

# In-Lieu Fee Project Site Plan Review Workbook

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Prepared by:



**Ecosystem Planning and Restoration, LLC**  
8808 Centre Park Drive, Suite 205  
Columbia, MD 21045

Prepared for:



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Kate Thompson, Washington Department of Ecology  
Devin Schenck, The Nature Conservancy  
Pam Fetterman, Ecogenesis/Ecological Restoration Business Association  
Melissa Scianni, EPA Region IX  
Melody Rudenko, Oregon Department of State Lands  
Charlotte Kucera, U.S. Fish and Wildlife Service  
Stacia Bax, Missouri Department of Natural Resources  
Jessi Miller, U.S. Fish and Wildlife Service  
Susan-Marie Stedman, NOAA  
Donna Collier, Valencia Wetland Trust/National Environmental Banking Association  
Andrew D Beaudet, U.S. Army Corps of Engineers Headquarters  
Michelle L Mattson, Institute for Water Resources, U.S. Army Corps of Engineers  
Valerie L Layne, Institute for Water Resources, U.S. Army Corps of Engineers  
Calvin L Alvarez, Alaska District, U.S. Army Corps of Engineers

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Jeanne Richardson, Norfolk District, U.S. Army Corps of Engineers  
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Stephanie TomCoupe, National Fish and Wildlife Foundation  
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Erin Knauer – EPR designed Maryland wetland restoration site.

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# Introduction

In 2007, the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) began training federal, state, and tribal members of Interagency Review Teams (IRTs) on the review and approval process for mitigation banks and in-lieu fee (ILF) programs through national and regional courses.<sup>1</sup> In 2008, the Corps and EPA issued joint regulations known as the Mitigation Rule which standardized the review and approval process for mitigation banks and ILF programs. This review workbook and checklist reflect the lessons learned through more than a decade of teaching and learning from participants across the country. This workbook is one of a series of five review workbooks, with one for each of the following: Mitigation Bank Prospectus, Mitigation Bank Instrument, ILF Prospectus, ILF Instrument, and ILF Project Site Plan. Each workbook is accompanied by a checklist that takes the mitigation review elements from each workbook and puts them in a fillable document to help track the IRT members review progress and comments. Where the review elements are the same for mitigation banks and ILF programs, the corresponding workbooks are the same.

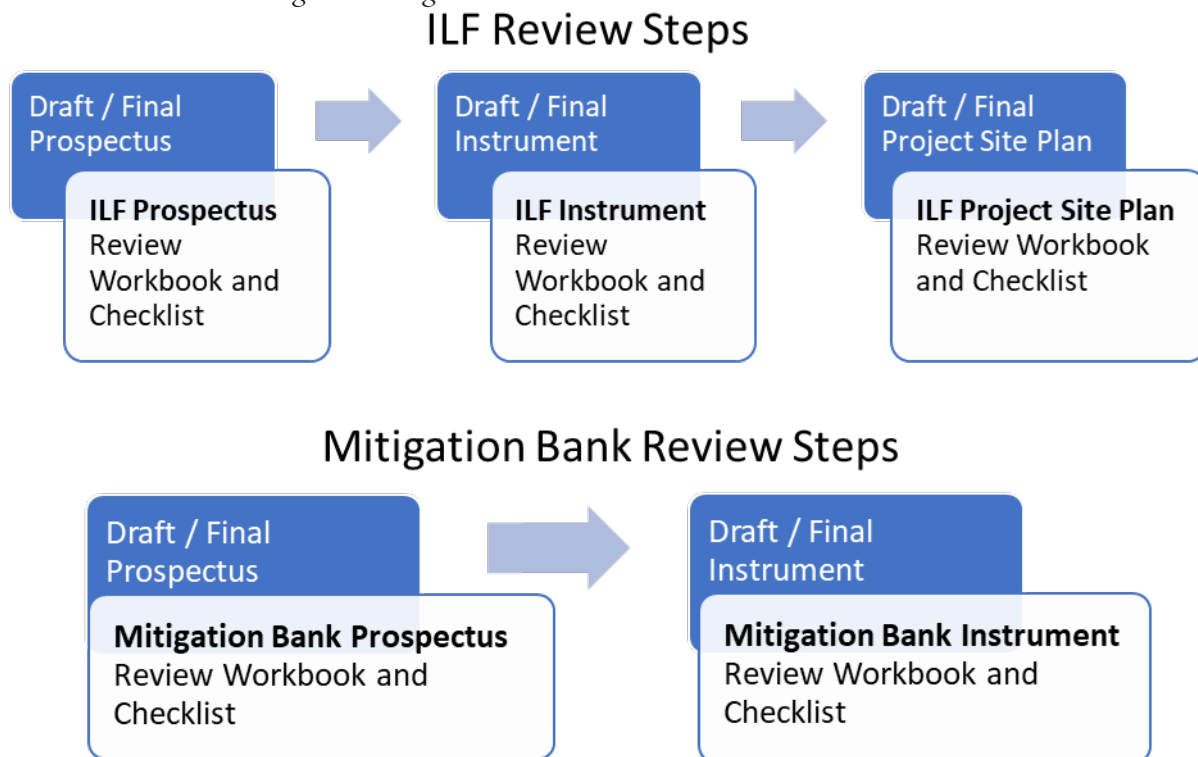
The workbooks provide many references and example practices discussed during the trainings and are organized according to the mitigation elements identified in the Mitigation Rule. Each mitigation element includes the relevant regulatory text, examples of how it is addressed from different District templates or instruments, and a series of questions to help IRT members adequately review all the relevant information needed to understand the proposal. The workbooks and checklists are technical resources to provide an organized structure for reviewing mitigation bank and ILF program proposals and ensuring that all aspects of the Mitigation Rule are considered. The checklist includes each review element question in a table for easily identifying what information has been reviewed and where any comments or questions remain after review. Bank and ILF proposals can often be hundreds of pages long and organized as a single or multiple documents. The checklists have been designed to help track where information is and determine if more information or clarification is needed.

The complete set of five workbooks covers each of the major review steps for a mitigation bank and an ILF program development, as shown below (Figure 1). Bank review starts with the workbook and checklist for the mitigation bank prospectus. The bank prospectus workbook covers the eight review elements from the Mitigation Rule associated with a mitigation bank prospectus. Next is the mitigation bank instrument review workbook, which starts by asking if there are any unresolved questions from the bank prospectus review and then focuses on the 18 elements required for mitigation bank instruments. The ILF proposal review is a bit more complicated, with three workbooks and associated checklists. The ILF program prospectus covers the eight review elements from the Mitigation Rule associated with an ILF prospectus (six in common with the Mitigation Bank Prospectus Workbook). The ILF program instrument workbook differs from the bank instrument review workbook because it only covers 11 review elements needed for establishing the program, five in common with bank instruments, and six that only pertain to ILF program instruments (Figure 1). Lastly, there is the ILF project site plan review workbook that covers 19 review elements, including all 18 elements required for a mitigation bank instrument and one additional element specific to establishing ILF sites.

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<sup>1</sup> See: <https://www.conservationfund.org/our-work/conservation-leadership-network/our-services/training-resources-3rd-party-mitigation-interagency-review-team>

Figure 1. Mitigation bank and ILF workbooks and checklists



This workbook and checklist are intended for use by members of the IRT to facilitate the review of an ILF program project site plan. ILF project site plans may go by a number of names, including project development plans, site development plans, or simply site/project plan. This workbook will refer to them as ILF project site plans. ILF projects are typically large and complex projects, often with multiple supporting attachments or exhibits. The purpose of this project site plan review workbook is to assist the IRT reviewer in evaluating whether a proposed ILF project is ecologically beneficial and will effectively compensate for lost aquatic resource functions and services. It is not intended to provide local guidelines and policies or replace any locally developed templates, tools, or guidelines used to prepare and review an ILF project site plan.

Before delving into review of the draft ILF project site plan, the reviewer should first be familiar with the ILF instrument and examine the prospectus for the ILF project site to assess how any concerns that were raised during review of the project site prospectus have been addressed in the ILF project site plan.

### Workbook Organization

This workbook and associated checklist cover 18 separate review elements typically associated with ILF projects. Twelve of these elements are required for all mitigation plans (permittee responsible, mitigation bank, and ILF project proposals), and the other six are specific to banks and ILF projects. Taken together, these 18 elements are used to reduce the risk of potential ILF project failure, such as failure to complete construction, meet its performance standards, or continuation of long-term management when operations cease. For example, consider how these elements function to reduce risk:

- Financial assurances are used to help ensure that an ILF project has adequate resources available to guarantee a site is constructed, managed, and monitored throughout its operational life.

- The site protection mechanism is used to ensure that incompatible activities are prohibited on an ILF project site.
- The credit release schedule makes credits available to the Sponsor based on the project meeting performance milestones.

Collectively these and the other elements work to minimize the risk of failure. It is important to realize that although risk can be minimized, it can never be completely eliminated.

To organize the 18 elements in these workbooks, they have been grouped into three logical categories that relate to their role in an ILF project: **Project Establishment** (denoted with a \*), **Project Operations** (denoted with a #), and **Performance and Management** (denoted with a +). Note that these groupings do not reflect the order in which the Sponsor might undertake them but are instead a logical grouping for IRT review of the draft project site plan.

<u>12 Elements of a Mitigation Plan</u>	<u>6 Elements of an ILF Project</u>
Goals and objectives*	Service area*
Site selection*	Credit release schedule#
Site protection*	Accounting procedures#
Baseline information*	Reporting protocols#
Credit determination#	Assumption of mitigation responsibility#
Mitigation work plan*	Default & closure provisions#
Maintenance plan+	
Performance standards+	
Monitoring requirements+	
Long-term management plan+	
Adaptive management plan+	
Financial assurances*	

**Project Establishment** refers to those elements that must be resolved/in-place for an ILF project site to be identified and constructed. The elements in this grouping include goals and objectives, site selection, baseline information, mitigation work plan, financial assurances, site protection, and service area. Note, the term project establishment, as discussed in this ILF Project Site Plan Review Workbook, is not the same as what may be used in other district or state guidance or template documents. For example, the Los Angeles District ILF Enabling Instrument template (2012) refers to ILF project establishment as including securing the project site and all necessary authorizations, modifying the ILF program instrument, and posting all necessary financial assurances.

**Project Operations** include those elements directly related to operations. These elements include credit determination, credit release schedule (schedule of credit availability to the Sponsor), provisions for the Sponsor to assume permittee mitigation responsibility, accounting procedures (for each and all credit transactions), reporting protocols (monitoring reports, ledger accounts, and status of financial assurances and long-term management funding), and provisions related to default (failure to comply with the project site plan) and closure of the ILF project site.



**Performance and Management** include those elements that ensure the ILF project meets its ecological targets and develops into the intended resource. It includes performance standards, monitoring requirements (to evaluate attainment of standards), maintenance plan (as part of overall management), adaptive management plan (as necessary to ensure that performance standards are met), and long-term management of the ILF project (to ensure it is sustainable beyond the operations phase).

All of the ILF project site plan review elements are interrelated and will be referenced repeatedly throughout this workbook. In many cases, one element in a workbook may refer the reviewer to another element in the workbook. For example, an ILF project's goals and objectives are the basis for performance standards (performance standards are used to evaluate the attainment of goals and objectives), which are themselves evaluated through regular monitoring reports submitted to the IRT.

# Background

For every permit issued by the Corps under the Clean Water Act (CWA) section 404, adverse impacts to wetlands, streams, estuaries, and other aquatic resources must be avoided and minimized to the extent practicable. For those unavoidable impacts, compensatory mitigation is often required to replace the loss of wetland, stream, tidal habitat, and other aquatic resource functions in the watershed.<sup>2</sup> The term “watershed” used throughout this workbook includes consideration of landscape and seascape perspectives. Compensatory mitigation refers to the restoration, establishment (creation), enhancement, or preservation of wetlands, streams, estuaries, or other aquatic resources in order to offset these unavoidable adverse impacts.

In 2008, the Corps and the EPA issued joint regulations known as the Mitigation Rule.<sup>3</sup> These regulations established standards for all compensatory mitigation projects to offset permitted losses under CWA section 404. The Mitigation Rule recognizes three mechanisms for satisfying compensatory mitigation requirements: mitigation banks, ILF programs, and permittee-responsible mitigation (PRM). Equivalent standards are required for all compensatory mitigation projects regardless of the mechanism used to develop that project. This document focuses on reviewing and developing an ILF project specific site plan.

## Organization of the Mitigation Rule (Corps: 33 CFR 332/ EPA 40 CFR 230)

- The Mitigation Rule is divided into eight sections:
  1. Purpose and general considerations
  2. Definitions
  3. General compensatory mitigation requirements
  4. Planning and documentation
  5. Ecological performance standards
  6. Monitoring
  7. Management
  8. Mitigation banks and in-lieu fee (ILF) programs
- The first seven sections apply to all forms of compensatory mitigation
- The last section establishes standards that apply only to mitigation banks and ILF programs

- **Mitigation Bank (bank):** A mitigation bank is a project where aquatic resource conservation (restoration, establishment, enhancement, or preservation) has been initiated in advance of permitted losses of aquatic resource functions or services. Banks typically provide consolidated compensation for multiple permit actions. With the approval of regulatory agencies, permittees can acquire credits from a bank to meet their permit requirements for compensatory mitigation. The bank Sponsor (not

<sup>2</sup> For some resource types, it may be preferable to site compensatory mitigation projects using geographic units other than watersheds. For example, for vernal pools, landscape units known as vernal pool regions may be preferable, and for coral reefs, tidal wetlands, and other marine and estuarine resources, seascape units such as reef complex or littoral drift cell may be preferable. According to the RIBITS, projects using seascape or landscape units to site compensatory mitigation projects make up less than 5% of ILF projects.

<sup>3</sup> The appropriate citation from the Code of Federal Regulations associated with the Corps is 33 CFR Part 332 and EPA is 40 CFR Part 230, both are included throughout the workbooks.

the permittee) is responsible for the success of the bank project. Banks provide off-site compensation, meaning the compensation is at a location not typically on or immediately adjacent to the permitted impacts. Bank operation is governed by an instrument that the Sponsor drafts, often based on district or state-provided templates, and is subject to review and approval by the Corps and its state and federal counterparts who compose the IRT.

- **ILF Programs:** ILF programs are established by a public agency or non-profit organization (the ILF Sponsor) and sell credits to permittees. The Sponsor commits to use those funds to perform mitigation activities. Typically, the Sponsor collects funds from multiple permittees in order to pool the financial resources necessary to build and maintain the mitigation site. The ILF Sponsor is responsible for the success of the mitigation. Like banking, ILF mitigation is also typically off-site; however, unlike banking, the mitigation typically occurs after the permitted impacts. Many districts/states require additional compensation to offset this temporal lag (see 33 CFR 332.3(f)(2)/40 CFR 230.93(f)(2)). Like banks, ILF program operation is governed by an instrument drafted by the Sponsor, often based on district or state-provided templates, and is subject to review and approval by the Corps and the IRT.

**Templates:** Many districts have developed templates of ILF-related documents (i.e., instruments, long-term management plans, site protection documents) to increase review efficacy. These templates are becoming more commonplace and encouraged by many District and state policies and practices. The IRT staff should be aware of language revision constraints and refrain from commenting on prior, approved language within the templates or providing comments that conflict with the approved template.

- **Permittee-Responsible Mitigation:** PRM is undertaken by a permittee to compensate for aquatic resource impacts resulting from a specific project. The permittee generally performs the mitigation after the permit is issued but prior to or concurrent with the initiation of permitted impacts. The permittee is responsible (liable) for the implementation, success, and long-term protection and management of the mitigation project. The permit governs the Permittee-Responsible Mitigation (PRM). There is no IRT involvement or instrument associated with PRM, and PRM may occur at the site of the permitted impacts or an off-site location within the same watershed.

**Mitigation Preference Hierarchy:** The Mitigation Rule established a preference hierarchy for mitigation credits (33 CFR 332.3(b)(2) and (3)/40 CFR 230.93(b)(2) and (3)). Under this hierarchy if the appropriate type (wetland, stream, etc.) of released credits are available from a mitigation bank or an ILF project in a service area that includes the permitted impact, those credits are generally preferred over advance credits from ILF programs or PRM projects that have not been initiated.

Using released credits from banks and ILF projects is generally a preferred form of compensatory mitigation under the Mitigation Rule because they implement projects in advance of permitted losses, thus reducing temporal losses of functions and uncertainty over project success. Additionally, ILF programs may consolidate compensatory mitigation projects where ecologically appropriate, in turn combining resources (including financial as well as agency resources) and scientific and technical expertise. (Note, this may be more of a challenge or even impractical for small PRM projects.) An ILF project site plan may also include descriptions of how the mitigation project will provide offsets under other regulatory authorities, such as state counterparts to CWA section 404, CWA section 402, or the Endangered Species Act.

ILF programs differ from mitigation banks in a number of ways:

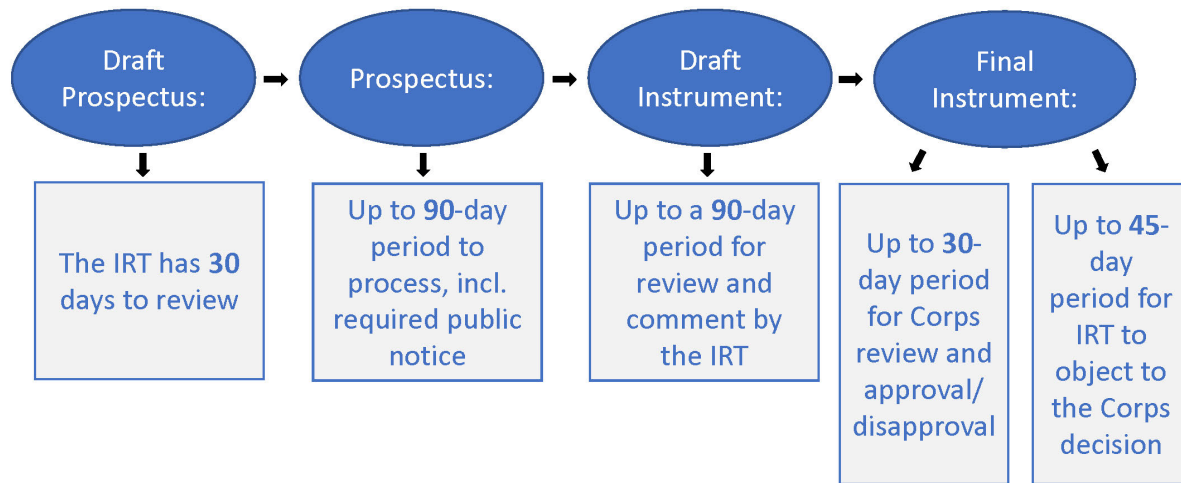
- ILF programs can only be sponsored by government (usually state or local government) or non-profit conservation organizations.
- ILF programs are required to use a watershed approach for strategic site selection (forms part of the Compensation Planning Framework).
- ILF programs include two types of credit activities: advance credits that are associated with a program service area (NOT a project site); and released credits, generated by project sites that were funded with proceeds from advance credit sales and meet performance standards.
- ILF programs typically operate by selling advance credits as mitigation. These advance credits are associated with service areas, and the proceeds are then used to develop and implement mitigation projects on sites within the applicable service area. Credits generated from an ILF project site or mitigation bank (released credits) are generally preferred over these advance credits.
- The fee schedule for these advance credits is publicly available.
- When a program sells advance credits and has accrued sufficient proceeds from those credit sales, the ILF program can then identify project sites and develop and implement mitigation projects.
- Credits generated from an ILF project (released credits) are first used to fulfill a mitigation obligation generated by the sale of an advance credit. If there are any released credits left over after fulfillment, they can be sold and may be determined to be equivalent to a bank credit.
- ILF programs are required to identify financial accounting procedures to ensure that all collected funds are transparently and appropriately managed and dispensed.
- These programs often provide compensatory mitigation when there are few or no mitigation banks with available credits or where PRM is not practicable.
- Some ILF programs provide compensation for resources that are more difficult or less in demand, like the ecologically valuable fens, shellfish, seagrasses, mudflats, and subtidal sediment remediation projects, which generally have limited opportunities for return on investment.

ILF project site plan development and authorization follow a similar four-step process as the ILF or Bank instrument approval process (see Figure 2). The Sponsor is responsible for preparing and submitting all documentation associated with the project to the IRT for review.<sup>4</sup> The timelines depicted in Figure 2 are contingent upon the submittal of complete documents by the Sponsor at each step in the process.

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<sup>4</sup> Development and review of bank instruments follow the same four-step process as the development of ILF project site plans. A bank instrument is required to provide the same information as an ILF project site plan.

