***[IN-LIEU FEE PROGRAM PROSPECTUS TEMPLATE]***

***[Text in brackets is provided for explanatory purposes. Please delete before submitting the prospectus.]***

***[Please note: CFR Part 332.8 (Federal Rule on Compensatory Mitigation) contains a list of information required when submitting an ILF Prospectus. The rule states the prospectus must provide a summary of the information regarding the proposed in-lieu fee program, at a sufficient level of detail to support informed public and IRT comments. This template serves as a guide, based on previous ILF prospectus submittals and public comment, as to the information needed to “support informed public and IRT comments.” The template text should be revised to reflect the individual ILF Program.]***

***[Insert In-Lieu Fee Program Name]***

**In-Lieu Fee Prospectus**

**[Insert date****]**

**Program Sponsor:**

***[Insert name of sponsoring organization]***

***[Insert mailing address for sponsoring organization]***

***[Insert phone number, email, or both for sponsoring organization]***

Table of Contents

[List of Figures iv](#_Toc355859096)

[List of Acronyms v](#_Toc355859097)

[1. Introduction 6](#_Toc355859098)

[2. Need for Program 6](#_Toc355859099)

[3. Objectives 7](#_Toc355859100)

[4. Definitions 8](#_Toc355859101)

[5. Program Establishment and Operation 12](#_Toc355859102)

[5.1 Overview 12](#_Toc355859103)

[5.2 Program Scope 12](#_Toc355859104)

[5.3 Regulatory Authorities 13](#_Toc355859105)

[5.4 Mitigation Sequencingand Participating Agencies 14](#_Toc355859106)

[5.5 Sponsor Qualifications and Responsibilities 15](#_Toc355859107)

[5.6 Interagency Review Team 16](#_Toc355859108)

[6. Credit and Debit Procedure 17](#_Toc355859109)

[6.1 Method for Determining Debits and Credits 17](#_Toc355859110)

[6.2 Advance credits 18](#_Toc355859111)

[7. Program Account 19](#_Toc355859112)

[7.1 Mitigation Fees 19](#_Toc355859113)

[7.2 Calculation of Mitigation Fees 20](#_Toc355859114)

[7.3 Allocation and Use of Mitigation Fees 20](#_Toc355859115)

[8. Ledger 22](#_Toc355859116)

[8.1 Program Account Ledger 22](#_Toc355859117)

[8.2 Credit Ledger 23](#_Toc355859118)

[9. Reporting 23](#_Toc355859119)

[10. Compensation Planning Framework 24](#_Toc355859120)

[11. Descriptions and Assessments of Service Areas 26](#_Toc355859121)

[11.1 Service Area 1 26](#_Toc355859122)

[11.2 Service Area 2 28](#_Toc355859123)

[12. Site Selection Process 28](#_Toc355859124)

[12.1 Stakeholder Involvement Strategy 31](#_Toc355859125)

[12.2 IRT Approval 31](#_Toc355859126)

[13. Preservation Strategy 32](#_Toc355859127)

[14. Site Acquisition and Protection 32](#_Toc355859128)

[15. Mitigation Project Implementation 33](#_Toc355859129)

[15.1 Mitigation Plan 33](#_Toc355859130)

[15.2 Fulfillment of Advance Credits 35](#_Toc355859131)

[15.3 Credit Release 35](#_Toc355859132)

[15.4 Project Implementation 37](#_Toc355859133)

[15.5 Monitoring and Maintenance 37](#_Toc355859134)

[15.6 Adaptive Management and Contingency Planning 37](#_Toc355859135)

[16. Long Term Management/Site Stewardship 38](#_Toc355859136)

[17. How Mitigation Relates to Restoration Projects 38](#_Toc355859137)

[18. Evaluation and Reporting 39](#_Toc355859138)

[19. References 40](#_Toc355859139)

# List of Figures

***[The below figures are required. However, depending on the scope of your project, additional figures may be needed.]***

**Figure 1. Vicinity Map**

**Figure 2. Showing Watersheds/Service Areas**

# List of Acronyms

|  |  |
| --- | --- |
| BMP | Best Management Practice |
| CAO | Critical Areas Ordinance |
| CFR | Code of Federal Regulations |
| DA | Department of the Army (usually indicating Corps permits) |
| EPA | Environmental Protection Agency |
| ESA | Endangered Species Act |
| FCD | Flood Control District |
| GIS | Geographic Information Systems |
| HGM | Hydrogeomorphic |
| IGA | Inter-governmental Agreement |
| ILF | In-lieu Fee |
| IRT | Inter-agency Review Team |
| LWD | Large Woody Debris |
| NOAA | National Oceanic and Atmospheric Administration |
| RCW | Revised Code of Washington |
| SMG | Site Management Guidelines |
| USFWS | United States Fish and Wildlife Service |
| WDFW | Washington Department of Fish and Wildlife |
| WRIA | Watershed Resource Inventory Area |

