



**US Army Corps  
of Engineers**  
Omaha District

## **PUBLIC NOTICE**

**Issue Date:** December 4, 2012  
**Expiration Date:** January 4, 2013

**30 DAY NOTICE**

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**Wyoming Regulatory Office 2232 Dell Range Blvd., Suite 210 Cheyenne, Wyoming 82009**

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### **Public Notice for Proposed**

## **Wyoming Stream Mitigation Procedure**

In accordance with the 2008 Compensatory Mitigation Rule (33 CFR Parts 325 and 332), the U.S. Army Corps of Engineers (Corps), Omaha District, Wyoming Regulatory Office (WRO), is interested in establishing a tool to help quantify appropriate compensatory stream mitigation when it is determined to be necessary as part of a Section 404 permit action. The proposed Wyoming Stream Mitigation Procedure (WSMP) is a method for quantifying the adverse impacts (debits) and the acceptable compensatory mitigation (credits) in relation to a project that would result in more than minimal adverse impacts to a stream. It is applicable only to actions requiring compensatory mitigation for adverse ecological effects as authorized through the Department of the Army (DA), and to compensatory mitigation banks and in-lieu fee programs approved by the Corps.

Section 404 of the Clean Water Act establishes a permit requirement, administered by the Corps of Engineers, for projects that involve discharging dredged or fill material into waters of the United States.

Compensatory mitigation means the restoration, enhancement, establishment 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 (33 CFR Part 332.2). The Corps considers the need for compensatory mitigation when evaluating potential individual and cumulative adverse impacts that may be authorized by Department of Army Permits, including Nationwide and Individual Permits. The WSMP provides a standardized approach for calculating the appropriate offset for functional stream loss in the state of Wyoming. It can be utilized by anyone and verified by the WRO.

The WSMP was adapted from other debiting/crediting procedures utilized elsewhere in the Corps Regulatory Program by a technical working group of the Wyoming Mitigation Banking Interagency Review Team (IRT). The working group consisted of technical experts from the following agencies: Corps – WRO, US Environmental Protection Agency (EPA), Wyoming Department of Environmental Quality (WDEQ), and Wyoming Game and Fish Department (WGFD).

The Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties before adoption of the procedure for use in the Wyoming Regulatory Program. Comments will be used to assess the technical soundness and suitability of the proposed procedure for calculating appropriate compensation for DA-permitted projects that result in more than minimal stream loss.

Comments, both favorable and unfavorable, will be accepted, made a part of the record and will receive full consideration by the WRO and IRT technical working group. Comments will be accepted during this comment period and may be provided via e-mail, standard mail, or fax using the contact information listed below. Any agency or individual having an objection to the procedure should identify it as an objection with clear and specific reasons. **All replies to the public notice should be sent to the address listed above.** For additional information please see the website listed above for a copy of the draft WSMP or contact Ms. Paige Wolken by telephone at (307) 772-2300 or by electronic mail at **Paige.M.Wolken@usace.army.mil**

**Comments postmarked after the expiration date of this public notice, or received by fax or e-mail after the closing date, will not be considered. Comments left on our voicemail system will not be considered.**



Omaha District

# WYOMING STREAM MITIGATION PROCEDURE (WSMP) - November 2012 -

## 1. Applicability.

The practice of using compensatory mitigation to ensure minimal adverse individual and cumulative adverse effects is an important component of the Corps Regulatory Program. Compensatory mitigation means the restoration, enhancement, establishment 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 (33 CFR Part 332.2). The Corps considers the need for compensatory mitigation when evaluating potential individual and cumulative adverse impacts that may be authorized by Department of Army Permits, including Nationwide and Individual Permits. This document defines the compensatory Stream Mitigation Procedure within the state of Wyoming (WSMP). It describes the method for quantifying the adverse impacts (debits) and the acceptable compensatory mitigation (credits) in relation to a project that would result in more than minimal adverse impacts to a stream. It is applicable to Corps regulatory actions requiring compensatory mitigation for adverse ecological effects where more rigorous, detailed functional assessment techniques such as the Hydrogeomorphic (HGM) methodology, are not considered practical or necessary. The following points are noted.

