#3) – Proposed Restoration Reach Score (#2) = Final Score

5. **Determine Net Improvement Value using Final Score from # 4 (above) and the chart below.**

6. **Record value on Restoration Mitigation Factors worksheet under Net Improvement.**

If the final score is:	The value is:	And the net improvement is:
11 to 15	**3.0**	**Maximum Improvement**
7 to 10	**2.0**	**Significant Improvement**
4 to 6	**1.0**	**Moderate Improvement**
1 to 3	**0.5**	**Minimal Improvement**

Stream Channel Restoration is the re-establishment of the general structure, function and self-sustaining behavior of the stream system that existed prior to disturbance. It is a holistic process that requires an understanding of all physical and biological components of the stream system and its watershed. Stream restoration activities can restore stream functions through a broad range of measures including the removal of the watershed disturbances that are causing stream instability; installation of structures and planting of vegetation to protect stream banks and provide habitat; and the reshaping or replacement of unstable stream reaches into appropriately designed functional streams and associated floodplains.

Stream stability is morphologically defined as the ability of the stream to maintain, over time, its dimension, pattern, and profile in such a manner that it is neither aggrading nor degrading and is able to transport without adverse consequence the flows and detritus of its watershed (Rosgen 1996). A number of factors can change the stability and function of streams including changes in stream flow, sediment regime, land use within the watershed, and direct disturbances (e.g., channelization, culverts, impoundments, bridges, and loss of bank stabilizing riparian vegetation) (Rosgen, 1996).

Restoration of natural stream stability requires careful study by experts trained in stream geomorphology. It may involve changing channel width, stabilization measures, flow modification, grade control, stream routing changes to improve sinuosity and/or other measures to appropriately handle stream energy and reconnect the stream with its floodplain. Reference reach data from a stream(s) of the same target stream type (Rosgen, 1996) and from the same eco-region should serve as a template for the design of the restoration stream's dimension, pattern, profile, bed material, and erosion processes. It is important to develop restoration plans in consultation with appropriate resource and regulatory agencies. All stream restoration proposals require a minimum riparian buffer based on land use and slope. Buffer widths wider than the minimum required may receive additional credits based on the Riparian Buffer Factor. The Corps reserves the right to increase the minimum required buffer if it is deemed necessary based on adjacent land use.

Stream Enhancement and Maintenance/Improvement activities are designed to augment channel stability, stabilize stream banks, restore natural channel features and in-stream habitat, and improve water quality and stream ecology. Design plans shall be based on reference conditions or analytical methodologies.

Structure Removal refers to removal of existing structures including culverts, pipes, dams, weirs, and other manmade structures that alter stream geomorphology and reduce the reach and flow of waters. Structure removal, if performed properly, can restore a stream to its natural condition and provide considerable functional improvement. Important elements to consider when removing existing structures include restoring fish passage, re-vegetating the reservoir area, and long term monitoring of sediment transfer, water quality, stream channel morphology, and aquatic ecology.

Hydrologic Improvements at Road Crossings associated with a mitigation site can provide stream enhancement by preventing downstream scour and upstream ponding; and by connecting natural floodplains. Improvement measures include, but are not limited to, replacement of culverts with bridging, providing floodplain culverts, and resetting or resizing culverts to allow fish passage and restore stream processes.

Bank Stabilization can be accomplished using a variety of different techniques including bioremediation utilizing natural materials and vegetative cover (e.g., tree revetments, root wads, vegetated crib walls); in-stream structures specifically designed to provide grade control and reduce energy at the bank interface; and manual manipulation of the bank slope. Mitigation plans must provide locations, methods, and materials associated with the proposed bank stabilization measures. Stabilization on (only) one side of a stream that results in bank erosion on the opposite side is not acceptable as mitigation.

In-stream Habitat Creation is controlled by factors such as stream flow, channel structure, cover, water quality, and riparian corridors and project designs should be made to mimic natural conditions. To improve in-stream habitat, structures such as cross vanes, floating log covers, bed load traps, bank covers and fish passage structures are typically used. In-stream structure proposals shall require a full morphological analysis to ensure that they do not alter the appropriate dimension, pattern, and profile for the stream type.

Priority Category is a factor that recognizes the importance of aquatic resources that provide valuable functions and services on a watershed scale, that occupy important positions in the landscape, or that are considered important because of their rarity. Adverse impacts to primary priority areas should be avoided and minimized to the maximum extent practicable

Primary Priority areas include:

- State Heritage Trust Preserves
- Wild and Scenic Rivers
- Anadromous fish spawning habitat
- Outstanding Resource Waters
- Essential Fish Habitat
- State Trout Natural streams
- Waters adjacent to Federal or State protected areas
- Waters with Federal/State listed T&E species

Secondary Priority areas include:

- 303 (D) listed streams
- Waters with Federal Species of Management Concern
- Waters with State listed rare/uncommon species
- State Trout Put, Grow, and Take streams
- Stream and river reaches within 0.5 miles upstream/downstream of Primary Priority reach
- State Scenic River Corridors

Tertiary Priority areas include all other streams.

Riparian Buffer recognizes that forested riparian zones are essential to stream system function, channel stability, and maintenance of water quality and in-stream habitat. Natural buffers provide functions such as runoff filtration, stream shade, wildlife corridors, and contribution of woody debris and detritus. Minimum buffer widths based on land use and slope will be required for all mitigation proposals involving stream restoration or enhancement activities and buffer preservation or enhancement activities.

Additional mitigation credit may be obtained by enhancing buffers beyond the minimum required buffer widths. Buffer enhancement can be accomplished through active reforestation of native species and/or removal of exotics. Buffer enhancement/preservation credits will not be generated for unstable stream channels. In cases where the stream restoration/buffer enhancement areas involve the confluence of two stream channels, with both being buffered, buffer enhancement credit beyond the minimum required buffer widths will only be counted for one of the two streams. For the purpose of these guidelines, an area will be considered riparian buffer preservation if less than 10% of the area would require planting of deep-rooted vegetation. The following issues should be considered when evaluating upland buffers in terms of their overall quality and general acceptability:

- Buffers may not be acceptable if their contribution to system integrity is of questionable value due to shape, condition, location, inadequate or excessive width, or other reasons.

- Buffers must be established adjacent to all restored or enhanced stream channels to the maximum extent practicable. Upland buffer values will generally not be assigned to linear systems that are not buffered in their entirety.

- Buffers that have recently been clear-cut must be planted and monitored to ensure that natural vegetation develops within the buffer area.

- Lot lines are not allowed within buffer zones.

A buffer improvement value will be assigned to buffers that meet the minimum required buffer width identified in the tables below. Stream mitigation plans (restoration, enhancement, preservation activities) that do not include sufficient riparian buffers to protect the mitigation site may not generate compensatory mitigation credits. To determine buffer preservation or enhancement value, follow the steps below:

Step 1: Determined required buffer width based on land use from **Chart A** below.

Step 2: For **buffer preservation and restoration values**, use **Chart B**. Preservation values are based on average age of trees in the buffer zone, ratio of proposed buffer to required buffer, and whether the buffer will apply to one or both sides of the stream channel. Buffer enhancement values are based on activities conducted in the buffer zone, ratio of proposed buffer to required buffer, and whether the buffer will apply to one or both sides of the stream channel. If preserving or enhancing both sides of the stream channel, the value will be added under both Side A and Side B on the RESTORATION MITIGATION FACTORS FOR LINEAR SYSTEMS in Section 3.0.

Step 3: If the mitigation proposal includes buffer preservation in one area of the buffer zone **and** buffer enhancement in a separate area of the buffer zone, use the **formula** below to calculate values to enter on the RESTORATION MITIGATION FACTORS FOR LINEAR SYSTEMS in Section 3.0. NOTE: You cannot receive credit for enhancement AND preservation in the same area of the buffer zone.

(% Buffer Preservation X Chart B value) + (% Buffer Enhancement X Chart C value) =Buffer Value
Note: The sum will always equal 100% of the buffer area.

Chart A: MINIMUM STREAM BUFFER ZONE WIDTHS FOR MITIGATION CREDIT

Land Use	Required Minimum Buffer Width (ft)			
	< 5% Slope	5 - 20% Slope	21 - 40% Slope	> 40% Slope
Single Family Residential	50	100	150	200
Multi-Family Residential	60	120	180	240
Commercial/ Golf Course /Agriculture/Silviculture	75	150	225	300
Industrial/Landfill	100	200	300	TBD
Other Categories Case-by-case	TBD			

Chart B: RIPARIAN BUFFER PRESERVATION/ENHANCEMENT VALUES

Buffer Width	Minimum Required Buffer		2X Minimum Required Buffer		4X Minimum Required Buffer		6X Minimum Required Buffer	
Buffer Location	1-side only	Both banks	1-side only	Both banks	1-side only	Both banks	1-side only	Both banks
PRESERVATION: Age of Trees								
15-50 years	0.075	0.10	0.084	0.11	0.09	0.125	0.10	0.13
> 50 years	0.125	0.15	0.14	0.17	0.16	0.19	0.165	0.20
ENHANCEMENT:								
Riparian Planting and Invasive Control	0.20	0.30	.22	.34	.25	.38	.26	.39

Note: Credit will not be allowed for buffer widths deemed excessive to providing benefits to the aquatic system. In general, buffers that exceed 300 feet in width will not be given additional buffer credit. Buffers that are impacted and lack functional value must be restored to provide credit. Buffering both sides of the stream is beneficial and generally required. Streams that are unstable and require significant channel or bank restorations are not considered candidate streams for buffer improvement credit unless the project includes stream channel improvements. Perpetual protection of restored and/or intact, naturally forested riparian zones through restrictive covenants, conservation easements or transfer in fee title to a conservation entity is required.

Stream Type categories are based on the suite of functions that they perform and are defined as follows.

Non-RPWs are non-navigable tributaries that are not relatively permanent. (i.e. the tributaries typically do not have continuous flow for at least 3 months of the year).

1st and 2nd Order RPWs are non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically have continuous flow at least seasonally (e.g., typically three months)

All other streams include greater than 2nd order tributaries and traditional navigable waters.

Watershed Approach considers the importance of landscape position and resource type for the sustainability of aquatic resource functions within the watershed. It also considers the habitat requirements of important species, habitat loss or conversion trends, sources of watershed impairment, and current development trends, as well as the requirements of other regulatory and non-regulatory programs that affect the watershed, such as storm water management or habitat conservation programs. The ultimate goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites.

The identification and prioritization of resource needs should be as specific as possible to enhance the usefulness of the approach in determining compensatory mitigation requirements. The level of information and analysis needed to support a watershed approach must be commensurate with the scope and scale of the proposed impacts requiring a DA permit, as well as the functions lost because of those impacts. Compensatory mitigation requirements determined through the watershed approach should not focus exclusively on specific functions (e.g., water quality or habitat for certain species), but should provide, where practicable, the suite of functions typically provided by the affected aquatic resource.

3.0 TABLES AND WORKSHEETS

ADVERSE IMPACT FACTORS FOR LINEAR SYSTEMS									
FACTORS	**OPTIONS**								
Stream Type[1]	Non-RPW 0.1		1st and 2nd Order RPWs 0.8			All Other Streams 0.4			
Priority Category	Tertiary 0.1		Secondary 0.4			Primary 0.6			
Existing Condition	Very Impaired 0.1		Impaired 0.5		Partially Impaired 0.75		Fully Functional 1.5		
Duration	Temporary 0.05		Recurrent 0.1			Permanent 0.3			
Dominant Impact	Shade/ Clear 0.05	Utility Crossing 0.15	Culvert 0.3	Armor 0.5	Detention /Weir 0.75	Morpho-Logic 1.5	Impound/ Flood 2.0	Pipe 2.2	Fill 2.5
Cumulative Impact (LF)	< 50' .01	51-300' 0.10	301-500' 0.20	501-999' 0.40		1000' – 6000' 1.5			> 6000' 3.0

[1]Stream type does not include man-made linear features. These features will be evaluated on a case-by-case basis.

Required Mitigation Credits Worksheet for Linear Systems

Factor	Impact 1	Impact 2	Impact 3	Impact 4	Impact 5	Impact 6
Stream Type						
Priority Category						
Existing Condition						
Duration						
Dominant Impact						
Cumulative Impact						
Sum of R Factors	R_1 =	R_2 =	R_3 =	R_4 =	R_5 =	R_6 =
Linear Feet Impact	LL_1 =	LL_2 =	LL_3 =	LL_4 =	LL_5 =	LL_6 =
R x LL=						
Total Required Credits = $\sum$ (R x LL) =						

Determination of Stream Credits
Working Draft, Subject to Change
Last Revised June 24, 2011

RESTORATION MITIGATION FACTORS FOR LINEAR SYSTEMS				
FACTORS	**OPTIONS**			
Stream Type[1]	Non-RPWs 0.05	1st and 2nd Order RPWs 0.4	All Other Streams 0.2	
Priority Category	Tertiary 0.05	Secondary 0.2	Primary 0.3	
Net Improvement [2]	Refer to Net Improvement in Section 2.0 (Definitions), page 4 to calculate NI value			
Credit Schedule	Not Applicable 0	After .02	Concurrent .05	Before 0.1
Location	Case by Case 0	Drainage Basin .02	Adjacent HUC .05	8-Digit HUC 0.1
Riparian Buffer	Calculate Value from the Riparian Buffer Factor in Section 2.0 (Definitions)			

[1]Stream type does not include man-made linear features.

