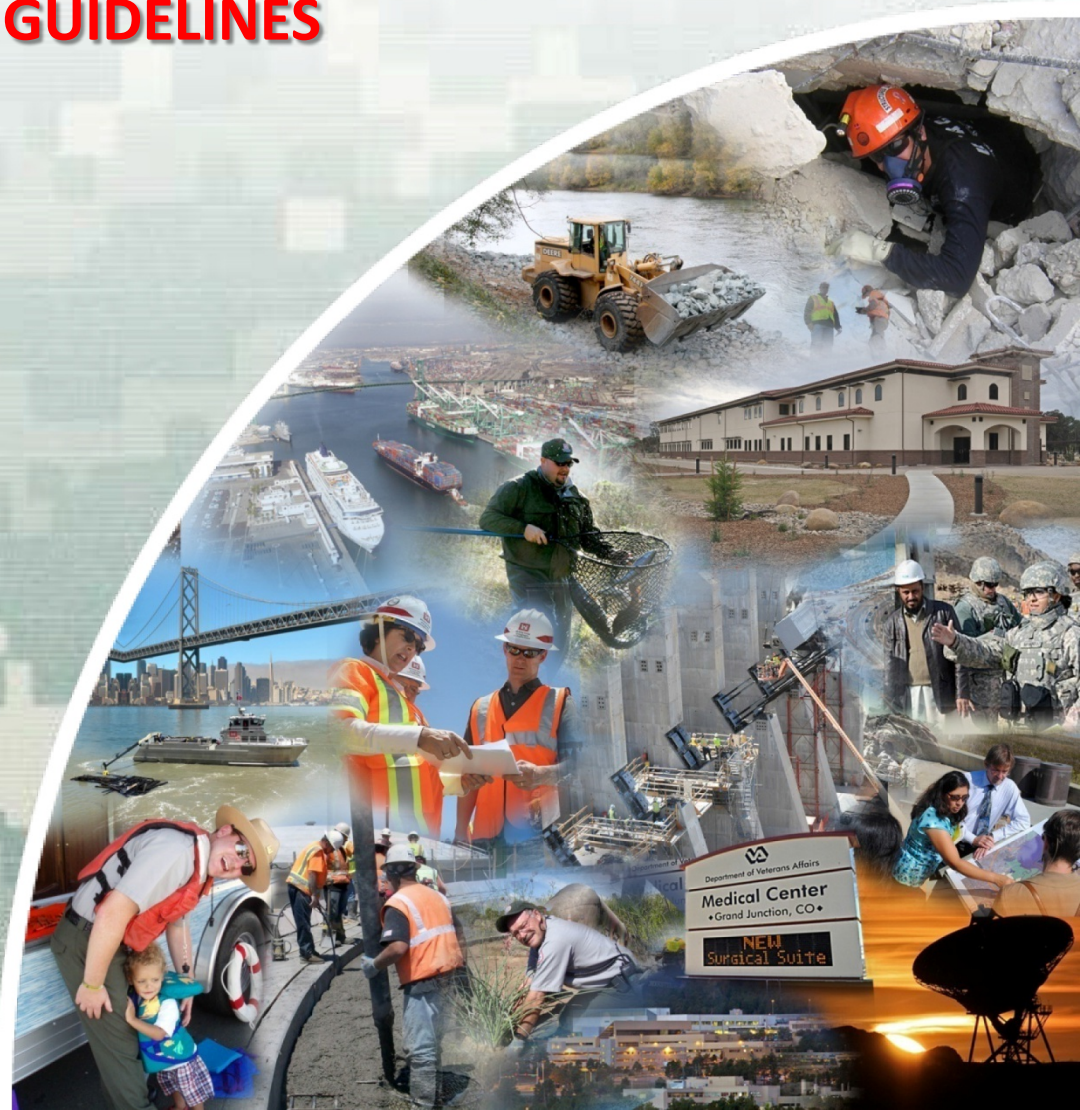
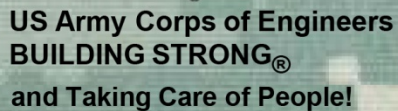


# REGIONAL COMPENSATORY MITIGATION & MONITORING GUIDELINES

**May 1, 2015**



# Apply to all of South Pacific Division



The boundaries for the SPD Regulatory Program within the four districts encompass the states of Arizona, California, Nevada, Utah, New Mexico, as well as parts of Colorado and Texas.