- The Corps (Wyoming Regulatory Office) will consider the need for compensatory mitigation when evaluating loss of waters of the United States that may be authorized by Department of Army (DA) Permits to ensure that the adverse effects to the aquatic environment are minimal. Projects that result in more than minimal stream loss will usually require compensatory mitigation.
- Ephemeral, intermittent, and perennial streams can be evaluated under this WSMP. Losses and adverse impacts (impacts) to streams are calculated based upon the stream quality and type of impact in combination with overall linear footage, ultimately defined as “debits”.
- This WSMP does not affect sequencing (e.g., avoidance, minimization, reduction) or any requirements of the 404(b)(1) Guidelines or other applicable documentation. Such requirements shall be evaluated during consideration of permit applications.
- When this WSMP is used in the establishment of a mitigation bank, the Army Corps of Engineers (Corps) will consult with the Interagency Review Team (IRT), on the appropriate application and integration of this document with other aspects of the Mitigation Banking Instrument.
- In addition to the requirements set forth in this document, other Federal, State, Tribal, or local agencies within Wyoming may require additional or separate mitigation under their own authorities.
- Other available functional assessment methods may be used to quantify stream debits and credits in place of this procedure if they make sense in the watershed context, as long as prior approval has been obtained from the Corps.
- Separate and/or additional procedures may be applied to special resources, standard individual permits, or approved mitigation banks.

## **2. Purpose.**

The intent of this WSMP is to establish a method for calculating compensatory mitigation debits and credits that will provide predictability and consistency. This WSMP is not intended for use as project design criteria.

Nothing in this WSMP should be interpreted as a promise or guarantee that a project that follows the procedure described herein will be assured approval. Each permit application and waterway is evaluated on a case-by-case basis. Following the guidelines herein does not confer any absolute guarantee of mitigation acceptability. Site specifics of a particular project may warrant alternative mitigation requirements.

## **3. Corps Regulatory Policy on Stream Mitigation.**

This WSMP was developed from other Corps Districts and Engineer Research and Development Center (ERDC) procedures that have been in effect for several years. The intent for this WSMP is to comply with the requirements for mitigation found in 33 CFR Parts 320, 332 and 325.

If a discrepancy is discovered and it appears in conflict with any relevant Corps regulation or policy, users should immediately notify the Corps of the discrepancy and the Corps will review relevant policy, obtain clarification, and modify the WSMP as necessary.

## **4. Adverse Impacts.**

The existing condition of the stream and the anticipated functional loss within a given length (reach) of stream caused by the permitted activity including direct, secondary and cumulative effects, as appropriate, will be used to quantify impacts and debits in this document. Activities resulting in stream loss may include filling, realignment, excavating, flooding, draining, clearing, channelizing, straightening, shortening, canalizing, incising/entrenching, or other adverse actions that affect the physical, chemical, and biological characteristics of a stream.

## **5. Mitigation Categories.**

In general, there are four major categories (A-D below) available to an applicant to implement compensatory mitigation. The Corps will rely on 33 CFR 332.3 when considering and approving appropriate mitigation.

A. Mitigation Bank Credits: The applicant may elect to purchase credits from an established stream mitigation bank as long as impacts are within the bank's service area and the bank has appropriate credits available. The bank and its available credits must be approved by the Corps following consultation with the IRT.

Benefits for considering a bank include utilizing timing schedule 1 or 2 (0.1 or 0.08 modifier) and the bank assumes responsibility for the entire mitigation obligation upon acceptance of the fee and adequate notification to the Corps. To locate a bank in Wyoming visit the Regional Internet Bank Information Tracking System (RIBITS) link on the Omaha District Mitigation Information website <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Mitigation.aspx>, or contact the Wyoming Regulatory Office at phone (307-772-2300).

B. In-Lieu Fee credits: The applicant may elect to pay a fee to an ILF sponsor who will construct the mitigation site concurrent or after impacts have occurred. The ILF plan and its available credits must be pre-approved by the Corps following consultation with the ILF's IRT. The ILF sponsor assumes responsibility for the entire mitigation obligation upon acceptance of the fee and adequate notification to the Corps.