[2] Net Improvement values are for in-stream work only. For riparian buffer enhancement or preservation choose **Not Applicable** under Net Improvement and calculate buffer values under Riparian Buffer.

Proposed Restoration Mitigation Worksheet for LINEAR SYSTEMS

Factor	**Reach 1**			**Reach 2**		
Credit Type	**In-Stream work with minimum buffer**	**Additional stream buffers**	**Stream Preservation or buffers only**	**In-Stream work with minimum buffer**	**Additional stream buffer**	**Stream preservation or buffers only**
Stream Type						
Priority Category						
Net Improvement						
Credit Schedule						
Location						
Riparian Buffer Side A						
Riparian Buffer Side B						
Sum of Mitigation Factors =						
Proposed Linear Feet of Stream=						
Proposed Restoration (In-stream work plus min buffer) M_a **x** LL=						
Proposed Preservation (Stream preservation or buffers only) M_b **x** LL=						
					Total Proposed Stream Restoration Credits =	
					Total Proposed Buffer Credits =	

When calculating credits, if a reach has in-stream work and additional buffers beyond minimum required, do not use grayed areas under additional buffers. If proposed work will be stream preservation or buffer enhancement ONLY, use Stream Preservation or buffers only column.

LINEAR SYSTEMS

Mitigation Summary Worksheet For Example

I. Required Mitigation

A.	Required Mitigation Credits Calculated from Worksheet		
		Reduction	**Linear Feet**
B.	Reduction Credit: Has the permittee protected the remaining on-site aquatic resources? Are the remaining on-site aquatic resources at least 3X the amount of impacted resources? (If you answer yes to both questions, you can propose a reduction of 25% of the required credits).		
C.	Total Required Mitigation Credits		

II. Permittee Responsible Mitigation Credit Summary		**Credits**	**Linear Feet**
D.	Stream Preservation/Buffer Enhancement		
E.	Stream Restoration		
F.	Total Proposed Bank Mitigation = D + E		

III. Third Party Mitigation Credit Summary		**Credits**	**Linear Feet**
G.	Stream Preservation/Buffer Enhancement		
H.	Stream Restoration		
I.	Total Proposed Non-Bank Mitigation = G + H		

IV. Proposed Mitigation Summary		**Credits**	**Linear Feet**
J.	Total Stream Preservation/Buffer Enhancement = D + G		
K.	Total Stream Restoration = E + H		
L.	Total Proposed Mitigation = F + I		

V. Local Compensatory Mitigation Goals

	Yes	**No**
PMC $\geq$ RMC or in words Are the Credits in Row L greater than or equal to Row C?		
PMC $_{\text{Stream Restoration}} \geq$ 1/2 RMC or in words Are the Credits in Row K greater than or equal to 50% of Row C?		

4.0 STREAM MITIGATION EQUATION.

When compensatory mitigation is required, the mitigation plan will be evaluated using the mitigation factors tables. These calculation tables are not intended to represent an exact or statistically proven scientific method. Rather, the method is based on the judgment of regulatory and resource agency staff. It is intended to establish a clear, understandable, and consistent method for use by applicants and regulators. As additional experience with this procedure is gained, it is possible that the tables of factors will be reviewed and adjusted. Always use the most recent approved edition of the tables.

Simply stated, for a mitigation proposal to be acceptable, the Proposed Stream Mitigation Credits (PMC) must be equal to or greater than the Required Stream Mitigation Credits (RMC). *In accordance with the federal goal of no net loss of aquatic resources, at least 50% of the required credits must be generated through restoration and/or enhancement activities*. The mitigation credits for RMC and PMC are calculated using the options and factors given in the attachments.

Proposed Mitigation Credits (PMC) $\geq$ Required Mitigation Credits (RMC)
And,
Proposed Stream Restoration $\geq$ 1/2 $\sum$ RMC

On a programmatic basis, the Charleston District believes that the preservation of upland buffers, riparian zones, and the remaining aquatic resources on the project site should be encouraged where the protection of resources will provide meaningful benefits to the watershed. Therefore, permit applicants that agree to protect these areas may be eligible for a 25 percent reduction in the total amount of compensatory mitigation required to offset a proposed project.

In order to obtain the full 25% credit reduction, the proposed stream linear footage that will be protected on the project site must be at least 3 times the stream linear footage of aquatic resources that will be impacted by the proposed project. In addition, site protection instruments will be required to ensure that these areas are protected in perpetuity from indirect and cumulative impacts. Mitigation credits cannot be generated for areas that will be placed under site protection for the credit reduction. All reductions are subject to Corps approval.

5.0 Examples of Stream Mitigation Requirements

Project Description – Example 1 – Third Party Mitigation

The applicant proposes to impact 1840 linear feet of stream channel for the construction of a 4.5 acre impoundment in the lower piedmont region. Portions of this stream system have been previously disturbed.

PROJECT IMPACTS:

Reach 1

The construction of a dam involving permanent fill in 440 linear feet of a 2nd order perennial stream that has been previously impacted:
Stream Type = 2nd order RPW
Priority Category = Tertiary
Existing Condition - Partially Impaired - Assessment Score = 12
Duration = Permanent
Dominant Impact = Fill
Cumulative Impact (for entire single and complete project) = 1840 LF

Reach 2

Flooding of 940 linear feet of the a 2nd order perennial stream
Stream Type = 2nd order RPW
Priority Category = Tertiary
Existing Condition - Partially Impaired -Assessment Score = 12
Duration = Permanent
Dominant Impact = Flooding
Cumulative Impact (for entire single and complete project) = 1840 LF

Reach 3

Flooding of 460 linear feet of a Non-RPW
Stream Type = Non-RPW
Priority Category = Tertiary
Existing Condition - Fully Functional - Assessment Score =17
Duration = Permanent
Dominant Impact = Flooding
Cumulative Impact (for entire single and complete project) = 1840 LF

ADVERSE IMPACT FACTORS FOR LINEAR SYSTEMS									
FACTORS	**OPTIONS**								
Stream Type[1]	Non-RPW 0.1		1st and 2nd Order RPWs 0.8			All Other Streams 0.4			
Priority Category	Tertiary 0.1		Secondary 0.4			Primary 0.6			
Existing Condition	Very Impaired 0.1		Impaired 0.5		Partially Impaired 0.75		Fully Functional 1.5		
Duration	Temporary 0.05		Recurrent 0.1			Permanent 0.3			
Dominant Impact	Shade/ Clear 0.05	Utility Crossing 0.15	Culvert 0.3	Armor 0.5	Detention /Weir 0.75	Morpho-Logic 1.5	Impound/ Flood 2.0	Pipe 2.2	Fill 2.5
Cumulative Impact (LF)	< 50' .01	51-300' 0.10	301-500' 0.20	501-999' 0.40		1000' – 6000' 1.5			> 6000' 3.0

[1]Stream type does not include man-made linear features. These features will be evaluated on a case-by-case basis.

Required Mitigation Credits Worksheet for Linear Systems

Factor	Impact 1	Impact 2	Impact 3	Impact 4	Impact 5	Impact 6
Stream Type	0.8	0.8	0.1			
Priority Category	0.1	0.1	0.1			
Existing Condition	0.75	0.75	1.5			
Duration	.3	.3	.3			
Dominant Impact	2.5	2.0	2.0			
Cumulative Impact	1.5	1.5	1.5			
Sum of R Factors	R_1 =5.95	R_2 =5.45	R_3 =5.5	R_4 =	R_5 =	R_6 =
Linear Feet Impact	LL_1 =440	LL_2 =940	LL_3 =460	LL_4 =	LL_5 =	LL_6 =
R x LL=	2618	5123	2530			
Total Required Credits = ∑ (R x LL) =					**10271**	

Proposed Mitigation – Purchase Mitigation Bank Credits

The applicant proposes to place all remaining on-site aquatic resources in a conservation easement as avoidance and minimization. The remaining on-site aquatic resources include 5500 linear feet of stream channel. Preservation of the remaining on-site resources will reduce the applicant's mitigation requirements. As compensatory mitigation, the applicant proposes to purchase mitigation credits from a Corps-approved mitigation bank.

I. Required Mitigation		Credits
A.	Required Mitigation Credits =	10271
B.	Credit Reduction	2568
C.	Total Required Mitigation Credits =	7703

II. Third Party Mitigation Credit Summary		Credits	Linear Feet
D.	Stream Preservation/Buffer Enhancement	3851.5	0
E.	Stream Restoration	3851.5	TBD
F.	Total Proposed Non-Bank Mitigation = D + E	7703	TBD

III. Permittee Responsible Mitigation Credit Summary		Credits	Linear Feet
G.	Stream Preservation/Buffer Enhancement		
H.	Stream Restoration		
I.	Total Proposed Bank Mitigation = G + H	0	0

IV. Proposed Mitigation Summary		Credits	Linear Feet
J.	Total Stream Preservation/Buffer Enhancement = D + G	3851.5	TBD
K.	Total Stream Restoration = E + H	3851.5	TBD
L.	Total Proposed Mitigation = F + I	7703	TBD

V. Local Compensatory Mitigation Goals

	Yes	No
PMC $\geq$ RMC or in words Are the Credits in Row L greater than or equal to Row C?	X	
$PMC_{Stream\ Restoration} \geq$ 1/2 RMC or in words Are the Credits in Row K greater than or equal to 50% of Row C?	X	

Project Description – Example 2 - Permittee Responsible Mitigation (on-site)

The project impact description is the same as Example 1. The applicant proposes to impact 1840 linear feet of stream channel for the construction of a 4.5 acre impoundment in the lower piedmont region. Portions of this stream system have been previously disturbed.

PROJECT IMPACTS:

Reach 1
The construction of a dam involving permanent fill in 440 linear feet of a 2nd order perennial stream that has been previously impacted:

Stream Type = 2nd order RPW
Priority Category = Tertiary
Existing Condition - Partially Impaired - Assessment Score = 12
Duration = Permanent
Dominant Impact = Fill
Cumulative Impact (for entire single and complete project) = 1840 LF

Reach 2
Flooding of 940 linear feet of the a 2nd order perennial stream:

Stream Type = 2nd order RPW
Priority Category = Tertiary
Existing Condition - Partially Impaired -Assessment Score = 12
Duration = Permanent
Dominant Impact = Flooding
Cumulative Impact (for entire single and complete project) = 1840 LF

Reach 3
Flooding of 460 linear feet of a Non-RPW:

Stream Type = Non-RPW
Priority Category = Tertiary
Existing Condition - Fully Functional - Assessment Score =17
Duration = Permanent
Dominant Impact = Flooding
Cumulative Impact (for entire single and complete project) = 1840 LF

Determination of Stream Credits
Working Draft, Subject to Change
Last Revised June 24, 2011

ADVERSE IMPACT FACTORS FOR LINEAR SYSTEMS									
FACTORS	**OPTIONS**								
Stream Type[1]	Non-RPW 0.1		1st and 2nd Order RPWs 0.8			All Other Streams 0.4			
Priority Category	Tertiary 0.1		Secondary 0.4			Primary 0.6			
Existing Condition	Very Impaired 0.1		Impaired 0.5		Partially Impaired 0.75		Fully Functional 1.5		
Duration	Temporary 0.05		Recurrent 0.1			Permanent 0.3			
Dominant Impact	Shade/ Clear 0.05	Utility Crossing 0.15	Culvert 0.3	Armor 0.5	Detention /Weir 0.75	Morpho-Logic 1.5	Impound/ Flood 2.0	Pipe 2.2	Fill 2.5
Cumulative Impact (LF)	< 50' .01	51-300' 0.10	301-500' 0.20	501-999' 0.40		1000' – 6000' 1.5			> 6000' 3.0

[1]Stream type does not include man-made linear features. These features will be evaluated on a case-by-case basis.

Required Mitigation Credits Worksheet for Linear Systems

Factor	Impact 1	Impact 2	Impact 3	Impact 4	Impact 5	Impact 6
Stream Type	0.8	0.8	0.1			
Priority Category	0.1	0.1	0.1			
Existing Condition	0.75	0.75	1.5			
Duration	.3	.3	.3			
Dominant Impact	2.5	2.0	2.0			
Cumulative Impact	1.5	1.5	1.5			
Sum of R Factors	R_1 =5.95	R_2 =5.45	R_3 =5.5	R_4 =	R_5 =	R_6 =
Linear Feet Impact	LL_1 =440	LL_2 =940	LL_3 =460	LL_4 =	LL_5 =	LL_6 =
R x LL=	2618	5123	2530			
Total Required Credits = $\sum$ (R x LL) =					**10271**	

Proposed Mitigation – Permittee Responsible Mitigation

For compensatory mitigation, the applicant proposes to restore 1660 linear feet of a 2nd order perennial RPW including the planting of a buffer within a minimum buffer zone. In addition, they agree to provide riparian buffer enhancement along 2600 linear feet of a separate 2nd order perennial RPW. Adjacent land use is residential. All mitigation will be performed concurrent with the impacts. The mitigation area will be placed under conservation easement. The applicant has submitted a complete mitigation plan that was coordinated with the appropriate resource and regulatory agencies and deemed acceptable.

Reach 1

The applicant proposes to establish a stable stream and floodplain at the existing bed elevation along 1660 linear feet of an impaired perennial RPW. In addition, the applicant proposes riparian buffer enhancement through the planting of a minimum buffer on both sides of the tributary. The proposed buffer is 50' wide and the area is zoned residential. The applicant will restore native plants and remove invasive species.