Figure 2. ILF project site plan development



**Project Site Plans** follow the same 4-step approval process (see Figure 2 and below descriptions) as mitigation banks and ILF programs. However, the regulations do not require the Corps to prepare an initial evaluation letter (IEL) in response to the prospectus for a project site (33 CFR 332.8(d)/40 CR 230.98(d)). This proposal for an ILF project site is called different names in different districts. These include Site Development Plan, Receiving Site Plan, Site Plan, Mitigation Plan, Instrument Amendment, etc. This workbook refers to the proposal for an ILF project as a project site plan. Approval of the project site plan is considered a modification of the approved ILF instrument (33 CFR 332.8(g)(1)/40 CFR 230.98(g)(1)).

**Draft Site Plan/Prospectus** submittal is considered an optional step in the Mitigation Rule, although many districts/states require submittal. The purpose is to allow the identification of any potential issues with the project early in the process so the Sponsor can address them prior to the start of the formal process.

**Site Plan/Prospectus** submittal is required for all ILF projects. The Corps is required to issue a 30-day public notice for the complete prospectus. All comments received in response to the public notice are shared with the Sponsor and IRT within 15-days of the end of the public notice. For banks and ILF programs, the Corps is required to provide the Sponsor with an initial evaluation letter (IEL) stating the potential suitability of the proposal to provide compensatory mitigation. ILF projects are considered modifications of the ILF program instrument (33 CFR 328(g)(1)/40 CFR 230.98(g)(1)). An initial evaluation is not required by regulation for ILF projects (33 CFR 328(d)(5)(iv)/40 CFR 230.98(d)(5)(iv)); however, many districts provide an initial evaluation of the prospectus. If the prospectus is suitable, the Sponsor may be directed to prepare a draft ILF project site plan. If the prospectus is deemed unsuitable, the Sponsor may revise the prospectus to address the deficiencies and resubmit. If the Sponsor submits a revised prospectus, the Corps will issue a revised public notice. An approved prospectus does NOT guarantee approval of a proposed ILF project site plan.

**Draft Site Plan/Instrument Modification** is submitted to the IRT by the Sponsor for review and comment. The Chair or co-chairs are responsible for providing all comments to the Sponsor to be addressed in the final instrument within 90-days of receipt of the complete Draft Site Plan. The ILF project site plan must be



based on the prospectus and describe in detail the physical and legal characteristics of the ILF project and how it will be established and operated. It must incorporate all of the draft instrument elements specified in the Mitigation Rule (33 CFR 332.8(d)(6)/40 CFR 230.98(d)(6)). The Chair or co-chair is responsible for providing all comments to the Sponsor to be addressed in the final instrument.

**Final Site Plan/Instrument Modification** is then submitted to the IRT by the Sponsor, along with documentation indicating how the Sponsor addressed previous comments on the draft instrument. Within 30-days of receipt of the complete Final Site Plan, the Corps must notify other members of the IRT of its intent to approve/disapprove the Final Instrument. If a federal member of the IRT disagrees, he/she may then object to the Corps decision and initiate a formal dispute resolution process. There is no automatic approval of an ILF instrument. This same step applies to modifications of an approved instrument, such as approval of an ILF project site plan. On several occasions, districts have determined that the proposed project site plan is not potentially suitable for compensatory mitigation regardless of revision. In those cases, districts and/or Sponsors have withdrawn those proposals from further consideration.

### **Delays in Project Site Plan Review**

Delays in the timelines, specified in the Mitigation Rule for review and comment on the project proposal and ILF project site plan, can affect program planning and feasibility. For example, purchase and sale agreements for land purchases generally allow a limited time period for due diligence/feasibility evaluation. The landowner may not agree to a time extension or, if so, only at additional expense to the Sponsor. The Sponsor's ability to secure project sites and project implementation partners, acquire conservation easements, stay within project development and implementation budgets, secure financial assurances, and develop and implement ILF projects is more difficult when regulatory timelines are not followed.

Review can be delayed for a number of reasons, including:

- Completion of endangered species consultation
- Completion of cultural/historic resources coordination (Section 106 NHRPA)
- Government-to-government coordination (tribal coordination)
- Sponsor's failure to provide necessary information
- The necessary information cannot be secured within a specified timeframe
- IRT members failing to provide timely reviews

# Terminology

**Advance Credits:** Credits of an approved ILF program that are available for sale prior to being fulfilled (implementation of a mitigation project) in accordance with an approved mitigation project plan. Advance credit sales require an approved ILF program instrument that meets all applicable requirements (33 CFR 332.2/40 CFR 230.92).

**Assessment methodology:** The mechanism or tool used to evaluate the loss of functions or services at the permitted impact site as well as the gain in functions or services provided at the compensation site. Assessment methods vary by aquatic resource type (i.e., wetlands, streams) and between districts/states.

**Compensatory mitigation methods:** There are four compensatory mitigation methods, restoration, establishment, enhancement, and preservation:

- **Restoration** encompasses two types of actions, re-establishment of aquatic resources in a place where those resources formerly occurred (e.g., prior converted cropland) and rehabilitation of degraded aquatic resources. Much of the stream mitigation implemented involves the rehabilitation of degraded streams;
- **Establishment** (creation) is the development of an aquatic resource where one did not previously occur;
- **Enhancement** is the manipulation of one or more characteristics of an aquatic resource to improve or intensify one or more aquatic resource functions; and
- **Preservation** means removing any threat of destruction or adverse modification to an aquatic resource through appropriate physical and legal mechanisms.

**Compensation Planning Framework (CPF):** The watershed-based planning framework or tool used to select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities. All ILF projects used to provide compensation for Department of the Army (Corps) permits must be consistent with the approved compensation planning framework (CPF) (33 CFR 332.8(c)(1)).

**Credits:** A unit of measure (functional, areal, or other suitable metric) representing the accrual or attainment of aquatic functions or services at a mitigation site. The measure is based on restored, established, enhanced, or preserved aquatic resources. Credits are the currency that an ILF program utilizes for trading.

**District:** Refers to an Army Corps of Engineers (Corps) district office.

**Fees:** The cost of compensatory mitigation credits provided by an ILF program are determined by the ILF program Sponsor (33 CFR 332.8(o)(5)(i)/40 CFR 230.98(o)(5)(i)). The district engineer may evaluate fee schedules for ILF programs to determine whether those fees satisfy the criteria in 33 CFR 332.8(n)(5)(ii)/40 CFR 230.98(n)(5)(ii) and are sufficient for providing the required compensatory mitigation (see preamble to the Mitigation Rule, Federal Register / Vol. 73, No. 70 Thursday, April 10, 2008, page 19609).

Credit prices may vary based on mitigation resource type (e.g., wetland or stream). The cost per unit of credit must include the expected costs associated with the restoration, establishment, enhancement, and/or preservation of aquatic resources in that service area. These costs must be based on full cost accounting and include, as appropriate, expenses such as land acquisition, project planning and design, construction,

plant materials, labor, legal fees, monitoring, and remediation or adaptive management activities, as well as administration of the ILF program (33 CFR 332.8(o)(5)(ii)/40 CFR 230.98(o)(5)(ii)).

**Functions:** Functions are the physical, chemical, and/or biological processes that occur in ecosystems (e.g., denitrification or carbon sequestration).

**Fulfillment of Sales of Advance Credits from an ILF Program:** Application of credits released in accordance with a credit release schedule in an approved mitigation project plan to satisfy the mitigation requirements represented by the sale or debit of advance credits (33 CFR 332.2/40 CFR 230.92) Only after any advance credit sales within a service area have been fulfilled (through the application of released credits from an ILF project) may additional released credits from that project be sold or transferred to permittees (33 CFR 332.2/40 CFR 230.92).

**Hydrologic Unit Codes (HUCs):** A nationwide hierarchical mechanism used to delineate watersheds based on surface hydrologic features. This system first developed by the USGS divides the country into 21 regions (2-digit), 222 subregions (4-digit), 370 basins (6-digit), 2,270 subbasins (8-digit), ~20,000 watersheds (10-digit), and ~100,000 sub-watersheds (12-digit). HUCs are often used in the definition of mitigation bank and ILF program service areas.

**ILF Program:** Mitigation that occurs when a permittee purchases credits from an ILF Sponsor (a public agency or non-profit organization). The Sponsor commits to utilizing those funds to perform mitigation activities. Typically, the Sponsor collects funds from multiple permittees in order to pool the financial resources necessary to build and maintain the mitigation site. The ILF Sponsor is responsible for the success of the mitigation. Like banking, ILF mitigation is also typically off-site; however, unlike mitigation banks, ILF mitigation typically occurs after the permitted impacts. Like banks, ILF program operation is governed by an instrument drafted by the Sponsor, often based on district or state provided templates, and is subject to review and approval by the Corps and the IRT.

**ILF Project:** A compensatory mitigation project developed by an ILF program to offset permitted losses of aquatic resource functions and services. ILF projects are required to follow the same standards, development, and approval process as mitigation bank sites. The 12 required elements for mitigation plans (33 CFR 332.4(C)(2)-(14)/40 CFR 230.94(C)(2)-(14)) apply to bank, ILF, and PRM projects.

**ILF Project Site Plan Review:** Also referred to as ILF project (development) plan, site development plan, etc.

**In-kind:** A resource of a similar structural and functional type to the impacted resource.

**Instrument:** Refers to the ILF program and all associated exhibits/attachments. In some cases, the instrument is all-inclusive. In other cases, the instrument is the framework, and the exhibits/attachments provide the detail on each element (monitoring, site selection, etc.). Each ILF project site plan is considered a modification of the approved instrument.

**IRT (Interagency Review Team):** An interagency group of federal, tribal, state, and/or local regulatory and resource agency representatives that reviews documentation for and advises the co-chairs (Corps district and any other agency chairing the IRT) on the establishment and management of a mitigation bank, an ILF program, or ILF project (33 CFR 332.2/40 CFR 230.92). The reference to the IRT or IRT reviewer in this workbook is a reference to the IRT co-chairs (Corps and any other counterpart state, tribal, or federal agency with independent regulatory authority) as well as other IRT members (other federal, tribal, state, or local agency included on the IRT).

**Multiple authority ILF projects:** Also called “Joint Projects.” These are ILF projects that provide compensatory mitigation for resource impacts under more than one regulatory authority. Examples include ILF projects that provide compensation for resources regulated under CWA section 404 and the Endangered Species Act. Each regulatory agency has authority over credits providing compensation for impacts authorized under its jurisdiction.

**Out-of-kind:** A resource of a different structural and functional type than the impacted resource.

**Released Credits:** Those credits generated by an ILF project meeting performance milestones. The district engineer, in consultation with the IRT, may determine that those credits are available for sale or transfer, once any debited advance credits have been fulfilled. A proportion of projected credits for a specific mitigation bank or ILF project may be released upon approval of the mitigation plan, with additional credits released as milestones specified in the credit release schedule are achieved (33 CFR 332.2/40 CFR 230.92).

**Resource type:** The type of aquatic resource considered. Examples include wetlands, streams, or subsets like vernal pools, pine savannas, tidal marsh, intermittent streams, lagoons, etc.

**RIBITS:** The national web-based application used by a number of federal agencies to track mitigation bank and ILF activities. Sponsors and regulators use RIBITS for the management of ledger and reporting activities. To access it, go to: <https://ribits.ops.usace.army.mil/ords/f?p=107:2>

**Service area:** The geographic area within which impacts can be mitigated at a specific ILF program and/or ILF project site, as specified in the ILF instrument and/or ILF project site (33 CFR 332.2/40 CFR 230.92.2).

**Services:** The benefits that human populations receive from the functions provided by ecosystems (e.g., flood flow attenuation or water quality improvement).

**Sponsor:** ILF project Sponsor; any government or non-profit conservation organization responsible for establishing and operating an ILF program or ILF project. The ILF Sponsor is responsible for the success of the ILF program and all associated project sites.

**Subordination agreement (in context of other interests in property):** In compensatory mitigation, a subordination agreement makes any previously recorded easements, liens or encumbrances take second place in the mitigation site protection instrument. For example, suppose a mitigation site protection instrument was recorded after a deed to secure a debt, and the land was subsequently foreclosed upon to settle the debt. In that case, the site protection instrument could be terminated. Subordination makes the compensatory mitigation interest the primary property interest (“first in right”) and allows greater assurance that the mitigation site will withstand adverse actions such as foreclosure.

**Temporal Loss:** The time lag between the loss of aquatic resource functions or services caused by the permitted impacts and the replacement of aquatic resource functions or services at the compensatory mitigation site

**Watershed approach:** An analytical and strategic approach for selecting compensatory mitigation projects that consider the needs of a watershed and how the location and types of compensatory mitigation projects within the watershed address those needs. This same approach can be applied to other landscape/seascape units.

# Commonly Used Acronyms

Bank Enabling Instrument (BEI)  
Banking Instrument (BI)  
Compensatory Planning Framework (CPF)  
Environmental Protection Agency (EPA)  
Geographic Information Systems (GIS)  
Hydrologic Unit Codes (HUCs)  
Initial Evaluation Letter (IEL)  
In-lieu fee (ILF)  
Interagency Review Team (IRT)  
Letters of Intent (LOI)  
Long-term management (LTM)  
Mitigation Banking Instrument (MBI)  
Permittee Responsible Mitigation (PRM)  
Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS)  
United States Army Corps of Engineers (Corps or USACE)

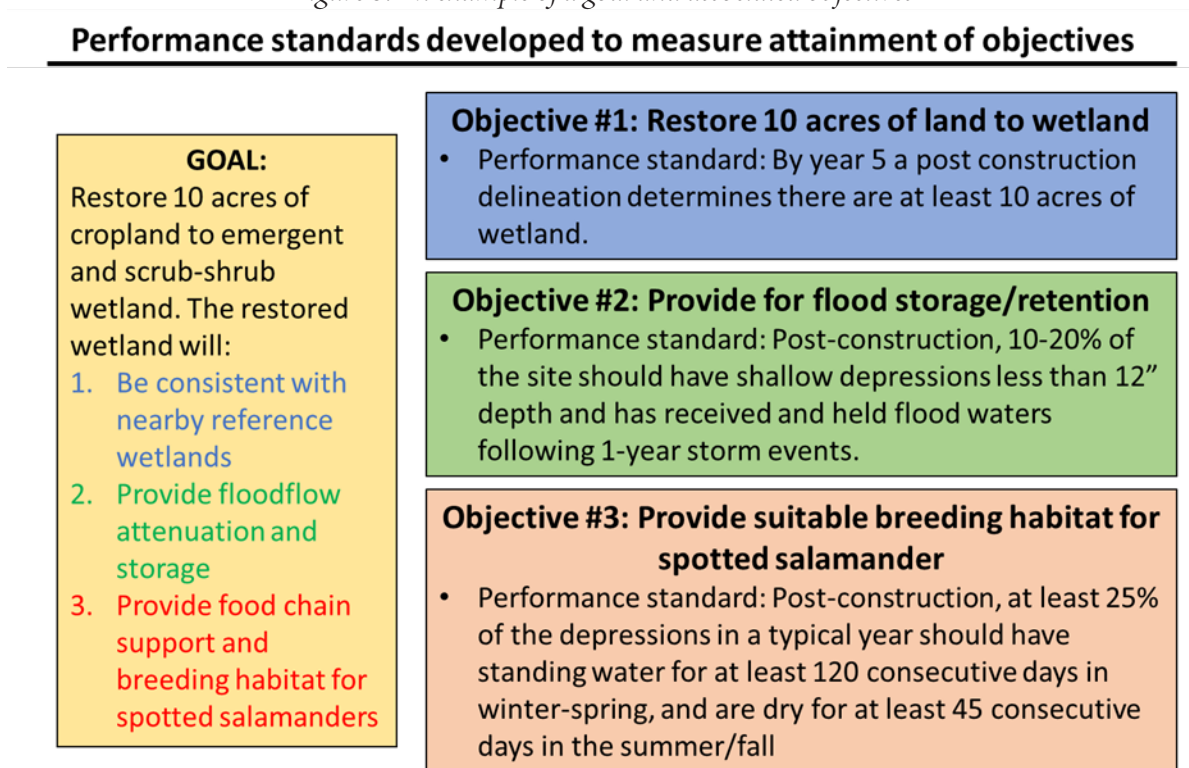


# Project Establishment

# 1. Project Goals and Objectives

Goals are the general guidelines that explain what you want to achieve and the rationale (why) for doing a project (Figure 3). Objectives identify a specific element of the goal and may define the strategies or steps needed to attain the stated goals (Ossinger 1999). Goals and objectives reflect the project’s purpose and need (goal), functions and services to be addressed (goal), and how the project will meet the defined performance standards (objective – measurable and quantifiable).

Figure 3. An example of a goal and associated objectives



1a. Does the project site fit within the goals and objectives of the CPF for the service area?

The CPF’s aquatic resource goals and objectives should discuss the type(s) of aquatic resources the ILF program is focused on restoring for each service area. It should also include general locations (statewide to project site) and amounts of aquatic resources the program will seek to provide (33 CFR 332.8(c)(2)(v)/40 CFR 230.98(c)(2)(v)).

The Sponsor may also include the overall goals of the ILF program (e.g., provide an alternative to permittee responsible mitigation, expand ILF mitigation to apply to larger scale projects/impacts, provide compensation for scarce or at-risk resources, contribute to environmental sustainability within the watershed, MA DFG 2014), or connect the program’s goals to the agency or organization’s overall mission (e.g., “provide effective and responsible levels of protection and restoration of New Hampshire’s aquatic resources through an efficient regulatory program...” NH DES 2018).

The selected project site should have specific goals and objectives that are consistent with the ILF program's CPF. For example, an ILF project conducted by the Maine Atlantic Salmon Restoration and Conservation Fund must further the program's goals of facilitating the passage of Atlantic salmon and contributing to the species recovery (ME DMR 2018).

**1b. Does the project site plan include a description of the resource type(s) and approximate amount(s) that will be provided?**

The type and amount of resource(s) to be provided by the project must be identified to enable reviewers to evaluate whether resources are consistent with the site's compensatory mitigation potential. On occasion, ILF project site plans may propose establishing resource types (wetlands or streams) that are not consistent with the landscape setting of the project site or that would not be sustainable. Those proposals are generally discouraged and should be reviewed carefully. The IRT reviewers can consider whether the desired resource types and amounts specified in the workplan are consistent with the district/state's credit determination mechanism.

An ILF program may have multiple project sites. Each project site will have its own site plan, which should provide a description of the resource type(s) and amount(s) to be provided by the ILF site.

**1c. Does the project site plan identify functions and services to be provided by the project site?**

The functions and services to be provided by the site should be clearly identified to ensure they are relevant to the project and as mitigation required for unavoidable impacts. Descriptions should be focused on the functions and services targeted for improvement or preservation by the project. Seasonal wetlands may perform denitrification, which is a function; the service associated with this function is the resulting water quality improvement. Different resource types provide different functions and services. Seasonal palustrine wetland restoration may not provide the same functions as tidal wetland restoration.

**1d. Does the project site plan include the methods used for compensation?**

For each resource type(s) that would be provided on the project site, the project site plan should include the amount of re-establishment, rehabilitation, establishment, enhancement, and preservation proposed (see 33 CFR 332.2/40 CFR 230.92).

**1e. Does the project site address ecological resource needs within the watershed or landscape setting in which the project site is located?**

The ILF project site plan should include a list of ecological resource needs within the watershed or landscape setting and an explanation of how the site will address those needs. The project site plan should address identified ecological resource needs in the watershed, such as water quality and quantity issues (e.g., TMDLs, persistent flooding and property damage), at-risk species habitat, lost or diminishing wetland habitat types, and the project site plan should explain how the site will address those needs. With respect to federally and state-listed species and habitat, the mitigation project should address limiting factors, including habitat, in the respective recovery units such as watersheds, estuaries, and marine basins. This information can be found in documents such as recovery and conservation plans.

## 2. Site Selection

How was the ILF project site selected, and is it appropriate for the mitigation type/needs? What does it mean to be an appropriate ILF project site? Information regarding site selection can be found in multiple locations within the regulations, as it is applicable to many of the elements/components of mitigation. This is because the selection of a mitigation site is the single most important factor in determining a mitigation project's future success. The selection of a project site may influence other factors, such as the ability to provide durable site protection, the likelihood of meeting ecological performance standards, credit yield from the project, and even potential long-term management needs. To ensure all components of site selection are identified and discussed, citations for the major regulatory components are included below. Note, ILF project sites must also be fully consistent with the site selection elements laid out in the ILF program's Compensation Planning Framework (33 CFR 332.8(c)/40 CFR 230.98(c)).

### Site Selection

A description of the factors considered during the site selection process (33 CFR 332.4(c)(3)/ 40 CFR 230.94(c)(3))

**Type and location of compensatory mitigation** (33 CFR 332.3 (b)(1)/40 CFR 230.93(b)(1)):

- Project sites should be located within the same watershed as the impact site, where they are most likely to replace lost functions, and should take into account the site's watershed scale features.
- For marine and estuarine mitigation, project sites should be located within the same marine ecological system (basin, littoral cell, or bay) where they can replace the same functions and services.
- Compensation for impacts to aquatic resources in coastal watersheds should also be located in a coastal watershed where practicable.