C. Permittee-responsible mitigation: The applicant may elect to prepare their own mitigation proposal or hire a consultant to prepare a mitigation plan which must be approved by the Corps. These three sub-categories of permittee-responsible mitigation are spelled out in detail within 33 CFR Section 332.2 (b)(4-6). (Permittee retains all the responsibilities for the mitigation obligations)

- Permittee-responsible mitigation under a watershed approach.
- Permittee-responsible mitigation through on-site and in-kind mitigation
- Permittee-responsible mitigation through off-site and/or out of kind mitigation

D. Combination of above: With Corps' approval, the above options may be combined to satisfy a compensatory mitigation obligation.

#### **6. Mitigation Activities (not all inclusive).**

Permit applicants are responsible for proposing appropriate compensatory mitigation to offset unavoidable impacts, commensurate with the amount and type of impact associated with a particular DA permit. Compensatory mitigation for adversely impacted streams can include a combination of in-stream and riparian restoration (re-establishment or rehabilitation), enhancement, creation or preservation. Preservation should only be considered in combination with enhancement and restoration. Because streams are difficult to replace through creation, restoration and enhancement activities will provide greater certainty that permitted impacts will be successfully offset (33 CFR 332.3(e)(3)).

Activities that constitute restoration or enhancement include, but are not limited to: establishment of natural buffers; acquisition of wildlife corridors/crossings; impoundment removal; livestock exclusion; road crossing improvements; removal of invasive vegetation and restoration of appropriate vegetation communities; stream channel restoration of pattern, profile, and dimensions; in-stream habitat recovery; and reconnection of a stream with its flood plain. All restoration and/or enhancement measures should be designed with the goal of improving biological and morphological integrity, habitat, and water quality.

#### **7. Location.**

For this WSMP, a watershed is an 8-digit Hydrologic Unit Code (HUC). When practicable and environmentally sound, mitigation should be as close to the impact site as practicable and within the same local sub-watershed (10- or 12- digit HUC) or watershed (8-digit HUC). Distant or out-of-watershed compensatory mitigation may not be acceptable and must be approved on a case-by-case basis. Project impacts occurring on Indian Reservations should be offset within the Reservation boundary.

#### **8. Timing.**

When practicable and feasible, mitigation should be completed prior to or concurrent with the adverse impacts. The preferred method is to complete mitigation prior to the commencement of the impacts. However, it is recognized that because of equipment utilization it may be necessary to perform the mitigation concurrent with the overall project. This is usually acceptable provided the time lag between the impacts and mitigation is minimized and the mitigation is completed within one growing season following commencement of the adverse impacts. Rationale should be provided for schedules showing less than 100% completion of the approved mitigation concurrent with completion of the permitted project. An additional credit requirement may be applied by the Corps to account for temporal lag.

#### **9. Maintenance.**

Mitigation areas should be designed to be naturally self-sustaining following the completion of the mitigation. Diligence should be taken to show hydrology is adequately considered since plans requiring an energy subsidy (pumping, intensive management, etc.) will normally not be acceptable. The goal is to achieve a natural state that does not depend upon maintenance. Proposed mitigation plans that require extensive maintenance or other substantial ongoing human inputs will generally not be accepted. Management and maintenance of the project will be subject to the requirements found in 33 CFR 332.7.

**10. Mitigation Bank Development.**

Proposals for mitigation banks must be in compliance with 33 CFR 332.8. Proposals that include use of credits from a mitigation bank must normally comply with the requirements of this WSMP as well as any conditions or restrictions applicable to the bank.

**11. Stream Mitigation Costs.**

All costs are the responsibility of the applicant (whether conducting the work or purchasing credits from a Corps approved bank). Financial assurances in the form of a bond or other similar binding document can and may be applied to assure funds will be available to complete mitigation (33 CFR 332.3n). For mitigation banks, actual cost per credit is determined by the sponsor and the client. For in-lieu fee, an IRT will set the cost per credit, with final approval provided by the Corps.