**BUILDING STRONG®**  
on the Cornerstone of the Southwest



# 11. APPLICABILITY AND EFFECTIVE DATE

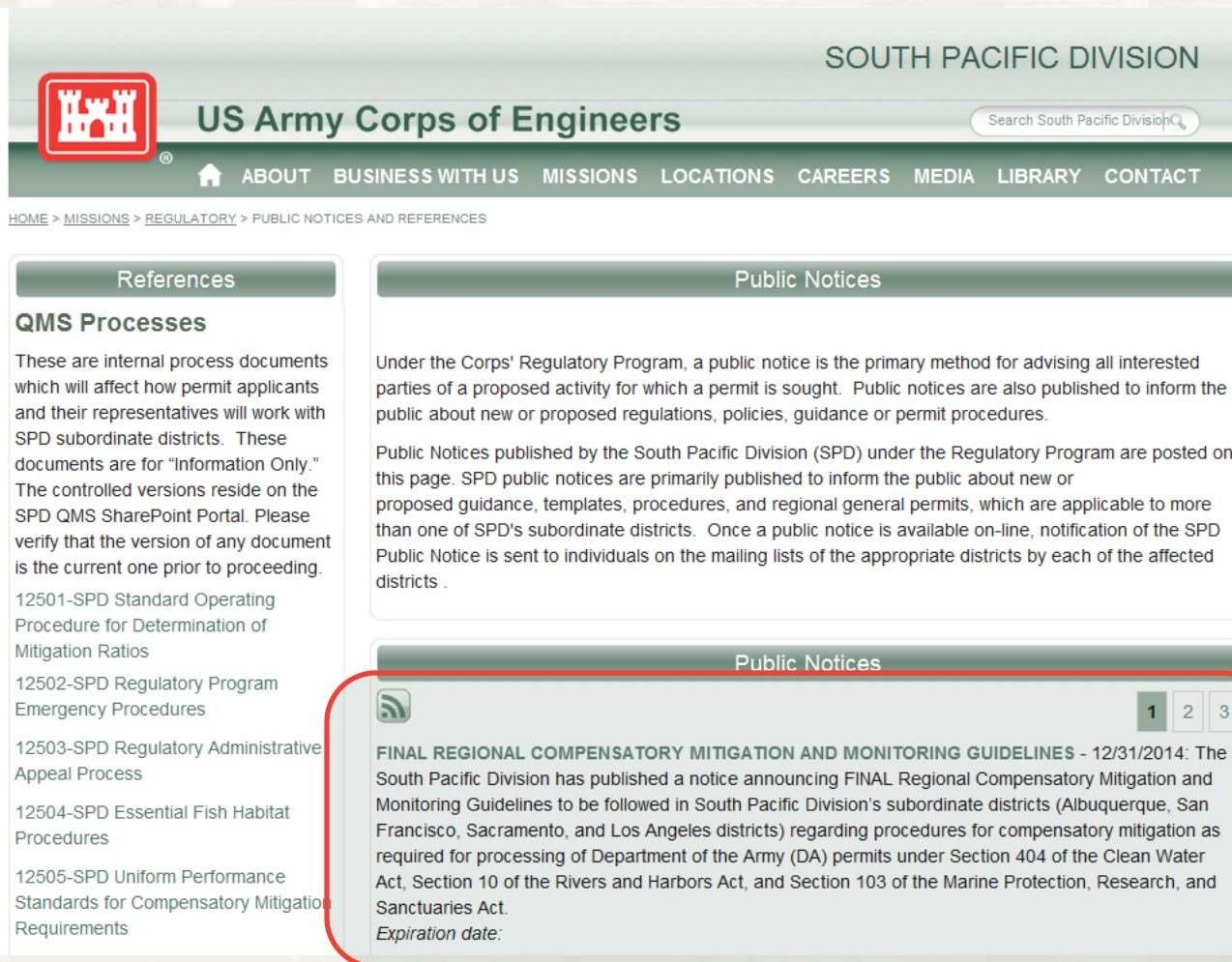
- Guidelines are effective January 12, 2015.
- Supersede all previous district-specific compensatory mitigation and monitoring guidelines issued within SPD.
- Applicable for all permit applications and mitigation bank/ILF prospectus submittals received after January 12, 2015.