**Watershed approach** (33 CFR 332.3(c)/40 CFR 230.93(c)). Application of the watershed approach to site selection means that project sites should take into consideration the following features within the watershed:

- Habitat requirements of important species
- Habitat loss and conversion
- Trends in land use
- Compatibility with adjacent land uses
- Ecological benefits
- Whether the project addresses watershed, estuarine, or marine needs
- The suite of functions to be provided
- Degraded aquatic resources and identification of immediate and long-term aquatic resource needs within the watershed

**Site Selection** (33 CFR 332.3(d)/40 CFR 230.93(d)) considerations:

- Hydrologic conditions, soil characteristics, and other physical and chemical characteristics
- Size and location of the site relative to hydrologic conditions (including water rights)
- Watershed scale features such as aquatic habitat diversity and habitat connectivity
- Whether the project site may be incompatible with adjacent land use activities (i.e., development around site, the site may pose localized flooding or mosquito issues)

- 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 federally or state-listed species
- Other relevant factors such as:
  - o Upstream/downstream watershed conditions,
  - o Likely future conditions (i.e., more development proposed or anticipated effects of sea level rise or climate change),
  - o Anticipated land use trends,
  - o Local or regional goals for resource restoration or protection,
  - o Re-establishment of corridors or habitat for at-risk species,
  - o Water quality and floodplain management goals, and
  - o Relative potential for chemical contamination of aquatic resources.

**Mitigation Type** (33 CFR 332.3(e)/40 CFR 230.93(e)):

- In general, in-kind mitigation is preferred to-out-of-kind because it is more likely to compensate for functions and services lost at the impact site.
- For difficult-to-replace resources (e.g., bogs, springs, streams, Atlantic white cedar swamps), if further avoidance and minimization are not practicable, then the required compensation should be provided through in-kind rehabilitation, enhancement, or preservation.

**Some additional site selection considerations in other portions of the Mitigation Rule:**

- **Public and Private lands** – Project sites can be situated on private or public lands, with some different requirements associated with each option (33 CFR 332.3(a)(3)/40 CFR 230.93(a)(3)).

**Private vs. public lands...**

- ▶ On private land, a project site is required to protect the land through a conservation easement or other protection documents.
- ▶ On public lands, the land may already be considered conserved and, as such, may not require additional protections.

Exceptions to this include federal lands that are subject to uses incompatible with conservation, like grazing, timber, and mining activities. These lands may not be the best choice for mitigation projects unless additional protection measures can be put in place (see section on-site protection). Intertidal and sub-tidal lands are often state-owned. These areas may require additional measures to ensure their use for mitigation is consistent with the state agency’s mission and state code. On a side note, some federal agencies may not allow compensatory mitigation actions on their lands (i.e., U.S. Fish and Wildlife Service Final Policy on NWR System and Mitigation, 1991).

- **Preservation** - Incorporating areas of preservation in a project site must comply with the five criteria for preservation discussed in (33 CFR 332.3(h)/40 CFR 230.93(h)).



### **Preservation Land Criteria**

All of the following five criteria must be met:

1. Resources to be preserved provide important physical, chemical, or biological functions for the watershed,
2. Resources to be preserved contribute significantly to the ecological sustainability of the watershed, estuary, or marine area,
3. Preservation is determined to be appropriate and practicable,
4. The resources are under threat of destruction or adverse modification, and
5. The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to a state agency, or land trust).

- **Buffers** (33 CFR 332.3(i)/40 CFR 230.93(i)) - Both upland buffers and riparian areas may contribute to sustainability, and ecological functioning of project sites - consider whether the project would establish or augment a conservation corridor.
- **Financial assurances** (33 CFR 332.3(n)(2)/40 CFR 230.93(n)(2)) - Factors influencing the amount of short-term assurances required for a project include the size and complexity of the project, likelihood of success, and degree of project completion.
- **Site protection** (33 CFR 332.7(n)/40 CFR 230.97(n)) - The ability to provide durable long-term protection of a mitigation project is a key consideration in site selection. Key considerations for site protection include:
  - o The potential protection mechanism (easement, declaration of restrictions, title transfer, federal facility management plan, etc.)
  - o Whether the mechanism used would prohibit incompatible uses of the property
  - o Whether there are any conflicting uses of the property itself (i.e., mineral or timber extraction)
- **Sustainability** (33 CFR 332.7(b)/40 CFR 230.97(b)) - The project must, to the maximum extent practicable, be sustainable after performance standards have been met.
- **Long-term management** (33 CFR 332.7(d)/40 CFR 230.97(d)) - The requirement for long-term management of mitigation projects, including the associated financing, may influence site selection. For example, foreseeable management needs, including structures like gates, fencing, and water controls or ecological management, such as prescribed fire or control of invasive species, may be important considerations in site selection.

The section of the Mitigation Rule devoted to third-party compensatory mitigation also restates some of the site selection factors discussed in earlier sections of the federal regulations. For example, regulations discussing requirements for a prospectus (33 CFR 332.8(d)(2)(vii)(B)/40 CFR 230.98(d)(2)(vii)(B)) state that the prospectus must include consideration of potential ecological benefits that the project may provide as well as the relationship of the proposed project site to hydrologic sources (including the availability of sufficient water rights to the long-term sustainability of the project).

In summary, the project site plan should include:

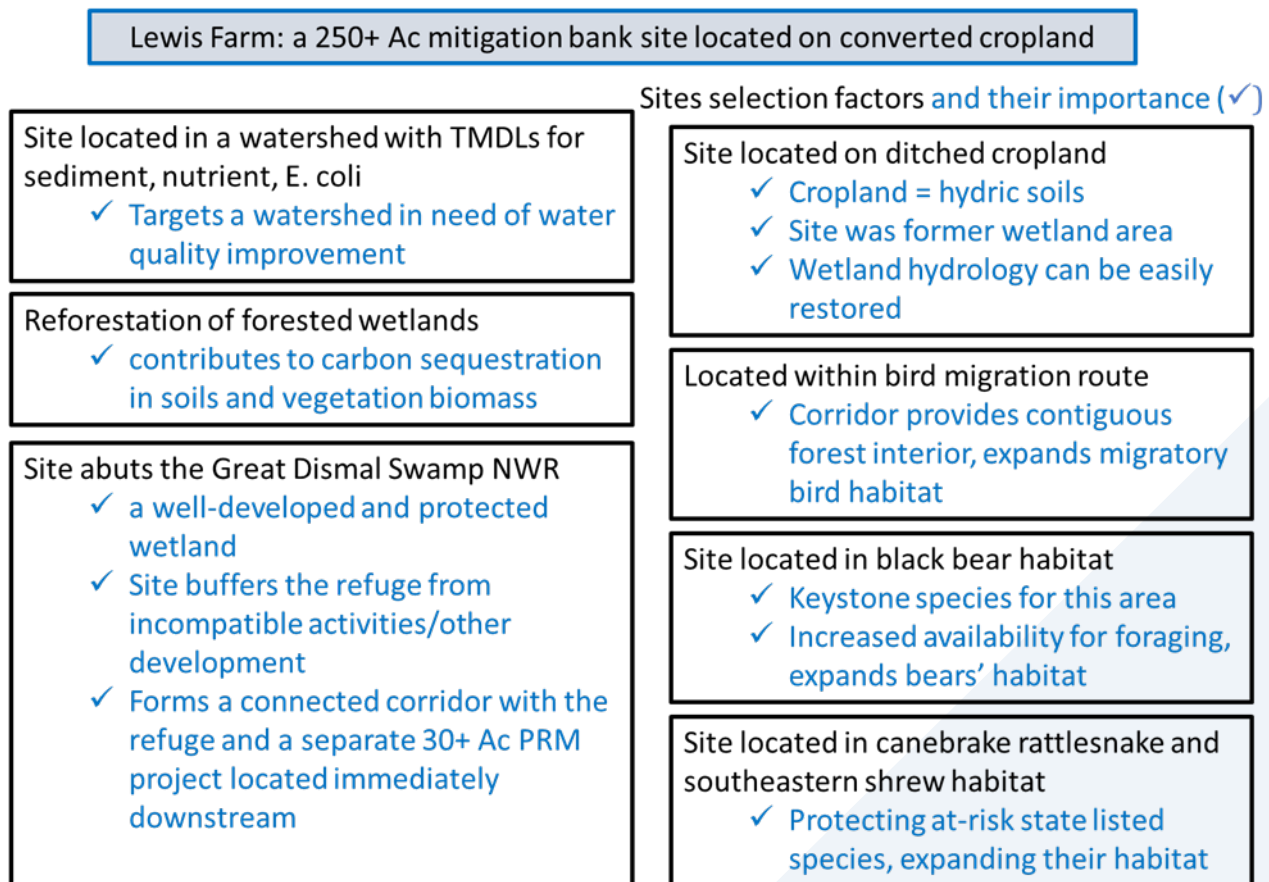
- A brief rationale for how a certain project site was selected and an explanation for why it is a suitable candidate for fulfilling mitigation needs. The narrative should clearly state the aquatic resource

functions/services proposed and identify any supporting information used in site selection, such as State Wildlife Action Plans, watershed plans, water quality improvement plans, conservation plans, recovery plans, etc.

- Discussions on the critical watershed conditions/characteristics (including those mentioned above) that could influence the success of the proposed project goals and objectives. The project site plan should provide specific, concrete examples/criteria.
- For project sites that include mitigation for state and federally listed species, site selection should take into consideration recovery goals and limiting factors for the target species

A case example is provided to aid the reviewer (Figure 4). The headings (black text) represent project site selection factors, and the bullets (blue text) explain the importance of these factors. While all criteria may not be included, a majority should be included and addressed for a complete proposal.

Figure 4. A case example of site selection factors



Evaluating the questions below, the reviewer should consider the extent to which site selection addresses the ILF Sponsor's goals and objectives.

2a. Is the ILF project site located within the watershed or landscape position where it is most likely to either replace lost functions and services or enhance existing, compromised functions and services as described in the approved ILF program instrument and/or CPF instrument?

This question asks whether the ILF project site is located where it is likely to provide at least some of the functions and services typically lost as a result of permitted actions (33 CFR 332.3(b)(1)/40 CFR 230.93(b)(1)). These functions and services should be identified in the project's goals and objectives. The IRT reviewer should consider whether those functions and services are likely to be provided at the site. For example, a wetland restoration project located adjacent to existing wetlands may be more likely to contribute to watershed biodiversity (function); restoration of a seasonal wetland in the watershed headwaters may be more likely to support denitrification (function); and floodplain restoration in higher order floodplains may be more likely to contribute to floodwater abatement (service).

If an ILF program purchases mitigation bank credits to fulfill its mitigation obligations, the location of the bank site providing those credits must be consistent with the site selection strategy identified in the ILF program's CPF.

2b. Does the project site include areas that were formerly aquatic resources or are currently degraded aquatic resources?

Review the proposed project site to determine if it is or ever was an aquatic resource. The likelihood of success for a compensatory mitigation project is greater when restoring (re-establishing or rehabilitating) or enhancing degraded aquatic resources than when establishing (creating) an aquatic resource where one did not previously occur. The reviewer should consider if the landscape would support the aquatic habitat (33 CFR 332.3(a)(2)/40 CFR 230.93(a)(2)). Is evidence provided to document former aquatic resource conditions? Such evidence may include historic aerials, historic soil surveys, and/or historic USGS topographic maps. See also Element 3: Baseline Information for more information.

2c. Does the project site include buffers that would protect it from its surroundings? Does it help buffer other conserved aquatic resources from potentially incompatible activities?

Project sites may also include wetland and/or upland buffers. Buffers may be restored, established, enhanced, or preserved. They may be required to ensure the viability of mitigation sites as well as provide habitat or corridors for ecological functioning of the aquatic resources. Buffers, when proposed, should provide meaningful ecological value and generate compensatory mitigation credit.

The first question refers to whether the project site has adequate buffers to ensure the integrity of the site. The second question addresses whether the site itself is buffering other aquatic resources (i.e., a project site located adjacent to a national wildlife refuge is buffering the refuge) (33 CFR 332.3(i)/40 CFR 230.93(i)). The IRT reviewer should refer to any local district or state guidelines regarding buffer requirements and crediting.

2d. Is the project site adjacent to other conserved aquatic resources or does it help establish, or extend a conserved corridor?

Similar to the above question, the intention is to determine if the project site is part of a larger network of conserved aquatic resource habitat. Consideration should be given to whether the proposed ILF project site helps to establish or extend a planned conservation corridor or is within areas designated as critical fish and wildlife habitat or other state, regional, or local natural resource designations (e.g., National Wild & Scenic rivers, outstanding waters, aquatic reserves, imperiled habitats, etc.). For example, expansion of contiguous protected aquatic resource habitat may provide greater ecological value than an isolated wetland (33 CFR 332.3(d)(3)/40 CFR 230.93(d)(3) and ((33 CFR 332.3 (b)(1)/40 CFR 230.93(b)(1)).

Additionally, the reviewer should consider the proximity of the project site to protected lands or waters.

2e. Has the proposed project site addressed the ecological priorities and needs identified in the CPF for the project landscape/watershed, such as chronic environmental conditions (flooding, impaired water quality, insufficient habitat for important aquatic species, etc.) (33 CFR 332.3(c)(3)/40 CFR 230.93(c)(3))?

The CPF functions to strategically select and prioritize ILF compensatory mitigation sites. The proposed project site should be fully consistent with the CPF. The reviewer should consider whether the proposed ILF project site addresses ecological needs for the project site and its surrounding (upstream/downstream) watershed. For example, if the receiving water has a TMDL for sediment, a proposed project site that includes stream restoration would likely have a goal to reduce sediment input into the system. The same applies for systems that suffer from chronic flooding, low dissolved oxygen levels, or have high nutrient loading. Restoration of wetland and/or streams could improve water quality and better manage storm flows, which in turn helps improve downstream conditions (33 CFR 332.3(c)(3)/40 CFR 230.93(c)(3).

Reviewers should also consider the susceptibility of the site to risk factors like climate change or sea level rise. This is particularly relevant for estuarine projects where sea level rise will likely affect design elevations and target habitats.

For proposed ILF project sites located in marine or estuarine environments, consideration should be given to whether the project is likely to address identified ecological needs within the same ecological system (e.g., same reef complex, estuary, littoral drift cell, embayment, wave climate, etc.) (33 CFR 332.3(c)(2) (v)/40 CFR 230.93(c)(2)(v). For example, has the ILF project site plan addressed any identified ecological needs within a certain coastal habitat or across a matrix of coastal habitats (e.g., vegetation such as salt marsh, mangroves, or submerged aquatic vegetation, reef structures such as oyster reefs or corals, and/or unvegetated/unstructured intertidal or subtidal areas such as mudflats and sandflats). See also question 7c in Element 7: Service Area.

2f. Are there any apparent potential constraints and/or limitations to the proposed project site? Are any of these critical to successful project establishment or operation?

Are there any factors that complicate design, development, and/or implementation of a proposed ILF project site? For example, adjacent development activities or historic districts, which could limit the amount of property available to implement the project site and/or the types of mitigation activities that can occur on the property, existing easements limiting activities on the parcel(s) where the project site

is proposed, sensitive fauna/flora species or archaeological/cultural sites, environmental contaminants, utility crossings, drainage canals, or severed sub-surface rights that could constrain project viability. Also, proximity to airports may increase risks to aviation by attracting wildlife to areas where aircraft-wildlife strikes may occur (e.g., near airports) (33 CFR 332.3 (b)(1)/40 CFR 230.93(b)(1)).

Constraints should be evaluated in the context of the proposed mitigation activities on the project site. In a number of states (e.g., Texas and Louisiana), severed sub-surface (oil, gas, and mineral) rights are the norm. Use of a minerals management plan is one way to ensure that the project will not be disturbed by future mineral development activity.

Factors that could be considered critical to project establishment and operation may include the following:

- Questions/concerns about the adequacy of appropriate water rights to support a wetland project,
- The net effects of the project design and management on federal or state listed species,
- Other interests in the project site property (e.g., severed mineral rights, drainage easements, prior-recorded easements), or
- Consequences of local/state laws and ordinances (e.g., law or ordinance that restricts conversion of agricultural land to wetlands).

These factors should be addressed in the project site plan with supporting documentation provided in the plan or accompanying exhibits (e.g., title reports or property assessment and warranty documents).

#### 2g. Is this project site ecologically suitable for providing the desired aquatic resource functions/services within the subject watershed or landscape position?

This is a critical question in evaluating site selection. It is all encompassing, tying together all components and considerations discussed in the introduction to this element. To address this question comprehensively, the reviewer should consider each of the criteria in the bulleted list at the introduction to this element (33 CFR 332.3(d)(1)/40 CFR 230.93(d)(1)).

This question builds on the first question in this element (2a), which asks if the site is located where it has the potential to replace lost functions and services. Even though the project may be appropriately located, it may not have the capacity to provide those desired functions and services. Other factors - e.g., adjacent land uses, future development plans, severed oil and gas rights, or limited water rights - could disqualify the site as being suitable to provide the intended functions/services.

Suitability includes many elements, including an appropriate hydrologic source and regime to support the desired aquatic resource type (i.e., seasonal wetland, intermittent stream). For example, the hydrologic regime for a seasonal wetland may be characterized by seasonal saturation or temporary inundation for a seasonal wetland, and the hydrologic regime of an intermittent stream has flows part of the year but is not supported solely by precipitation. Also refer to question 3a under Element 3: Baseline Information.



### 3. Baseline Information

The baseline condition is needed to evaluate whether a site is appropriate for the type of compensatory mitigation proposed as well as for comparing pre-project (baseline) and post-project conditions. This comparison can then be used to determine degree of change in function or condition (uplift) and the actual credit yield (33 CFR 332.8(o)(3)/40 CFR 230.98(o)(3)).

3a. Does the ILF project site plan include a description of the baseline watershed/landscape, and ecological characteristics of the proposed project site?

The project site plan should have a section or dedicated narrative discussing the watershed and landscape characteristics for a proposed site and its surroundings (upstream and downstream) that provides the context of the project site, such as sources of hydrology and existing topography (33 CFR 332.3(d)(1)/40 CFR 230.93 (d)(1)).

#### **Baseline Information**

A description of the ecological characteristics of the proposed compensatory mitigation project site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions... should also include a delineation of waters of the United States on the proposed compensatory mitigation project site (33CFR 332.4(c)(5)/ 40 CFR 230.94(c)(5)).

#### **Types of Information that may be included:**

- Most recent soils mapping and classification
- Historic aeriels and soils mapping and classification
- Wetland delineation information (ID per USACE wetland delineation manual criteria)
- USGS topography or LiDAR imagery
- Historic USGS topo maps and USGS or state/local level surrounding land use map
- Watershed scale map showing location of site relevant to other named aquatic features and public/private conservation lands and other protected lands
- Critical habitat for site and surrounding areas
- FEMA floodplain maps
- Natural areas inventory maps of the site and surrounding areas
- Historic extent of shellfish beds, coral reefs, or submerged aquatic vegetation (SAV) areas
- Historic extent of estuarine areas

3b. Is the baseline data applicable and comparable to data that will be collected post-construction (performance standards)?

The baseline information should include information such as groundwater well data, surface water stage data, estimated or measured hydroperiod data, stream bank stability and channel morphology data, vegetation data, and, if applicable, water quality data (e.g., temperature, conductivity, oxygen levels) that can be measured consistently to establish the existing condition, pre-construction, and the restored state,

post-construction. The data collected pre-construction would be considered a benchmark for the degree of change in function the post-construction state achieves.

### 3c. Do the baseline conditions support the project's goals and objectives?

Prior to reviewing the designs/improvements proposed, the reviewer should make certain that the selected site(s) has a high likelihood of meeting its goals and objectives. A palustrine forested wetland should not be proposed for a desert environment, as desert conditions (i.e., lack of consistent hydrology, unsuitable soils, etc.) are not suitable for this habitat type. If the re-establishment of a vernal pool is proposed where there isn't a restrictive soil layer. In this case, the mitigation work plan (Review Element 4) would have to address this constraint. Similarly, reviewers should examine the site conditions and compare them with the project's mitigation goals and objectives to determine if the site is appropriate for the proposed resources.

### 3d. Does the project site plan include or reference a delineation of wetlands/waters?

A wetland/waters delineation is a required component of the ILF project site plan (33 CFR 332.4(c)(5)/230.94(c)(5)). It is an important source of data that, like the example baseline data sources listed in 3b, is used for comparing the baseline wetland/waters condition and extent to its post-mitigation condition and extent (e.g., for any new wetland creation or enhancement of existing wetlands).

Note, a delineation is used to determine whether the project site meets technical criteria for consideration as an aquatic resource (e.g., wetland, stream). Delineations are typically not synonymous with jurisdictional determinations. Whether an aquatic resource is jurisdictional or not is a separate matter from whether a project site meets wetland or stream technical criteria.