**12. Point of Contact.**

Copies of this document will be made available on the Wyoming Regulatory Office website at: <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Wyoming/Mitigation.aspx>

Questions regarding use of this policy for specific projects must be addressed to the Project Manager handling the permit action. Other general inquiries or comments regarding this document may be addressed to:

Matthew Bilodeau, State Program Manager  
or Paige Wolken, WSMP Project Manager  
Wyoming Regulatory Office  
U. S. Army Corps of Engineers, Omaha District  
2232 Dell Range Boulevard, Suite 210  
Cheyenne, Wyoming 82009  
Phone (307) 772-2300  
Subject: WSMP

**13. Document Updates.**

This document is subject to periodic review and modification. The policies and regulations regarding mitigation can change and it is possible that new guidance will result in periodic modifications to this Stream Mitigation Procedure.

The referenced web links in this document may change over time. Please contact the Wyoming Regulatory Office if a web link is no longer valid.

## DEBIT AND CREDIT COMPUTATION TABLES

### I. Using the Equations and Data forms

When compensatory mitigation is required, it will be determined by using the following equations. These calculations are not intended to represent an exact scientific method. Rather, it is intended to establish a clear, understandable, and consistent method to calculate stream debits and credits.

For a mitigation proposal to be acceptable, the Proposed Mitigation Credits (PMC) must be equal to or greater than the Impact Debts (Debts).

Any Multiplier category not selected or applicable will equal zero.

**Note:** A spreadsheet (WSMP\_Worksheet\_Tables2012.xls) containing the equations is available to aid in the calculations for this procedure.

**Table 1. Adverse Impacts (Debts)**

FACTORS	MULTIPLIERS							
	Class 4		Class 3		Class 2			Class 1
	B	A	D	C or B	D	C	A, AB or B	
Stream Classification (Pg 7)	0.1	0.2	0.6	0.8	1.1	1.3	1.5	2.0
Special Resources (Pg 7)	Red Ribbon 1.1		Conservation 1.5		Blue Ribbon 1.5		Wild & Scenic 2.0	T&E Species 2.5
Existing Condition (Pg 8)	Non-Functional 0.50			Deficient 1.0			Functional 1.5	
Type of Loss (Pg 9)	Partial Functional Loss 1.0			Functional Loss 4.0			Physical Loss 6.0	
Cumulative Impact (Pg 9)	Multiply total length of all stream disturbances (feet) x 0.005.							

**Table 2. Debts Worksheet**

FACTORS	Loss 1	Loss 2	Loss 3	Loss 4	Total
Stream Classification					
Special Resources					
Existing Condition					
Type of Loss					
Cumulative Impact					
Sum of Factors (SF <sub>i</sub> )					
Linear Feet (LF <sub>i</sub> )					
SF <sub>i</sub> X LF <sub>i</sub>					

**Table 3. Mitigation Measures (Credits)**

FACTORS	MULTIPLIERS							
	Class 4		Class 3		Class 2			Class 1
Stream Classification (Pg 7)	B	A	D	C or B	D	C	A, AB or B	
	0.1	0.2	0.6	0.8	1.1	1.3	1.5	2.0
Special Resources (Pg 7)	Red Ribbon 1.1		Conservation 1.5		Blue Ribbon 1.5		Wild & Scenic 2.0	T&E Species 2.5
Riparian Buffer (Pg 10)	Total Width of Riparian Buffers ÷ 1000							
Net Riparian Improvement (Pg 10)	Minimal 0.2		Moderate 0.5			Substantial 2.5		
Net Stream Improvement (Pg 10)	Minimal 1.5		Moderate 3.5			Substantial 6.0		
Type of Protection (Pg 11)	Deed Restriction 0.5		Permittee Easement 1.0		Agency Owned 1.0		Conservation Easement 3.0	Fee Title 5.0
Timing (Pg 12)	Schedule 3 -1.5			Schedule 2 0.0			Schedule 1 4.0	
Location (Pg 12)	Outside HUC 8 -1.0			Off-Site 0.0			On-Site 0.4	
Watershed Approach (Pg 12)	1.5							

**Table 4. Credits Worksheet**

FACTORS	Mitigation 1	Mitigation 2	Mitigation 3	Mitigation 4	Total
Stream Classification					
Special Resources					
Riparian Buffer					
Net Riparian Improvement					
Net Stream Improvement					
Type of Protection					
Timing					
Location					
Watershed Approach					
Sum of Factors (SF <sub>m</sub> )					
Linear Feet (LF <sub>m</sub> )					
SF <sub>m</sub> x LF <sub>m</sub>					