AND

- Permit applications received prior to the effective date must also comply with these guidelines except for cases where compensatory mitigation has already been constructed or where the applicant can otherwise fully demonstrate substantial resources have been expended or committed in reliance on previous guidance governing compensatory mitigation for DA permits within SPD (for example, compensatory mitigation plans already approved by the Corps in writing).



# Available On-line



The screenshot displays the US Army Corps of Engineers South Pacific Division website. The header includes the Corps of Engineers logo, the text "US Army Corps of Engineers", and "SOUTH PACIFIC DIVISION". A search bar is located on the right. The navigation menu includes links for HOME, ABOUT, BUSINESS WITH US, MISSIONS, LOCATIONS, CAREERS, MEDIA, LIBRARY, and CONTACT. The breadcrumb trail reads: HOME > MISSIONS > REGULATORY > PUBLIC NOTICES AND REFERENCES.

The main content area is divided into two columns. The left column, titled "References", lists several documents under the heading "QMS Processes":

- 12501-SPD Standard Operating Procedure for Determination of Mitigation Ratios
- 12502-SPD Regulatory Program Emergency Procedures
- 12503-SPD Regulatory Administrative Appeal Process
- 12504-SPD Essential Fish Habitat Procedures
- 12505-SPD Uniform Performance Standards for Compensatory Mitigation Requirements

The right column, titled "Public Notices", contains two sections. The top section provides a general overview of the Regulatory Program and public notices. The bottom section, also titled "Public Notices", features a red-bordered box highlighting a specific notice:

**FINAL REGIONAL COMPENSATORY MITIGATION AND MONITORING GUIDELINES - 12/31/2014:** The South Pacific Division has published a notice announcing FINAL Regional Compensatory Mitigation and Monitoring Guidelines to be followed in South Pacific Division's subordinate districts (Albuquerque, San Francisco, Sacramento, and Los Angeles districts) regarding procedures for compensatory mitigation as required for processing of Department of the Army (DA) permits under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act.

*Expiration date:*

<http://www.spd.usace.army.mil/Missions/Regulatory/PublicNoticesandReferences.aspx>



# INTRODUCTION AND PURPOSE

- Guidelines intended to supplement and inform implementation of 2008 Corps-EPA mitigation regulations (33 CFR Part 332), a.k.a., “the Mitigation Rule.”
- Organized similarly to the rule (33 C.F.R. § 332.1 through 332.8).
- Provide guidance for the regulated public in selecting appropriate compensatory mitigation sites and in preparing mitigation plans to compensate for unavoidable impacts to waters of the United States for authorized activities.
- Intended to standardize compensatory mitigation procedures throughout SPD region.
- Intended to assist the regulated public in preparing mitigation plans and in implementing successful compensatory mitigation projects using a watershed-based approach.
- Unless otherwise noted, each part of the Guidelines applies to mitigation banks, in-lieu fee programs, and permittee-responsible mitigation.



## 3.5. Financial assurances

- Provide contingency funding for a third party to complete compensatory mitigation
- Generally provided as bonds or letters of credit. See [IWR White Paper: Implementing Financial Assurances for Mitigation Project Success](#). Government agencies may propose alternative mechanisms.
- 3.5.1 Amount of financial assurance
  - Mitigation plans should include an itemized budget ( should address all the items listed in 33 CFR §332.3(n)(2)).
  - 20 percent (%) contingency.
- 3.5.3 Financial assurance release process: The Department of the Army permit or instrument must clearly specify the conditions under which the financial assurances are to be released to the permittee, sponsor, and/or other financial assurance provider, including, as appropriate, linkage to achievement of performance standards, adaptive management, or compliance with special conditions.



