DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
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CESWG-PE-R

MEMORANDUM FOR All Regulatory Personnel

SUBJECT: Interim SWG Stream Condition Assessment Standard Operating Procedure

1. General: The purpose of this document is to provide a set of Standard Operation Procedures (SOP) and requirements for addressing stream mitigation in the Galveston District. This SOP will only be applicable only when direct impacts occur within the stream bed of a water of the United States. While the intent of the SOP is to assess the current functional condition of a stream and determine the appropriate functional credits to offset for any unavoidable loss, the SOP is not intended to take the place of project specific review which may result in adjustments to compensation requirements. Aquatic resources evaluated under this SOP shall be delineated in accordance with Regulatory Guidance Letter 05-05 - Ordinary High Water Mark Identification and wetlands present in the stream and/or riparian buffer shall be delineated in accordance with 1987 Corps of Engineers Wetland Delineation Manual and any appropriate Regional supplement. Applicants should defer to 33 CFR 332, Compensatory Mitigation for Losses of Aquatic Resources, for guidance on mitigation requirements not specifically addressed in this SOP. This SOP should only be used after a permit applicant has first avoided and minimized project impacts and the district engineer determines compensatory mitigation is necessary to offset unavoidable impacts to aquatic resources. The amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions associated with the stream bed.

2. Resources: The purpose of the SOP is to provide predictable and repeatable assessment of compensatory mitigation requirements for the Galveston District Regulatory Branch. In development of this stream condition assessment tool; information from existing documents has been copied, sometimes in its entirety, without appropriate citation. The following are the Corps Regulatory documents and peer reviewed literature sources used in the development of the tool:

- 33 CFR Part 332 - Compensatory Mitigation for Losses of Aquatic Resources
- Regulatory Guidance Letter (RGL) 05-05 - Ordinary High Water Mark Identification.
- Regulatory Guidance Letter (RGL) 08-03 - Minimum Monitoring Requirements for Compensatory Mitigation Projects
- Compensatory Stream Mitigation Standard Operation Procedures and Guidelines. March 2009. Mobile District Corps of Engineers.
- Unified Stream Methodology. January 2007.Norfolk District Corps of Engineers.
- National Water and Climate Center Technical Note 99–1-Stream Visual Assessment Protocol, December 1998 Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling
- Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish-Second Edition, 1999. Environmental Protection Agency; Office of Water; Washington, D.C.
- Regionalization of the Index of Biotic Integrity for Texas Stream. 2002. Linam, Gordon W.; Kleinsasser, Leroy J.; and Mayes, Kevin B.
- Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data.2007. Texas Commission on Environmental Quality
- Rosgen, D.L. 2001. A Practical Method of Computing Streambank Erosion Rate. Proceedings of the Seventh Federal Interagency Sedimentation Conference, Vol. 2, pp. II - 9-15, March 25-29, 2001, Reno, NV.

3. Interim Assessment: The Galveston District will initiate a one-year trial implementation of each available level of the SWG Stream Condition Assessment prior to finalization. Comments may be submitted during the entire one-year implementation trial and will be reviewed and incorporated into the administrative record prior to the District's finalization of the procedure.

4. Organization of SOP: The SOP is divided into three sections: 1) Stream Assessment Tool; 2) Assessment of Stream Impacts; and 3) Determining Compensation Requirements. Important stream functions measured include the ability to transport water, transport sediment, support and maintain a community of organisms and provide a safe water supply.

- Stream Assessment Tool This section, found in Appendix A, describes a tiered process for establishing the current condition of the stream function. For the purpose of this tool, the stream types include:

    - Level 1: All Ephemeral & Intermittent Streams, all Intermittent Streams with Perennial Pools will be evaluated using Level 1. In addition, all Perennial Streams and Wadeable Rivers where the proposed impacts are less than 500 linear feet will be evaluated using Level 1. The parameters sampled under Level 1 include; 1) Visual Channel Assessment; 2) Riparian Buffer Assessment; 3) Visual In-Stream Habitat Assessment; and 4) Visual Channel Alteration Assessment.

    - Level 2: Perennial Streams and/or Wadeable Rivers where the proposed impacts are equal to or greater than 500 linear feet. The parameters sampled under Level 2 include: UNDER DEVELOPMENT

    - Level 3: Complex or controversial stream projects on Perennial Streams and Wadeable Rivers. Level 3 is for use only when the district engineer determines that a Level 2 assessment is inadequate to assess the condition of a stream. The parameters sampled in a Tier 3 assessment include: UNDER DEVELOPMENT

- Procedure for assessment of Impacts on Stream Condition (debits) This section describes an impact classification system based on the extent to which the proposed impact is expected to impair the stream. Five Impact Classifications are outlined based on the severity of their affect on the stream by altering bankfull depth, slope, velocity, flow resistance, sediment size, sediment load, and bankfull discharge. The Assessment of Stream Impacts is found in Appendix B.

- Level 1, 2 and 3 Stream Condition Assessment Compensation Evaluation Procedure (credits) This section describes the methods and alternatives for fulfilling the Compensation Requirement for both onsite and offsite compensation, and explains the process. Compensation may be achieved through re-establishment, rehabilitation & enhancement and through a limited amount of preservation. The Determination of Compensation requirements is found in Appendix C.

5. Reporting Requirements

- Stream Assessment Report The investigator shall provide a detailed report of the stream assessment, with justification for all conclusions. Justifications should include photographic evidence, drawings and species lists. The stream shall be delineated in accordance with Regulatory Guidance Letter 05-05 - Ordinary High Water Mark Identification and wetlands present in the stream and/or riparian buffer shall be delineated in accordance with 1987 Corps of Engineers Wetland Delineation Manual and any appropriate Regional supplement. Submitted

surveys shall be in accordance with the Galveston District Standard Operating Procedure for Recording Jurisdictional Delineations using Global Position Systems.

- Mitigation Plan The applicant shall provide a compensatory mitigation plan in accordance with the 33 CFR 332.4(c). In order to realize a final, stable stream design, the mitigation plan must address land use changes, as well has a history of the streams drainage basin, both at the local and watershed level, since these changes often cause disequilibrium of upstream delivery of water flow and sediment that result in stream deficiencies. The extent and cause of the deficiencies need to be discussed. Performance measures shall be ecologically based and that are objective and verifiable.

- Monitoring Plan The applicant shall provide compensatory mitigation monitoring plan reports in accordance with Regulatory Guidance Letter 08-03 - Minimum Monitoring Requirements for Compensatory Mitigation Projects. Monitoring shall include at a minimum an annual assessment of the compensatory mitigation site utilizing the Tiered Stream Assessment Tool until such time as the applicant has received written concurrence from the District Commander that the compensatory mitigation project has met its objectives and no additional monitoring reports are required.

6. Conclusion: The District goal is a no net loss of aquatic resource function. Branch personnel should use the SWG-Tiered Stream Condition Assessment to assess jurisdictional stream impacts and are responsible for verifying tool results when submitted by applicants. Aquatic resources impacted by the project located outside of the stream bed shall be evaluated with the appropriate assessment protocols. Additional agency coordination that would delay further permit processing is not required. There may be unique circumstances where a mitigation ratio greater than one-to-one is required to account for: the likelihood of success; differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project; temporal losses of aquatic resource functions; the difficulty of restoring or establishing the desired aquatic resource type and functions; and/or the distance between the affected aquatic resource and the compensation site. The rationale for the required replacement ratio and the functional assessment must be documented in the administrative record for the permit action.

7 July 2011
DATE

Fred L. Anthamatten
Chief, Regulatory Branch