Stream Type: 2nd order Perennial RPW

Priority Category = Tertiary

Net Improvement = Reference Score is 18; Proposed Restoration Reach Score is 5.5

Credit Schedule = The restoration will occur at the same time as the project impacts (concurrent).

Location = In the same 8-digit HUC

Riparian Buffer = The applicant will provide the minimum required buffer and proposes enhancement of both sides of the stream channel through planting and invasive control.

Using **Chart B** under Riparian Buffers the Enhancement Value is 0.30

Reach 2

The applicant proposes a 100' riparian buffer enhancement along both sides of 2600 linear feet of a 2nd order perennial RPW < 15 feet. The buffer includes planting and invasive control and the area will be placed in conservation easement.

Stream Type = 2nd order Perennial RPW

Priority Category = Tertiary

Net Improvement = Not applicable

Credit Schedule = Concurrent

Location = In the same 8-digit HUC

Riparian Buffer = The buffer is 2:1 and the applicant will enhance both sides of the stream channel through planting and invasive control.

Using **Chart B** under Riparian Buffers the Enhancement Value is 0.34

RESTORATION MITIGATION FACTORS FOR LINEAR SYSTEMS				
FACTORS	**OPTIONS**			
Stream Type[1]	Seasonal RPWs 0.05	1st and 2nd Order Perennial RPWs 0.4	All Other Streams 0.2	
Priority Category	Tertiary 0.05	Secondary 0.2	Primary 0.3	
Net Improvement [2]	Refer to Net Improvement in Section 2.0 (Definitions), page 4 to calculate NI value			
Credit Schedule	Not Applicable 0	After .02	Concurrent .05	Before 0.1
Location	Case by Case 0	Drainage Basin .02	Adjacent HUC .05	8-Digit HUC 0.1
Riparian Buffer	Calculate Value from the Riparian Buffer Factor in Section 2.0 (Definitions)			

[1]Stream type does not include man-made linear features.

[2] Net Improvement values are for in-stream work only. For riparian buffer enhancement or preservation choose **Not Applicable** under Net Improvement and calculate buffer values under Riparian Buffer.

Proposed Restoration Mitigation Worksheet for LINEAR SYSTEMS

Factor	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6
Stream Type	**.4**	**.4**				
Priority Category	**.05**	**.05**				
Net Improvement	**3.0**	**0**				
Credit Schedule	**.05**	**.05**				
Location	**0.1**	**0.1**				
Riparian Buffer Side A	**.30**	**.34**				
Riparian Buffer Side B	**.30**	**.34**				
Sum of Restoration Mitigation Factors=	M_1 = 4.20	M_2 =1.28	M_3 =	M_4 =	M_5 =	M_6 =
Linear Feet Proposed Restoration	LL_1 =1660	LL_2 =2600	LL_3 =	LL_4 =	LL_5 =	LL_6 =
M × LL=	**6972**	**3328**				
Total Proposed Credits = ∑ (M × LL) =						**10300**

Determination of Stream Credits
Working Draft, Subject to Change
Last Revised June 24, 2011

LINEAR SYSTEMS
Mitigation Summary Worksheet

I. Required Mitigation **Credits**

A.	Required Mitigation Credits =	10271
B.	Reduction Credit	0
C.	Total Required Mitigation Credits =	10271

II. Third Party Mitigation Credit Summary		**Credits**	**Linear Feet**
D.	Stream Preservation/Buffer Enhancement		
E.	Stream Restoration		
F.	Total Proposed Bank Mitigation = D + E	0	0

III. Permittee Responsible Mitigation Credit Summary		**Credits**	**Linear Feet**
G.	Stream Preservation/Buffer Enhancement	3328	1660
H.	Stream Restoration	6972	2600
I.	Total Proposed Permittee Responsible Mitigation = G + H	10300	4323

IV. Proposed Mitigation Summary		**Credits**	**Linear Feet**
J.	Total Stream Preservation/Buffer Enhancement = D + G	3328	1660
K.	Total Stream Restoration = E + H	6972	2600
L.	Total Proposed Mitigation = F + I	10300	4323

V. Local Compensatory Mitigation Goals

	Yes	**No**
PMC $\geq$ RMC or in words Are the Credits in Row L greater than or equal to Row C?	X	
$PMC_{Stream\ Restoration} \geq$ 1/2 RMC or in words Are the Credits in Row K greater than or equal to 50% of Row C?	X	

Working Draft, Subject to Change
Last Revised October 7, 2010

Functional Assessment Sheets

LOW GRADIENT STREAM ASSESSMENT DATA SHEET

Stream Name	Basin/Watershed:	USGS Quad:
Latitude:	Longitude:	County:
Date:	Time:	Investigator:
Stream width:	Stream Depth:	Length of Stream Reach:
Has it rained within the past 48 hours?	Adjacent land use? (Industrial, agriculture, etc):	

Habitat	**Condition Category**			
Parameter	Fully Functional	Partially Impaired	Impaired	Very Impaired
1.Epifaunal Substrate or Available Cover	**Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e.logs/snags that are not new fall and not transient).**	**30-50% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization**	**10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.**	**Less than 10% stable habitat lack of habitat is obvious; substrate unstable or lacking.**
SCORE	2.0	1.5	1.0	0.5
2.Pool Substrate Characterization	**Mix of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.**	**Mix of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.**	**All mud or clay or sand bottom; little or no root mat; no submerged vegetation.**	**Hard-pan, clay, or bedrock; no root mat or vegetation.**
SCORE	2.0	1.5	1.0	0.5
3.Pool variability	**Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.**	**Majority of pools large-deep; very few shallow.**	**Shallow pools much more prevalent than deep pools.**	**Majority of pools small-shallow or pools absent.**
SCORE	2.0	1.5	1.0	0.5
4.Sediment Deposition	**Little or no enlargement of islands or point bars and less than 20% of the bottom affected by sediment deposition.**	**Some new increase in bar formation, mostly from gravel, sand or fine sediment. 20-50% of the bottom affected; slight deposition in pools.**	**Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80%of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.**	**Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.**
SCORE	2.0	1.5	1.0	0.5
5.Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills > 75% of the available channel or < 25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE	2.0	1.5	1.0	0.5
6.Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern	Some channelization present, usually in areas of bridge abutments; evidence of past channelization (greater than past 20 yr.) may be present, but recent channelization not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. In stream habitat greatly altered or removed entirely.
SCORE	2.0	1.5	1.0	0.5
7.Channel Sinuosity	The bends in the stream increase the stream length 3-4X longer than if it was in a straight line (If braided channel, this parameter is difficult to rate.)	The bends in the stream increase the stream length 2-3X longer than if it was in a straight line.	The bends in the stream increase the stream length 2 to 1 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
SCORE	2.0	1.5	1.0	0.5
8.Bank Stability	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. < 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosion scars.
SCORE	Left Bank 1.0	0.75	0.50	0.25
SCORE	Right Bank 1.0	0.75	0.50	0.25
9.Vegetative Protection	>90% of SB surfaces and adjacent riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes. minimal or no evidence of grazing or mowing; almost all plants allowed to grow naturally	70-90% of the SB surfaces covered by native vegetation but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential more than ½ of potential plant stubble height remaining	50-70% of SB covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than ½ potential plant stubble height remaining.	<50% of SB surfaces covered by vegetation; disruption of SB vegetation is very high; vegetation has been removed to 5 cm. or less in average stubble height.
SCORE	Left Bank 1.0	0.75	0.50	0.25
SCORE	Right Bank 1.0	0.75	0.50	0.25
10.Riparian Veg Zone Width	Width of riparian zone>18 meters; human activities (roads, clear-cuts, lawns, crops, parking lots) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone < 6 meters; little or no riparian vegetation due to human activities.
SCORE	Left Bank 1.0	0.75	0.50	0.25
SCORE	Right Bank 1.0	0.75	0.50	0.25

Total Score: _____ NOTES/COMMENTS:

HIGH GRADIENT STREAM ASSESSMENT DATA SHEET				
Stream Name	Basin/Watershed:		USGS Quad:	
Latitude:	Longitude:		County:	
Date:	Time:		Investigator:	
Stream width:	Stream Depth:		Length of Stream Reach:	
Has it rained within the past 48 hours?		Adjacent land use? (Industrial, agriculture, etc):		

Habitat	**Condition Category**			
Parameter	Fully Functional	Partially Impaired	Impaired	Very Impaired
1.Epifaunal Substrate or Available Cover	**Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e. logs/snags that are not new fall and not transient).**	**40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization**	**20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.**	**Less than 20% stable habitat lack of habitat is obvious; substrate unstable or lacking.**
SCORE	2.0	1.5	1.0	0.5
2.Embeddedness	**Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.**	**Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.**	**Gravel, cobble, and boulder particles are 50-75% surrounded by fine Sediment.**	**Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.**
SCORE	2.0	1.5	1.0	0.5
3.Velocity/Depth Regime	**All four velocity/depth regimes present (slow-deep, slow shallow, fast-deep, fast shallow). Slow is <0.3 m/s, deep is >0.5 m/s.**	**Only 3 of the 4 regimes Present.**	**Only 2 of the 4 habitat regimes present.**	**Dominated by 1 velocity/depth regime (usually slow-deep).**
SCORE	2.0	1.5	1.0	0.5
4.Sediment Deposition	**Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.**	**Some new increase in bar formation, mostly from gravel, sand or fine sediment. 5-30% of the bottom affected; slight deposition in pools.**	**Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50%of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.**	**Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.**
SCORE	2.0	1.5	1.0	0.5
5.Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills > 75% of the available channel or < 25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE	2.0	1.5	1.0	0.5
6.Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern	Some channelization present, usually in areas of bridge abutments; evidence of past channelization (greater than past 20 yr.) may be present, but recent channelization not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. In stream habitat greatly altered or removed entirely.
SCORE	2.0	1.5	1.0	0.5
7.Frequency of Riffles (or bends)	Frequent occurrence of riffles; distance of riffles/width of stream is <7. Variety of habitat is key.	Occurrence of riffles infrequent; distance of riffles/width of stream is between 7 and 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles/stream width is 15 to 25.	All flat water or shallow riffles; poor habitat; distance between riffles/stream width > 25.
SCORE	2.0	1.5	1.0	0.5
8.Bank Stability	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. < 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosion scars.
SCORE	Left Bank 1.0	0.75	0.50	0.25
SCORE	Right Bank 1.0	0.75	0.50	0.25
9.Vegetative Protection	>90% of SB surfaces and adjacent riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes. minimal or no evidence of grazing or mowing; almost all plants allowed to grow naturally	70-90% of the SB surfaces covered by native vegetation but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential more than ½ of potential plant stubble height remaining	50-70% of SB covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than ½ potential plant stubble height remaining.	<50% of SB surfaces covered by vegetation; disruption of SB vegetation is very high; vegetation has been removed to 5 cm. or less in average stubble height.
SCORE	Left Bank 1.0	0.75	0.50	0.25
SCORE	Right Bank 1.0	0.75	0.50	0.25
10.Riparian Veg Zone Width	Width of riparian zone>18 meters; human activities (roads, clear-cuts, lawns, crops, parking lots) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone < 6 meters; little or no riparian vegetation due to human activities.
SCORE	Left Bank 1.0	0.75	0.50	0.25
SCORE	Right Bank 1.0	0.75	0.50	0.25

Total Score: _____ NOTES/COMMENTS:

Working Draft, Subject to Change
Last Revised October 7, 2010

Appendix E

Compensatory Mitigation Plan Template

Permittee-Responsible Mitigation Plan Template

PROPOSED MITIGATION SITE
LOCATION
CITY, STATE

NAME OF PERMITTEE

SUBMITTED TO:
U.S. Army Corps of Engineers, Charleston District
U.S. Environmental Protection Agency, Region 4
U.S. Fish and Wildlife Service, Charleston Ecological Services
National Oceanic and Atmospheric Administration, National Marine Fisheries Service
US Department of Agriculture, Natural Resource Conservation Service
S.C. Department of Natural Resources
S.C. Department of Health and Environmental Control

PREPARED BY

SUBMISSION DATE

1.0 PROJECT DESCRIPTION

This section should include a general description of the proposed project and the specific activities that adversely impact waters of the United States and other aquatic resources on the project site. Prior to considering a proposed compensatory mitigation plan, the Corps must complete our evaluation of alternatives required by the 404(b)(1) Guidelines, and the permit applicant must avoid and minimize potential impacts to aquatic resources to the maximum extent practicable. Therefore, this section must include information about the alternatives that were considered during the evaluation of the proposed project. All applications for a standard DA permit must include information about other layouts on the project site and other project sites that would avoid and minimize potential impacts to aquatic resources. Pre-construction notifications for activities authorized by Nationwide Permits must address avoidance and minimization of potential adverse impacts on the project site.

2.0 AVAILABLE MITIGATION CREDITS

This section should include information about the number and type of mitigation credits that are available within the same watershed as the proposed project. This information may be obtained using the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) at http://216.83.232.125:443/pls/htmldb/f?p=101. RIBITS is an interactive web-based compensatory mitigation tracking system. The public is able to view information, including bank names, contact information, service area maps, and credits ledgers for the majority of the approved mitigation banks in South Carolina. Permit applicants should contact the individual mitigation banks and ILF programs whose service areas overlap the location of the proposed project for additional information about the availability of mitigation credits.

3.0 WATERSHED APPROACH

The goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources through the strategic selection of compensatory mitigation sites. Therefore, permit applicants should consider factors such as current trends in habitat loss or conversion; cumulative impacts of past development activities; and chronic environmental problems such as flooding or poor water quality within the same 8-digit Hydrologic Unit Code and the sub-watershed where the proposed project is located.