# 3.6 Aquatic resource description

- All compensatory mitigation proposals and plans should provide a detailed description of aquatic resource sites in table format (see example tables B-1 and B-2 in Appendix B)
- Both for “pre-construction” conditions (baseline conditions before impacts and implementation of the compensatory mitigation) and proposed “post-construction” conditions (after impacts and implementation of the compensatory mitigation).

Table B-1: Impact Site Description

Pre-Construction Site Conditions							Post-Construction Site Conditions			
Site No. <sup>1</sup>	Habitat Types <sup>2</sup>	Vegetation Communities <sup>3</sup>	Cowardin <sup>4</sup>	HGM <sup>5</sup>	Hydrology	FCAMP CRAM (if any)	Activity	Permanent Loss <sup>6</sup>	Temporary Loss <sup>7</sup>	Lin. Ft
<i>Wetland Waters of the U.S.</i>										
1	Alkali meadow	Saltgrass series	PUB	Slope	saturated	wet meadow	road crossing	0.3	N/A	N/A
2	Freshwater marsh	Bulrush-cattail series	R2UB	Depressional	seasonally flooded	depression	building pads	2.1	N/A	N/A
Total:								2.4	N/A	N/A
<i>Non-Wetland Waters of the U.S.</i>										
3	Mulefat	Mulefat series	R4SB	Riverine	intermittent	riverine	utility line	N/A	0.27	873
4	Riparian scrub	Arroyo willow series	R4SB	Riverine	intermittent	riverine	building pads	0.7	N/A	1202
Total:								0.7	0.27	1875
<i>Upland Habitats</i>										
5	Native grassland	Purple needlegrass series	N/A	N/A	N/A	N/A	grading	N/A	1.2	N/A
6	Sage scrub	California monilia series	N/A	N/A	N/A	N/A		4.5	N/A	N/A
Total:								4.5	1.2	N/A

Table B-2: Mitigation Site Description

Site No.	Pre-Construction Site Conditions Habitat Types <sup>1</sup>	Post-Construction Site Conditions									
		Habitat Type <sup>2</sup>	Vegetation <sup>3</sup>	Hydrology	Mitigation Method	Acres	Lin. Ft	Cowardin <sup>4</sup>	HGM <sup>5</sup>	FCAMP CRAM (if any)	
Wetland Waters of the U.S.											
1	Alkali meadow	Alkali meadow	Saltgrass series	saturated	EN	3.0	N/A	PUB	Slope	wet meadow	
2	Freshwater marsh	Freshwater marsh	Bulrush-cattail series	seasonally flooded	EN	1.0	N/A	R2UB	Depressional	depression	
3	Annual grassland	Riparian forest	Black willow series	seasonally flooded	ES	1.0	500	PEM	Riverine	riverine	
Total:						5.0	500				
Non-Wetland Waters of the U.S.											
4	Annual grassland	Mulefat	Mulefat series	intermittent	ES	1.2	100	R4SB	Riverine	riverine	
5	Disturbed riparian scrub	Riparian scrub	Arroyo willow series	intermittent	ES	1.0	2,400	R4SB	Riverine	riverine	
6	Tamarisk scrub	Riparian scrub	Arroyo willow series	intermittent	RH	1.6	1,401	R4SB	Riverine	riverine	
Total:						3.8	3,901				
Buffer Habitats											
7	Annual grassland	Native grassland	Purple needlegrass series	upland	RE	1.38	2,400	N/A	N/A	N/A	
8	Annual grassland	Native grassland	Purple needlegrass series	upland	RE	1.38	2,400	N/A	N/A	N/A	
9	Ruderal habitat	Sage scrub	CA monilia series	upland	RE	4.5	N/A	N/A	N/A	N/A	
10	Sage scrub	Sage scrub	CA buckwheat-white sage series	upland	EN	0.5	N/A	N/A	N/A	N/A	
Total:						7.6					
Non-Aquatic Mitigation Excluding Buffer Areas <sup>6</sup>											
11	Annual grassland	Native grassland	Purple needlegrass series	upland	restoration	5	N/A	N/A	N/A	N/A	
12	Ruderal habitat	Sage scrub	CA buckwheat-white sage series	upland	restoration	5	N/A	N/A	N/A	N/A	
13	Chaparral	Chaparral	Chamise series	upland	preservation	13	N/A	N/A	N/A	N/A	
Total:						23					