**Table 5. Mitigation Summary**

<b>Total Project Debits</b>		<b>Debits</b>
<b>A</b>		
<b>Mitigation Banking Credit Summary</b>		<b>Credit</b>
<b>B</b>		
<b>In-Lieu Fee Credit Summary</b>		<b>Credit</b>
<b>C</b>		
<b>Permittee-responsible Credit Summary</b>		<b>Credit</b>
<b>D</b>		
<b>Credit Grand Totals</b>		<b>Credit</b>
<b>E</b>	$E=B+C+D$ , E must be >A	

**II. Definition of Factors Used in Tables**

II.1 Adverse Impact (Debit) Factors

**Stream Classification** for Wyoming and this procedure will be conducted according to the Wyoming Department of Environmental Quality (WDEQ) Wyoming Surface Water Classification List which incorporates flow regime and designated uses. The List can be obtained from Chapter 1 of the Wyoming Water Quality Rules and Regulations on the WDEQ website:  
<http://deq.state.wy.us/wqd/watershed/surfacestandards/Downloads/Standards/2-3648-doc.pdf>

The List must be referenced to complete Table 1.

**Special Resources** are stream and riverine systems that provide functions and values of recognized importance. The following information must be referenced to complete Table 1.

Red Ribbon and Blue Ribbon – Statewide and nationally important trout production streams, as designated by the Wyoming Game and Fish Department. A list and map of these resources can be found on the WGFD website: <http://wgfd.wyo.gov/web2011/WILDLIFE-1001061.aspx>

Conservation - All waters within HUC 10 watersheds designated by the WGFD as Aquatic Conservation Areas, which capture Native Species Status 1, 2 and 3 as well as Species of Greatest Concern Tier 1, 2 and 3 under the State Wildlife Action Plan. A list and map of these resources can be found on the WGFD website: <http://wgfd.wyo.gov/web2011/WILDLIFE-1001061.aspx>

Wild and Scenic –Wyoming waters receiving designation under the Wild and Scenic Rivers Act can be found on the following website: <http://www.rivers.gov/rivers/wyoming.php>

T&E Species - Threatened and Endangered Species (T&E) as designated under the Endangered Species Act. Note: As of 2012, there are no streams that would fall under this category. Current information regarding Wyoming T&E species can be found on the U.S. Fish and Wildlife Service website: [http://www.fws.gov/wyominges/Pages/Species/Species\\_Endangered.html](http://www.fws.gov/wyominges/Pages/Species/Species_Endangered.html)

**Existing Condition** is a reflection the functional state of a stream before any project impacts that would occur from an applicant's proposed project, or likewise, the existing and projected functional state in determination of net improvement for compensatory mitigation (see Net Riparian Improvement and Stream Improvement). This is a measure of the stream's natural stability and resilience relative to the physical, chemical and biological integrity of the system. The 2008 Compensatory Mitigation Rule recommends that a functional or condition assessment be completed at the impact site to quantify ecological losses and at the mitigation site to quantify projected ecological gains in order to determine how much compensatory mitigation is required (33 CFR 332.3(f)(1)). Determination of existing condition may be best accomplished through a functional or condition assessment, which may be rapid or intensive depending on the project. The use of an assessment method should be confirmed by the Corps.

Regardless of the assessment method(s) used, the results should be explained to demonstrate that the stream falls into one of the following categories:

Functional means the hydrologic, hydraulic, geomorphic, physiochemical and biologic functions of the stream reach are maintained. For example, the reach is physically stable and is characterized by an appropriate stream hydrograph and chemical makeup for the topographical setting and watershed characteristics. Stream biota are diverse and unimpaired by excessive anthropogenic inputs.

A functional stream reach is not channelized or impounded; is free of manmade alterations that degrade channel stability, or aquatic habitat quality and connectivity; transports the sediment and flows produced by its watershed while maintaining stable dimensions, pattern and profile; shows minimal evidence of human-induced sedimentation or incision; has a functioning vegetated riparian zone; is not on Wyoming's 303(d) list of impaired waters due to nonsupport of aquatic life uses; and supports stream biota comparable to reference conditions.