The information needed to support a watershed approach (33 CFR 332.3(c)) should be commensurate with the proposed impacts to aquatic resources. The Charleston District has identified several sources of information that may be useful for this purpose, and has posted this information on our website at www.usace.army.mil. The permit applicant should use and supplement this information to describe the existing condition of the 8-Digit HUC and the sub-watershed where the proposed project is located. If possible, the permit applicant should also identify the aquatic resource needs of the watershed where the proposed project is located.

This information should also be used below (Section 4.2 Site Selection) to identify and discuss potential mitigation alternatives that were considered during the development of a proposed mitigation plan.

4.0 PROPOSED COMPENSATORY MITIGATION PLAN

The components of a complete mitigation plan are identified in the Mitigation Rule (33 CFR 332.4(c). The following sections provide additional local guidance about the information that will be required to review and approve a PRM plan.

4.1 Goals and Objectives: *This section should include a statement regarding your intent to preserve, enhance, restore and/or create wetlands and/or tributaries of (include name of nearest blue-line stream) to provide compensatory mitigation for adverse impacts to wetlands, streams and/or other aquatic resources authorized by Department of the Army permit #XXXXX. Provide a description of each aquatic resource type and amount that will be provided, the method of compensation (i.e., restoration, establishment, enhancement, and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the ecological needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.*

4.2 Site Selection: *Provide a description of the factors considered during the site selection process. This should include consideration of watershed needs, onsite alternatives, where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site. In determining the ecological suitability of the compensatory mitigation project site, consideration must be given to the factors listed below:*

4.2.1 Hydrological conditions, soil characteristics, and other physical and chemical characteristics;
4.2.2 Watershed-scale features, such as aquatic habitat diversity, habitat connectivity, and other landscape scale functions;
4.2.3 The size and location of the compensatory mitigation site relative to hydrologic sources (including the availability of water rights) and other ecological features;
4.2.4 Compatibility with adjacent land uses and watershed management plans;
4.2.5 Reasonably foreseeable effects the compensatory mitigation project will have on ecologically important aquatic or terrestrial resources (e.g., shallow sub-tidal habitat, mature forests), cultural sites, or habitat for federal or state listed, threatened and endangered species; and
4.2.6 Other relevant factors including, but not limited to, development trends, anticipated land use changes, habitat status and trends, the relative locations of the impact and mitigation sites in the stream network, local or regional goals for the restoration or protection of particular habitat types or functions (e.g., re-establishment of habitat corridors or habitat for species of concern), water quality goals, floodplain management goals, and the relative potential for chemical contamination of the aquatic resources.

4.3 Site Protection: *Long-term protection of privately owned compensatory mitigation sites may be provided through real estate instruments such as a conservation easement or the transfer of title to a federal, tribal, state, or local resource agency, or a non-profit conservation organization. For government property, a Memorandum of Agreement or similar mechanism must prohibit incompatible land uses and establish a third party right of enforcement to ensure sufficient protection to the compensatory mitigation site. The method of site protection and the identity of the conservation easement holder, the party that will hold title to the property, or the government agency responsible for managing the property must be included in this section.*

The Charleston District's Model Conservation Easement and Model Restrictive Covenant are available at our website (http://www.sac.usace.army.mil). Any proposed changes to the model documents must be identified clearly using track changes or a similar method to facilitate review of these legal documents. Failure to identify changes may result in the document being returned to the bank sponsor without review.

4.4 Baseline Conditions:

4.4.1 Project Site: *Since the objective of compensatory mitigation is to offset adverse impacts to waters of the United States authorized by DA permits, every permit application must include information about the existing condition of aquatic resources (streams, open waters, wetlands, etc) located on the project site. This information is used to determine both the number and type of mitigation credits that will be required to offset adverse impacts associated with the proposed project. This information should include photographs and data sheets of the specific aquatic resources that will be impacted on the project site, and should support the Required Mitigation Credit Worksheets for the proposed project.*

4.4.2 Proposed Mitigation Site: *In order to describe the existing condition of the mitigation site, the permit applicant will need to research and describe historic conditions, any past modifications to the mitigation site, and any ongoing changes in response to natural disturbances or management practices. The following resources are examples of information that may be used to describe the mitigation site: maps showing the location and boundaries of the property, information on current soil conditions, historical and existing hydrologic conditions, historic and existing plant communities, historical and cultural information about the site including past, present and future uses of the property including impacts to resources, jurisdictional determination (provide copy of confirmation and reference appendix for associated data/maps), water quality (for impaired streams, please reference most recent 303D listing information and cause of impairment at http://www.scdhec.gov/environment/water/tmdl/index.htm), and a description of each aquatic resource type (Hydrogeomorphic Approach, Cowardin classification, Rosgen stream type, etc. as appropriate) and upland habitat type. The baseline information must be sufficient to support the development of the mitigation work plan. For example, longitudinal and cross-sectional data including entrenchment ratio, width/depth ratio, sinuosity, slope, and pebble count are necessary to evaluate the existing condition of a stream. Therefore, this information is required if stream restoration activities are proposed as part of the mitigation plan.*

4.4.3 Reference Site: *The baseline information gathered by the permit applicant for the reference site is used to identify the mitigation site potential and to assist in the development of appropriate performance standards. Therefore, a similar level of effort (see 4.4.2 above) is required to describe the existing condition of the reference site. The reference site should be located within the same watershed as the mitigation site. Since the reference site will be monitored throughout the life of the proposed project, it must be located in an area that will not be affected by the proposed restoration activities or future development of adjacent or nearby properties.*

4.5 Determination of Credits: *The permit applicant should use the most recent version of the Charleston District Guidelines for Preparing a Compensatory Mitigation Plan (Appendix C and D) to determine the number of mitigation credits required to offset a proposed project and to*

estimate the number of mitigation credits generated by a proposed mitigation plan. This section should include a copy of all worksheets and information that supports the values that were used in the worksheets.

4.6 Mitigation Work Plan: *This section should include (as applicable) detailed design plans for the proposed restoration and enhancement activities and a description of the proposed activities for each area including existing and proposed elevation and slopes, construction methods, construction schedules, construction sequence, source of water including connections to existing waters and uplands; hydroperiod (seasonal depth, duration, and timing of inundation and saturation), methods for establishing the desired plant community; plans to control invasive plant species; proposed native plant species composition, source of species, plant location map, plant spatial structure, expected natural regeneration, soil profile, source of soils, target soil characteristics, erosion and soil compaction control measures, planned habitat, planned buffer, interpretive signs, trails, and/or fences. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information such as planform geometry, channel form (e.g., typical channel cross-section), watershed size, design drainage, and riparian area plantings. For buffer enhancement, you must provide target vegetation composition, species list, cumulative density of plantings, and planting schedule. If removing impoundment structures or performing in-stream restoration, please provide detailed and specific information/design plans regarding proposed restoration techniques. The proposed mitigation activities should be clearly shown on a map of the mitigation site.*

4.7 Maintenance Plan: *A description and schedule of maintenance activities that are required to ensure the proposed mitigation site develops as expected once the initial construction is completed. This may include measures to control predation of mitigation plantings, temporary irrigation to facilitate plant establishment, procedures for conducting supplemental plantings and/or maintenance and repair of any water control or in-stream structures.*

4.8 Performance Standards: *Performance standards must be developed for each mitigation activity or management unit on the mitigation site. A management unit should not include more than one aquatic resource type (stream, wetland, etc.) or mitigation method (restoration, enhancement, establishment, or preservation). Performance standards should describe the mitigation activities that are being conducted and should establish criteria for documenting the degree of success and whether the mitigation site has achieved the desired objectives. The following are examples of acceptable performance standards:*

Forested Wetland - For areas involving vegetative restoration, plantings should include a diversity of species similar to those found in the reference site. An initial stocking density of 300 trees per acre (12' x 12' spacing) is recommended with a target density of 150-300 stems/acre and 85% canopy coverage after five years. In addition, planted species must show a consistent increase in height, lateral growth and root collar diameter throughout the monitoring period.

Hydrology - Wetlands would be considered successfully restored or enhanced when monitoring demonstrates that the degree and duration of flooding has increased over the baseline and is comparable to a suitable reference wetland. For effectively drained areas, success criteria should include quantitative criteria demonstrating the area meets jurisdictional criteria for vegetation and hydrology and that it is comparable to a reference area.

Stream Restoration - Following 5 years of monitoring and through two bank full events, the data demonstrates that the restored stream is in stable condition, stream parameters are comparable to the reference reach, and baseline conditions for stream biology and water quality have been maintained or improved. For units requiring riparian buffer plantings, including buffer enhancement units, vegetative success criteria should in addition to survival rate include that seedlings show a consistent increase in height, lateral growth and root collar diameter throughout the monitoring period.

Performance Standards may be based on functional, conditional, or other suitable assessment methods and/or criteria and may include hydrological, vegetative, faunal, and soil measures. This section of the approved mitigation plan should also describe how the performance standards will be used to verify that the mitigation site is meeting interim success criteria and the objectives have been attained. The target values or range of values for the parameters specified in the performance standards should be calibrated with the reference site(s).

4.9 Monitoring Requirements:

4.9.1 Monitoring Reports- (5-year minimum) Monitoring reports should be concise and provide information to describe the site conditions and whether the mitigation project is meeting its performance standards. The report should include a narrative that provides an overview of site conditions and function; design drawings, maps, and photographs to illustrate site conditions, and functional assessments used to provide quantitative or qualitative measures of the functions provided by the mitigation project. Photographs should be formatted to print on a standard 8.5 x 11 sheet of paper, dated, and clearly labeled with the direction from which the photo was taken. Maps should show the location of the mitigation site, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation site. Additional components of the narrative are:

4.9.1.1 Name of party responsible for conducting the monitoring and the date(s) of the inspection.
4.9.1.2 A brief description of the approved compensatory mitigation plan and the dates when specific mitigation activities were commenced and/or were completed.
4.9.1.3 A paragraph describing whether the mitigation site is developing as expected. This summary should be supported by a detailed description of each management unit, and whether or not each management unit is developing as expected and meeting the necessary performance standards.
4.9.1.4 If one or more management units are not meeting the necessary performance standards, the permit applicant must submit a description of the existing condition, identify the reason(s) that the management unit is not meeting performance standards, and submit a proposal to conduct remedial actions and bring the management unit into compliance with the approved mitigation plan.
4.9.1.5 Dates of any corrective or maintenance activities conducted since the previous report submission.

4.9.2 Monitoring Parameters should include:

4.9.2.1 For stream restoration, channel stability should be monitored at permanently established monitoring stations located at the most upstream and downstream limits of the bank and at several cross sections at stations located

within restoration reaches. For each station, measurements should include photographic documentation, plan view, longitudinal profile, and pebble counts.
4.9.2.2 Vegetative monitoring, for all units involving planting, should include measurements of height, lateral growth, and root collar diameter in addition to density of all trees by species including regeneration; composition, density, DBH, and height of all planted trees to determine survivability and growth rate; density and/or estimated coverage of all exotic species; and composition and estimated coverage of shrub and herbaceous (dominant, 10% or greater coverage) species.
4.9.2.3 Benthic macroinvertebrates should be sampled in accordance with SCDHEC qualitative sampling protocols. This data should be collected and analyzed by a state certified lab at permanently established monitoring stations located at the most upstream and downstream limits of the bank and at additional stations within the bank located downstream of each restoration reach. Biotic index, abundance, diversity, and the species list for each station should be listed in the monitoring report.
4.9.2.4 Water quality data should include, but is not limited to, the following parameters: pH, dissolved oxygen, temperature, conductivity, hardness. This data should be collected and analyzed by a state certified lab at permanently established monitoring stations located at the most upstream and downstream limits of the bank and at additional stations within the bank located downstream of each restoration reach.
4.9.2.5 Hydrology data: Monitoring wells should have corresponding rain gauges to document response times and duration of saturation. For guidance on the installation of monitoring wells for wetland hydrology, please reference ERDC standards:

http://el.erdc.usace.army.mil/elpubs/pdf/tnwrap06-2.pdf

http://el.erdc.usace.army.mil/elpubs/pdf/tnwrap00-2.pdf

4.10 Long-term Management Plan: *This section describes activities that are expected to occur after all of the compensatory mitigation activities are completed and the mitigation plan is determined to be successful. Unlike maintenance activities that facilitate the development of the mitigation site during the operation of the mitigation bank, the long-term management plan should address activities that are required to ensure that the mitigation site continues to provide aquatic resource functions and services in perpetuity.*

4.10.1 Ownership of the Mitigation Site*: The long-term management plan should state whether the mitigation site will remain in private ownership or whether the existing property owner plans to convey the mitigation site to an appropriate conservation group or government agency, and the method for ensuring that the new property owner(s) understands their responsibility to protect the mitigation site in perpetuity (if applicable).*

4.10.2 Identity of Long-Term Steward: *Identify the name and contact information for the Long-Term Steward and a statement of their responsibilities.*

4.10.3 Identification of Long Term Management Activities: *Provide a list of activities,* such as burning, management of invasive species, etc. that are required to ensure that the mitigation site will continue to provide the desired aquatic resource functions and services.
4.10.4 Funding Mechanism: *Describe how the necessary management activities will be funded*
4.10.5 Justification for Level of Funding: The Long-Term Steward will be responsible for conducting the long-term management activities described above. The long-term management fund must provide a secure funding source for future maintenance, repair, and monitoring requirements. *This justification must be based on real world estimates of the money required to manage the site in perpetuity. Quotes gathered for the estimate of restoration/enhancement costs may be used to generate this number. Amount should include monies for habitat work, infrastructure, and monitoring requirements. Either the amount agreed to between the permit applicant and the Corps or the amount agreed to between the permit applicant and Long-Term Steward WHICHEVER IS HIGHER shall be used to fund the account.)*

4.11 Adaptive Management: In the event the approved mitigation plan, one or more mitigation activities, or one or more areas of the mitigation site fails to achieve the necessary performance standards as specified in the mitigation plan, the permit applicant shall notify the Corps immediately. Adaptive management activities may consist of corrective actions and additional monitoring of the approved mitigation site, implementation of an alternate PRM plan, or the purchase of mitigation credits from an approved mitigation bank or in-lieu fee program. Failure to actively pursue and implement an approved mitigation plan or to develop and implement an adaptive management plan may be grounds for modification, suspension or revocation of the associated Department of the Army authorization.