## 3.8 Functional or Condition Assessment Methods (FCAM)

- In general, an FCAM should be developed and calibrated for the aquatic resource type(s) and geographic area within which it is being applied.
- Appropriate FCAMs must be aquatic resource-based, repeatable, standardized, comparable from site to site, based on sound science, and must receive prior project-specific approval from the Corps.
- In addition, the Corps encourages peer review of proposed FCAM and prefers such methods to be used when available and when it is practicable to use those methods.
- In general, an FCAM should be used, where available and appropriate, for larger, more complex projects (generally those having permanent impacts greater than 0.5 acre of waters of the United States and/or greater than 300 linear feet of jurisdictional stream bed).

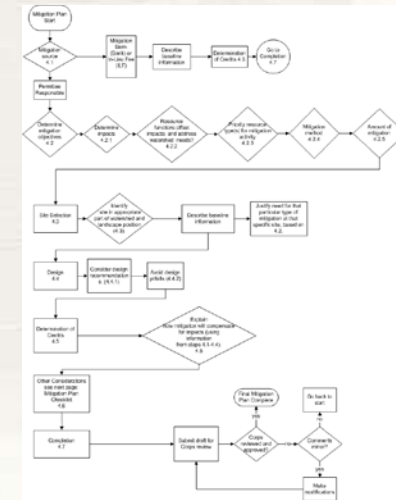




# 4. PLANNING AND DOCUMENTATION

- Overall, the process of developing a mitigation plan can be described as having the following stages:

- Determination of compensatory mitigation source(s),
- Determination of objectives,
- Site selection,
- Design,
- Determination of credits,
- Other considerations (including development of performance standards and monitoring protocols), and
- Completion



Mitigation Plan Checklist

Section	Required content	Completed
4.6.1	Title Page	
4.6.2	Contributor Page	
4.6.3	Distribution Page	
4.6.4	Table of Contents	
4.6.5	Brief description of overall project	
4.6.6	Objectives 33 CFR §332.4(c)(2)	
4.6.7	Determination of Credit 33 CFR §332.5(f) and 332.4(c)(6)	
4.6.8	Description of site selection criteria 332.3(d) and 332.4(c)(2)	
4.6.9	Baseline information 332.4(c)(2)	
4.6.10	Mitigation work plan 332.4(c)(7)	
4.6.11	Description of site protection instrument 332.4(c)(4) and 332.4(a)	
4.6.12	Maintenance plan 332.4(c)(8)	
4.6.13	Ecological performance standards 332.4(c)(9) and 332.5	
4.6.14	Monitoring requirements 332.4(c)(10) and 332.6	
4.6.15	Long-term management plan 332.4(c)(11) and 332.7(d)	
4.6.16	Long-term funding (endowments)	
4.6.17	Adaptive management plan 332.4(c)(12) and 332.7(e)	
4.6.18	Financial assurance(s) 332.4(c)(13)	
4.6.19	Other information required by district engineer	

- Flowchart and checklist included in Guidelines (Appendix C)



# 4.4.1 Design recommendations and for compensatory mitigation

- 4.4.1.1 General design recommendations
  - Adequate buffers, diversity of habitats, use of reference sites & native species, avoiding adverse impacts to existing resources
- 4.4.1.2 Design recommendations for wetlands
  - Natural, self-sustaining hydrology, secure water rights, understanding future water risks
- 4.4.1.3 Design recommendations for stream
  - Allow main channel to migrate laterally, site-appropriate channel geometry, use of local, native materials, and bioengineering, establish/protect adjacent riparian areas



