U.S. Army Corps of Engineers Fort Worth District
Compensatory Mitigation Plan Guidelines
For
Permittee Responsible Mitigation

Monitoring Requirements:

Historically, Permittee Responsible Mitigation (PRM) sites in the district established five year monitoring periods, and in some circumstances, required a seven to ten year monitoring period based on the mitigation plan and associated activities.

A monitoring plan will be developed to address the specific reporting needs of each PRM site and may depend on a number of factors, including, the magnitude of earth work proposed, a mitigation applicant's prior history of successful projects, and risk of failure. In order to ensure streams are appropriately stable and are developing in accordance with the predicted "at maturity" Texas Rapid Assessment Method (TXRAM) score, a monitoring plan appropriate for each site will be developed utilizing the principles of the Stream Pyramid or other similar approach. Most typically, monitoring will occur on an annual basis. A jurisdictional determination and functional/conditional assessment will be provided at intervals established in the monitoring plan. However, the actual length of monitoring would depend on jurisdictional status of mitigation areas, combined with the actual functional/conditional assessment. If the functional lift is not obtained, the site will continue to be monitored until the ecological performance is met. Adaptive management and additional monitoring may be deemed necessary.

Long-Term Hydrology:

The applicant shall address the adequacy and source of current hydrology and demonstrate the PRM site currently possess adequate short-term and long-term hydrology to sustain the site as its intended aquatic resource type.

As part of determining hydrology, the applicant shall also review/investigate any activities upstream (or downstream) that may have potential future impacts on this hydrology. This investigation will include, but is not limited to, a review of the Texas Water Development Board's current State Water Plan to identify any proposed reservoirs that could influence hydrology. In addition, the applicant shall evaluate any proposed residential, commercial, or industrial development within the watershed that could affect the site's hydrology. The applicant should also review any recent U. S. Army Corps of Engineers (USACE) 404 permit actions, or any actions currently under review, that could indicate potential hydrologic impacts to the bank site. Existing water rights and the proximity of the bank site to potential urban expansion shall also be reviewed. In most cases, the acquisition of water rights for the purpose of assuring

adequate long-term hydrology of the site will not be practicable. On a case-by-case basis, the USACE may require a water budget to be developed when long-term sustainable hydrology may be an issue.

PRM Area of Applicable Use:

The primary, secondary, and tertiary PRM Area of Applicable Use (AAU) is similar to service areas for mitigation banks in that it establishes the geographic relationship and ratios for proposed wetland and stream mitigation projects. AAUs will be determined utilizing watersheds based on the 8-digit Hydrologic Unit Code (HUC) and the Level III Ecoregions of Texas (Omernik 2004).

The primary AAU is defined as the entire 8-digit HUC within which the PRM site is located (regardless of Ecoregion). The secondary AAU is defined as any 8-digit HUC (or portion thereof) adjacent to the primary service area, and located within the same Level III Ecoregion as the PRM site. The tertiary AAU is defined as any 8-digit HUC (or portion thereof) adjacent to the primary AAU, but located outside of the same Level III Ecoregion as the PRM site. All secondary and tertiary AAUs must be located within the same major river basin as the primary AAU (Sulphur/Cypress, Sabine, Neches, Trinity, Brazos, Colorado, etc.) Tertiary AAU areas may not extend beyond the limits of the adjacent Ecoregion as that of the PRM site. Ratios for AAUs will generally be as follows: Primary Service Area 1 : 1, Secondary Service Area 1.5 : 1, and Tertiary Service Area 3 : 1.

Consideration of Recently Disturbed Sites:

Any sites that have recently undergone human induced alteration which would artificially create low baseline conditions will generally not be considered as potential PRM sites until such time as the site has remained in an unaltered state for a period of five years. These activities include, but are not limited to cutting, clearing, logging, burning, mowing, application of herbicides, ditching, draining, mining, and dam/berm removal. Any activities that serve to maintain an artificially low baseline condition of the site, would be considered further alteration activities and would initiate another five year waiting period. Typical exceptions to this waiting period would include the application of herbicides solely for the control of exotic invasive species or beneficial management activities that have been performed on the property on a long-term continuous basis. Consideration will be given to the historical land use of a site. A complete documentation relative to a site's recent land use history will be required in the Prospectus as part of the proposed bank review.