4.12 Financial Assurances: The permit applicant shall provide financial assurances in the form of a Performance Bond or Letter of Credit to ensure funding is available to implement the approved mitigation plan or to implement corrective measures if additional work is required to ensure the success of the mitigation activities. The amount of the bond or letter of credits shall be based on estimated construction costs and the Corps will release these financial assurances after documentation and approval of project success. The permit applicant must notify the Corps 120 days prior to termination of financial assurances.

Identify the party responsible for establishing and managing the financial assurance, the specific type of financial instrument, the method used to estimate assurance amount, the date of establishment, and the release and forfeiture conditions. Documentation of estimated construction costs must be provided in a separate appendix of this document.

Working Draft, Subject to Change
Last Revised October 7, 2010

Appendix F

Site Protection Instruments

Working Draft, Subject to Change
Last Revised October 7, 2010

Charleston District
Conservation Easement Model

Charleston District Conservation Easement Model of September 2010
See http://www.sac.usace.army.mil for latest edition of this model.

STATE OF SOUTH CAROLINA CONSERVATION EASEMENT AND ACCEPTANCE

COUNTY OF _____

THIS INDENTURE, is made this _____ day of _____, 20____, by and between _____ ("Grantor(s)"), of _____, South Carolina, and _____, ("Grantee(s)"), of _____, South Carolina.

WHEREAS, Grantor is the owner in fee simple of certain real property *["real property" includes surface waters and wetlands, any interest in submerged lands, uplands, associated riparian/littoral rights*] located in _____ County, South Carolina, more particularly described [*description of tract must include: 1) acreage, and 2) reference the surveyed plat(s) required below*] ("Protected Property");

WHEREAS, Grantor desires to convey to the Holder a conservation easement placing certain limitations and affirmative obligations on the Protected Property for the protection of wetlands, scenic, resource, environmental, and other values, and in order that the Protected Property shall remain substantially in its natural condition forever;

WHEREAS, Holder is qualified to hold a conservation easement, and is either
(a) a governmental body empowered to hold an interest in real property under the laws of this State or the United States; or
(b) a charitable, not-for-profit or educational corporation, association, or trust [*, qualified under § 501(c)(3) and §170 (h) of the Internal Revenue Code*], the purposes or powers of which include one or more of the purposes (a) - (d) listed below;

(a) retaining or protecting natural, scenic, or open-space aspects of real property;
(b) ensuring the availability of real property for recreational, educational, or open-space use;
(c) protecting natural resources;
(d) maintaining or enhancing air or water quality.

WHEREAS, Grantor and Holder agree that third-party rights of enforcement shall be held by the U.S. Army Corps of Engineers, Charleston District and the S.C. Department of Health and Environmental Control ("Third-Parties," to include any successor agencies), and may be exercised through the appropriate enforcement agencies of the United States and the State of South Carolina, and that these rights are in addition to, and do not limit, the rights of enforcement under Department of the Army permit number _____, or any permit or certification issued by the Third-Parties.

[Insert for approved mitigation banks: WHEREAS, the Protected Property has been approved by the Third-Parties for use as a mitigation bank, to be known as _____ Mitigation Bank;]

COVENANTS, TERMS, CONDITIONS, AND RESTRICTIONS

A. PURPOSE

1. The purpose of this Conservation Easement is to ensure the Property will be preserved in a "Natural Condition", as defined herein in perpetuity and to prevent any use of the Property that will materially impair or interfere with the Conservation Values of the property (the "Purpose"). Grantor intends that this Conservation Easement will confine the use of the Property to such activities, including without limitation, those involving the restoration, enhancement, and/or preservation of aquatic resources in a manner consistent with the conservation purposes of this Conservation Easement.

2. The term "natural condition," as referenced in the preceding paragraph and other portions of this conservation easement, shall mean the condition of the property, as it exists at the time this Conservation easement is executed, as well as future restoration, enhancement, or other changes to the property that occur directly as a

result of the compensatory mitigation measures required by section 404 Permit(s) pursuant [to the Mitigation Banking Instrument [*and/or described in the Final Mitigation and Monitoring Plan*] dated, _____, 20__ ("Mitigation Plan"), the cover page and Executive Summary of which are attached as Exhibit "_," including implementation, maintenance, and monitoring activities (collectively, "Compensatory Mitigation").

3. **Baseline Documentation**. The Current Conditions (which may or may not include restoration and enhancement efforts pursuant to compensatory mitigation activities), of the Property as of the date of this Deed are further documented in a "Present Conditions Report," dated,_____, 20__ and prepared by [*preparer's name*], which report is acknowledged as accurate by Grantor and Grantee. The present conditions report includes:

(a) a current aerial photograph of the Protected Property at an appropriate scale taken as close as possible to the date the donation is made;

(b) on-site photographs taken at appropriate locations on the Protected Property, including of major natural features; and,

(c) a surveyed plat of the Protected Property showing all relevant property lines, all existing man-made structures, improvements, features, and major, distinct natural features such as waters of the United States, and shall be recorded in the RMC office for each county in which the Protected Property is situated prior to the recording of this Conservation Easement, and is recorded at [insert book and page references, county and date of recording]

(d) [etc. - insert any additional documentation which may be used to evidence the natural condition of the ` Protected Property]

The Present Conditions Report has been provided to both parties and will be used by Grantee to assure that any future changes in the use of the Property will be consistent with the terms of this Deed. However, the Present Conditions Report is not intended to preclude the use of other evidence to establish the condition of the Property as of the date of this Deed.

4. **Baseline Documentation Update**. After the completion of the compensatory mitigation activities on the protected property, Grantor, grantee, and third-parties agree that the baseline documentation can and should be updated to reflect the new conditions of the protected property. In the event that such an update is needed, grantor agrees to provide such necessary update, including photographs, narratives, and any other data needed to accurately reflect the conditions of the protected property.

5. Grantor certifies to Third Parties and Grantee that to the Grantors actual knowledge, there are no previously granted easements existing on the property that interfere or conflict with the Purpose of this Conservation Easement as evidenced by the title Report attached at "Exhibit _."

6**.** **Current Liens**. **[*fill in as appropriate*]** At the time of conveyance of this Easement, the Property is subject to a Mortgage or Deed of Trust, the holder of which has agreed, by separate instrument, a copy of which is attached hereto as **Exhibit __**, to subordinate its rights in the Property to the extent necessary to permit the Trust to enforce the purposes of this Easement in perpetuity and to prevent any modification or extinguishment of this Easement Deed by the exercise of any rights of the Deed of Trust holder.

NOW THEREFORE, for the foregoing consideration, and in further consideration of the restrictions, rights, and agreements herein, Grantor hereby conveys to Holder a conservation easement over the Protected Property consisting of the following:

B. PROHIBITED USES

Any activity on or use of the property inconsistent with the Purpose of this Conservation Easement and not reserved as a right of Grantor is prohibited. These Restrictions shall run with the land and be binding on Grantor's heirs, successors, administrators, assigns, lessees, or other occupiers and users, and are subject to the Reserved Rights which follow. The Following uses by Grantor, Grantee, their respective guests, agents, assigns, employees, representatives, successors, and third parties are expressly prohibited on the Property except as otherwise provided herein or unless specifically provided for in the Section 404 Permit and any amendments thereto, the Mitigation

Plan, and any easements and reservations of rights in the chain of title to the property at the time of this conveyance (as set forth on Exhibit __):

1. **General**. There shall be no filling, flooding, excavating, mining or drilling; no removal of natural materials; no dumping of materials; and, no alteration of the topography in any manner.

2. **Waters and Wetlands**. In addition to the General restrictions above, there shall be no draining, dredging, damming or impounding; no changing the grade or elevation, impairing the flow or circulation of waters, reducing the reach of waters; and, no other discharge or activity requiring a permit under applicable clean water or water pollution control laws and regulations, as amended.

3. **Trees/Vegetation**. There shall be no clearing, burning, cutting or destroying of trees or vegetation, except as expressly authorized in the Reserved Rights; there shall be no planting or introduction of non-native or exotic species of trees or vegetation.

4. **Activities**. No industrial activities, commercial activities, residential activities, or agricultural activities (including livestock grazing) shall be undertaken or allowed.

5. **Structures**. There shall be no construction, erection, or placement of buildings, billboards, or any other structures, nor any additions to existing structures.

6. **New Roads**. There shall be no construction of new roads, trails or walkways without the prior written approval of the Holder and Third-Parties, including of the manner in which they are constructed.

7. **Utilities**. There shall be no construction or placement of utilities or related facilities without the prior written approval of Holder and Third-Parties.

8. **Pest Control**. There shall be no application of pesticides or biological controls, including for problem vegetation, without prior written approval from the Holder and Third-Parties.

9. **Subdivision**. There shall be no legal or de facto division, subdivision or portioning of the property.

10. **Other Prohibitions**. Any other use of, or activity on, the Protected Property which is or may become inconsistent with the purposes of this grant, the preservation of the Protected Property substantially in its natural condition, or the protection of its environmental systems, is prohibited.

[11. *Additional, case-specific restrictions may need to be inserted*]

C. GRANTEE'S RIGHTS

To accomplish the Purpose of this Conservation Easement, Grantor, its successor and assign hereby grants and conveys the following rights to Grantee and Third Parties.

1. To preserve and protect the Conservation Values of the Property, including enforcing the terms of this Conservation Easement in order to assure the protected property remains in its "natural condition," defined herein, in perpetuity.

2. To enter upon the property at reasonable times in order to monitor compliance with and to otherwise enforce the terms of this Conservation Easement.

3. To prevent any activity on or use of the property that is inconsistent with the Purpose of this Conservation Easement and to require the restoration of such areas or features of the Property that may be damaged by any act, failure to act, or any use that is inconsistent with the Purpose of this Conservation Easement.

4. All mineral, air, and water rights necessary to protect and sustain the biological resources of the Property, provided that any exercise or sale of such rights by Grantee shall not result in conflict with the Conservation Purpose.

5. All present and future development rights allocated, implied, reserved or inherent in the properties; such rights are hereby terminated and extinguished, and may not be used or transferred to any portion of the Properties.

6. The right to enforce by means, including, without limitation, injunctive relief, the terms and conditions of this Conservation Easement.

D. GRANTOR'S RESERVED RIGHTS

Notwithstanding the foregoing Restrictions, Grantor reserves for Grantor, its heirs, successors, administrators, and assigns the following Reserved Rights, which may be exercised upon providing prior written notice to Holder and to Third-Parties, except where expressly provided otherwise:

1. **Landscape Management**. Landscaping by the Grantor to prevent severe erosion or damage to the Protected Property or portions thereof, or significant detriment to existing or permitted uses, is allowed, provided that such landscaping is generally consistent with preserving the natural condition of the Protected Property.

2. **Forest Management**. Harvesting and management of timber by Grantor is limited to the extent necessary to protect the natural environment in areas where the forest is damaged by natural forces such as fire, flood, storm, insects or infectious organisms. *[Additional language related to fire management plans may be added as necessary]* Such timber harvest and management shall be carried out in accordance with Best Management Practices approved by the South Carolina Forestry Commission or successor agency, as amended.

3. **Recreation**. Grantor reserves the right to engage in any outdoor, non-commercial recreational activities, including hunting (excluding planting or burning) and fishing, with cumulatively very small impacts, and which are consistent with the continuing natural condition of the Protected Property. No written notice required.

4. **Mineral Interests**. Grantor specifically reserves a qualified mineral interest (as defined in § 170(h)(6) of the Internal Revenue Code) in subsurface oil, gas or other minerals and the right to access such minerals. However, there shall be no extraction or removal of, or exploration for, minerals by any surface mining method, nor by any method which results in subsidence or which otherwise interferes with the continuing natural condition of the Protected Property.

5. **Road Maintenance**. Grantor reserves the right to maintain existing roads, trails or walkways. Maintenance shall be limited to: removal or pruning of dead or hazardous vegetation; application of permeable materials (e.g., sand, gravel, crushed) necessary to correct or impede erosion; grading; replacement of culverts, water control structures, or bridges; and, maintenance of roadside ditches.

6. **Vegetation, Debris, and Exotic Species Removal**. Grantor reserves the right to engage in the removal or trimming of vegetation downed or damaged due to natural disaster, removal of man-made debris, removal of parasitic vegetation (as it relates to the health of the host plant) and removal of non-native or exotic plant or animal species.