## 4.4.2 Design Pitfalls

- List of conflicts or questionable design features that should be avoided or may warrant seeking alternative sites to provide compensatory mitigation that will achieve the desired objectives:
  - Selection of a site unsuitable for fulfilling compensatory mitigation objectives: site should include existing water source(s) that can be used, and require minimal earthwork.
  - Insufficient soil characterization.
  - Presence of structures that require long-term maintenance and/or disrupt or replace natural hydrology, such as drop structures; high-flow bypass structures; gabions or levees; buried structures (e.g. riprap); artificial hydrology (permanent irrigation, pumped water sources); and engineered slopes.
  - Presence of competing/conflicting uses (e.g., existing or proposed transportation, flood control structures, or planned flood control-related maintenance activities and easements, existing or proposed fuel modification areas).
  - Insufficient buffers: insufficient buffer area to achieve plan objectives; buffers with mechanically or chemically manipulated fire breaks, i.e., disking, scraping, mowing, or spraying, buffers that are bypassed by pipes or other conveyances.
  - Insufficient connectivity with other aquatic resources, and/or a compensatory mitigation project sited where future land uses in the immediate area would have a large impact on the physical, chemical, or biological components of the wetland (increase in runoff, close proximity to future urban development, etc.).
  - Placement where surface water can be diverted in the future or groundwater table lowered due to future land uses upstream or upslope.
  - Insufficient analysis of hydrology and soil interaction (see examples in Guidelines).
  - Over-excavation to soils or subsoils unsuitable for the growth and reproduction of the desired plant species.
  - Planting vegetation species in unsuitable locations without appropriate hydrologic regimes or soil types (texture and chemistry).



## 4.6 Other considerations

- Where water rights could affect the ability to provide the hydrology needed for the desired aquatic resource type, water rights must be addressed explicitly in the mitigation plan, to ensure that the necessary hydrology will be available for a self-sustaining compensatory mitigation project.
- In addition, water and/or mineral rights or other potential easements that could adversely affect the long-term sustainability of the site must be disclosed and in many cases may need to be terminated or subordinated for the site to be used for compensatory mitigation. If such rights cannot be secured by the party responsible for the compensatory mitigation project, it may be necessary to find an alternative site for the compensatory mitigation project.





## 4.8 Mitigation plan outline

- Provides required content and suggested format for mitigation plans
- Includes prompts and explanations for required information
- Amount and type of information necessary depends on type and complexity of the compensatory mitigation project as well as the scope and scale of impacts to the aquatic environment



# 5. ECOLOGICAL PERFORMANCE STANDARDS

- 5.2 Recommended range and formulation of performance standards: In general, ecological performance standards for compensatory mitigation should measure a range of environmental variables to assess ecological functions or condition.
- Compensatory mitigation plans should, when applicable, include performance standards related to:
  - physical characteristics,
  - hydrology,
  - flora,
  - fauna, and
  - in certain cases water quality (within an ecological context).
- For more information, see Corps QMS Document 12505: [SPD Uniform Performance Standards for Compensatory Mitigation Requirements](#).



## 5.3 Setting performance standards using reference sites

- Reference sites are a well-established tool to identifying reasonable targets for compensatory mitigation projects, in the context of the current regional environmental conditions.
- In the context of this guidance, the **reference standard** represents the highest level of aquatic resource functioning/condition observed within a watershed or region.
- In general and where appropriate, compensatory mitigation plans should utilize reference sites to help develop performance standards.
- The reference standard for that watershed (or ecoregion) should be considered in selecting reference sites to help establish performance standard targets.
- Where appropriate and practicable, multiple reference sites may be used rather than a single reference site.



# More on performance standards

- 5.4 Interim performance standards: Interim performance standards are crucial to ensuring compensatory mitigation performance follows a trajectory to attain final mitigation success.
- 
- 5.5 Performance standards format: Ecological performance standards should be listed in table format and clearly document the interim and final performance requirements of the compensatory mitigation site.
- 5.6 Functional/condition assessment data: For projects where a functional/condition assessment method is used to assess a mitigation project's "before" and "after" conditions, the projected "after" score shall be included as a performance standard, after accounting for the length of the monitoring period.