Deficient means the stream reach has been compromised through *partial loss* of one or more of the integrity functions (hydrologic, hydraulic, geomorphic, physiochemical and biological). Ecosystem recovery has a moderate probability of occurring naturally.

A deficient stream may have an entrenchment ratio and/or width/depth ratio at bank full discharge that is inappropriate for the expected stream type relative to reference reach data; moderate evidence of human-induced sedimentation or incision; a moderately functioning vegetated riparian zone of deep-rooted or mat of vegetation; or manmade structures that degrade channel stability or aquatic habitat quality and connectivity.

Nonfunctional means that there is a high loss of system stability or resilience of the stream reach characterized by *loss* of one or more integrity functions. Chemical, biological, or physical degradation alone can characterize a nonfunctional stream. Ecosystem recovery is unlikely to occur naturally.

A nonfunctional stream may be channelized; have extensive human-induced sedimentation or incision; have extensive bank erosion with accelerated lateral channel migration; have little or no vegetated riparian zone with deep-rooted vegetation; have manmade structures that degrade channel stability or aquatic habitat quality and connectivity; be listed on Wyoming's 303(d) list of impaired waters due to nonsupport of aquatic life uses; or have stream biota that are not comparable to reference conditions.

Tools available to determine existing condition:

*A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas*, TR 1737-15, 1998, developed and utilized by the Bureau of Land Management, US Forest Service and Natural Resources Conservation Service (NRCS):

<ftp://ftp.blm.gov/pub/nstc/techrefs/Final%20TR%201737-15.pdf>

*Stream Visual Assessment Protocol Version 2*, 190–VI–NBH, December 2009, developed by the NRCS:

[ftp://ftp-fc.sc.egov.usda.gov/NDCSMC/Stream/pubs/NBH\\_Part\\_614\\_Subpart\\_B\\_10\\_Dec\\_09.pdf](ftp://ftp-fc.sc.egov.usda.gov/NDCSMC/Stream/pubs/NBH_Part_614_Subpart_B_10_Dec_09.pdf)

*Natural Channel Design Review Checklist*, EPA 843-B-12-005, 2012,

[http://water.epa.gov/lawsregs/guidance/wetlands/upload/Natural\\_Channel\\_Design\\_Checklist\\_5\\_16\\_12.pdf](http://water.epa.gov/lawsregs/guidance/wetlands/upload/Natural_Channel_Design_Checklist_5_16_12.pdf)

*A Function-Based Framework for Stream Assessment & Restoration Projects*, EPA 843-K-12-006, 2012,

[http://water.epa.gov/lawsregs/guidance/wetlands/upload/A\\_Function-Based\\_Framework.pdf](http://water.epa.gov/lawsregs/guidance/wetlands/upload/A_Function-Based_Framework.pdf)

WDEQ's Integrated 305(b) and 303(d) Report (<http://deq.state.wy.us/wqd/watershed/#Assess>) or individual water quality assessment reports (<http://deq.state.wy.us/wqd/watershed/index.asp#Mon>) can be consulted to help determine the existing condition of many Wyoming streams. Note that not all waters are assessed, particularly smaller streams. The lack of assessment does not imply that the water meets water quality standards or supports its designated aquatic life uses.

**Type of Loss** is the category of stream loss resulting from proposed activities that will significantly diminish the functional integrity of the stream and riparian system. Three main categories of impact include:

Partial Functional Loss means only a portion of the stream channel is affected, degrading one or more integrity functions. For example, installation of bank armor (extensive rock or cement riprap or retaining walls) on one bank with little to no incorporation of vegetation would adversely affect flow dynamics, biological habitat and geomorphic resiliency.

Functional Loss means the stream channel and riparian system are affected by an activity resulting in the impairment or loss of most integrity functions. For example, reworking, dredging, channelizing or diverting flow would modify stream elevations and contours and adversely impact the morphology, character and function of the stream channel.

Physical Loss means the stream is physically destroyed resulting in loss of all integrity functions within the affected reach.