### 3e. Does the project site plan include information related to at-risk fauna and flora species and/or other regulated resources (cultural/archaeological)?

Baseline information should include a review of presence/absence of state and federal rare, threatened, or endangered (RTE) species and regulated state and federal historic and archaeological resources for the proposed project area and its surroundings. If any sensitive fauna/flora species are identified, their associated state/federal regulatory status and habitat requirements should also be included. Part of determining whether a site with sensitive resources is an appropriate mitigation site is to evaluate the effects to these resources. Will the site conserve and protect sensitive cultural or archaeological resources or, in the case of fauna/flora, provide an opportunity to enhance/expand their current habitat?

### 3f. Does the project site plan include the location and extent of any utilities and other infrastructure in the project vicinity?

The presence (or absence), location and extent of utilities, and other infrastructure should be noted, as they may not be compatible with the project's goals and objectives. If a sewer line runs through the middle of a proposed wetland mitigation site, what are the requirements for maintenance access to this sewer line? If the site needs to be graded down to access the water table, will increasing surface hydrology affect the sewer line?

Similarly, for projects in marine or estuarine environments, are underwater utilities present? The ILF project site plan should identify all existing and proposed infrastructure. The plan should also consider the potential impacts (direct or indirect) of this infrastructure on the ILF project site as well as any proposed measures that allow for attainment of project goals and objectives without future impacts to the site. For more detail, see also Review Element 6: Site Protection Instrument.

3g. Does the project site plan include the location and information related to any existing easements, rights-of-way (ROWs), or other property restrictions?

This question builds on question 3f. and is discussed in greater detail in Review Element 6: Site Protection Instrument. If there are any existing easements (such as utility or drainage), ROWs, or other interests in the project site property, such as liens or mortgages, they should be clearly identified and explained, as they may not be compatible with the project's goals and objectives. Mitigation often requires overlay easements, deed restrictions, or even subordination of existing easements to the easement (refer to Terminology and Review Element 6: Site Protection) to better ensure a mitigation site is protected in the long-term; existing easements may allow or prohibit an overlay easement. Any restrictions should not impede or inhibit the design, construction, or post-construction condition of the proposed mitigation site. If any of these apply, the site is not adequate for conducting mitigation.

Note, if drainage or utility easements or ROW are present, consider whether they have been excluded from the credit calculations. The IRT reviewer should also evaluate these features in the context of the project (whether they have a negative effect on the proposed mitigation project). The presence of ROWs does not necessarily disqualify a site from consideration.

## 4. Mitigation Work Plan

Mitigation Work Plan components may include project boundaries, construction methods, sequence, grading, elevations, slopes, soil and vegetation management, stream planform geometry, channel form, design discharge, etc. (33 CFR 332.4(c)(7)/40 CFR 230.94(c)(7)). The mitigation work plan may be used as an oversight tool; it is a reference that the IRT can use in reviewing construction, reviewing as-builts, and identifying needs for maintenance, remediation, and/or adaptive management.

**Mitigation Work Plan**  
Detailed written specifications and work descriptions for the compensatory mitigation project... (33CFR 332.4 (c)(7)/ 40 CFR 230.94(c)(7)).

Other resources have been developed specifically to support the review of mitigation work plans such as the Natural Channel Design Review Checklist (Harman and Starr 2012) and the Wetlands Engineering Handbook (USACE ERDC 2000). A number of district- or state- specific tools have also been developed, for example: Charleston District's 2010 Mitigation Plan Template, the New Orleans District resource-specific template mitigation workplans (Bottomland Hardwood, Swamp, Marsh, and Pine Flatwood), and the New England District's 2016 Mitigation Compensatory Mitigation Guidance, which includes guidelines to assist in the review of mitigation plans for a number of resource types. Other districts/states are in the process of developing mitigation work plan guidelines.

**4a. Does the project site plan include the required work plan components? Do these components have detailed specifications and descriptions?**

The mitigation work plan should contain detailed written specifications and work descriptions for the project (33 CFR 332.4(c)(7)/40 CFR 230.94(c)(7)). The work plan may include but is not limited to the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing proposed plant communities; plans to control invasive plant species; proposed grading plan, including elevations and slopes of the substrate; any berms or water control/water management structures, soil management; and erosion control measures. Refer to local state and/or district guidelines and any established templates for specific components included in a mitigation work plan.

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-sections), watershed size, design discharge, and riparian area plantings (33 CFR 332.4(c)(7)/40 CFR 230.94(c)(7)).

**4b. Are the work plan components reflective of the project's goals and objectives?**

For example, it would not be appropriate for a wetland restoration work plan on a mineral flat, where the primary hydrologic inputs are a seasonally high-water table and precipitation to include elements associated with stream restoration (e.g., cross-sections, design discharge). The work plan should reflect the type of aquatic restoration proposed, the functions and services proposed to be provided, and be consistent with the manner of project implementation.

4c. Do the work plan components follow established best practices or provide an explanation discussing why the approach is appropriate?

For example, a restoration designer may propose to use a new design or material for temporary bank stabilization during vegetation establishment; this should be supported by an explanation of why the design and/or material is appropriate and how it will work. Additionally, relevant references supporting the work plan approach should be cited in the ILF project site plan.

Consider whether work plan components are appropriate to the baseline conditions. In the past, some stream restoration projects entailed more extensive work to re-establish channels than the conditions warranted. Relevant references supporting the work plan approach should be cited in the project site plan.

4d. Does the work plan consider the presence of any existing infrastructure (i.e., utilities) or easements?

Existing infrastructure and any easements should be identified in both the baseline and mitigation work plan sections of the project site plan and associated exhibits. The mitigation work plan should take this information into consideration because of the potential for incompatibility with the ILF project site's goals and objectives. See Element 3f. and 3g. above for more on this topic.



## 5. Project Budget Review

The ILF program credit fees are required to be based on full cost accounting; that is, they must be sufficient to cover the full cost of project selection, design, implementation, management, and contingency costs (to address uncertainties) (33 CFR 332.8(o)(5)(ii)/40 CFR 230.98(o)(5)(ii)), associated with restoration, establishment, enhancement, or preservation of aquatic resources. The full cost of selection, design, implementation, monitoring, site maintenance, and adaptive and long-term management of an ILF project should thus be reflected in the ILF project budget.

The ILF project budget should include all the elements necessary for ILF program operations, including project implementation and management. The funds available for the mitigation projects are typically limited to funds in the ILF program account for the service area in which the project is located. Mitigation funds for projects may not be commingled with funds from other sources (i.e., grants, donations) that cannot be used to generate mitigation credits (33 CFR 332.8(i)(1)/40 CFR 230.98(i)(1)).

The Preamble to the Mitigation Rule (Federal Register / Vol. 73, No. 70 Thursday, April 10, 2008, page 19657) states that,

*"The district engineer does not need to authorize each individual disbursement from the account, but must provide written approval for the project, based on a review of the project mitigation plan, which will include a description of activities and projected costs. Once the project is authorized, funds disbursed from the account must be spent for the project in a manner consistent with the approved project mitigation plan."*

### **Proposed ILF Project Review**

The Sponsor must submit proposed in-lieu fee projects to the district engineer for funding approval. Disbursements from the program account may only be made upon receipt of written authorization from the district engineer, after the district engineer has consulted with the IRT (33 CFR 332.8(i)(2)/40 CFR 230.98(i)(2)).

The project budget is part of the project site plan package submitted to the IRT Chair or co-chairs for review.<sup>5</sup> The Chair or co-chairs are charged with approving the project site plan and the associated project budget following coordination with the IRT. Note, the ILF Sponsor (through full cost accounting) is responsible for ensuring that a project satisfies the ILF program's advance credit liability and is funded with available funds.

There is considerable variability in the approach that IRT members take in reviewing ILF project budgets in different states/districts. When reviewing the project site plan, IRT members tend to focus and comment on the technical aspects of a project, including site selection, project design elements, and long-term management (and associated funding). Once a project site plan is approved, the IRT may review overall costs per credit and compare this to current credit prices using the data from annual reports submitted by the ILF program.

<sup>5</sup> It is good practice for the ILF program to submit a preliminary budget to the Chair or co-chairs and IRT at the project prospectus phase, (project costs may only be approximate at that point and subject to revision).

Some IRTs, such as those in the Nashville District, focus on the cost per credit associated with proposed projects (Joshua Frost, Pers. Comm). They consider the total project cost and divide that by the proposed credit yield to obtain an estimated cost per credit. That cost per credit is compared against the current credit fee schedule to help determine whether the fee schedule is capturing the full cost of project implementation. In some districts, this evaluation is conducted while the project is being implemented rather than prior to project approval, using annual report data.

**Some Approaches Used by IRTs to Evaluate Proposed Budgets Include:**

- a. The Sponsor walks the IRT through the budget to see if it is logical, reasonable, or whether some elements are missing or insufficiently covered.
- b. Compare the proposed budget to similar projects in the program service area. Districts/states with considerable experience with ILF projects may have robust data sets from previous projects to draw upon when evaluating proposed project budgets. Data from previous projects implemented through request for proposals (RFPs) may also prove useful in budget evaluation.
- c. Use software-based applications like The Nature Conservancy’s (TNC) Stewardship calculator<sup>6</sup> (2016) or the Center for Natural Lands Management’s (CNLM) Property Analysis Record<sup>7</sup> (2018). These applications have proved especially useful in evaluating proposed long-term management expenses for ILF projects.
- d. Use agency cost engineers (such as those associated with each Corps District) to evaluate project budgets using standard tools like Micro-Computer Aided Cost Estimating System (MCACES) or RSMeans and determine whether the proposed budget is reasonable.
- e. Require the ILF Sponsor to provide a third-party estimate of the construction, monitoring, and maintenance costs to verify that the proposed costs are reasonable.

Other IRTs, such as the Seattle District, which oversees the King County ILF program, focus more on the budget line items rather than the cost of credits for permittees (Suzanne Anderson, Pers. Comm.). These IRTs tend to focus on construction costs. For projects involving at-risk species like salmonids, state wildlife agencies, NOAA Fisheries, and Tribal members are actively involved in reviewing project design and costs and considering potential trade-offs between desirable ecological elements (i.e., fish habitat elements) and those ecological elements required of the project site to offset permitted impacts such as freshwater wetlands. According to several ILF program Sponsors and IRT co-chairs, IRTs are increasingly focusing on specific budget elements such as stream construction work and long-term management (Suzanne Anderson, Joshua Frost, Karen Johnson, Devin Schenk, Pers. Comm). Another approach might be to consider the budget as a whole and divide it by the number of anticipated credits to compare the per credit price to advance credit prices (or even bank credit prices where that information is available). If the calculated price is less than advance credit, then IRT members may want to consider whether the project budget is consistent with full cost accounting (ERBA, Pers. Comm).

<sup>6</sup> <https://www.conservationgateway.org/ConservationPlanning/ToolsData/Pages/stewardshipcalculator.aspx>

<sup>7</sup> <https://www.cnlm.org/par/>

Several IRTs focus on ensuring all costs, including long-term management, are captured in project budgets. The project site plan should include a budget that lists the various aspects of project implementation and management, such as acquisition, design, construction, monitoring, maintenance, long-term management, and contingency costs. An example of this can be seen in the preliminary budget for a proposed ILF project in Ohio (TNC 2020). This preliminary budget was used for planning purposes only but is a good starting point/example for those developing and/or reviewing an ILF project budget.

It is important to note that as the ILF project site plan is developed, reviewed by the IRT, and refined, the project budget develops accordingly. Typically, each aspect of the project is further divided into logical tasks, whether the project is implemented by the ILF program in-house or contracted through a RFP process. The Ducks Unlimited (DU) McIntyre mitigation project (DU 2018a) is an example of a budget for a project designed and implemented in-house by an ILF program (DU 2018b). This project budget covers land acquisition, planning, protection, construction, monitoring, maintenance, financial assurances, and long-term management. Another in-house example is the Flying M Ranch Vernal Pool Preservation Project plan developed by the National Fish and Wildlife Foundation (NFWF 2019). The plan has a robust project budget that details anticipated expenses for full project implementation, including easement acquisition and long-term management (Attachment 9, NFWF 2019).

The Pixieland ILF project is an example of a budget for a project implemented through an RFP issued by the Oregon Department of State Lands (OR DSL 2012). The pre-implementation phase of the project includes development of a grading plan and soil balance calculations, development of a contract, and baseline monitoring.

Very few project budgets are publicly available, as most ILF programs and/or Districts consider their content to be proprietary or confidential information, not subject to release under the Freedom of Information Act (FOIA, see 5 U.S.C. § 552). In some cases, final and approved project budgets may be accessed through RIBITS, usually as part of a larger approved project site plan. Summary project data are also typically available in ILF program annual reports. Examples include annual reports for the Virginia Aquatic Resources Trust Fund (TNC 2021), Maine Natural Resource Conservation Program (ME DEP 2021), and New Hampshire's Aquatic Resource Mitigation Fund (NH DES 2018).

**5a. Does the IRT have an established procedure/methodology for reviewing project budgets at the project site plan stage, and if so, does the plan follow it?**

While established procedures or guidelines for IRT review of project budgets are not readily available on public websites such as RIBITS or district web pages, the IRT reviewer should check whether the district or state has established project budget review procedures/methodologies, and if so, verify the plan follows those guidelines.

**5b. Does the project site plan include information supporting the budget, such as a narrative or tables?**

The plan should include some form of a budget. That budget may be presented as a separate document or spreadsheet that is available for consideration by the IRT, as a part of the plan, or as an appendix or exhibit. The Virginia Aquatic Resources Trust Fund submits project budgets to the IRT as separate non-releasable documents (Karen Johnson, Pers. Comm.). The project site plan for Keys Restoration Fund's (KRF) Crane Point project includes a brief budget narrative discussing total costs, including construction, monitoring,

long-term management, and contingencies (KRF 2015). The budget for the McIntyre Road Mitigation Plan developed by the DU New York ILF Program covers the range of estimated project costs, including site acquisition, plan development, construction, monitoring, and management costs (DU 2018a).

**5c. Does the project budget consider the potential cost/credit for the project and the extent to which the project would help the ILF program satisfy any advance credit liabilities?**

A number of IRT co-chairs and ILF Sponsors have indicated that their IRTs were interested in potential costs/credit for a project and/or the extent to which a project satisfied advance credit liabilities (Leslie Day, Joshua Frost, Devin Schenk, Pers. Comm.). In some cases, the ILF Sponsor provides that information to the IRTs with the project budget and plan (Karen Johnson, Pers. Comm.). Otherwise, IRTs may be able to estimate per credit cost by taking the estimated project cost found in the project budget and dividing that by the estimated number of credits generated by the project. For example, the total estimated cost of the DU McIntyre Road project (DU 2018a) was \$1,090,149, with 17.25 credits estimated total yield, resulting in an estimated per credit cost of \$63,197. The 2018 ILF instrument reported advance credit costs in this service area of \$90,022 per-credit, including administrative fees. These advance credit costs are considered an average value intended to cover the range of costs associated with ILF projects in the service area. By calculating estimated total costs and credit yields, an IRT may be able to anticipate a close approximation of actual per credit costs. In this case, the actual credit costs were much lower than advance credit costs, which benefited the ILF program by providing an additional financial cushion against unforeseen expenses and/or allowing the ILF program to consider more complex or costly projects in the future.

**5d. If the projected project cost exceeds available funds, does the budget identify where the additional funds would be secured?**

It is important that if the cost of the project exceeds available funds that a source of additional funds is identified. Many ILF programs have established sub-accounts for individual watersheds (e.g., KY DFWR 2018), reserve funds (KY DFWR 2018), proceeds from investment earnings, or sales of released credits (i.e., TNC 2019) that may provide additional funds to finance a project. Refer to question 5e on the use of grants or other sourced funds in project implementation.

The KRF Crane Point Hammock (2015) project budget is an example of a narrative that estimated project costs, the funds available for the project, and because costs exceeded available funds, identified where those funds might be secured to cover the shortfall. In this case, the ILF program proposed making up the difference by drawing funds from sub-accounts for land acquisition and for another project, subject to IRT approval. Note, it is important that the ILF program instrument indicates how use of funds from sub-accounts will be accomplished, documented, and communicated with the IRT.

**5e. Does the budget for the project include any non-mitigation funds such as grants, donations, and/or appropriations? Does it discuss whether those non-mitigation funds will generate mitigation credit?**

Some ILF programs, such as the Maine Natural Resource Conservation Program (2020) and Montana Aquatic Resources Services (2020), encourage development of projects that involve other sources of funds, because the additional funds can result in larger and more ecologically valuable projects. However, these programs only allow for credit generation from mitigation fees collected from the sale of credits. Other sources of funds (grants, donations, appropriations, etc.) do not generate mitigation credits and cannot be

used to fulfill mitigation obligations. The Sponsor must clearly distinguish between mitigation fee and grant or other funding sources used in project implementation. This has been accomplished by either basing mitigation credits on 1) only the project costs (including long-term management) funded with mitigation fees; or 2) the portion of the project acreage fully funded with mitigation fees. These two approaches are consistent with the requirements in the Mitigation Rule for separate accounting of other sources of funds (33 CFR 332.8(i)(1)/40 CFR 230.98(i)(1)). Non-mitigation funds must not be commingled with mitigation fees for any purpose, including long-term management. Federal grants and appropriations as well as other non-compensatory mitigation funds may not be used to generate mitigation credits (see 33 CFR 332.3(j)(2)/40 CFR 230.93(j)(2)). such as a preservation project then financial assurance amounts may be low), past performance/experience of mitigation provider/Sponsor, the costs associated with obtaining the land, planning and construction of the project, and monitoring post-construction (33 CFR 332.3(n)(2)/40 CFR 230.93(n)(2)). Districts vary widely in their requirements for financial assurances, with some requiring separate assurances for each stage of project implementation (separate assurances for construction, monitoring, and maintenance), while others allow a single assurance. Assurances may be reduced (phased release) and/or released at the end of a project's operational life (end of monitoring), or when clearly defined milestones are met such as completion of construction or approval of as-builts. The conditions for reduction/release of assurances will be specified clearly in the project site plan.



## 6. Financial Assurances

Financial assurances are a mechanism that helps ensure resources are available to correct or replace unsuccessful projects during an ILF project's operational phase (covers both construction and monitoring during the performance phase of project). Financial assurances are intended to limit but cannot eliminate the risk of project failure. Third party claims on assurances are rare and drawn upon only if a Sponsor is unwilling or unable to correct an issue, also known as default (see section on default). It is the IRT reviewer's responsibility to review the Sponsor's financial assurance estimates and determine if they are accurate/sufficient. With sufficient financial assurances, the reviewer may have greater confidence that the project will be successfully completed and meet its performance standards. Key considerations for financial assurances include estimating the assurance amount, implementing the assurance, and understanding the different types of assurances.

### **Financial Assurances:**

A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be completed, in accordance with its performance standards (33 CFR 332.4 (c)(13)/40 CFR 230.94 (c)(13)).

The Corps' Institute for Water Resources (IWR) has published a useful reference on financial assurances for compensatory mitigation projects (Scodari et al. 2016). It includes a discussion of the requirements for financial assurances, approaches to estimating the amount of assurances, different types of financial assurance mechanisms, and implications of federal fiscal law.

### Estimating Amount of Financial Assurance Needed

Considerations for estimating the amount of financial assurance needed include: size and complexity of a project, degree of completion of a project, the likelihood of success (e.g., if project has low risk of failure, such as a preservation project, then financial assurance amounts may be low), past performance/experience of mitigation provider/Sponsor, the costs associated with obtaining the land, planning and construction of the project, and monitoring post-construction (33 CFR 332.3(n)(2)/40 CFR 230.93(n)(2)). Districts vary widely in their requirements for financial assurances, with some requiring separate assurances for each stage of project implementation (separate assurances for construction, monitoring, and maintenance), while others allow a single assurance. Assurances may be reduced (phased release) and/or released at the end of a project's operational life (end of monitoring) or when clearly defined milestones are met, such as completion of construction or approval of as-builts. The conditions for reduction/release of assurances will be specified clearly in the project site plan.

There are two basic approaches to determining the amount of assurances a Sponsor will provide for their project site, on-site remediation and off-site replacement. On-site remediation estimates the amount of assurances from the amount of resources needed to undertake corrective actions to the existing project site. These estimates include the cost to complete construction and meet performance standards. On-site estimates are typically itemized by proposed actions such as planting, monitoring, or controlling invasive species. Off-site replacement estimates the amount of assurances from the cost of finding and implementing a new, separate mitigation project or purchasing credits from a bank or ILF program. This is generally a

more expensive and intensive alternative, in part because it may include the cost of securing an alternative project site as well as developing and implementing a mitigation plan for that site. A number of districts may require assurances for a project to be based on the off-site replacement estimate if they have questions regarding the suitability or accessibility of the original site.