7. **Compensatory Mitigation**. Grantor reserves the right to perform any restoration, enhancement, and other wetland mitigation activities required by Section 404 permit's and/or Mitigation Banking Instruments, including the use of all equipment necessary to successfully complete any mitigation requirements contained therein.

8. **Other Reserved Rights**. Grantor reserves the right to engage in all acts or uses not prohibited by the Restrictions, and which are not inconsistent with the conservation purposes of this grant, the preservation of the Protected Property in its natural condition, and the protection of its environmental systems.
9. [*Insert for approved mitigation banks: 7. Grantor reserves the sole and unrestricted right to sell credits or other entitlements or interests in the Protected Property in order to perfect and carry out the purpose of a mitigation bank*.]

10. [Additional*, case-specific reservations may be listed, e.g., fire or wildlife management plans.*]

E. GENERAL PROVISIONS

The following General Provisions shall be binding upon, and inure to the benefit of, the Grantor, Holder and Third-Parties, and the heirs, successors, administrators, assigns, lessees, licensees and agents of each:

1. **Marking of Property.** Grantor shall install and maintain permanent signs saying "Protected Natural Area" or establish an equivalent, permanent, marking system along the boundary of any protected areas such as upland buffers, riparian zones, and aquatic resources.

2. **Rights of Access and Entry**. Holder and Third-Parties shall have the right to enter and go upon the Protected Property for purposes of inspection, and to take actions necessary to verify compliance with the Restrictions. Holder shall also have the rights of visual access and view, and to enter and go upon the Protected Property for purposes of making scientific or educational observations and studies, and taking samples, in such a manner as will not disturb the quiet enjoyment of the Protected Property by Grantor. No right of access or entry by the general public to any portion of the Protected Property is conveyed by this Conservation Easement.

3. **Enforcement**. In the event of a breach of the Restrictions by Grantor or another party, the Holder or one of the Third-Parties must notify the Grantor in writing of the breach. The Grantor shall have thirty (30) days after receipt of such notice to undertake actions that are reasonably calculated to swiftly correct the conditions constituting the breach. If the Grantor fails to take such corrective action within thirty (30) days, or fails to complete the necessary corrective action, the Holder and/or the Third-Parties may undertake such actions, including legal proceedings, as are necessary to effect such corrective action. Among other relief, Holder and/or Third-Parties shall be entitled to a complete restoration for any breach of the Restrictions. Breaches of General Provisions of this Conservation Easement shall be actionable without notice. The costs of a breach, correction or restoration, including the Holder's expenses, court costs, and attorneys' fees, shall be paid by Grantor, provided Grantor is determined to be responsible for the breach. Enforcement shall be at the discretion of the Holder and/or Third-Parties, and no omission or delay in acting shall constitute a waiver of any enforcement right. These enforcement rights are in addition to, and shall not limit, enforcement rights available under other provisions of law or equity, or under any applicable permit or certification.

4. **Events Beyond Grantor's Control**. Nothing herein shall be construed to authorize the Holder or Third-Parties to institute any proceedings against Grantor for any changes to the Protected Property caused by acts of God or circumstances beyond the Grantor's control such as earthquake, fire, flood, storm, war, civil disturbance, strike, the unauthorized acts of third persons, or similar causes.

5. **Obligations of Ownership**. Grantor is responsible for any real estate taxes, assessments, fees, or charges levied upon the Protected Property. Grantor shall keep the Protected Property free of any liens or other encumbrances for obligations incurred by Grantor. Holder shall not be responsible for any costs or liability of any kind related to the ownership, operation, insurance, upkeep, or maintenance of the Protected Property, except as expressly provided herein. Nothing herein shall relieve the Grantor of the obligation to comply with federal, state or local laws, regulations and permits which may apply to the exercise of the Reserved Rights.

6. **Long Term Management**. Grantor will accomplish the long-term management activities identified in the approved mitigation plan, dated _____. The required activities include but are not limited to *management activities (i.e., control of invasive species, fire, etc) and the maintenance and/or replacement of structures (fences,*

ditch plugs, weirs, etc) that are critical to the long-term success of the mitigation activities as described in the approved mitigation plan.

7. **Extinguishment**. In the event that changed conditions render impossible the continued use of the Protected Property for the conservation purposes, this Conservation Easement may only be extinguished, in whole or in part, by judicial proceeding.

8. **Eminent Domain**. Whenever all or part of the Protected Property is taken in the exercise of eminent domain so as to substantially abrogate the Restrictions imposed by this Conservation Easement, the Grantor and Holder shall join in appropriate actions at the time of such taking to recover the full value of the taking, and all incidental and direct damages due to the taking.

9. **Proceeds**. This Conservation Easement constitutes a real property interest immediately vested in Holder. In the event that all or a portion of this Protected Property is sold, exchanged, or involuntarily converted following an extinguishment or the exercise of eminent domain, Holder shall be entitled to the fair market value of this Conservation Easement. The parties stipulate that the fair market value of this Conservation Easement shall be determined by multiplying the fair market value of the Protected Property unencumbered by this Conservation Easement (minus any increase in value after the date of this grant attributable to improvements) by the ratio of the value of this easement at the time of this grant to the value of the Protected Property (without deduction for the value of this Conservation Easement) at the time of this grant. The values at the time of this grant shall be the values used, or which would have been used, to calculate a deduction for federal income tax purposes, pursuant to Section 170(h) of the Internal Revenue Code (whether eligible or ineligible for such a deduction). Holder shall use its share of the proceeds in a manner consistent with the purposes of this Conservation Easement.

10. **Notification**. Any notice, request for approval, or other communication required under this Conservation Easement shall be sent by registered or certified mail, postage prepaid, to the following addresses (or such address as may be hereafter specified by notice pursuant to this paragraph):

To Grantor: _____
_____
_____

To Holder: _____
_____
_____

To Third Parties: U.S. Army Corps of Engineers
Attn: Regulatory Division
69A Hagood Avenue
Charleston, South Carolina 29403

_____
_____
_____

9. **Assignment**. This Conservation Easement is transferable, but only to a qualified holder under 501 (C)(3) and § 170(h) of the Internal Revenue Code as described herein. As a condition of such transfer, the transferee shall agree to all of the restrictions, rights, and provisions herein, and to continue to carry out the purposes of this Conservation Easement. Assignments shall be accomplished by amendment of this Conservation Easement under paragraph 12. Grantee shall notify Third Parties at least 60 days prior to any such assignment or transfer.

10. **Failure of Holder**. If at any time Grantee is unable or fails to enforce this Conservation Easement, or if Grantee ceases to be a qualified holder under §501(c)(3) and § 170(h) of the Internal Revenue Code, and if within a reasonable period of time after the occurrence of one of these events the Grantee fails to make an assignment pursuant to paragraph 9, then the Holder's interest shall become vested in another qualified holder in accordance with an appropriate (e.g., cy pres) proceeding in a court of competent jurisdiction.

11. **Subsequent Transfer**. Grantor agrees to incorporate the terms of this Conservation Easement in any deed or other legal instrument which transfers any interest in all or a portion of the Protected Property. Grantor agrees to provide written notice of such transfer to Grantee and Third Parties at least 60 days prior to the date of transfer. The

failure of Grantor to comply with this paragraph shall not impair the validity or enforceability of this Conservation Easement.

12. **Amendment**. This Conservation Easement may be amended, but only in writing signed by all parties hereto, and provided such amendment does not affect the purpose of this Conservation Easement or the status of the Grantee under any applicable laws, including S.C. Code Title 7, Chapter. Any amendments must be consistent with the conservation purposes of this grant.

13. **Severability**. Should any separable part of this Conservation Easement be found void or unenforceable by a court of competent jurisdiction, the remainder shall continue in full force and effect.

14. **Warranty**. Grantor warrants that it owns the Protected Property in fee simple, and that Grantor either owns all interests in the Protected Property which may be impaired by the granting of this Conservation Easement or that there are no outstanding mortgages, tax liens, encumbrances, or other interests in the Protected Property which have not been expressly subordinated to this Conservation Easement. Grantor further warrants that Holder shall have the use of and enjoy all the benefits derived from and arising out of this Conservation Easement.

15. **Habendum Clause**. To have and to hold, this Easement together with all and singular the appurtenances and privileges belonging or in any way pertaining thereto, either in law or equity, either in possession or expectancy, for the proper use and benefit of the Grantee, its successors and assigns, forever.

[Signature Pages Attached]

IN WITNESS WHEREOF, Grantor and Grantee have executed this Conservation Easement, and the Third-Parties have approved this Conservation Easement, on the date written above. By its execution and acceptance of this Conservation Easement, Grantee accepts the third-party rights of enforcement herein.

SIGNED, SEALED AND
DELIVERED IN THE PRESENCE OF:

GRANTOR:

_____ Signature: _____
(Witness)

_____ _____
(Witness) [type/print name of grantor]

STATE OF SOUTH CAROLINA)
) ss.
COUNTY OF _____)

I, a Notary Public, do hereby certify that _____ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and seal this _____ day of _____, 20____.

_____(S
ignature of Notary Public)

_____
(Typed/Printed name of Notary Public)

NOTARY PUBLIC FOR SOUTH CAROLINA
My Commission Expires: _____

Continuation of Signature Page
For Deed of Conservation Easement

GRANTEE:

_____ Signature: _____
(Witness)

_____ _____
(Witness) [type/print name of grantee]

_____
[Title and Organization]

STATE OF SOUTH CAROLINA)
) ss.
COUNTY OF _____)

I, a Notary Public, do hereby certify that _____ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and seal this _____ day of _____, 20____.

_____
(Signature of Notary Public)

_____
(Typed/Printed name of Notary Public)

NOTARY PUBLIC FOR SOUTH CAROLINA
My Commission Expires: _____

Approval by Third-Parties

U.S. Army Corps of Engineers,
Charleston District,

By: _____

_____
[type/print name]

Title: _____

S.C. Department of Health and
Environmental Control

By: _____

_____
[type/print name]

Title: _____

Working Draft, Subject to Change
Last Revised October 7, 2010

Charleston District
Restrictive Covenant Model

STATE OF SOUTH CAROLINA DECLARATION OF RESTRICTIVE COVENANTS

COUNTY OF _____

THIS DECLARATION OF RESTRICTIVE COVENANTS is made this ___ day of _____, 20__, by _____("Declarant*(s)*").

RECITALS

WHEREAS, Declarant*(s) is/are* the owner*(s)* of certain real property (*"real property" includes wetlands, any interest in submerged lands, uplands, associated riparian/littoral rights*) located in _____ County, South Carolina, more particularly described as [*describe property to be preserved as XX acres of wetlands and XX acres of upland buffers and attach an approved permit drawing or surveyed plat of the protected property including: 1) acreage, 2) a reference to recorded plat(s), or (see Paragraph 9),*] ("Property"); and

WHEREAS, as compensatory mitigation under Federal *and State* law for Department of the Army permit number _____ ("Permit") issued by the U.S. Army Corps of Engineers, Charleston District ("Corps" or "Charleston District," to include any successor agency), *and certification(s) and/or permit(s) issued by the S.C. Department of Health and Environmental Control ("DHEC," to include any successor agency)*, and in recognition of the continuing benefit to the permitted property, and for the protection of waters of the United States and scenic, resource, environmental, and general property values, Declarant*(s)* *has/have* agreed to place certain restrictive covenants on the Property, in order that the Property shall remain substantially in its natural condition forever.

NOW THEREFORE, Declarant*(s)* hereby declare*(s)* that the Property shall be held, transferred, conveyed, leased, occupied or otherwise disposed of and used subject to the following restrictive covenants, which shall run with the land and be binding on all heirs, successors, assigns (they are included in the term, "Declarant," below), lessees, or other occupiers and users.

1. **Prohibitions**. Declarant*(s) is/are* and shall be prohibited from the following: filling, draining, flooding, dredging, impounding, clearing, burning, cutting or destroying vegetation, cultivating, excavating, erecting, constructing, releasing wastes, or otherwise doing any work on the Property; introducing exotic species into the Property (except biological controls preapproved in writing by the Corps *and DHEC*); and from changing the grade or elevation, impairing the flow or circulation of waters, reducing the reach of waters, and any other discharge or activity requiring a permit under clean water or water pollution control laws and regulations, as amended. The following are expressly excepted from this paragraph: a) cumulatively very small impacts associated with hunting (excluding planting or burning), fishing, and similar recreational or educational activities, consistent with the continuing natural condition of the Property; b) removal or trimming of vegetation hazardous to person or property, or of timber downed or damaged due to natural disaster; c) restoration or mitigation required under law [*if reference is made to the Permit, or to a mitigation plan approved by the Permit, all exceptions (including regarding buffer areas) must be specifically spelled out in the Permit or plan; also, additional, specific exceptions may be listed in this paragraph, e.g., fire or wildlife management plans, boardwalks, etc.*].

2. **Amendment**. After recording, these restrictive covenants may only be amended by a recorded document signed by the Corps *and DHEC* and Declarant. The recorded document, as

amended, shall be consistent with the Charleston District model conservation restrictions at the time of amendment. Amendment shall be allowed at the discretion of the Corps *and DHEC*, in consultation with resource agencies as appropriate, and then only in exceptional circumstances. Compensatory mitigation for any adverse impacts associated with an amendment will be required pursuant to Charleston District mitigation policy at the time of amendment. There shall be no obligation to allow an amendment.

3. **Notice to Government**. Any permit application, or request for certification or modification, which may affect the Property, made to any governmental entity with authority over wetlands or other waters of the United States, shall expressly reference and include a copy (with the recording stamp) of these restrictive covenants.