In order to account for the appropriate magnitude of potential functional loss, when same or different types of loss occur in different locations (reaches) of the same project, each should be accounted for as separate losses in Table 2.

**Cumulative Impact** is the total linear feet of stream adversely impacted by the project (0.005 x length of stream impacted). This factor is intended to capture the effect that more than one action may have on an aquatic resource (i.e., riprap may be proposed along several separate reaches of the same stream and the factor will result in an increase in debit responsibility).

## II.2. Credit Factors

**Riparian Buffer** widths should be a minimum width of 50 feet or more depending on slope and surrounding land use. Greater buffer widths provide greater water quality benefits, and more consistently prevent sediment and runoff from entering the stream.

*Riparian buffer credit will only be received if the buffer is protected (see Type of Protection).*

**Net Riparian Improvement and Net Stream Improvement** are measures of the functional lift attributed to the enhancement, restoration and perpetual protection of streamside riparian areas and restored stream channel function. Improvements in riparian and in-stream structure and habitat elements relate directly to improvements in stream functions. Restored streams have proper morphology relative to the physical characteristics of the watershed.

The 2008 Federal Mitigation rule recommends that a functional or condition assessment of the existing condition be completed at the mitigation site to quantify projected ecological gains, which would be realized if the mitigation project is successfully implemented (33 CFR 332.3(f)(1)). While some projects may not require a rigorous functional assessment, information about the existing condition of various parameters is useful to determine what restoration or enhancement activities would provide the greatest functional lift. For example, if the riparian vegetation scores low in an assessment, vegetative enhancements, such as invasive species removal or native re-vegetation activities can be prioritized and may provide greater functional lift. Determination of net improvement is best accomplished through functional or condition assessments, which could be rapid or more rigorous depending on the project scope.

Recognizing the importance of both in-stream and riparian buffer improvement activities, net improvement credits can be generated independently for both types of improvements. Net Improvement Credits are based on the following, and reference the condition categories described in the Existing Condition section above.

*An explanation of the specific mitigation activities to be employed and the measurable positive change in condition or function projected is required to justify the category selected.*

**Substantial** - Enhancement and restoration activities bring a ‘nonfunctional’ riparian buffer or stream site to ‘functional.’

**Moderate** - Enhancement and restoration activities that greatly improve a select integral function or generally improve multiple integral functions; and bring either a ‘deficient’ riparian buffer or stream site closer to ‘functional,’ where the riparian and in-stream functions are stable / on a trajectory to functional; or a ‘nonfunctional’ riparian buffer or stream site to ‘deficient’, where the riparian and in-stream functions are on a trajectory to ‘deficient’.

**Minimal** - Enhancement or limited rehabilitation activities that generally improve a select integral function or nominally improve multiple integral functions; and that bring a ‘nonfunctional’ riparian buffer or stream site to “deficient”; or that bring a ‘deficient’ riparian buffer or stream site closer to ‘functional,’ where the riparian and in-stream functions will continue to be compromised. Minimal net improvement may also be achieved at a site where the riparian buffer or stream site is already ‘functional’ and only preservation or site protection were proposed to maintain the site.

## Examples:

Where a documented problem exists, fencing, controlled stream access and reduced grazing may be measures that can be used to manage livestock along streams thereby avoiding bank degradation, sedimentation, and water quality problems. In highly impacted areas, exclusion of livestock through fencing and controlled stream access could provide moderate or substantial lift where following livestock exclusion and re-vegetation techniques, the re-vegetated riparian buffer captures sediment and nutrients and reduce runoff; bank erosion is reduced and the stream can access its floodplain, build banks, and dissipate flood energy.

For a restoration site where the initial condition is considered impaired due to channelization and a high entrenchment ratio, and the stream is not supporting aquatic life uses due to resultant aquatic habitat degradation, maximum lift may be achieved by restoring morphological traits such as bankfull width, stream sinuosity, entrenchment ratio, slope and width/depth ratio to expected conditions derived from referenced morphologic data. The functional lift from these activities can be measured and monitored using appropriate hydraulic, geomorphic and biological parameters, and typically would be anticipated to achieve maximum functional improvement. Where relocation of an incised stream and/or modifying the existing channel to create a more sinuous stream channel is impracticable due to belt width constraints, modifying the existing channel and floodplain at its current elevation to create a stable channel may be the most restoration available, but because the stream is not reconnected with the floodplain, the site may only achieve minimal lift.