### Implementing Financial Assurance

Federal fiscal law dictates that absent explicit statutory authority, federal agencies cannot directly or indirectly receive or use the proceeds from a claim on financial assurances. This would be a violation of the Miscellaneous Receipts statute (31 USC 3302(b)). So how does a federal agency ensure that the proceeds from an assurance may be applied to a project if needed? Assurances must be payable to a non-federal beneficiary (a third party such as a non-profit, government/quasi-government, land trust, or private entity) who agrees to complete the approved mitigation project. The beneficiary would ideally be an entity that is qualified and has a reputation and/or experience with administering and implementing compensatory mitigation projects. The ILF project site plan should address how claims on assurances may be made. If a claim is made on the financial assurances, the beneficiary would be responsible for developing a plan of corrective actions (e.g., remediation plan) for review and approval by the Corps in consultation with the rest of the IRT. Finally, the assurance mechanism must require notification to the Corps at least 120 days in advance of expiration/revocation of the assurance. This allows the Corps to take any action necessary (e.g., pursuing a claim on or renewal of the assurance).

### Financial Assurance Mechanism

There are a number of acceptable types of financial assurance a Sponsor may use, subject to Corps approval. Each type has its considerations and varies in duration and cost. See Table 1 below for more information on and considerations for the most common assurance mechanisms used (information from Scodari et al. 2016).

*Table 1. Types of financial assurance*

<b>Assurance Mechanism</b>	<b>Duration</b>	<b>Price/Cost</b>	<b>Collateral</b>	<b>Claims &amp; Performance</b>	<b>Other Considerations</b>
Cash in Escrow	As long as needed	100% of assurance amount	No	Provides payment only	Beneficiary necessary
Performance Bond	Typically 1-2 years, may be renewed	1.5-5% of bond dollar amount	Yes – up to full bond amount	Payment or performance, is the decision of the bonding company	Designee needed to make claim; potential for disputes with bonding company
Letter of Credit	Typically 1-2 years, may be renewed	1-3% of letter amount	Yes – up to full letter amount	Provides payment only	Beneficiary necessary; original unaltered letter must be presented at time of claim

Assurance Mechanism	Duration	Price/Cost	Collateral	Claims & Performance	Other Considerations
Casualty Insurance	Up to 10 years	Often \$50K (non-refundable) + 2-4% of policy amount	No	Payment or performance	Insurer conducts evaluation of Sponsor before insuring; multiple claims can be made but total cannot exceed policy limit
Self-Assurance	Up to 10 years	Typically a % of total project	No	Performance	Sponsor sets resources aside to undertake corrective actions

Typically, an ILF program allocates a portion of the funds in the account to either 1) set aside as a guaranty of future performance (a type of financial assurance) or 2) used to secure conventional financial assurances (i.e., letter of credit or performance bond). The exceptions are ILF projects implemented by third parties as a result of request for proposal (RFP) processes. In those cases, the project proponents are responsible for posting appropriate financial assurances. Examples of ILF programs that utilize the RFP process include North Carolina’s Division of Mitigation Services, Maine’s Natural Resource Conservation Program, or New Hampshire’s Aquatic Resource Mitigation Program.

Financial Assurance Estimate Case Examples

Below are two examples representing a more general (“Monitoring and Maintenance Phase”) and more detailed (“Stream and Wetland Restoration Site Engineer’s Estimate”) financial assurance estimate.

The “Monitoring and Maintenance Phase” estimate provides total costs and cost breakdown for the monitoring/maintenance actions itemized (Table 2). The list of actions and cost breakdown are generalized, lacking detail on, for example, what kind of monitoring is planned, the type of road maintenance anticipated (patching? grading? repaving?), or quantities for which to better understand the estimated costs. This approach may not be suitable for estimating financial assurance amounts for more technically difficult or complex mitigation projects. For example, a wetland establishment project in a landscape position where wetlands do not occur. A project of this sort might require highly engineered water controls, geotechnical materials, and soil amendments, all of which need to be reflected in the assurance estimate.

*Table 2. Example of financial assurance estimates - Monitoring and Maintenance Phase*

Description	Cost	Cost Breakdown
Prescribed Fire	\$144,000	4 burns, 1,200 acres @ \$30/acre
Fire lane	\$64,000	4 burns, 8 miles @ \$2,0000/mile
Road Maintenance	\$8,000	10 yrs @ \$800/yr
Exotic species control	\$100,000	200 acres/yr @ \$50/acre/yr for 10 yrs
Monitoring	\$50,000	(\$5,0000/yr for 10 yrs)
Contingencies (10%)	\$36,600	
Total	\$402,000	

The construction assurance estimate, “Stream and Wetland Restoration Site Engineer’s Estimate,” includes a comprehensive list of construction actions, providing quantities and unit costs along with the total costs that demonstrates the construction process has been well thought out and planned (Table 3).

*Table 3. Example of financial assurance estimates - Stream and Wetland Restoration*

<b>Stream and Wetland Restoration Site Engineer's Estimate</b>					
<b>Description</b>	<b>Quantity</b>	<b>Unit Measure</b>	<b>Pay Unit</b>	<b>Unit Price</b>	<b>Total Fee</b>
Construction Survey	1	LS	LS	\$3,500	\$3,500
As-built survey	1	LS	LS	\$2,500	\$2,500
Temp construction entrance	2	LS	LS	\$1,500	\$3,000
Grading	1	LS	LS	\$45,000	\$45,000
Invasive species control	1	LS	LS	\$5,000	\$5,000
Woody debris structure	13	EA	LS	\$500	\$6,500
Surface water diversion	1	LS	LS	\$12,500	\$12,500
Sediment bags	4	EA	EA	\$200	\$800
Impervious dikes	5	EA	EA	\$500	\$2,500
Silt fence	3200	LF	LF	\$2.00	\$6,400
Wattles	100	LF	LF	\$5.50	\$550
Temp seeding	36	AC	AC	\$750	\$27,000
Permanent seeding wet/sunny	0.9	AC	AC	\$1,200	\$1,080
Permanent seeding dry/sunny	2.6	AC	AC	\$1,200	\$3,120
Bare root seedlings	238	Stem	Stem	\$2.25	\$5,355
Fencing	1200	LF		\$4.00	\$4,800
Clearing and grubbing	33	AC		\$1,500	\$49,500
Incidental stone	2	Ton		\$50.00	\$100.00
<b>Subtotal</b>					
Mobilization	1	LS		\$9,185.25	\$9,185.25
<b>Total Fee</b>					<b>\$192,890.25</b>

6a. Does the project site plan include the basis for the financial assurance, either corrective action on the project site, or replacement compensation at another site? Is this consistent with district/state requirements?

Refer to the discussion in “Estimating Financial Assurances” above for on-site remediation versus off-site replacement. Refer to the local district/state requirements for determining the approach to estimating assurances.

6b. Does the project site plan include an itemized list of work associated with construction, monitoring, and maintenance provided in support of the financial assurance estimate? Does the itemized list include all the component parts associated with the project?

Does the project site plan include an itemized list of work associated with construction, monitoring, and maintenance provided in support of the financial assurance estimate? Does the itemized list include all the component parts associated with the project?

6c. Does the site plan include specific conditions for reduction/release of financial assurances?

There may be a single assurance for the life of the project, or there may be separate assurances for different operational stages of the project (e.g., construction, monitoring, and maintenance) or phases/units if the entire project is not constructed concurrently. The project site plan needs to specify under what conditions/circumstances an assurance will be reduced or released.

6d. Do the assurances identify a non-federal beneficiary in the event that a claim is made on the assurances?

Refer to the discussion in the introduction to Review Element 6 above under the heading “Implementing Financial Assurance.” The financial assurance mechanism must identify an appropriate beneficiary.

6e. Does the type of assurance provide for payment, performance, or both in the event that a claim is made?

Refer to Table 2 and Table 3, above. Letters of credit and escrow provide for payment only. Appropriations provide for performance only, performance bond and insurance provide for payment and performance, and self-assurance usually provides for performance by providing funds to the Sponsor to guarantee corrective action.

6f. Does the assurance include notification to the Corps at least 120 days before expiration/revocation of the assurances?

As noted in the introduction to Review Element 5 above under the heading “Implementing Financial Assurance,” notification of a change in assurance status must be provided to the Corps at least 120 days in advance.

6g. Does the project site plan or associated exhibit specify that the Sponsor will provide a financial assurance mechanism prior to an initial release of credits?

An initial release of credits (see Review Element 10 for more on credit release) may be allowed once the project site plan and mitigation plan have been approved, the project site has been secured, and financial assurances have been established (33 CFR 332.8(m)/40 CFR 230.98(m)).



## 7. Site Protection Instrument

Site protection instruments are the legal mechanisms that protect a site from encroachment or degradation. The site protection instrument will require coordination with the district or state counsel to ensure that the mechanism is adequate and compliant with state law.

### Site Protection Instrument

A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site (33CFR 332.4(c)(4)/ 40 CFR 230.94(c)(4)).

The site protection instrument should identify prohibited and restricted activities as well as those property rights reserved by the landowner (e.g., hunting or fishing, passive recreation, etc.) Both prohibited/restricted uses and reserved rights should be reviewed to ensure that the property has adequate legal protection.

State laws govern real estate and site protection, so it is important to work with an attorney or office of Counsel that is familiar with the laws governing real estate where the ILF project is located. The IWR publication on-site protection for compensatory mitigation (Wood and Martin 2016) provides a good introduction to this topic.

7a. Does the project site plan include a proposed long-term site protection mechanism (conservation easement, declaration of restrictions, etc.)? Is the protection mechanism consistent with current district/state guidelines (including template instruments)?

The reviewer will want to be certain a site is being given long-term protection as required in the regulations (33 CFR 332.7(a)(1)/40 CFR 230.97(a)(1)). The purpose of site protection is to ensure that the functions and services provided by the project will continue after monitoring is completed and the project enters into the period of long-term management.

District/state guidelines (including template instruments) have been developed to be consistent with state laws governing real estate, as well as federal and state regulations governing long-term protection of compensatory mitigation sites.

7b. Does the mechanism protect against interests/activities that are incompatible with the project's goals and objectives?

Interests may be financial (liens, mortgages, contracts), drainage/utility/access easements, ingress/egress, conservation/other ownership, or mineral/timber/water rights. These interests have the potential to impede the long-term protection of the site. The regulations (33 CFR 332.7(a)(2)/40 CFR 230.97(a)(2)) state that the mechanism providing long-term protection of the site must, to the extent appropriate and practicable, prohibit incompatible uses, such as timbering or mineral extraction. In many cases, areas under easements or utility rights-of-way that are subject to maintenance may be excluded from the ILF project site acreage utilized to calculate mitigation credits.

7c. Does the site protection instrument (or associated exhibits) list any other interests in the property (financial, mineral/timber, water rights)? Does the instrument (or exhibits/attachments to the ILF project site plan) include an explanation as to how those other interests may affect the project site?

It is important for the reviewer to conduct an initial screening of the site protection instrument and associated documents to determine whether the Sponsor has identified any other property interests present within the proposal/project site, and if so, to list all of those interests, and whether the holders of those interests have the potential to affect the long-term protection of the site (Table 4). The IRT reviewers should consider surface and subsurface (i.e., groundwater) interests and if the project controls the surface and subsurface (mineral, oil, or gas) rights of the site. Someone exercising these other rights can affect an ILF project site. In some cases, these other interests may not disqualify a site if the areas covered by the interests are not included within the project acreage used to determine mitigation credits and if exercising those interests would not adversely affect the project site. These interests should be subordinated/managed prior to execution of the site protection instrument; otherwise, these other interests may take precedence over the site protection instrument (i.e., “first in time first in right”).

### **Mineral Rights:**

There are many states where mineral interests are separate (severed) from the fee title (or surface) interests. Wood and Martin (2016) identify a number of approaches to address this situation.

- One approach is to consider whether the site protection instrument (or associated exhibits) documents the nature of the mineral ownership, the feasibility of acquiring those interests, and those efforts to acquire the interests. Note, it may not be feasible for the Sponsor to acquire all of the mineral interests within a project site.
- In some cases, holders of mineral rights have agreed to restrict disturbance within some distance of the project site ground surface (e.g., within 200 feet of ground surface) in order to limit impacts to the site.
- The Sponsor, in conjunction with the owner of the mineral rights may develop a minerals management plan which assesses the feasibility of mineral extraction and designates areas for access and extraction (most applicable to oil and gas) that will not adversely impact the restored/enhanced/preserved acreage of the ILF project.
- Another approach used occasionally is for the program Sponsor to base financial assurances on the cost of full site replacement if the threat posed by unresolved interests in the property cannot be offset or managed.

It may take a combination of these four approaches and/or other approaches to resolve any concerns about mineral rights and the ILF project site.

Table 4. Examples of how other interests in property may affect site protection

Interests	Attribute Measured
Maintaining a drainage easement that crosses a wetland mitigation bank site, which could drain existing wetlands or inhibit wetland restoration.	State and local municipalities are generally responsible for maintaining these drainage easements that manage flows from impervious surfaces/roadways (state and local highway), stormwater flow/transport (public works) and/or mosquito control (public works, health department).
A utility company may choose to maintain a right-of-way (easement) crossing a bank site by mechanical (mowing, bush hogging) or chemical (herbicides) means.	This could adversely affect portions of the bank site, for example if the site is intended to develop into forested wetlands.
Subsurface (Mineral/oil & gas) rights are often owned separately (severed) from surface rights.	In many states, a site protection document like a conservation easement cannot be recorded unless the owner of the subsurface rights agrees to the easement. In other states the subsurface rights owner is not legally bound by an easement on the surface. Exercising subsurface rights (mineral or oil & gas extraction) could have an adverse effect on the mitigation bank site.

7d. If the site is located on public lands, is the Sponsor proposing additional long-term protection measures? Do they seem adequate?

Public lands, for example, many of those managed by the U.S. Forest Service and Bureau of Land Management, allow for multiple uses of the land, including mining, timbering, grazing, and other activities. Are these or any other uses of the ILF project site allowed? Are those other uses compatible with the objectives of the mitigation project? If other uses are likely to be incompatible with the mitigation project, is the Sponsor proposing additional mechanisms, such as a federal facility management plan or conservation land use agreement that would provide additional long-term protection of the project site? Site protections for compensatory mitigation projects on public lands is addressed in further detail in the regulations at 33 CFR 332.7(a)(4)/40 CFR 230.97(a)(4) as well as in Wood and Martin 2016 on pages 9-10.

### **Case Example: Public Land and Long-term Protection**

Bahia Honda State Park (Park) is owned by the State of Florida and managed by the Division of Parks and Recreation. The State of Florida has established numerous provisions regarding the continued ownership and management of Florida State Parks, including the establishment of non-lapsing endowments created in Title XVIII, Public Lands and Property, of the Florida State Statutes; more specifically Chapters 258 (State Parks and Preserves) and Chapter 259 (Land Acquisitions for Conservation or Recreation), which provide funding allocations for the continued management of State Parks. In addition, FS Section 259.032(10) requires that all State Lands must develop, maintain, and update a management plan that specifically details the key management activities necessary to achieve the preservation and protection of its natural resources. Prior to construction, the Keys Restoration Fund ILF program (KRF), which is managing the Parks' wetland restoration and enhancement project (identified as Bahia Honda Projects A and B), and the Park will enter into an agreement that authorizes KRF to carry out the restoration and enhancement activities and binds the Park to maintain the restored ILF project sites in perpetuity.

7e. Does the site protection mechanism include the requirement to provide the Corps with 60-days advanced notification if there is a proposed amendment or termination of the site protection mechanism?

Over the life of a project there may be proposals to modify the site protection mechanism for example, to accommodate a planned pipeline or roadway, to remove land that is unnecessary for compensatory mitigation purposes<sup>8</sup>, or to accommodate other uses of the project land. The real estate instrument, management plan, or other long-term protection mechanism must contain a provision requiring at least 60-day advance notification before any action is taken to void or modify the instrument, management plan, or mechanism, including the transfer of title or establishment of other legal claims over the project site (see 33 CFR 332.7(a)(3)/40 CFR 230.97(a)(3)). This 60-day requirement enables the Corps and IRT to review the proposal, determine the effect of the action on the project site, provide feedback to the Sponsor, and determine whether additional action is necessary.

<sup>8</sup> Any request to remove lands from an existing mitigation project (ILF project bank or PRM) should be reviewed carefully. When these areas are included in mitigation projects, they are typically either mitigation areas or buffer areas needed to support mitigation functions or services onsite. Areas that have been credited by the regulatory agency for any reason should not be removed from site protection.

## 8. Geographic Service Area

The service area should be appropriately sized to offset permitted impacts and replace lost functions/services. A service area may be a watershed and/or landscape unit (HUC 6, HUC, 8, ecoregion, physiographic province, or administrative area) in which compensation would be provided (33 CFR 332.8(d)(6)(ii)(A)/40 CFR 230.98((d)(6)(ii)(A)).

### Service Area

The geographic area within which impacts can be mitigated at a specific ILF program, as designated in its instrument (33CFR 332.2/ 40 CFR 230.92).

An ILF program generally has more than one service area. A service area typically encompasses the (sub) watershed, ecoregion, or landscape unit where the resource impact occurs. ILF programs may also have different service areas for different credit types, such as wetlands, streams, different types of wetlands, and/or other resource types, including listed species.

The service area must be appropriately sized to ensure that the aquatic resource compensation provided by the ILF program will effectively offset permitted impacts and/or replace lost functions/services across the entire program service area (33 CFR 332.8(d)(6)(ii)(A)/40 CFR 230.98((d)(6)(ii)(A)).

Most ILF project sites do not have service areas that are distinct from ILF program service areas. One exception is the Virginia Aquatic Resources Trust Fund (2019), where each ILF project has its own smaller service area that is consistent with the Virginia Code. In this situation, an ILF project may not offset all project impacts within a larger program service area.

The project site plan should include the following for all credit types:

- A map or other electronic representation (e.g., shapefile, kmz file, etc.) and a written description identifying the extent of the service area(s),
- Environmental factors (e.g., watershed, resource type, landform, at-risk species) used in determining the service area,
- Any specific district, state, local, or tribal requirements (e.g., law, regulations, policy, management plans, etc.) used to determine the service area,
- Any economic considerations (e.g., expansion of a service area to increase credit availability) that may factor into determining the service area, and
- Clear documentation of the rationale for the location and extent of the service area.

Refer to the mitigation regulation for additional information on service areas (33 CFR 332.8(d)(6)(ii)(A)/40 CFR 230.98(d)(6)(ii)(A)).

### 8a. Does the project site plan or associated exhibits include a clearly defined service area(s) for the project site?

Service area boundaries may not be as precisely defined as depicted on maps. Some service areas are based on ecoregions or on HUCs such as HUC 8 or HUC 6. For example, HUCs are periodically revised, often changing extents in relatively flat areas like coastal plains. So, it is important that the project site plan provides both a description of the service area(s) and associated map(s). Where possible, the boundaries of



the service area should be clearly defined (i.e., use readily recognizable features for limits like an adjacent roadway, state line or county boundary, or geographic features like a stream or mountain chain) to minimize future disputes between the Sponsor, the IRT members, and regulators (non IRT members) over whether proposed permits are within an ILF project's service area(s). In most cases, the project service area will be the same as the program service area, but the ILF program instrument may allow the establishment of different service areas for individual sites.

**8b. Are there multiple service areas or service area types defined? Is this consistent with district, state, or local requirements?**

A project site may have more than one service area. Project sites may have different service areas for different credit types, including wetlands versus streams, different types of wetlands, and/or specific to other resource types, including listed species.

Some project sites may have a secondary service area adjacent to the primary service area, which can be used to provide compensation in otherwise under-served areas. There are typically restrictions on use of ILF credits within the secondary service area. For example, the use of credits within a secondary service area may require higher compensation ratios or be used only for general permits. District, state, or local requirements should be referenced when reviewing a proposal for a secondary service area.

**8c. Does the project site plan or associated exhibits specify the watershed or landscape units used to define the service area?**

The service area is typically defined by the watershed and/or landscape units (HUC 6, HUC 8, ecoregion, ecological drainage unit, physiographic province, or administrative area) in which it occurs (33 CFR 332.3(b)(1)/40 CFR 230.93(b)(1)). Note, HUCs do not necessarily represent entire watersheds; often, they compose a subpart of a watershed. Additionally, in coastal watersheds, compensation for impacts should be located in coastal watersheds or within a legislatively defined coastal zone, which may be subject to additional state regulations (e.g., Louisiana).

Where watershed boundaries do not exist (i.e., marine areas), an appropriate spatial scale should be used to replace functions/services within the same ecological system (marine basin, reef complex, wave climate, embayment, drift cell, etc.).