Financial Assurances:

The applicant will be required to provide financial assurances, in accordance with the 2008 Mitigation Rule. These financial assurances would typically cover 110% of all costs associated with project construction for short-term financial assurance. The additional 10% would cover any contingencies (i.e. replanting, further manipulation of hydrology). In order to determine the appropriate amount of funds to be established in the short-term financial assurance, the applicant shall provide a detailed breakdown of all project related costs, such as those included in the Compensatory Mitigation Plan. These items should include, but are not limited to the following: as-built plans/survey work, costs of land ownership/control, earthwork, permits, erosion control measures, structures, building materials, plant materials, seeding, planting, fencing, control of exotic invasive species, implementation of adaptive management activities, monitoring and reporting including monitoring of hydrology, plants, or other elements related to site condition, fence repair and maintenance, administration/legal costs such as associated with establishment of financial assurances endowments and the conservation easement.

Stream Credits:

In order to generate in-channel and riparian buffer credits (as defined in the Fort Worth District Stream Mitigation Method, Public Notice CESWF-13-MIT-1, dated October 2, 2013), the applicant must own and/or control both banks of a stream including the full required buffer on both sides of the stream, and provide documentation of ownership and/or control. The only exception would be those situations in which the opposite side of the stream is owned and/or controlled by a federal, state and/or local entity, including a 501(c) (3) organization for which the property would be protected in perpetuity through a conservation easement or long-term management plan. In addition, stream beds (channel bottom from toe-of-bank to toe-of-bank) not owned and/or controlled by the sponsor would be ineligible for any in-channel credits. However, riparian buffer credits could be generated adjacent to stream beds not owned by the sponsor. In order to make an official determination relative to potential state-owned stream beds, a determination should be obtained from the State of Texas General Land Office.

Design Plans for Mitigation Projects:

As part of the USACE and agency review process for in-stream work associated with PRM projects, applicants would include 60% stream channel design plans, as a component of the draft Compensatory Mitigation Plan, with 95% design plans submitted at the Final Compensatory Mitigation Plan. Additionally, as-built stream channel design plans would be submitted upon completion of earthwork. As-built plans showing wetland activities would be submitted for wetland-only banks or stream mitigation banks incorporating wetlands as a part of the bank. As-built plans would depict all other

activities located outside of streams and/or wetlands which have been incorporated into the project, including, but not limited to: grading, water control structures, erosion control, etc. In order for the USACE to understand potential differences between the as-built condition, as compared to the approved plans, the applicant would provide a detailed, itemized description of the differences between the as-built plans and the plans depicted in the approved Compensatory Mitigation Plan, including any revisions to aquatic resource accounting to reflect actual work performed or achieved on the ground. These plans would be reviewed by the USACE prior to making any aquatic resource accounting adjustments.

Consultant Qualifications and Experience:

The applicant shall provide details on the qualifications and experience of their consultants. Particularly for stream mitigation projects, and other projects involving uncertain hydrologic conditions, the qualifications and experience of the consultants will be reviewed. In addition, the applicant shall submit, for USACE review, examples of past projects similar in nature to those proposed that have been completed by the consultant. In the event that the consultant does not have extensive experience in these areas, the USACE may require a greater degree or amount of monitoring, and/or increased financial assurances.

Use of Reference Sites:

In order to evaluate the appropriateness and likelihood of success of proposed stream and wetland restoration/enhancement designs, and to calculate the projected ecological lift anticipated to be achieved by proposed PRM work, the applicant should identify potential reference sites for USACE and potentially resource agency review. The applicant should provide, at a minimum, a TXRAM (2.0) assessment for each appropriate reference site.