4. **Reserved Rights**. It is expressly understood and agreed that these restrictive covenants do not grant or convey to members of the general public any rights of ownership, entry or use of the Property. These restrictive covenants are created solely for the protection of the Property, and for the consideration and values set forth above, and Declarant*(s)* reserve*(s)* the ownership of the fee simple estate and all rights appertaining thereto, including without limitation the rights to exclude others and to use the property for all purposes not inconsistent with these restrictive covenants.

5. **Compliance Inspections**. The Corps, *DHEC*, and *its/their* authorized agents shall have the right to enter and go upon the lands of Declarant*(s)*, to inspect the Property and take actions necessary to verify compliance with these restrictive covenants.

6. **Enforcement**. The Declarant*(s)* grant*(s)* to the Corps, the U.S. Department of Justice, and/or *DHEC*, a discretionary right to enforce these restrictive covenants in a judicial action against any person*(s)* or other entity(ies) violating or attempting to violate these restrictive covenants; provided, however, that no violation of these restrictive covenants shall result in a forfeiture or reversion of title. In any enforcement action, an enforcing agency shall be entitled to a complete restoration for any violation, as well as any other judicial remedy such as civil penalties. Nothing herein shall limit the right of the Corps to modify, suspend, or revoke the Permit.

7. **Property Transfers**. Declarant*(s)* shall include the following notice on all deeds, mortgages, plats, or any other legal instruments used to convey any interest in the Property (failure to comply with this paragraph does not impair the validity or enforceability of these restrictive covenants):

> NOTICE: This Property Subject to Declaration of Restrictive Covenants Recorded at [*insert book and page references, county(ies), and date of recording*].

8. **Marking of Property**. The perimeter of the Property shall at all times be plainly marked by permanent signs saying, "Protected Natural Area," or by an equivalent, permanent marking system.

[*Paragraph 9 - generally, a surveyed, recorded plat is required; however, at the discretion of the Corps and DHEC, an approved permit drawing or site plan attached to these restrictive covenants may suffice*]

9. **Recording of Plat**. A plat depicting the boundaries of the Property subject to these restrictive covenants shall be recorded in the deed records office for each county in which the Property is situated prior to the recording of these restrictive covenants. The plat*(s) is/are* recorded at [*include book and page references, county(ies), and date*].

10. **Long-Term Management.** The Declarant is responsible for long-term management activities identified in an approved mitigation plan, dated _____. The required activities include but are not limited to *management activities (invasive species, fire, etc) and the maintenance and/or replacement of structures (fences, ditch plugs, weirs, etc) that are critical to the long-term success of the mitigation activities as described in the approved mitigation plan.*

11. **Separability Provision**. Should any separable part of these restrictive covenants be held contrary to law, the remainder shall continue in full force and effect.

IN WITNESS WHEREOF, the Declarant*(s) has/have* duly executed this Declaration of Restrictive Covenants the date written above.

IN THE PRESENCE OF: Declarant*(s)*

_____ By: _____
[*type name of witness under signature line*] [*type name of individual under signature line*]

_____ Its: _____
[*type name of witness under signature line*] [*title of signing individual, where applicable*]

STATE OF SOUTH CAROLINA)
) ss.
COUNTY OF _____)

I, a Notary Public, do hereby certify that _____ Personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and seal this _____ day of _____, 20____.

_____
(Signature of Notary Public)

_____
(Typed/Printed name of Notary Public)

NOTARY PUBLIC FOR SOUTH CAROLINA

My Commission Expires: _____

Working Draft, Subject to Change
Last Revised October 7, 2010

Appendix G

Financial Assurances

US Army Corps of Engineers®

REGULATORY GUIDANCE LETTER

No. 05-1 Date: 14 February 2005

SUBJECT: Guidance on the Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds.

1. Purpose and applicability

a. Purpose. The U.S. Army Corps of Engineers (Corps) has the authority to issue permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. These permits may require compensatory mitigation to ensure that issued permits and resolution of unauthorized activities result in a no-net loss of aquatic resource functions. The purposes of this guidance are: 1) to provide general guidance on the use of letters of credit, performance bonds and other financial assurances, and 2) to provide specific guidance for the use of performance bonds to ensure the completion of compensatory mitigation projects.

b. Applicability. This guidance applies to Department of the Army (DA) permits that are conditioned to include any type of financial assurance to ensure that required compensatory mitigation is completed. It may also be used when financial assurances are required for mitigation and/or restoration for unauthorized activities.

2. General Considerations for Financial Assurances.

a. The Purpose of Requiring Financial Assurances. The overall success of compensatory mitigation, including establishment (i.e., creation), restoration, and enhancement of natural ecosystems is subject to many variables. Site-specific factors such as local droughts, fires or floods, pest infestations, diseases or illegal entrance by off-road vehicles may negatively affect a compensatory mitigation project before it has achieved the specified performance standards, and thus may require additional effort or remediation to ensure functional success. Detailed, well-written special conditions and compliance requirements without the requirement of financial assurances are usually sufficient for DA permits to ensure that relatively simple compensatory mitigation activities are completed and provide for desired aquatic resource functions. However, for some DA permits, district engineers may require financial assurances on a permit-by-permit basis to ensure the initiation and successful completion of required compensatory mitigation. For example, district engineers may determine that financial assurances are necessary to ensure that multiple-year plantings occur, invasive species are controlled, and adequate water is supplied after the initial physical phases of landscape construction (e.g., soil amendments, grading, plantings, seeding) are completed.

b. Considerations for Requiring Financial Assurances. Because the circumstances of each permit case are unique, the decision to require financial assurances should be made on a permit-by-permit basis. The analysis used to determine that an additional financial assurance is required for a particular permit must be documented on a case-specific basis and included as part of the administrative record for that permit. At their discretion, district engineers may choose to require financial assurances on a case-by-case basis for many reasons, some of which may include tthe length of monitoring required for the compensatory mitigation project, whether the mitigation is for an after-the-fact permit or constructed in advance of impacts, the type of mitigation (establishment, restoration or enhancement), experience with the permittee and/or consultant, and whether it requires new technology or includes proven techniques, whether the permit is for a project that impacts aquatic resources that provide high or low quality functions, and the likelihood of mitigation site sustainability. Funding for many long-term management activities such as prescribed burning, invasive species control, and maintenance of water control structures may also require financial assurances. These are among the many factors that should be taken into account when deciding whether or not to require additional financial assurances.

c. Types of Financial Assurances. Examples of financial assurances include performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit, legislatively enacted dedicated funds for government-operated banks or other approved instruments.

d. Amount of Financial Assurance. The dollar amount of any financial assurance, including the penal sum of a performance bond, is determined by the district engineer. Any required financial assurances should be sufficient to cover contingency actions such as default by the permittee or failure to meet performance standards. In addition, the amount of the financial assurances should be based on the size and complexity of the proposed compensatory mitigation project, the estimated amount required to construct and remediate the proposed compensatory mitigation project and monitoring of the compensatory mitigation site. The financial assurances may also include a reasonable amount to cover contingency costs or other amount determined to be appropriate to the level of the uncertainty for completion of a successful compensatory mitigation project. In some cases, the financial assurance may be increased to provide funds for the real estate costs associated with the purchase of another compensatory mitigation site if the current site cannot support the desired aquatic resource because of insufficient hydrology (e.g., possible reduction of groundwater in a highly urbanizing setting or change in surface water rights) or other factors that could affect compensatory mitigation project success. District engineers must document the analysis used to determine the amount of the financial assurance, and must include this analysis in the administrative records for their permits.

e. Use and Release of Financial Assurances. Financial assurances may be phased out or reduced once the project has been demonstrated to be functionally assured and self-sustaining in accordance with performance standards/success criteria. District engineers should clearly specify the conditions under which financial assurances are used to ensure mitigation, and the conditions under which the financial assurances are to be released to the permit applicant and/or provider of

the financial assurance. Special conditions should provide the permit applicant and/or financial assurance provider with an adequate chance to correct deficiencies with the compensatory mitigation project. In some cases, release of the financial assurance can be keyed to stages demonstrated with achievement of mitigation project performance standards or other special conditions. As discussed in section 3(a) of this Guidance, district engineers should not position themselves to accept directly, retain, or draw on financial assurance funds in the event of default of the permittee, unless specifically authorized by Federal statute.

3. Specific Considerations for Performance Bonds. This section provides guidance specific to the use of performance bonds.

a. Legal Considerations Applicable to Performance Bonds. Unlike some other Federal agencies, the Corps lacks statutory authority to accept directly, retain, and draw upon performance bonds to ensure compliance with permit conditions. If the Corps were to receive the sum of a performance bond directly, the sum would be categorized as a "miscellaneous receipt" under the Miscellaneous Receipts Statute, 31 U.S.C. §3302(b), and would be deposited in the U.S. Treasury without being used to ensure permit compliance. This situation applies to the use of other financial assurances as well. However, along with its authority to deny permit authorizations, the Corps has the authority to issue its permits with conditions. District engineers have the discretion to condition the approval of a permit to require the posting and execution of a performance bond by a permittee, as long as the Corps is not positioned to accept directly, retain, or draw upon bond monies in the event of a default. If and when they are used, such bonds should be executed with the signatures of an additional governmental or non-governmental environmental management entity or entities as a bond "surety" or "sureties," who agree to ensure performance if the Corps should determine that the permittee, as the bond "principal," has defaulted on any of its responsibilities. The permit should also specify that the Corps stands as a third-party "obligee" to the principal and surety(ies) of the bond, possessing the full and final authority to determine the penal sum amount, and to determine whether the principal and the surety(ies) have specifically performed some or all of the obligations, covenants, terms, conditions, and agreements of the bond. Finally, the bond should specify that if both the principal and the surety(ies) default in their responsibilities, the Corps retains the full and final discretionary authority to identify new parties as additional surety(ies) to the bond.

b. Suggested Permit Language if Performance Bond is Used. If a district engineer determines that a performance bond is necessary to ensure the completion of a compensatory mitigation project, the permit should list the posting and execution of the bond as a special condition. The following is suggested language for a special permit condition involving a performance bond:

> "The Permittee has executed a Performance Bond dated **[insert date bond executed]** in the amount of **[insert amount determined by district engineer]**, attached to this permit as **[insert Attachment Number or Letter]** and made a part

hereof, to provide financial assurance for the performance of all of the obligations, covenants, terms, conditions, and agreements required of the Permittee under this permit. The bond shall be posted before construction authorized by this permit commences."

c. Model Performance Bond. The appendix to this guidance is a Model Performance Bond, which is provided as a suggested template for district engineers that choose, on a permit-by-permit basis, to use performance bonds as special conditions to DA permits. This Model Performance Bond may be modified at the discretion of district engineers on a permit-by-permit basis.

4. Duration. This guidance remains effective unless revised or rescinded.

FOR THE COMMANDER:

Encl

DON T. RILEY
Major General, U.S. Army
Director of Civil Works

Appendix

MODEL PERFORMANCE BOND

DATE BOND EXECUTED (Must be same or earlier than date of permit.)
OBLIGEE: [Insert District Name], United States Army Corps of Engineers [Insert Address]

PRINCIPAL (Legal name and business address)	**Surety(ies)** (Legal name(s) and business address(es))
TYPE OF ORGANIZATION ("X"ONE) ___Individual ___Partnership ___Joint Venture ___Corporation	PENAL SUM OF BOND, amount determined solely by Obligee **Million(s)** / **Thousand(s)** / **Hundred(s)** / **Cent(s)**
STATE OF INCORPORATION	PERMIT DATE / **PERMIT NO.**

OBLIGATION:

We, the Principal and Surety(ies) hereto, are firmly bound as Obligors to the U.S Army Corps of Engineers (hereinafter called the Obligee) in the above penal sum, an amount determined solely by the Obligee. For the payment of the penal sum, we bind ourselves, our heirs, executors, administrators, assigns, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as “severally” only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown below the name of the Surety. The limit of liability shall be the full amount of the penal sum.

CONDITIONS:

The Principal received the permit identified above.

THEREFORE:

The above obligation is void if the Principal –

(a) Specifically performs and fulfills all of the obligations, covenants, terms, conditions and agreements of the permit during the original term of the permit and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety(ies), and during the life of any guaranty required under the permit, and -

(b) Also specifically performs and fulfills all of the obligations, covenants, terms, conditions, and agreements of any and all duly authorized modifications of the permit that may hereafter be made. Notice of those modifications to the Surety(ies) are waived.

IT IS FURTHER EXPRESSLY PROVIDED THAT:

The Obligee shall have the full and final authority to determine whether the Principal and Surety(ies) have specifically performed and fulfilled some or all of the obligations, covenants, terms, conditions and agreements of the permit.

Within thirty (30) business days of receiving notice from the Obligee that the Principal has defaulted on some or all of the obligations, covenants, terms, conditions and agreements of the permit, the Surety(ies) shall either -

(a) Remedy the default of the Principal to the full satisfaction of the Obligee by a certain date determined by the Obligee, or -

(b) Immediately tender to a party or parties identified by the Obligee the portion of the penal sum that the Obligee determines is due and owing and necessary to remedy the default. In no circumstance shall such a sum be tendered to the Obligee. Any new party or parties identified by the Obligee under this section shall immediately become a Surety or Sureties to this bond. If the Obligee determines that it is unable to identify such a party or parties, the Suerty(ies) shall remedy the default of the Principal under (a) of this section.