**8d. Does the service area comply with local, district, and/or state requirements (scale, size, or resource type)?**

Service area requirements differ by agency/government. In many cases, the local/state government will have laws, regulations, or ordinances shaping the boundaries of a service area. The IRT reviewer should reference district and local/state government regulations on service area boundaries when reviewing the project site plan. Service areas are often regulated by multiple government agencies, making it appropriate to defer to those agencies on matters of compliance. Consider whether the project site plan provides adequate service area mapping and descriptions consistent with any local, state, or district requirements.

8e. Is the rationale for the location, size, and extent of the service area clearly documented in the project site plan and/or exhibits?

The Mitigation Rule requires the Sponsor to justify the location, size, and extent of the service area to ensure that it is appropriately sized to offset permitted losses. The Mitigation Rule states that “the basis for the proposed service area must be documented in the instrument” (33 CFR 332.8(d)(6)(ii)(A)/ 40 CFR 230.98 (d)(6)(ii)(A)). The size of the service area can be related to the extent of the functions and services provided by the project site for those ILF projects that have service areas separate from program service areas. For example, a riparian project that reconnects a floodplain to its river may merit a larger service area than a riparian project that does not reconnect the floodplain because of the additional functions/ service provided (flood storage, sediment sequestration, fish nursery habitat, etc.).

# Project Operations

## 9. Credit Determination

The number of credits a compensation project generates should reflect the difference between pre- and post-compensatory mitigation project site conditions (33 CFR 332.8(o)(3)/40 CFR 230.98(o)(3)). There are a number of strategies used to determine how much credit a compensation project should receive. Credit determination approaches all use some combination of a unit of measure (typically acres or linear feet), an assessment of change, function, or condition (qualitative or quantitative), and adjustment factors to address policy and ecological priorities (e.g., proximity to impacts, threatened and endangered species, temporal lag).

The resulting approaches range from simple based on best professional judgment to more sophisticated approaches based on published assessment methodologies incorporated into credit/debit quantification tools developed by districts, states, or others. In all cases, credit determination methodologies should be consistently applied to both assess impacts (debits) and compensation (credits) while sensitive enough to reflect the change in aquatic resource functions and services.

### **Determination of Credits**

A description of the number of credits to be provided, including a brief explanation of the rationale for this determination. For permittees intending to secure credits from an approved ILF project site... it should include the number and resource type of credits to be secured and how these were determined (33CFR 332.4 (c)(5)/ 40 CFR 230.94 (c)(5)).

**9a. Is the Sponsor's credit determination methodology consistent with the reviewer's current district/state standards?**

Most districts/states have some form of credit determination methodology, whether qualitative, quantitative, or a combination thereof. Those methodologies may range from ratios to standard operating procedures, rapid assessment methods, as well as assessments of function and/or condition. Many districts/states have different credit determination methods for different aquatic resource types (e.g., streams vs. wetlands or for different types of wetlands).

It is important to determine whether the credit methodology proposed in the project site plan is consistent with established standards for that resource type in the district/state. If a Sponsor implements the district and/or state's established standards, it should only be reviewed by the IRT member for accuracy of calculation. Individual project review is not the medium through which an IRT member should question or disagree with use of established credit methodologies. If a Sponsor proposes a credit determination method that differs from the applicable district/state's standards, it should be discussed by the IRT with the Sponsor.

**9b. Is the proposed generation of credits consistent with district/state policy, and is it applied accurately?**

Is the application of the assessment methodology consistent with district/state policy? Does it yield the credit type/quantity that would be expected as a result of the application of the methodology based on documented district/state practices and guidelines?

It is critical that the correct assessment method(s) has been used in credit determination, the resource has been classified appropriately (e.g., stream flow or thermal regime or wetland community type), any applicable incentive factors associated with the methodology have been applied, and the credit calculations are accurate. Incorrect applications of assessment methodologies or incorrect calculations may lead to future disputes between the IRT and the Sponsor.

It is important that the reviewer focus their attention on whether the approach used for the project is consistent with the regulations as well as current district/state policy and practices.

**Note:** IRT members should strive to speak with one voice regarding the interpretation and application of credit methodologies to limit any conflicting messages provided to the Sponsor. The IRT should also communicate in a timely manner with the Sponsor to ensure all parties come to a common understanding. These principles are applicable to all elements of a project site plan.

In some cases, district/state assessment methods may not explicitly address or apply to specific mitigation projects. For example, some credit determination methods may be designed to assess single-thread channels and may not be directly applicable to multi-thread channels. Credit determination methods may not clearly address crediting for the removal of dams or impoundments. The reviewer should recognize these situations and be prepared to discuss them with the IRT and Sponsor.

#### 9c. Does the proposed number of credits reflect the difference between baseline and post-construction conditions?

In other words, are the number of proposed credits consistent with the proposed amount of uplift, as calculated/determined by the applicable district/state's credit determination methodology? The number of credits generated by a project must reflect the difference between pre- and post-compensatory mitigation project conditions as determined by the appropriate assessment method (33 CFR 332.8(o)(3)/40 CFR 230.98(o)(3)).

#### 9d. Are any of the proposed credits based solely on preservation?

A higher mitigation ratio should be applied for compensation based on preservation compared to compensation based on restoration, establishment, or enhancement. In other words, a specific amount of preservation (acres or linear feet) should generate fewer credits than the same amount of restoration, establishment, or enhancement acreage or stream length (33 CFR 332.8(o)(6)/40 CFR 230.98(o)(6)).<sup>9</sup> Preservation may be used to provide compensatory mitigation when it satisfies the following conditions:

- Provides important functions for the watershed;
- Contributes substantially to the ecological sustainability of the watershed;
- Is determined to be appropriate and practicable by the Corps;
- Is under threat of destruction or adverse modification\*;
- Will be permanently protected; and
- To the extent appropriate and practicable, done in conjunction with restoration, establishment, and/or enhancement of aquatic resources (30 CFR 332.3(h)/40 CFR 230.93(h))

<sup>9</sup> In a few districts/states the credit determination methodology does not convert all mitigation activities into a standardized credit. In those areas, credit types are assigned by mitigation method (e.g., preservation credits, rehabilitation credits, etc.) instead.

\*District or state-specific guidelines may clarify what is meant locally by threat of destruction or adverse modification.

9e. Are credits proposed to be generated through restoration, enhancement, or preservation of riparian areas, buffers, or uplands? If so, are those riparian areas, buffers, or uplands considered necessary to maintain the ecological viability of aquatic resources?

Riparian areas, buffers, and uplands are part of many, if not most, ILF project site proposals. Credits associated with these areas may be specified in acres, linear feet, or other suitable metrics. Riparian areas, buffers, and uplands can be used to generate credit when they are essential to maintaining the ecological viability of aquatic resources (33 CFR 332.8(o)(7)/40 CFR 230.98(o)(7)). For example, riparian buffers are integral to some aquatic resources such as stream systems, and uplands or buffers around vernal pools may be vital to the hydrologic regime of these systems and for supporting important life stages of associated fauna like amphibian species. In estuarine mitigation, buffers can be essential to allow for landward migration of estuarine habitat types in response to sea level rise.

The inclusion of riparian areas, buffers, or uplands should be consistent with regulations and district/state policy.

9f. Does the project site plan include a table identifying credits that will be generated by resource type and is there a corresponding map identifying those locations?

Each site plan should include a table specifying the amount of credits to be generated for each resource or credit type (i.e., stream or wetland resource restored, preserved, enhanced, established, or preserved) as well as corresponding maps depicting where these specific mitigation actions will be located on the project site. The table will be used in part to help determine initial and subsequent credit releases and the map(s) will be used to evaluate project performance.



## 10. Credit Release Schedule

The credit release schedule details the release of credits to a Sponsor based on the achievement of performance-based milestones (such as construction or attainment of performance standards).

Similar to a mitigation bank, as an ILF project meets its ecological performance standards, it generates credits. These project-specific credits are known as released credits, which are distinct from advance credits. Released credits are only released by the Corps in consultation with the IRT and only when the Corps determines that the appropriate milestones have been met. Once credits are released, it is still the district's responsibility to determine whether the credits are appropriate compensation for a specific permit.

Advance credits are associated with a program service area, not a project site. They represent mitigation credits that can be purchased before a project site has been constructed, and the funds from their sale are used to finance the project site. Once a project site has been constructed, the advance credits must be accounted for/debited before any released credits (credits available from the construction of the site) may be debited. Once the advance credit mitigation obligation is met, released credits are then available to debit until all available credits have been fulfilled.

### **Interplay between advance and released credits:**

The debit/sale of advance credits is a promise or commitment to provide compensatory mitigation in the future. That commitment is fulfilled/satisfied through the debit of released credits generated by a project site meeting its performance standards. That commitment must be satisfied before any released credits may be debited/sold. Released credits are used to fulfill the debit of advance credits (this fulfillment must occur first) as well as to provide compensatory mitigation for separate permitted losses (33 CFR 332.8(n)(3)/40 CFR 230.98(n)(3)).

### 10a. Does the project site plan or associated documents specify a credit release schedule?

The project site plan must provide a credit release schedule (33 CFR 332.8(d)(6)(iii)(B)/40 CFR 230.98(d)(6)(iii)(B)), which is often dictated by district/state practices or guidelines.

### 10b. Is the credit release schedule consistent with the mitigation type and resources being proposed? Does the project's credit release schedule differentiate between mitigation methods and resource types?

The release schedule may vary by district, mitigation method (restoration vs. preservation, etc.), resource type (stream vs. wetland restoration), and the likelihood of success (preservation is "safer" than restoration). A project site that has multiple credit types, such as wetland and stream credits, may have a different release schedule for each resource (Table 5; Table 6). In some cases, the credit release schedule for two related credit types, such as vernal pool (CWA section 404) and federally listed aquatic invertebrates (Endangered Species Act), may also be combined into a single release schedule. Releases only take place when the performance criteria for resources within a release schedule have been met. The release schedule may take place over a longer period of time for slower-developing resource types (e.g., forested wetlands vs. emergent wetlands).

and for certain mitigation methods (e.g., restoration credits may be released more slowly than preservation credits).

Two example credit release schedules (wetland and stream) are provided below.

*Table 5. Example wetland credit release schedule for an ILF project site*

Release	% of Credits to Be Released	Requirements
Construction	25%	<ul style="list-style-type: none"> <li>Upon completion of all initial work and approval of as-built report by IRT</li> </ul>
2nd release	60%	<ul style="list-style-type: none"> <li>Meeting performance standards for year monitoring occurred</li> </ul>
3rd release	15%	<ul style="list-style-type: none"> <li>Meeting year 5 performance standards</li> </ul>

Source: Norfolk District & Virginia DEQ Site Development Plan Template

*Table 6. Example stream credit release schedule for an ILF project site*

Release	Percentage of Credits to Be Released	Requirements
Construction	25%	<ul style="list-style-type: none"> <li>Upon completion of all initial work and approval of as-built report by IRT</li> </ul>
2nd release	10-20%	<ul style="list-style-type: none"> <li>Meeting Performance Standards</li> <li>Upon the occurrence of a bankfull event</li> </ul>
3rd release	10-20%	<ul style="list-style-type: none"> <li>Meeting Performance Standards</li> <li>Upon the occurrence of a bankfull event</li> </ul>
4th release	10-20%	<ul style="list-style-type: none"> <li>Meeting Performance Standards</li> <li>Upon the occurrence of a bankfull event</li> </ul>
5th release	Maximum 15%	<ul style="list-style-type: none"> <li>Meeting Performance Standards</li> <li>Upon the occurrence of a bankfull event</li> </ul>

Source: Norfolk District & Virginia DEQ Site Development Plan Template

10c. Does the release schedule specify incremental milestones (e.g., construction completion, meeting performance standards) to be achieved for credit releases?

The schedule of releases should be laid out incrementally (timing and amount of credits to be released) in the ILF project site plan. Refer to the two example credit release schedules above, which specify the release stages and percentage of credits that would be released at that stage if the associated requirements are met. An initial release consisting of a percentage of total potential credits is allowed once the project site or mitigation plans are approved, the site is secured (protected), financial assurances have been established, and any other requirements established by the district have been met (33 CFR 332.8(m)/40 CFR 230.98(m)).

10d. Will a significant amount of credits be withheld until all performance standards have been met?

A significant share of total credits must be reserved (unreleased) until all performance standards are met (33 CFR 332.8(o)(8)/40 CFR 230.98(o)(8)). What is considered a significant share is left to the district to determine.

10e. Is the release schedule consistent with current/accepted practices in the district or state?

Refer to the local district and/or state practices for consistency.

## 11. Assumption of Mitigation Responsibility

The treatment of mitigation liability is one of the defining factors separating ILF programs/projects (and banks) from permittee responsible mitigation (PRM). When permittees conduct their own mitigation, they retain full responsibility/liability for the success of the project/mitigation. When permittees purchase credits\* from an ILF program/project site, they are paying to transfer their mitigation responsibility to the ILF Sponsor. (This is also true when credits are purchased from a bank).

**\*Side Tip:** An applicant has two options for utilizing ILF credits as compensation:

1. Credits may be secured/purchased once a permit has been issued
2. Credits may be secured in advance of permit issuance

For both options, the applicant must obtain a permit before liability may be transferred to the ILF Sponsor and associated credits may be applied for compensation.

For a successful transfer of mitigation liability, the following regulatory requirements must be satisfied:

- The ILF project site plan must include a provision stating that the Sponsor assumes the permittee's mitigation liability,
- The permittee has secured a permit that approves the use of a certain amount and type of credits for satisfying their mitigation requirements, and
- The Sponsor has notified the Corps that the appropriate amount and type of credits have been secured by the permittee.

**Note:** Some districts have developed forms to be used to transfer mitigation responsibility from the permittee to the bank or ILF program Sponsor. A good example of this has been developed by the Wilmington District (2013).

11a. Does the project site plan include a provision stating that the Sponsor assumes the permittee's mitigation liability?

Refer to the explanation above and the regulatory language on this requirement (33 CFR 332.8(d)(6)(ii)(C)/40 CFR 230.98(d)(6)(ii)(C)).

11b. Does the project site plan include a provision stating that the Sponsor will notify the district of each transaction?

As stated above, the instrument must specify that the Sponsor will notify the Corps for each approved credit transaction (33 CFR 332.8(p)(1)/40 CFR 230.98(p)(1)).

11c. Does the project site plan specify the timing at which the district is notified of a transaction?

As stated above, the permittee retains responsibility for the mitigation until the Corps receives documentation confirming the Sponsor has accepted responsibility. Copies of this documentation are retained in the permit and project site file (33 CFR 332.3(l)(3)/40 CFR 230.93(l)(3)). Failure to provide documentation would be considered non-compliance with the project site plan.

## 12. Accounting Procedures

Accounting procedures are a mechanism for tracking debit and credit transactions. Credit transactions come in the form of:

- Release of credits (making available) to the Sponsor for sale
- Withdrawal/debit of credits to offset permitted losses

### 12a. Does the document have a credit accounting procedure outlined?

The project site plan must include a provision requiring the Sponsor to establish and maintain a credit ledger to account for all credit transactions (33 CFR 332.8(p)/40 CFR 230.98(p)). A better understanding of the fulfillment and interplay of advance credits through released credits can be gained through review of the following RIBITS website help/user guide manuals, Understanding the Credit Ledger and Sub-Ledger – June 2021 and Understanding the ILF Advance Credit Ledger – June 2021 (RIBITS 2021).

Current practices vary between districts. Some use RIBITS as the ledger, and copies of the RIBITS ledger are acceptable; others require the Sponsor to maintain a separate ledger for each project site. Additionally, many districts' ILF project site plans require submittal of (annual) credit ledger updates with the ILF project's monitoring report, as discussed in Review Element 13: Reporting Protocols

#### **RIBITS credit classifications:**

ILF project credit types do not always correspond directly to credit classifications in RIBITS ledgers. District RIBITS administrators are responsible for translating credit types in ILF projects to credit classifications in RIBITS. It may be helpful for the IRT and Sponsor to coordinate with the district RIBITS administrators to better understand how the credits for the ILF project site translate to the RIBITS ledger. A recommended practice would be to include a table in the project site plan that links credit types to RIBITS credit classifications.

### 12b. Does the document indicate when transaction notifications will be provided to the Corps?

Each time a transaction occurs, the Sponsor must notify the Corps (33 CFR 332.8(p)/40 CFR 230.98(p)). If RIBITS is used to track ledger activity and email has been enabled, then each time a transaction is entered into RIBITS all of those with permissions for that project (Corps Manager, IRT, Sponsor, etc.) receive email notifications. In many districts that automated notification is considered acceptable (check with local district to see if acceptable).

### 12c. Does it indicate what information will be provided in the notification?

Transaction documentation should include date of transaction, permittee name, project, permit number, credit type(s), and amounts of credits. Some states/districts (e.g., California, Chicago, Savannah) have developed forms to be used to document transactions that identify all the information they require in each notification transaction. Check with local district/state for document transactions templates/forms.

## 13. Reporting Protocols

Sponsor is required to submit periodic/annual monitoring (33 CFR 332.8(q)(2)/40 CFR 230.98(q)(2) and ledger account reports (33 CFR 332.8(q)(1)/40 CFR 230.98(q)(1)). These reports are then typically posted on RIBITS. The reports provide a mechanism to monitor a project's progress and activity.

The information required in project monitoring reports varies by aquatic resource type, district, and by state. A number of districts/states have developed monitoring report outlines or templates including Fort Worth, Maryland, Rock Island, and Wilmington. Check with local district/state for monitoring report templates/forms.

The Corps may also require reports on financial assurance and long-term management funding (33 CFR 332.8(q)(3)/40 CFR 230.98(q)(3)). The need for this type of reporting arose from experience with compensation projects where corrective action was necessary and the resources needed (i.e., financial assurances) were not available. Similarly, past projects were approved that did not have enough funds to manage the closed site long term (see Review Element 19: Long Term Management Plan). As a result, the annual/periodic funding report helps the IRT reviewer evaluate if:

- Short-term financial assurances are still in place for project completion, monitoring, and management in the operation phase, and
- Long-term management finances are funded as identified in the project site plan and are sufficient for management and maintenance after project operations have ceased.

13a. Does the project site plan specify requirements for submittal of reports to the Corps, such as:

- [Project monitoring reports?](#)

A Sponsor must submit project monitoring reports (often annual) providing the results of monitoring a project's development and potential attainment of performance standards (33 CFR 332.8(q)(2)/40 CFR 230.98(q)(2)). Refer to local district/state monitoring and reporting guidelines and policies, which may specify sampling/analysis methods for specific performance standards. A number of districts will allow submittal of reports electronically, for instance in RIBITS. If email has been enabled for the project site in RIBITS, then all those associated with the project (Corps project manager, Sponsor, IRT) will receive automated email notification from RIBITS.

- [Annual ledger account reports or RIBITS ledger updates?](#)

The annual ledger account report must be submitted to the Corps, which distributes it to the IRT, and must also be made available to the public on request (33 CFR 332.8(q)(1)/40 CFR 230.98(q)(1)). Annual ledger account reports, which should include:

- A listing and summary of all credit and debit activity for the project site – a mechanism of transparency, where the IRT reviews and ensures all ledger activity is clearly documented



- Beginning and ending balances of available credits and permitted losses (debits) based on resource type
- All credit additions and subtractions and other changes (releases, adjustments by the Corps, credit suspensions)

Annual ledger account reports should differentiate data for separate project sites.

- [Annual financial assurance and long-term management funding reports?](#)

These reports must include (33 CFR 332.8(q)(3)/40 CFR 230.98(q)(3)):

- Beginning and ending balances of financial assurances and long-term management funding
- All deposits and withdrawals
- Total amounts of required assurances and long-term management funding
- Status of financial assurances including expiration date
- Status of long-term management funding (how close to reaching the desired target; is it fully funded or partially funded?)

Additionally, annual financial assurance and long-term management funding reports should differentiate information for separate ILF project sites.

## 14. Default and Closure Provisions

Default is when an ILF Sponsor fails to comply with any aspects of the project site plan. In general, the presumption is that any non-compliance with the plan may be considered a default. The Corps and IRT will always attempt to resolve any noncompliance issues/situations that arise with the Sponsor and project site prior to undertaking actions to correct a default.

Closure indicates that a project site has been successful in satisfying its responsibilities laid out in the project site plan.

### 14a. Does the ILF project site plan (or associated exhibits) specify what is meant by default?

An ILF project site plan must include default provisions (33 CFR 332.8(d)(6)(ii)(D)/40 CFR 230.98(d)(6)(ii)(D)). However, the regulations do not specify what must be included in these default provisions, so the IRT reviewer is advised to consult local district or state guidelines.