These reference sites should exemplify the ecological condition anticipated to be achieved at full maturity. All reference sites are to be selected using sound ecological practices. Selected sites should be similar with regard to a number of factors, including, but not limited to, hydrologic regime, watershed, Ecoregion (Level III Ecoregions of Texas, Omernik 2004), soil type, landscape position, and surrounding development patterns. Data sheets, photographs, and other supporting information for the reference and mitigation project sites will be evaluated to determine if the amounts and types of predicted ecological lift are reasonable and achievable in the context of the mitigation work plan. Once approved, these sites would be used to determine the projected ecological lift of the mitigation site.

Use of Index of Biotic Integrity (IBI):

For in-channel work on perennial streams or intermittent streams with perennial pools, the applicant will be required to use an IBI, or similar biotic assessment model, to provide biological data regarding the effects of restoration on the fish and benthic macroinvertebrate communities. At a minimum, IBI's or equivalent model shall be performed before restoration activities occur to obtain baseline data and performed again after restoration efforts. The IBI and methods for biological monitoring are described in the Texas Commission on Environmental Quality's Surface Water Quality Monitoring Procedures, Volume 2 (RG-416, June 2007). Link to procedures: http://www.tceq.texas.gov/publications/rg/rg-416/index.html.

Performance Standards:

All performance based credit releases will be determined on percent survival of planted species, diversity, and invasive species criteria in addition to the predicted TXRAM (2.0) scores as calculated based on ecological lift trajectory. The TXRAM (2.0) score ecological lift trajectory reflects baseline, incremental lift, and ultimate scores at maturity, plotted against time. Specifically, the score to be used as a performance standard would be the score predicted to be achieved at the end of the monitoring period. Additionally, the applicant should establish interim scores that will correspond to each scheduled credit release. In the event the actual score falls below that predicted by the applicant, the monitoring period and/or amount of ecological lift provided by the site would be adjusted accordingly.

Irrigation and Monitoring:

It is the intent of the mitigation program to ensure that all approved mitigation sites are self-sustaining in the long-term. However, on occasion, applicants may choose to provide supplemental water to help ensure survival of newly planted species. Establishment irrigation performed during the first growing season after planting may be done so without the need to extend the approved monitoring period. In the event bank sponsors choose to irrigate bank sites after the first growing season, the required monitoring period shall be extended such that the first year of monitoring would begin from the time at which irrigation ceases. This requirement will help to ensure that a site's natural hydrologic conditions are sufficient to support the intended habitat type.

Abstract / Title Search:

As a component of the Draft Compensatory Mitigation Plan, the applicant would provide a copy of a residential abstract, including a 60-year title search performed by a title company operating within the subject state and an attorney's opinion of title relative to potential effects of any and all activities associated with subject liens and encumbrances. This information is necessary to comply with the 2008 Mitigation Rule to ensure that all properties being considered as potential mitigation banks have been fully researched and full disclosure has been provided relative to all liens and encumbrances.

Additional Tables for Compensatory Mitigation Plan:

Appropriate accounting is an important aspect of the mitigation bank development process. To ensure clarity with the process of accounting and monitoring, all Compensatory Mitigation Plans should contain additional tables indicating the projected functional assessment scores specific to each assessment area within the project site bank for monitoring milestone. In addition, all Compensatory Mitigation Plans should contain additional tables which show the projected credit distribution for each assessment area.

Conservation Easement Holder Qualifications and Experience:

Conservation Easements held by an independent third-party land trust organization is the mechanism used to ensure long-term protection of mitigation sites. As a preference the conservation easement should be held by a nationally accredited 501(c)(3) land trust organization. In the event the organization being considered is not nationally accredited, the organization's Board of Directors should have in its corporate resolutions the adoption of the National Land Trust Alliance's Statement of Land Trust Standards and Practices as guiding the practices of the organization. (The Statement is available from LTA (www.lta.org or 202-638-4725). In all cases the bank sponsor will be required to provide details on the organization's qualifications, personnel, and experience relative to the preservation and management of aquatic resources and/or habitat conservation areas.

Stream Mitigation Buffers:

In an effort to ensure long-term sustainability, streams subject to lateral migration must include details on establishment and preservation of meander belt widths including the required buffer width. In the event the applicant sponsor is required to increase buffer width to ensure long-term sustainability of the stream and associated riparian buffers, TXRAM (2.0) would allow the bank sponsor to generate additional credits.