In the event that the Surety(ies) fail(s) to respond within thirty (30) business days to the Obligee’s notice of default, or to honor comitments to the full satisfaction of the Obligee under (a) or (b) above of this section, the full penal sum may, at the election of the Obligee, immediately become due and owing and paid to a party or parties identified by the Obligee. In no circumstance shall the full penal sum be tendered to the Obligee. Any new party or parties identified by the Obligee under this paragraph shall immediately become a Surety or Sureties to this bond.

WITNESS:

The Obligee, Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL		
Signature 1 (Seal)	Signature 2 (Seal)	Corporate Seal
Name, title 1 (typed)	Name, title 2 (typed)	

INDIVIDUAL SURETY(IES)

Signature 1 (Seal)	Signature 2 (Seal)
Name, title 1 (typed)	Name, title 2 (typed)

COPORATE SURETY(IES)

Surety A		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	

Surety B		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	

Surety C		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	

Surety D		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	
Surety E		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	
Surety F		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	
Surety G		
Name & address	State of Incorporation	Liability limit
Signature 1 (Seal)	Signature 2 (Seal)	
Name, title 1 (typed)	Name, title 2 (typed)	
Obligee		
[Insert District Name] **U.S. Army Corps of Engineers** **[Insert District Address]**		
Signature 1 (Seal)	Signature 2 (optional) (Seal)	

Name, title 1 (typed)	Name, title 2 (typed)

Bond Premium	**Rate Per Thou. ($)**	**Total ($)**

INSTRUCTIONS

1. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

2. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURET(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, a completed Affidavit of Individual Surety for each individual surety shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning their financial capability.

3. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

Working Draft, Subject to Change
Last Revised October 7, 2010

Appendix H

Monitoring Requirements

US Army Corps of Engineers®

REGULATORY GUIDANCE LETTER

No. 08-03 **Date: 10 October 2008**

SUBJECT: Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Restoration, Establishment, and/or Enhancement of Aquatic Resources.

1. Purpose and Applicability

a. Purpose. This Regulatory Guidance Letter (RGL) provides the Districts and regulated public guidance on minimum monitoring requirements for compensatory mitigation projects, including the required minimum content for monitoring reports. This RGL replaces RGL 06-03.

b. Applicability. The final Mitigation Rule published on April 10, 2008, states that the submission of monitoring reports to assess the development and condition of compensatory mitigation projects is required, but the content and level of detail for those reports must be commensurate with the scale and scope of the compensatory mitigation projects as well as the compensatory mitigation project type (see 33 CFR 332.6(a)(1)).

This RGL applies to all Department of the Army (DA) permit authorizations under Section 404 of the Clean Water Act and Sections 9 and 10 of the Rivers and Harbors Act that contain special conditions requiring compensatory mitigation provided through aquatic resource restoration, establishment and/or enhancement. This guidance also applies to monitoring reports that are prepared for mitigation bank sites and in-lieu-fee project sites.

This RGL supports the Program Analysis and Review Tool (PART) program goals for the Regulatory Program. Specifically, this RGL supports the PART performance measures for mitigation site compliance and mitigation bank/ in-lieu-fee compliance. These measures apply to active mitigation sites, mitigation banks, and in-lieu-fee project sites that still require monitoring.

2. Background

Recent studies by the Government Accountability Office (GAO) and National Research Council (NRC) indicated that the U.S. Army Corps of Engineers (Corps) was not providing adequate oversight to ensure that compensatory mitigation projects were successfully replacing the aquatic resource functions lost as a result of permitted activities. For example, the GAO study determined that many project files requiring

mitigation lacked monitoring reports despite the fact that such reports were required as a condition of the permit. Similarly, the NRC study documented that a lack of clearly stated objectives and performance standards in the approved compensatory mitigation proposals made it difficult to ascertain whether the goal of no net loss of wetland resources was achieved.

On April 10, 2008, the Corps and Environmental Protection Agency published the "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule" (Mitigation Rule) which governs compensatory mitigation for activities authorized by permits issued by the Department of the Army (33 CFR Parts 325 and 332). This RGL complements and is consistent with the final Mitigation Rule.

3. Discussion

Inconsistent approaches to monitoring compensatory mitigation projects are one of several factors that have affected the ability of Corps project managers (PMs) to adequately assess achievement of the performance standards of Corps-approved mitigation plans. Standardized monitoring requirements will aid PMs when reviewing compensatory mitigation sites, thereby allowing the Corps to effectively assess the status and success of compensatory mitigation projects.

This RGL addresses the minimum information needed for monitoring reports that are used to evaluate compensatory mitigation sites. Monitoring requirements are typically based on the performance standards for a particular compensatory mitigation project and may vary from one project to another.

Monitoring reports are documents intended to provide the Corps with information to determine if a compensatory mitigation project site is successfully meeting its performance standards. Remediation and/or adaptive management used to correct deficiencies in compensatory mitigation project outcomes should be based on information provided in the monitoring reports and site inspections.

4. Guidance

a. Monitoring guidelines for compensatory mitigation.

i. Performance Standards. Performance standards, as defined in 33 CFR 332.2, and discussed in more detail at 33 CFR 332.5, will be consistent with the objectives of the compensatory mitigation project. These standards ensure that the compensatory mitigation project is objectively evaluated to determine if it is developing into the desired resource type and providing the expected functions. The objectives, performance standards, and monitoring requirements for compensatory mitigation projects required to offset unavoidable impacts to waters of the United States must be provided as special conditions of the DA permit or specified in the approved final mitigation plan (see 33 CFR 332.3(k)(2)). Performance standards may be based on functional, conditional, or other suitable assessment methods and/or criteria and may be incorporated into the

special conditions to determine if the site is achieving the desired functional capacity. Compensatory mitigation projects offset the impacts to diverse types of aquatic resources, including riverine and estuarine habitats. Special conditions of the DA permits will clearly state performance standards specific to the type and function of the ecosystem in relation to the objectives of the compensatory mitigation project.

ii. Monitoring Timeframe. The special conditions of the DA permit (or the mitigation plan as referenced in the special conditions) must specify the length of the monitoring period (see 33 CFR 332.6(a)(1)). For mitigation banks, the length of the monitoring period will be specified in either the DA permit, mitigation banking instrument, or approved mitigation plan. For in-lieu fee projects, the length of the monitoring period will be specified in either the DA permit or the approved in-lieu fee project plan.

The monitoring period must be sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years (see 33 CFR 332.6(b)). The District determines how frequently monitoring reports are submitted, the monitoring period length, and report content. If a compensatory mitigation project has met its performance standards in less than five years, the monitoring period length can be reduced, if there are at least two consecutive monitoring reports that demonstrate that success. Permit conditions will support the specified monitoring requirement and include deadlines for monitoring report submittal. Longer monitoring timeframes are necessary for compensatory mitigation projects that take longer to develop (see 33 CFR 332.6(b)). For example, forested wetland restoration may take longer than five years to meet performance standards.

Annual monitoring and reporting to the Corps is appropriate for most types of compensatory mitigation projects, though the project sponsor may have to monitor progress more often during the project's early stages. Certain compensatory mitigation projects may require more frequent monitoring and reporting during the early stages of development to allow project managers to quickly address problems and/or concerns. Annual monitoring can resume once the project develops in accordance with the approved performance standards. In cases where monitoring is required for longer than five years, monitoring may be conducted on a less than annual timeframe (such as every other year), though yearly monitoring is recommended until the project becomes established as a successful mitigation project. In this case, off-year monitoring should include some form of screening assessment such as driving by the mitigation site, telephone conversations regarding condition of the mitigation site, etc. On-site conditions, the complexity of the approved mitigation plan, and unforeseen circumstances will ultimately determine whether the monitoring period should be extended beyond the specified monitoring time frame for a particular project. Complex and/or ecologically significant compensatory mitigation projects should have higher priority for site visits.

As discussed above, the remaining monitoring requirements may be waived upon a determination that the compensatory mitigation project has achieved its performance standards. The original monitoring period may be extended upon a determination that

performance standards have not been met or the compensatory mitigation project is not on track to meet them (e.g., high mortality rate of vegetation). Monitoring requirements may also be revised in cases where adaptive management or remediation is required.

iii. Monitoring Reports. Monitoring requirements, including the frequency for providing monitoring reports to the District Commander and the Interagency Review Team (IRT), will be determined on a case-by-case basis and specified in either the DA permit, mitigation banking instrument, or approved mitigation plan. The content of the monitoring reports will be specified in the special conditions of the DA permit so that the requirements are clearly identified for the permittee or third-party mitigation sponsor. In addition, the monitoring reports should comply with the timeframes specified in the special conditions of the DA permit. Monitoring reports will not be used as a substitute for on site compliance inspections. The monitoring report will provide the PM with sufficient information on the compensatory mitigation project to assess whether it is meeting performance standards, and to determine whether a compliance visit is warranted. The party responsible for monitoring can electronically submit the monitoring reports and photos for review.

Visits to mitigation sites will be documented in the administrative record and will count toward District performance goals. An enforcement action may be taken if the responsible party fails to submit complete and timely monitoring reports.

b. Contents of Monitoring Reports. Monitoring reports provide the PM with a convenient mechanism for assessing the status of required compensatory mitigation projects. The PM should schedule a site visit and determine potential remedial actions if problems with the compensatory mitigation project are identified in a monitoring report.

The submittal of large bulky reports that provide mostly general information should be discouraged. While often helpful as background, reiteration of the mitigation and monitoring plan content, lengthy discussions of site progress, and extensive paraphrasing of quantified data are unnecessary. Monitoring reports should be concise and effectively provide the information necessary to assess the status of the compensatory mitigation project. Reports should provide information necessary to describe the site conditions and whether the compensatory mitigation project is meeting its performance standards.

Monitoring reports will include a Monitoring Report Narrative that provides an overview of site conditions and functions. This Monitoring Report Narrative should be concise and generally less than 10 pages, but may be longer for compensatory mitigation projects with complex monitoring requirements. Monitoring Report Narratives may be posted on each District's Regulatory web site.

Monitoring reports will also include appropriate supporting data to assist District Commanders and other reviewers in determining how the compensatory mitigation project is progressing towards meeting its performance standards. Such supporting data may include plans (such as as-built plans), maps, and photographs to illustrate site

conditions, as well as 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.

c. Monitoring Report Narrative:

i. Project Overview (1 page)

(1) Corps Permit Number or Name of the Mitigation Bank or In-Lieu Fee Project

(2) Name of party responsible for conducting the monitoring and the date(s) the inspection was conducted.

(3) A brief paragraph describing the purpose of the approved project, acreage and type of aquatic resources impacted, and mitigation acreage and type of aquatic resources authorized to compensate for the aquatic impacts.

(4) Written description of the location, any identifiable landmarks of the compensatory mitigation project including information to locate the site perimeter(s), and coordinates of the mitigation site (expressed as latitude, longitudes, UTMs, state plane coordinate system, etc.).

(5) Dates the compensatory mitigation project commenced and/or was completed.

(6) Short statement on whether the performance standards are being met.

(7) Dates of any recent corrective or maintenance activities conducted since the previous report submission.

(8) Specific recommendations for any additional corrective or remedial actions.

ii. Requirements (1 page)

List the monitoring requirements and performance standards, as specified in the approved mitigation plan, mitigation banking instrument, or special conditions of the DA permit, and evaluate whether the compensatory mitigation project site is successfully achieving the approved performance standards or trending towards success. A table is a recommended option for comparing the performance standards to the conditions and status of the developing mitigation site.

iii. Summary Data (maximum of 4 pages)

Summary data should be provided to substantiate the success and/or potential challenges associated with the compensatory mitigation project. Photo documentation may be provided to support the findings and recommendations referenced in the monitoring report and to assist the PM in assessing whether the compensatory mitigation project is meeting applicable performance standards for that monitoring period. Submitted photos should be formatted to print on a standard 8 ½” x 11” piece of paper, dated, and clearly labeled with the direction from which the photo was taken. The photo location points should also be identified on the appropriate maps.

iv. Maps and Plans (maximum of 3 pages)

Maps should be provided to show the location of the compensatory mitigation site relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation plan. In addition, the submitted maps and plans should clearly delineate the mitigation site perimeter(s), which will assist PMs in locating the mitigation area(s) during subsequent site inspections. Each map or diagram should be formatted to print on a standard 8 ½" x 11" piece of paper and include a legend and the location of any photos submitted for review. As-built plans may be included.

v. Conclusions (1 page)

A general statement should be included that describes the conditions of the compensatory mitigation project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the permittee or sponsor, including a timetable, should be provided. The District Commander will ultimately determine if the mitigation site is successful for a given monitoring period.

d. Completion of Compensatory Mitigation Requirements. For permittee-responsible mitigation projects, compensatory mitigation requirements will not be considered fulfilled until the permittee has received written concurrence from the District Commander that the compensatory mitigation project has met its objectives and no additional monitoring reports are required. PMs will review the final monitoring reports to make this determination. A final field visit should be conducted to verify that on-site conditions are consistent with information documented in the monitoring reports.

e. Special Condition. The following condition should be added to all DA permits that require permittee-responsible mitigation. This condition does not apply to mitigation banks or in-lieu-fee programs:

Your responsibility to complete the required compensatory mitigation as set forth in Special Condition X will not be considered fulfilled until you have demonstrated compensatory mitigation project success and have received written verification of that success from the U.S. Army Corps of Engineers.

5. Duration

This guidance remains in effect unless revised or rescinded.

STEVEN L. STOCKTON, P.E.
Director of Civil Works