# 6. MONITORING

- 6.1 Monitoring methods:
- In general, compensatory mitigation monitoring methods should include quantitative sampling methods following established, scientific protocols (e.g., California Native Plant Society protocols) (Also see the 1987 Wetland Delineation Manual and applicable regional supplement.)
- Sampling documentation, as part of monitoring reports, should include maps showing locations of sampling points, transects, quadrants, etc.
- In addition, permanent photo stations should be established coincident with sampling locations.
- Additionally, where structures are placed in waters of the U.S., photo stations should be established that capture the structures and any consequent effect on channel morphology.



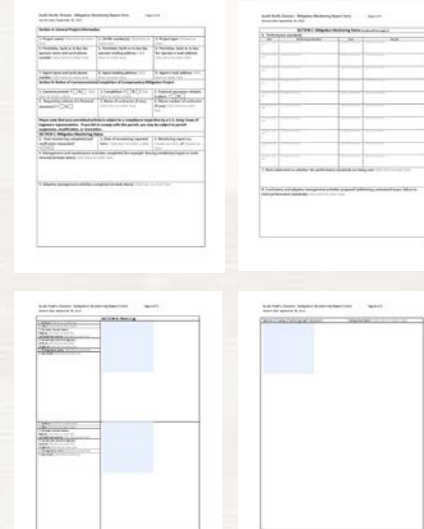
## 6.3.1 Longer monitoring periods for aquatic resources with slow development rates

- Monitoring periods of more than 5 years are warranted for aquatic resources with slow development rates. Examples of such aquatic resources within the South Pacific Division include:
  - vernal pools,
  - riparian forest, and
  - coastal salt marsh.
- Monitoring periods may also be extended if the compensatory mitigation project is not meeting its ecological performance standards and the district engineer determines more time is needed to assess success.
- As an option to make longer monitoring periods more practicable, monitoring periods exceeding the 5-year minimum may have longer periods between the required submission of monitoring reports (for example, every 2 years for a 10-year monitoring period). For the first 5 years, however, submission of monitoring reports should occur annually to demonstrate an initial trajectory toward meeting success criteria.



## 6.4.3 SPD monitoring report form

- To allow for greater efficiency by the Corps in reviewing monitoring reports, all monitoring reports must be submitted using the new SPD mitigation monitoring form. Supporting data must be attached to the form, including:
  - Vicinity map(s).
  - Compensatory Mitigation Site Map(s) (including the following information): Polygons by compensatory mitigation type as described in the approved mitigation plan; photo station locations; and annotated locations of sample points/transects/quadrants/soil pits/monitoring stations. Note: maps must comply with the [SPD Map and Drawings Standard](#).
  - Photographic record of the site during most recent monitoring visit at designated photo stations.
  - Results of functional/condition assessments if required to be used for the compensatory mitigation project.
  - Narrative report (optional).
  - Critical survey elevations, properly benchmarked (if applicable).
  - As-built drawing(s) (if any change from authorized design).
- See Guidelines Appendix D.
- Also available in editable Word version.

The image displays four preview thumbnails of the SPD monitoring report form. The top-left thumbnail shows the 'Site Information' section with fields for project name, location, and dates. The top-right thumbnail shows the 'Monitoring Data' section with a table for recording observations. The bottom-left thumbnail shows the 'Drawing' section with a grid for site maps. The bottom-right thumbnail shows the 'Narrative Report' section with a large text area for descriptions.

# MONITORING (cont'd)

- 6.5 Third-party monitoring: To obtain objective monitoring of compensatory mitigation projects, the Corps may require monitoring by approved third-party entities.
- 6.6 Monitoring and reference sites: In general and where appropriate and practicable, compensatory mitigation plans should incorporate reference sites as part of performance monitoring.
- 6.7 Attainment of compensatory mitigation success and release from monitoring requirements: The Corps ultimately determines if a compensatory mitigation project has achieved its objectives and performance standards and is successful.