**Type of Protection** means the legally binding mechanism applied to ensure that land and aquatic resources offered for mitigation has long-term protection. Long-term protection may be provided through real estate instruments such as conservation easements held by entities such as federal, tribal, state, or local resource agencies, non-profit conservation organizations, or private land managers; the transfer of title to such entities; or by restrictive covenants. For government property, long-term protection may be provided through federal facility management plans or integrated natural resources management plans. (33 CFR 332.7)

Five different types of restrictions are recognized, with varying levels of protection:

Deed Restriction - A private individual or property owners association attaches a legally recorded restrictive covenant to the property deed.

Permittee Easement - A 404 permittee obtains, legally records, and holds a specific easement to establish, maintain and protect a compensatory mitigation site.

Agency Owned - A mitigation site is located on land owned/managed by a State or Federal natural resource agency (e.g., WGFD or USFS) where establishment is arranged through special permit or an agreement and long term protection is provided by the agency through an appropriate management plan.

Conservation Easement - A qualified, experienced, non-profit conservation organization or a government agency holds a conservation easement for the mitigation site. The easement is enforceable by the easement holder. That entity holds a conservation easement on a mitigation site. A conservation easement granted to a qualified, experienced, non-profit conservation easement or government agency. The mitigation site is protected by a conservation easement held by a private individual or entity.

Fee Title - Transfer of complete ownership to a qualified, experienced, non-profit conservation organization or government agency that will manage the area as a natural-functioning stream or wetland corridor.

**Timing** means the relative time when the mitigation will be performed in relation to when adverse impacts to aquatic resources will occur. All credit withdrawals associated with mitigation banks must be able to meet interim success criteria commensurate with the level of credit withdrawal. Related terms include:

Schedule 1 – *Permittee-responsible mitigation*: all mitigation is done prior to the adverse impacts and success criteria have been met.

*Mitigation Banks*: Bank is certified and has available credits.

Schedule 2 – *Permittee-responsible mitigation/In Lieu Fee*: mitigation is concurrent with the adverse impacts. No credit will be given for concurrent timing.

*Mitigation Banks*: only pre-certified credits available.

Schedule 3 – *Permittee-responsible mitigation/In Lieu Fee*: mitigation is done after adverse impacts occur. Credits are withdrawn due to postponed functional offset.

Note: Additional credits may be required by the Corps for mitigation construction involving excessive temporal loss of aquatic resource functions (delayed functional offset).

**Location** is the relative proximity of the mitigation site to the impact site. For stream mitigation banks, service area will be defined for the bank after an assessment of the banking proposal. Bank credits are calculated far in advance of any known application. The Corps, after consultation with the IRT, will approve a standardized value for this category based on a banks service area and expected market so that credits can be calculated.

On-Site – The mitigation site is within ½ mile up or downstream of the impact, but still on the stream that is adversely impacted by an applicant’s proposed project.

Off-Site – The mitigation site is greater than ½ mile from the impact site. It can still be on the adversely impacted stream, but does not have to be, but it must be within the watershed (8-digit HUC as mapped by USGS).

Outside HUC 8 - The mitigation site is not within the same local or 8-digit HUC watershed as the adverse impacts, but still within an approved adjacent watershed or service area within the same Hydrologic Basin (6-digit HUC).

Note: Mitigation outside the impacted stream’s six digit hydrologic unit or a banks Geographic Service Area will generally not be acceptable.

**Watershed Approach** means that the applicant/permittee has effectively demonstrated to the Corps that the mitigation site and resource was strategically selected based on local watershed needs and goals (33 CFR 332.2 definition and 332.3(b))

For example, a watershed approach may be demonstrated where a mitigation site

- addresses an identified priority from a watershed plan, wildlife action plan, or species recovery plan
- addresses a TMDL or known source of water quality impairment
- restores critical habitat for listed species; and/or
- improves landscape or ecosystem connectivity