### 14b. Does the project site plan identify options available to address default?

These are the range of actions that may be implemented in response to default. The actions below are listed in order of easiest to most difficult for an IRT program Chair to implement:

1. Delay release of credits;
2. Corrective Action Plan – e.g., repair/replace damaged structure that was not maintained;
3. Additional monitoring - perhaps no monitoring has occurred, a monitoring period was missed, only part of a site was monitored, or portions of the site failed to meet performance standards (33 CFR 332.6(b)/40 CFR 230.96(b));
4. Adaptive management - implementation of the adaptive management plan
5. (33 CFR 332.8(l)(2)/40 CFR 230.98(l)(2));
6. Decrease available credits - decreasing the number of credits available to debit (33 CFR 332.8(l)(2)/40 CFR 230.98(l)(2));
7. Suspend part or all of operations - suspension of credit availability to debit, notice provided via official letter from district (33 CFR 332.8(o)(10)/40 CFR 230.98(o)(10));
8. Notice of non-compliance - official notification of non-compliance, opens door to administrative or legal action;
9. Making a claim on financial assurances - only when Sponsor is unable or unwilling to resolve issues; beneficiary/district makes the claim to attempt to resolve issues;
10. Suspending project operations; and
11. Terminate project site plan (most severe option) - When all other actions fail. Chair/co-chair action (33 CFR 332.8(o)(10)/40 CFR 230.98(o)(10)).

14c. Does the project site plan (or associated exhibits) define ILF project closure and what actions must be completed in order for closure to take place?

A project site plan must include closure provisions (33 CFR 332.8(d)(6)(ii)(D)/40 CFR 230.98(d)(6)(ii)(D)). However, the regulations do not identify what elements must be met in order for a project to close, so the IRT reviewer is advised to consult local district or state guidelines.

Project closure is generally defined as taking place when all of the below conditions are met for an entire project site:

- Performance standards are met<sup>10</sup>,
- All available credits are debited/relinquished by the Sponsor,
- Long-term management plan is implemented and revised if/when needed to reflect any changes in practice or availability of funding,
- Long-term steward/long-term manager is identified, and
- Long-term management plan is fully funded.

District or state standards may also specify conditions that must be met before a project site may close.

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<sup>10</sup> In the course of project operations, the IRT and the Sponsor may find it necessary to adjust or modify some performance standards as a result of corrective actions in order to accommodate the situation when certain initial performance standards cannot be met. This adjustment or modification of standards may often entail a concurrent adjustment in credits.

# Performance and Management

# 15. Performance Standards

Performance standards are used to evaluate whether a project is evolving into the intended natural resource and providing desired aquatic resource functions/services/conditions. Performance standards must be simple, objective, verifiable, unambiguous, understandable, measurable (quantitative OR qualitative), repeatable, based on best available science, and measured with a reasonable amount of effort.

**Performance Standards**  
 Ecologically based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives (33CFR 332.4 (c)(9)/ 40 CFR 230.94 (c)(9)).

Additionally, performance standards may be:

- incremental or interim
- derived from reference data
- used to measure development toward reference conditions

Elements of a mitigation project such as hydrologic or vegetation management have associated performance standards to better evaluate the need for project management or maintenance. For example, an observed reduction in fish passage in a restored perennial stream system could indicate obstructions or constrictions in flow inhibiting passage. In a pine flatwood community, tree canopy cover in excess of 15-25% may indicate the need for additional prescribed fire.

Performance standards can be developed for any resource and should include three elements that demonstrate how each project objective will be achieved: attribute measured, level that constitutes success, and time period to achieve success (Table 7).

*Table 7. Examples of Performance Standard 3 Elements*

<b>Performance Standard</b>	<b>Attribute Measured</b>	<b>Level that Constitutes Success</b>	<b>Time Period to Achieve Success</b>
<b>Hydrology of Floodplain Wetlands</b>			
Hydrology shall consist of a water table 12" or less to inundation up to 6" for a minimum of 28 consecutive days, during the growing season under normal and wetter than normal hydrological conditions.	Hydrology shallow groundwater level	Hydrology ranging from 12" below ground surface to 6" above ground surface	Minimum of 28 consecutive days OR two periods of 14 or more consecutive days within some specified timeframe following construction
<b>Wetland Soils</b>			
Soil has documented evidence of recent redoximorphic features developing by the third year after construction	Redoximorphic features	Evidence of development	Year 3 post-construction

15a. Does the mitigation plan contain performance standards to evaluate attainment of project objectives?

Are performance standards explicitly stated or included in the project site plan's narrative? Performance standards should be clearly identifiable and pertain to the desired aquatic resource outcome (and project's goals and objectives). Many project site plan/instrument templates have designated performance standards, which may be presented in a template table or narrative.

15b. Does the district have performance standards for the proposed aquatic resource(s)? If the district does not have performance standards, proceed to questions 15d-15h. If the district has performance standards, proceed to questions 15c-15h.

If the district has applicable performance standards, the IRT reviewer should refer to these standards when reviewing the project site plan.

In districts or states with no performance standard guidance or guidelines, the reviewer will need to determine the suitability of the Sponsor's proposed standards laid out in the project site plan. The Sponsor may adapt or incorporate standards from established or existing criteria or create their own set of performance standards. Regardless of how they are developed, performance standards should be relevant to the resource, understandable, measurable, include a timeframe component for evaluation and be compared to a reference site or existing reference data.

15c. Are the standards proposed by the Sponsor consistent with current district practices?

The reviewer will compare the applicable district or state's practices and ensure consistency with the standards proposed in the project site plan and/or associated exhibits. If any inconsistencies are identified, ensure the Sponsor has provided a robust and logical explanation for any changes, and discuss with members of the IRT.

15d. Are the performance standards ecologically based (e.g., entail comparison to reference sites/data, based on functional or condition assessment methodologies, and/or have measurements of hydrology or vegetation indices)?

Performance standards are intended to provide objective, measurable data that determine if a project is meeting its goals and objectives, typically measured in incremental stages. As such, the performance standards should focus on the relevant ecological conditions of a site, including hydrology, water quality, soils, vegetation, and fauna.

Performance standards should also include multiple assessments post-construction, which are compared to the baseline pre-restoration condition, and will track incremental changes over time (bank stabilization, vegetation growth, etc.).

15e. Are the standards derived from the project's goals and objectives? Are they verifiable and well-defined? Are the standards clear enough that a third party would understand them?

As mentioned in 8d., the performance standards need to reflect the purpose of the project and the project site's potential. If a palustrine emergent wetland is proposed, the standards may revolve around assessments for determining if a site meets the three criteria composing a wetland, generally: wetland vegetation, wetland hydrology presence, and hydric soil condition. However, meeting the technical standards for a



wetland (hydrophytic vegetation, hydric soils, and the technical hydrologic standards) is often insufficient to develop the desired wetland type. Instead, performance standards should be tailored to the requirements of the specific wetland type(s) to be provided by the project. This approach is exemplified in Minnesota (St. Paul District USACE 2019), where hydrologic performance standards differ for a palustrine emergent wetland depending upon whether the wetland is classified as deep marsh, hemi marsh, sedge meadow, or wet meadow. In this case, each marsh type has a different hydrologic regime and thus a different set of hydrologic performance standards. The standards should be repeatable for multiple assessments and use methodologies that are generally recognized and accepted amongst professionals in the industry.

#### **Case Example - Performance standards for listed species**

Where one of the objectives is to create or enhance habitat for listed species, performance standards may contain requirements regarding the presence and/or a minimum abundance of the target species. For migratory species such as salmonids, minimum abundance targets need to be carefully correlated with the regional abundance of the target species. Performance standards for salmonid habitat are generally based on habitat surrogates such as the removal of dikes, re-establishment of tidal channels, minimum flow, and maximum temperature conditions.

15f. Do the Sponsor's standards include three elements: attribute measured, level that defines success, and time period to achieve success? See example table 7 above.

The Sponsor should include each of these elements in their performance standards.

The attribute is the indicator being measured in the field (percent cover, water table elevation, duration or frequency of flooding, soil characteristics, etc.), level is the threshold that defines success (range or specific number, presence/absence of the attribute), and time is the interval or period during or following construction that data on the attribute is collected and within which the attribute is reasonably expected to be achieved. For additional information see Ossinger 1999.

15g. Do the standards evaluate incremental progress toward project objectives?

It is important to track a project's incremental progress, as it assists the Sponsor and IRT reviewer in evaluating attainment of its performance standards across the site. Some districts or states also require achievement of incremental standards.

15h. Do the performance standards compare project/site development to reference sites/data?

A site should be compared to one or more reference site(s)/data to accurately evaluate the site's performance. Relevant reference sites (perhaps located upstream or within same watershed) will have the same range of variability that would be expected for the proposed aquatic resource (Sueltenfuss and Cooper 2019).

15i. Where applicable, are there separate performance standards for different habitat or resource types?

For example, estuarine/marine compensation may include open water, intertidal habitat, and/or shallow subtidal habitat as part of a matrix of other habitats like salt marsh, SAV, mangrove, etc. These areas may be assigned water quality, sediment quality or fish/ biota performance standards specific to the compensation habitat or community type. Note, some districts or states have specific guidelines for estuarine and marine compensation, including performance standards (i.e., eelgrass performance standards, CA; NOAA Fisheries 2014).

## 16. Monitoring Requirements

Monitoring is used to determine if the mitigation project is meeting its performance standards and achieving its objectives. Monitoring is also used to:

- Evaluate compliance with the project site plan and the work plan,
- Evaluate the outcome of management and maintenance activities,
- Help determine whether a credit release is appropriate (refer to element 14 for information on credit releases), and
- Help to determine whether adaptive management activities are necessary (e.g., addressing the effects of climate change and sea level rise).

### **Monitoring Requirements:**

A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed (33CFR 332.4 (c)(10)/ 40 CFR 230.94 (c)(10)).

### 16a. How long will the site be monitored?

A site must be monitored for a minimum of five years, though the length of required monitoring can vary depending on the project resource and district protocols. Reviewers should refer to their district/state's standards for monitoring. Monitoring can be conducted for longer periods of time for those resources that develop more slowly such as forested wetlands (33 CFR 332.6(b)/40 CFR 230.96(b)).

### 16b. What parameters/criteria will be monitored? Are they sufficiently detailed to evaluate attainment of performance standards?

The nature of the project and associated district protocols will dictate which parameters/criteria should be monitored for a project. These will vary by the aquatic resource type (e.g., bottomland hardwood intermittent stream, or vernal pool). Due to the diversity of aquatic resources, the reviewer should reference their district/state's protocols to determine what monitoring requirements are appropriate for a given project. The required parameters should relate to the project's performance standards and objectives, and be consistent with district, state, or local policies and guidelines. For example, the monitoring plan should detail sample sizes, monitoring locations, timing, required statistical analyses, etc. Local monitoring guidelines for the intended aquatic resource should be incorporated in the plan.

### 16c. Does the project site plan specify the content of the monitoring report?

The reviewer should refer to their district/state's agreed-upon protocols for monitoring report content and submittal frequency when evaluating a Sponsor's monitoring plan. The monitoring plan should identify the content requirements for monitoring reports as well as when those reports need to be submitted. Many districts/states (e.g., Fort Worth, Maryland, Mobile, Rock Island) have developed monitoring report templates or outlines to standardize reporting and monitoring results and to facilitate review of those reports.

Additionally, the Regulatory Guidance Letter (RGL) 08-03 issued by Corps Headquarters may be of interest to the IRT reviewer as it establishes minimum monitoring requirements for compensatory mitigation project narrative reports. Note, for mitigation banks and ILF project sites this RGL may serve only as a supplemental reference to local guidelines/templates. The RGL may not provide sufficient data for a complete IRT reviewer evaluation, particularly if a credit release is being requested and documentation is necessary to demonstrate that the project is meeting performance standards.

#### 16d. Does monitoring include the use of reference sites or data to evaluate performance?

Districts/states differ in their performance standards for monitoring requirements. Some depend on technical standards, while others require reference data be used to evaluate a project's performance. The reviewer should ensure that the monitoring plan adheres to their district/state's agreed-upon protocols.

## 17. Maintenance Plan

### **Maintenance Plan**

A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed (33CFR 332.4 (c)(8)/ 40 CFR 230.94 (c)(8)).

This is the description and schedule of a Sponsor's management requirements for the project that ensures it remains viable once construction is completed and throughout the monitoring period. A maintenance plan may include infrastructure (water control structures, data loggers, fencing, signage, gates) and/or ecological management components (invasive species control) within the project area and it should identify regular or recurring actions needed for the upkeep of the project site until it transitions into long-term management.

The maintenance plan is a component considered in the development of short-term financial assurances, which are used to guarantee effective project management and successful achievement of performance standards. The IRT members can reference the maintenance plan to determine whether the project is appropriately maintained.

17a. Does the project site plan contain a description and schedule of maintenance requirements to ensure the project remains viable once it has been constructed and throughout the monitoring period?

The description and schedule of maintenance are required components of the project site plan, and they assist the Sponsor and IRT reviewer in identifying what will be needed (e.g., materials, labor, etc.) for maintaining the proposed site until it transitions into long-term management (33 CFR 332.4(c)(8)/40 CFR 230.94(c)(8)).

17b. Does the description cover all relevant aspects of maintenance including ecological and infrastructure maintenance?

The plan should provide a complete list of maintenance measures to ensure that the site is managed to retain its integrity and continue to provide the desired functions and services.

17c. Does the description identify regular or recurring actions?

This might include measures such as nuisance/exotic species treatment schedule, fence repair, or prescribed fire. These recurring actions are

### **Includes:**

- Measures to control predation/grazing of mitigation plantings
- Nuisance/exotic invasive species abatement measures and treatment schedule
- Temporary irrigation for plant establishment
- Invasive species control
- Replacement plan (e.g., replacement plantings) and structure maintenance/repair
- Other applicable maintenance plan components

## 18. Adaptive Management Plan

Aquatic resources are complex. The outcome of mitigation project implementation is often uncertain so management adjustments (i.e., adaptive management) may be necessary to address unforeseen circumstances (e.g., changes in site conditions or other components of the compensatory mitigation project) and better ensure that the project is successfully completed and meets its performance standards. Adaptive management requires coordination between the responsible party, Corps, and IRT to ensure agencies' approval of proposed adaptive measures by the Sponsor or long-term steward. Adaptive management may be necessary at any point in project implementation, including construction, performance phase (monitoring), and during long-term management (33CFR 332.4 (C)(12)/40 CFR 230.94 (C)(12)).

### **Adaptive Management Plan**

A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project... The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseeable circumstances that adversely affect compensatory mitigation success (33CFR 332.4 (c)(12)/ 40 CFR 230.94 (c)(12)).

18a. Does the project site plan or associated management plan document(s) include general guidelines for adaptive management that encompass:

An adaptive management plan should address each of the components below. This ensures that a Sponsor is more responsive to unforeseen project issues and changes while continuing coordination with the IRT. Does the project site plan address:

- Unforeseen circumstances, which may be defined at a national, state, or district level?
- Coordination with the IRT?
- The process for adjusting the project if it cannot be constructed according to plan?
- How the project will be managed if it does not meet its performance standards or long-term management goals?

18b. Do the monitoring and long-term management plans include provisions to determine whether any adaptive measures are needed?

Comprehensive monitoring and long-term management plans will account for possible future revisions based on unforeseen situations (e.g., a stream cuts a new channel, or a salt marsh restoration project erodes following an extreme storm event). See Table 8 below for an example from a monitoring plan of how adaptive management can be used to better meet performance standards.

### Unforeseen Circumstances

Many ILF project site plans refer to unpredicted events or phenomena negatively affecting an ILF project site by phrases such as “force majeure”, “Act of God”, “act of nature”, or unforeseen circumstances. These terms reflect a recognition that there is a degree of uncertainty associated with implementation of any ILF project no matter how well-thought out. Unanticipated events can occur on any project site, and examples may include population explosion of herbivores, widespread drought, spills of hazardous materials, fire, war, shoreline erosion, radical changes in salinity or water quality constituents, etc. These clauses in ILF project site plan identify how extraordinary events or circumstances beyond the control of the Sponsor to manage may be addressed. What may be considered to be an unforeseen circumstance (or force majeure event) differs widely between districts/states, so it is vital to refer to local guidelines and practices.

*Table 8. Case example of how adaptive management applies to performance standards and monitoring*

<b>Objectives</b>	<b>Performance Standards</b>	<b>Monitoring</b>	<b>Adaptive Management</b>
Re-establish 78 acres of tidal marsh	Y1: 80% planting survival Y3: Average stem density, by species, is > 75% average reference. Y5: 2 years since last invasive treatment & <5% invasive coverage	Annual: Measure of live, standing dead, & shoot densities or coverage in veg plot transects across entire site.	Additional treatment(s) or changes in chemical treatments may be necessary to control invasive species.
	Site elevation ~ reference elevation	Reference/ mitigation site elevation surveys.	Adjust elevations due to reworking of sediments

Consider whether district/state guidelines or practices address adaptive management implementation. If local guidelines, policies, or practices have not been developed, then it may be useful for the ILF project site plan to specify a process for adaptive management. Discussions should take place between the Sponsor and IRT agencies to lay out potential options for addressing unforeseen circumstances, identification of available resources for taking any necessary action, and/or monitoring the consequences of any corrective actions.

**18c. Do the monitoring, management, or long-term management plans consider the potential for adaptive management as a result of climate change or sea level rise?**

Climate change, including changes in the amount or periodicity of precipitation or increase in likelihood of wildland fire, may precipitate future adaptive management actions. The reviewer should give consideration to future sea level rise for projects located in coastal, marine, or estuarine areas and in non-coastal areas, increased frequency or intensity of flooding events, wildfire, or drought. The project site plan should also acknowledge extreme events and sea level rise factors, incorporate sea level rise predictions, and consider potential alternative states for future project condition. For example, does the plan allow for estuarine vegetation migration with sea level rise?



## 19. Long-Term Management Plan

mitigation projects are required to be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved (33 CFR 332.7(b)/ 40 CFR 230.97(b)). Merely protecting the land through recordation of a conservation easement or other long-term protection mechanism may not ensure that the functions and services provided by a an ILF project site will continue over the long term. Those functions and/or services can be lost due to invasive species, trespass, urban encroachment, changing environmental conditions (sea level rise, changes in precipitation and temperature regimes, etc.), changes in land use within the watershed, increases in non-point source pollution, sedimentation, etc. (see Teresa, 2009). Some level of management or maintenance may be required to ensure that the project site continues to provide the intended resource functions and services.

### **Long-term Management Plan**

A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management (33 CFR 332.4 (c)(11)/40 CFR 230.94(c)(11)).

A long-term management plan (LTMP) is a fundamental element of every mitigation plan (33 CFR 332.4(c)(11)/40 CFR 230.94(c)(11)) and must be part of the ILF project site plan, instrument, or associated documents. Plans should identify the responsible party and include a description of management needs, annual cost estimates for those needs, and the funding mechanism used to meet those needs.

### Responsible Party and Management Activities

Long-term management planning requires the Sponsor and the IRT to consider what management activities on the ILF project site will be necessary once all performance standards have been met. These management activities are specific to each project site and depend upon the desired aquatic resource(s) and the intended functions and services to be provided by the site. Practicability is a consideration in determining what long-term management activities are necessary for an ILF project site. The LTMP should include provisions for identifying the party responsible (Sponsor, long-term steward, etc.) to transfer long-term management responsibilities (assigning responsibilities to another party) and periodically reviewing and revising the LTMP over time based on changing resource needs or funding availability

The Sponsor is responsible for funding the LTMP, and this funding should be identified in the project site plan or LTMP (33 CFR 332.7(d)(2)/40 CFR 230.97(d)(2)). The ILF program account is typically used to fund the LTMP. Funds are generally transferred from the ILF program account into a trust account, endowment, or other mechanism to generate returns that can be used to help fund future management activities. The actual timing of the transfer of funds from the ILF program account is subject to district practices and the specific program instrument.

### Funding Long-term Management

Each long-term management activity entails an expenditure of funds. Recurring activities like fence repair, posting property boundaries, or conducting prescribed fire entail periodic expenditures. The cost associated with a management action is likely to increase over time because of inflation. The LTMP and

associated financing should take into account inflation (33 CFR 332.7(d)(3)/40 CFR 230.97(d)(3)). The rate of inflation over time can be estimated at [https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm). Because of the projected increase in costs of management over time, the ILF Sponsor and the IRT should give careful consideration to the necessity of each long-term management task required in the LTMP.

Unforeseeable costs may arise over time as well, such as costs associated with management of recently established invasive species or substantial increases in material costs (like fuel or steel). Funds are often provided in long-term management funding to address contingencies. Contingency rates may vary from 10-30% but 10% is typically the most common rate.

A number of useful tools have been developed to help estimate long-term management funding such as TNC's Long-Term Stewardship Calculator and Accompanying Handbook (2016) and the Center for Natural lands Management's Property Analysis Record© (2018). LTM costs are included as selection criteria options in the TNC calculator and an estimation of costs of easement defense and stewardship is discussed in a joint publication by the Environmental Law Institute and the Land Trust Alliance (ELI-LTA 2012).