# 7. MANAGEMENT

- 7.1 Long-term site protection: advantages & disadvantages of each option explained:
  - 7.1.1 Conservation easements
  - 7.1.2 Deed restrictions (restrictive or negative covenants)
  - 7.1.3 Transfer of title
  - 7.2 Government property
  - 7.3 Other available mechanisms
- 7.4 Required provisions
- 7.5 Approval process (see following slides)
- 7.6 Templates
- 7.7 Exhibits
- 7.8 Funding for long-term management
- 7.9 Long-term management
- 7.9 Protection of water and mineral rights



# 7. MANAGEMENT (cont'd)

- 7.5 Approval process:
  - A real estate instrument, management plan, or other long-term protection mechanism used for site protection of permittee-responsible mitigation **must be approved by the district engineer in advance of the activity causing the authorized impacts.**
  - All real estate instruments, management plans and other long-term protection mechanisms shall be reviewed and approved by the District Office of Counsel, in coordination with the District's Regulatory Division.
  - With any site real estate instrument, there has to be a review of the entity proposed for long-term ownership or oversight of the mitigation site to determine whether or not the proposed entity is appropriate. That review should include an evaluation of whether or not the entity has previously managed mitigation sites and their history for such management, their financial health, the experience and background of the individual(s) responsible for management, etc.



# 7. MANAGEMENT (cont'd)

- Approval of Deed Restrictions:
  - ✓ If deed restrictions are proposed, the proposal must discuss:
    - How any marketable record title issues will be addressed,
    - Suitability of the owner of the mitigation site for ensuring mitigation responsibilities are met,
    - History of the property owner in meeting mitigation responsibilities for other mitigation sites,
    - What mechanisms will ensure that long-term management requirements for the mitigation site are accomplished, and
    - What mechanism will ensure that required funding for the mitigation site will continue to be provided.
  - ✓ Where deed restrictions are determined to be appropriate, the permittee or the landowner of the mitigation will be required to report periodically on the status of the deed restriction to ensure restriction remains in the chain of title in perpetuity. Such reports would indicate:
    - Date recorded,
    - Date when the statutory period will expire,
    - Date deed restrictions will be re-recorded, and
    - Other pertinent information.



## 8.6 Credit determination

- While an FCAM is not required in all cases when compensatory mitigation is required, it is required when an appropriate FCAM is available and practicable.
- **Generally, it is assumed that for large endeavors such as mitigation banks and ILF programs, use of an appropriate and available FCAM would be practicable.** Therefore, in order to determine the number of proposed credits available at a proposed mitigation bank or ILF Program, a sponsor should incorporate data from an FCAM to estimate the expected functional gain.
- If a functional/condition assessment is not incorporated in the draft instrument, the Corps may adopt a conservative approach in determining the number and type of credits.
- Estimated functional gain would be determined using the same FCAM as part of the mitigation bank or ILF project's performance standards.
- When practicable, in order to use a mitigation bank or ILF Program, permit applicants should estimate functional loss using the same FCAM as used by the mitigation bank or ILF Program. Similarly, if debits are calculated, this should be done using the same FCAM as used by the mitigation bank or ILF program, unless out-of-kind mitigation is being provided and the FCAM is not applicable to that out-of-kind mitigation.





## 8.6 Credit determination (cont'd)

- Regardless of the specific factors considered for any given credit determination proposal, the mitigation bank or ILF instrument should:
  - Include a **credit determination exhibit** stating the numbers and types of expected credits and explaining in detail how both were determined.
  - Any separate reports and/or analyses relied upon in determining credits should be attached to the instrument and cited in this exhibit.
  - If an FCAM is used in credit determination, the exhibit should clearly explain how FCAM data were incorporated and any assumptions relied upon in doing so (for example, the threshold of functional lift necessary to generate rehabilitation credits).



# APPENDICES

- Appendix A: Compensatory Mitigation Methods
- Appendix B: Aquatic Resource Description Tables
- Appendix C: Process of Developing a Mitigation Plan
- Appendix D: Mitigation Monitoring Form
- Appendix E: IRT Review Timeline
- Appendix F: List of Acronyms



# POC's

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