Note, the actual cost of managing site protection instruments, like conservation easements, may not be identified as a part of long-term management funding, because the cost of managing easements is often negotiated between the Sponsor and the easement holder.

#### 19a. Does the project site plan include a long-term management plan (LTMP)?

See discussion above.

#### 19b. Does the project site plan or LTMP identify the party(ies) responsible for long-term management? Can the responsibility for long-term management be transferred to another party?

The project site plan or LTMP is required to identify the party(ies) responsible for long-term management. In many districts/states, the Sponsor may be identified in the project site plan as initially responsible for implementing the LTMP, but transfer of responsibility to another party is allowable, subject to review by the IRT and approval by the Corps (33 CFR 332.7(d)(1)/40 CFR 230.97(d)(1)).

#### 19c. Does the LTMP include a complete itemization of long-term management tasks to be conducted periodically on a permanent basis?

The LTMP should include the ILF project site's long-term goals and objectives and a complete listing of all anticipated long-term management activities. The long-term management activities should have a clear connection to the project site's goals and objectives so that future land managers, regulators, landowners, and easement holders understand the intent of the management activities. It is especially useful if the plan identifies the component elements of each management task including labor and materials. For example, periodic repair of fencing might include inspection of the fence and the repair of damaged fence segments including labor hours and materials. This information helps the reviewer confirm that the LTMP has fully considered the requirements for each management task.

19d. Are the annual cost estimates for management activities broken down by task? Does the LTMP identify references for cost information used in the plan?

As mentioned above, the LTMP should include a description of long-term management needs and annual cost estimates for those activities (see also 33 CFR 332.7(d)(2)/40 CFR 230.97(d)(2)).

Annual cost estimates are useful for determining the total amount of funding the Sponsor must set aside for long-term management. It is difficult to evaluate whether the cost estimates are complete unless these estimates are broken out by specific management tasks (e.g., replacement of a gate or posting of property boundaries) and their component parts including labor and materials. The assumptions made when preparing specific task-by-task cost estimates should also be articulated. Tools like TNC's Long-Term Stewardship Calculator (2016) and the CNLM's Property Analysis Record© (2018) help to clarify assumptions and to more accurately identify annualized costs of LTM.

Finally, the LTMP should identify the source of information used in these cost estimates (e.g., Bureau of Labor standard rates, Commerce Department data, industry standard cost estimation datasets such as RS Means©, etc.). This will facilitate verification by IRT members.

19e. Does the LTMP provide information supporting how the total amount of long-term financing was determined?

This information is critical to ensuring sufficient funds are available for long-term management of the ILF project site when it reaches the long-term management project site closure phase. The mechanism for Long-Term Management Funding (LTMF) is established when the ILF project site plan is approved by the IRT co-chairs and the Sponsor. Any modifications to the funding mechanism require consent by all parties involved in the ILF program (Sponsor, Corps, IRT, Long-term Manager) and may be challenging to secure. The LTMP should identify how the total amount of long-term financing was determined. An effective way used by many ILF programs is to first sum the total annual cost of all management activities required in the project site (including contingency and estimated administration costs). The example in Table 9 identifies annual management costs for a ten-acre mitigation project abutting a wildlife management area.

Table 9. Case example of LTM plan annual management costs

Task	Component	Unit	Number	Cost/Unit	Recurrence Interval	Annual Cost
Signage	Inspect & replace	Hour	4	\$40	1	\$160
Trash	Collect & dump	Hour	2	\$40	1	\$80
Annual Report	Narrative Summary	Hour	4	\$75	1	\$300
Fence	Labor	Hour	30	\$40	1	\$1,200
Fence Installed	3 strand barbed wire	Lin Ft	300	\$4	1	\$1,200
<b>Sub-Total</b>						<b>\$2,940</b>
Contingencies	20%					\$588
Admin	10%					\$294
<b>Total</b>						<b>\$3,822</b>

The annual cost of management is then divided by the expected earnings from investment of those long-term management funds (adjusted for inflation).

In this example, if the long-term management funds were anticipated to earn an average of 7% annually (gross earnings), inflation is estimated to average 3%/year, and administration (management) of the funds is 0.5%/year, then the adjusted or net earning rate of those funds would be 3.5% (7% - [3% + 0.5%]). Dividing this net earning rate (often called a Capitalization or Cap rate) into the annual cost of management provides an estimate of the total amount of the initial funding amount of long-term management funding (or principal amount) the Sponsor must set aside for the LTMP. In this case it is \$109,200 or \$3,822/0.035.

The average annual net rate of return or Cap rate for the long-term management funds is important. The lower the cap rate or net rate of return, the greater the initial fund amount the Sponsor must set aside for the LTMP (Table 10). In the table, a Cap rate of 5% would translate into a gross annual earnings rate of 8.5% (5% + 3% inflation + 0.5% administration). To achieve an earning rate that high would require active investment of the LTMP funds in a balanced portfolio including stocks, bonds, mutual funds, and other investment mechanisms. A Cap rate of 0.5% might be achievable through the use of less risky investment mechanisms like Treasury bills and certificates of deposit but would mean that the Sponsor must establish a much larger initial fund amount.

Refer to The Nature Conservancy. *Long-term Stewardship Calculator Accompanying Handbook: Section III Making Money for the Long-term.* (2016), pages 51-58 for more information and examples of calculating LTM funds.

Table 10. Example cap rates for long-term management funds

Annual Cash Need	Cap Rate	Initial Fund Amount
\$20,000	5%	\$400,000
\$20,000	3%	\$666,667
\$20,000	1%	\$2,000,000
\$20,000	0.5%	\$4,000,000

19f. Does the LTMP allow for periodic adjustments in management priorities? Does this include adjustments in spending?

The LTMP should allow the long-term manager to discuss with the IRT during the course of long-term management any revisions to the LTMP necessary to reflect changes in management needs (e.g., management of a previously unknown invasive species that could affect the functions/services by the project site) or management costs (e.g., additional unanticipated costs associated with management of recently discovered/documentated invasives species). Because the amount of LTMP funding is determined at the time of LTMP approval it may be difficult to secure additional funds during long-term management. So, if there are additional needs or additional expenses associated with long-term management it may be necessary to reexamine management tasks and costs and prioritize them based on available funding.

19g. Does the LTMP describe how the LTMP will be funded (lump sum, installments, prior to credit release, etc.)? Is that consistent with current practices in the district/state?

The project site plan and the LTMP should describe the LTMF mechanism including the timing of long-term financing. A number of approaches have been used to finance long-term management. Each of these practices has its own considerations, for example:

- **Single payment (or lump sum):** Funding long-term management obligations with a single or lump sum payment can be financially demanding for private sector ILF Sponsors.
- **Payment schedule:** Series of payments over time. The challenge with a payment schedule is ensuring the funding obligation is met in accordance with the ILF project site and LTMP.
- **Credit sale proceeds:** Use of credit proceeds is a common practice (e.g., setting aside a portion of proceeds from each credit sale for long-term management), however, full funding may prove difficult if credit demand lags or if credits are sold at discounted rates.
- **Incremental funding of long-term management:** Incremental funding of LTM as a milestone that must be met prior to an incremental credit release. This approach has proved effective in a number of states/districts (e.g., see Section VII Credit Release Schedule in the 2017 California Bank Enabling Instrument Template [California Multi-Agency Project Delivery Team 2017]).
- **Conversion or roll over of financial assurances:** Conversion or roll-over of financial assurances (escrow, letters of credit, etc.) is required in a number of districts/states but so far there are no examples of this in practice to review.
- **Annual appropriations/Capital improvement budgets and programmatic agreements:** Long-term management of project sites undertaken solely by public agencies on public lands are often funded through appropriations or programmatic agreements. It can be challenging to fully fund LTM on an annual basis. Some mitigation projects are undertaken on public lands but administered by the

private sector such as non-profit organizations that may be better able to secure appropriate long-term management funding.

Whichever practice is used, at a minimum, the initial funding amount for the LTMP should be fully funded before the ILF project site plan moves into the long-term management phase.



# References

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# APPENDIX A: REVIEW CHECKLIST

# ILF Project Site Plan Review Checklist Questions

The ILF Project Site Plan Review Checklist reflects the content of each element in the ILF Project Site Plan Review Workbook. For each element, the checklist asks whether the question was addressed (yes/no), whether the narrative is complete (yes/no), and the page numbers of the relevant narrative. A comment section for reviewer input is also included.

Review Elements Questions	Addressed Yes/No	Complete (Y/N)	Page #(s)	Reviewer Comments
<b>Introduction</b>				
Have the ILF program prospectus and instrument been reviewed?				
Are there any components unresolved or unaddressed from the prospectus/instrument?				
<b>1. Project Goals and Objectives</b>				
1a. Does the project site fit within the goals and objectives of the CPF for the service area?				
1b. Does the project site plan include a description of the resource type(s) and approximate amount(s) that will be provided?				
1c. Does the project site plan identify functions and services to be provided by the project site?				
1d. Does the project site plan include the methods used for compensation?				
1e. Does the project site address ecological resource needs within the watershed or landscape setting in which the project site is located?				
<b>2. Site Selection</b>				
2a. Is the ILF project site located within the watershed or landscape position where it is most likely to either replace lost functions and services or enhance existing, compromised functions and services as described in the approved ILF program instrument and/or CPF instrument?				



<b>Review Elements Questions</b>	<b>Addressed Yes/No</b>	<b>Complete (Y/N)</b>	<b>Page # (s)</b>	<b>Reviewer Comments</b>
2b. Does the project site include areas that were formerly aquatic resources or are currently degraded aquatic resources?				
2c. Does the project site include buffers that would protect it from its surroundings? Does it help buffer other conserved aquatic resources from potentially incompatible activities?				
2d. Is the project site adjacent to other conserved aquatic resources or does it help establish, or extend a conserved corridor?				
2e. Has the proposed project site addressed identified ecological priorities and needs identified in the CPF for the project landscape/watershed, such as chronic environmental conditions (flooding, impaired water quality, insufficient habitat for important aquatic species, etc.) (33 CFR 332.3(c)(3)/40 CFR 230.93(c)(3))?				
2f. Are there any apparent potential constraints and/or limitations to the proposed project site? Are any of these critical to successful project establishment or operation?				
2g. Is this project site ecologically suitable for providing the desired aquatic resource functions/services within the subject watershed or landscape position?				
<b>3. Baseline Information</b>				
3a. Does the ILF project site plan include a description of the baseline watershed/landscape, and ecological characteristics of the proposed project site?				
3b. Is the baseline data applicable and comparable to data that will be collected post-construction (performance standards)?				
3c. Do the baseline conditions support the project's goals and objectives?				

<b>Review Elements Questions</b>	<b>Addressed Yes/No</b>	<b>Complete (Y/N)</b>	<b>Page # (s)</b>	<b>Reviewer Comments</b>
3d. Does the project site plan include or reference a delineation of wetlands/waters?				
3e. Does the project site plan include information related to at-risk fauna and flora species and/or other regulated resources (cultural/archaeological)?				
3f. Does the project site plan include the location and extent of any utilities and other infrastructure in the project vicinity?				
3g. Does the project site plan include the location and information related to any existing easements, rights-of-way (ROWs), or other property restrictions?				
<b>4. Mitigation Work Plan</b>				
4a. Does the project site plan include the required work plan components? Do these components have detailed specifications and descriptions?				
4b. Are the work plan components reflective of the project's goals and objectives?				
4c. Do the work plan components follow established best practices or provide an explanation discussing why the approach is appropriate?				
4d. Does the work plan consider the presence of any existing infrastructure (i.e., utilities) or easements?				
4a. Does the project site plan include the required work plan components? Do these components have detailed specifications and descriptions?				
4b. Are the work plan components reflective of the project's goals and objectives?				
4c. Do the work plan components follow established best practices or provide an explanation discussing why the approach is appropriate?				
4d. Does the work plan consider the presence of any existing infrastructure (i.e., utilities) or easements?				

Review Elements Questions	Addressed Yes/No	Complete (Y/N)	Page #(s)	Reviewer Comments
<b>5. Project Budget Review</b>				
5a. Does the IRT have an established procedure/methodology for reviewing project budgets at the project site plan stage, and if so, does the plan follow it?				
5b. Does the project site plan include information supporting the budget, such as a narrative or tables?				
5c. Does the project budget consider the potential cost/credit for the project and the extent to which the project would help the ILF program satisfy any advance credit liabilities?				
5d. If the projected project cost exceeds available funds, does the budget identify where the additional funds would be secured?				
5e. Does the budget for the project include any non-mitigation funds such as grants, donations, and/or appropriations? Does it discuss whether those non-mitigation funds will generate mitigation credit?				
<b>6. Financial Assurances</b>				
6a. Does the project site plan include the basis for the financial assurance, either corrective action on the project site, or replacement compensation at another site? Is this consistent with district/state requirements?				
6b. Does the project site plan include an itemized list of work associated with construction, monitoring, and maintenance provided in support of the financial assurance estimate? Does the itemized list include all the component parts associated with the project?				
6c. Does the site plan include specific conditions for reduction/release of financial assurances?				
6d. Do the assurances identify a non-federal beneficiary in the event that a claim is made on the assurances?				
6e. Does the type of assurance provide for payment, performance, or both in the event that a claim is made?				

<b>Review Elements Questions</b>	<b>Addressed Yes/No</b>	<b>Complete (Y/N)</b>	<b>Page # (s)</b>	<b>Reviewer Comments</b>
6f. Does the assurance include notification to the Corps at least 120 days before expiration/revocation of the assurances?				
6g. Does the project site plan or associated exhibit specify that the Sponsor will provide a financial assurance mechanism prior to an initial release of credits?				
<b>7. Site Protection Instrument</b>				
7a. Does the project site plan include a proposed long-term site protection mechanism (conservation easement, declaration of restrictions, etc.)? Is the protection mechanism consistent with current district/state guidelines (including template instruments)?				
7b. Does the mechanism protect against interests/activities that are incompatible with the project's goals and objectives?				
7c. Does the site protection instrument (or associated exhibits) list any other interests in the property (financial, mineral/timber, water rights)? Does the instrument (or exhibits/attachments to the ILF project site plan) include an explanation as to how those other interests may affect the project site?				
7d. If the site is located on public lands, is the Sponsor proposing additional long-term protection measures? Do they seem adequate?				
7e. Does the site protection mechanism include the requirement to provide the Corps with 60-days advanced notification if there is a proposed amendment or termination of the site protection mechanism?				
<b>8. Service Area</b>				
8a. Does the project site plan or associated exhibits include a clearly defined service area(s) for the project site?				
8b. Are there multiple service areas or service area types defined? Is this consistent with district, state, or local requirements?				

<b>Review Elements Questions</b>	<b>Addressed Yes/No</b>	<b>Complete (Y/N)</b>	<b>Page #(s)</b>	<b>Reviewer Comments</b>
8c. Does the project site plan or associated exhibits specify the watershed or landscape units used to define the service area?				
8d. Does the service area comply with local, district, and/or state requirements (scale, size, or resource type)?				
8e. Is the rationale for the location, size, and extent of the service area clearly documented in the project site plan and/or exhibits?				
<b>9. Credit Determination</b>				
9a. Is the Sponsor's credit determination methodology consistent with the reviewer's district/state standards?				
9b. Is the proposed generation of credits consistent with district/state policy, and is it applied accurately?				
9c. Does the proposed number of credits reflect the difference between baseline and post-construction conditions?				
9d. Are any of the proposed credits based solely on preservation?				
9e. Are credits proposed for generation through restoration, enhancement, or preservation of riparian areas, buffers, or uplands? If so, are those riparian areas, buffers, or uplands considered necessary to maintain the ecological viability of aquatic resources?				
9f. Does the project site plan include a table identifying credits that will be generated by resource type and is there a corresponding map identifying those locations?				
<b>10. Credit Release Schedule</b>				
10a. Does the project site plan or associated documents specify a credit release schedule?				
10b. Is the credit release schedule consistent with the mitigation type and resources being proposed? Does the project's credit release schedule differentiate between mitigation methods and resource types?				

<b>Review Elements Questions</b>	<b>Addressed Yes/No</b>	<b>Complete (Y/N)</b>	<b>Page #(s)</b>	<b>Reviewer Comments</b>
10c. Does the release schedule specify incremental milestones (e.g., construction completion, meeting performance standards) to be achieved for credit releases?				
10d. Will a significant amount of credits be withheld until all performance standards have been met?				
10e. Is the release schedule consistent with current/accepted practices in the district or state?				
<b>11. Assumption of Mitigation Responsibilities</b>				
11a. Does the project site plan include a provision stating that the Sponsor assumes the permittee's mitigation liability?				
11b. Does the project site plan include a provision stating that the Sponsor will notify the district of each transaction?				
11c. Does the project site plan specify the timing at which the district is notified of a transaction?				
<b>12. Accounting Procedures</b>				
12a. Does the document have a credit accounting procedure outlined?				
12b. Does the document indicate when transaction notifications will be provided to the Corps?				
12c. Does it indicate what information will be provided in the notification?				
<b>13. Reporting Protocols</b>				
13a. Does the project site plan specify requirements for submittal of reports to the Corps, such as: <ul style="list-style-type: none"> <li>• Project monitoring reports?</li> <li>• Annual ledger account reports or RIBITS ledger updates?</li> <li>• Annual financial assurance and long-term management funding reports?</li> </ul>				



Review Elements Questions	Addressed Yes/No	Complete (Y/N)	Page # (s)	Reviewer Comments
<b>14. Default and Closure Provisions</b>				
14a. Does the ILF project site plan (or associated exhibits) specify what is meant by default?				
14b. Does the project site plan identify options available to address default?				
14c. Does the project site plan (or associated exhibits) define ILF project closure and what actions must be completed in order for closure to take place?				
<b>15. Performance Standards</b>				
15a. Does the mitigation plan contain performance standards to evaluate attainment of project objectives?				
15b. Does the reviewer's district have performance standards for the proposed aquatic resource(s)? If the district does not have performance standards, proceed to questions 15d-15h. If the district has performance standards, proceed to questions 15c-15h.				
15c. Are the standards proposed by the Sponsor consistent with current district practices?				
15d. Are the performance standards ecologically based (e.g., entail comparison to reference sites/data, based on functional or condition assessment methodologies, and/or have measurements of hydrology or vegetation indices)?				
15e. Are the standards derived from the project's goals and objectives? Are they verifiable and well-defined? Are the standards clear enough that a third party would understand them?				
15f. Do the Sponsor's standards include three elements: attribute measured, level that defines success, and time period to achieve success?				
15g. Do the standards evaluate incremental progress toward project objectives?				

<b>Review Elements Questions</b>	<b>Addressed Yes/No</b>	<b>Complete (Y/N)</b>	<b>Page #(s)</b>	<b>Reviewer Comments</b>
15h. Do the performance standards compare project/site development to reference sites/data?				
15i. Where applicable, are there separate performance standards for different habitat or resource types?				
<b>16. Monitoring Requirements</b>				
16a. How long will the site be monitored?				
16b. What parameters/criteria will be monitored? Are they sufficiently detailed to evaluate attainment of performance standards?				
16c. Does the project site plan specify the content of the monitoring report?				
16d. Does monitoring include the use of reference sites or data to evaluate performance?				
<b>17. Maintenance Plan</b>				
17a. Does the project site plan contain a description and schedule of maintenance requirements to ensure the project remains viable once it has been constructed and throughout the monitoring period?				
17b. Does the description cover all relevant aspects of maintenance including ecological and infrastructure maintenance?				
17c. Does the description identify regular or recurring actions?				

Review Elements Questions	Addressed Yes/No	Complete (Y/N)	Page #(s)	Reviewer Comments
<b>18. Adaptive Management Plan</b>				
<p>18a. Does the project site plan or associated management plan document(s) include general guidelines for adaptive management that encompass:</p> <ul style="list-style-type: none"> <li>• Addressing unforeseen circumstances, which may be defined at a national, state, or district level?</li> <li>• Coordination with IRT?</li> <li>• The process for adjusting the project if it cannot be constructed according to plan?</li> <li>• How the project will be managed if it does not meet its performance standards or long-term management goals?</li> </ul>				
<b>19. Long-Term Management Plan</b>				
19a. Does the project site plan include a long-term management plan (LTMP)?				
19b. Does the project site plan or LTMP identify the party(ies) responsible for long-term management? Can the responsibility for long-term management be transferred to another party?				
19c. Does the LTMP include a complete itemization of long-term management tasks to be conducted periodically on a permanent basis?				
19d. Are the annual cost estimates for management activities broken down by task? Does the LTMP identify references for cost information used in the plan?				
19e. Does the LTMP provide information supporting how the total amount of long-term financing was determined?				
19f. Does the LTMP allow for periodic adjustments in management priorities? Does this include adjustments in spending?				
19g. Does the LTMP describe how the LTMP will be funded (lump sum, installments, prior to credit release, etc.)? Is that consistent with current practices in the district/state?				