# 1. Introduction

This prospectus provides a summary of the proposal for an In-Lieu Fee (ILF) Mitigation Program for ***[insert name of location or sponsoring organization]***.  ***[Insert name of sponsoring organization]*** proposes to serve as Sponsor of the ***[insert ILF program name]*** ILF program.  The following prospectus outlines the circumstances and manner in which the ILF Program will serve to satisfy compensatory mitigation requirements of federal, state, and local regulatory programs in ***[insert location – i.e., city, county, watershed – where ILF will operate]*.**

# 2. Need for Program

***[Update and regionalize as needed]***

Studies of compensatory wetland mitigation in Washington State and across the country generally demonstrate that less than 50 percent of mitigation sites are successful ecologically or in achieving their performance standards and intended goals (Johnson et al. 2002, Mockler et al. 1998, National Research Council 2001, Sheldon et al. 2005). Furthermore, they fail to effectively replace lost or damaged resources, habitats, and functions (National Research Council 2001, Sheldon et al. 2005). These studies identify several common flaws, including inappropriate site selection, project design without a landscape or watershed context, poor planning and implementation of projects, lack of oversight, maintenance, and follow-through, and insufficient long-term management and monitoring. In addition, most mitigation projects implemented by permittees are small, less than one acre in size. The environmental benefits of these piecemeal, “postage stamp” projects, even when successful, are often limited in scope. This is because mitigation typically occurs “on the same site where impacts occur (“on‐site” mitigation) regardless of whether the mitigation would be successful and sustainable over time or contribute in a meaningful way towards the overall health of watershed processes” (ESA and Ross & Associates Environmental Consulting, Ltd. 2008).

Federal regulations have identified in-lieu fee programs as one potential option to correct some of the shortcomings in existing mitigation techniques (33 CFR Part 332 and 40 CFR Part 230). In-lieu fee programs consolidate compensatory mitigation projects and resources to target more ecologically significant functions, provide financial planning, provide scientific expertise, reduce temporal loss of function, and reduce uncertainty about project success.

The Mitigation That Works Forum also supports development of in-lieu fee programs. The Forum was convened by the Department of Ecology, and included 22-members representing state and federal agencies with mitigation responsibilities, local governments, ports, business, environmental, and land use/conservation interests. The Forum endorsed watershed-based mitigation, such as ILF, which directs mitigation dollars to the places in a watershed that are most likely to be successful and meaningful (ESA and Ross & Associates Environmental Consulting, Ltd. 2008).

New development either results in the direct loss of natural resource acreage and function, or it indirectly impairs processes and function due to urbanization and increases in impervious surfaces. The effects of expanding imperviousness include: increased flooding, erosion, elevated water temperatures, high nutrient loads and turbidity, and low dissolved oxygen. All of which adversely affect fish and wildlife habitat. Restoration efforts in key locations could provide significant improvements to hydrologic processes as well as benefits to water quality.

***[Describe the current development trends in the location where the ILF Program will operate. This is to provide a rationale for the general need of an ILF program in this location.]***

The ***[insert ILF Program name]*** ILF Program aims to provide an alternative to permittee-responsible mitigation within ***[insert location – i.e., city, county, watershed – where ILF will operate]***.

# 3. Objectives

The primary objectives of the ILF Program are to provide a comprehensive natural resource program that addresses ecosystem needs at the local watershed level, and that provides an additional mechanism for compensatory mitigation for unavoidable impacts to aquatic resources ***[insert “and their buffers”, if applicable]*** authorized by the Clean Water Act (33 U.S.C. § 1251 et seq.) and/or other federal, state, ***[insert “tribal”, if applicable]*** or local regulations while maximizing the benefit to the ***[insert watershed where the ILF program will operate****]*. The ILF Program is intended to uphold the goal of no net loss through the preservation, enhancement, establishment, and restoration of ecological functions within target watersheds through the establishment and management of Mitigation Sites. It is the intent of this program be operated in a collaborative manner, including collaboration of the Interagency Review Team (IRT) members in the decision making process. Additional objectives of the ILF Program include:

1. Provide high quality mitigation for unavoidable impacts to aquatic resources ***[insert “and their buffers”, if applicable]*** due to development.
2. Utilize scale efficiencies by combining the impacts from individual smaller projects within a service area into mitigation at larger sites.
3. More efficiently meet regulatory requirements by streamlining the compensatory mitigation process.
4. Develop an ecologically-based site selection process to identify the most appropriate mitigation options that result in greater ecological benefit to a sub-basin, basin, or watershed than could be achieved through permittee-responsible mitigation.
5. Select the best mitigation sites for the program through a rigorous analysis by a group of professional resource managers and local experts, drawing from personal knowledge and best available science and analyses of existing data for a particular basin or watershed.
6. Provide an alternative to permittee-responsible mitigation.
7. Provide an effective and transparent accounting structure for collecting in-lieu fees, disbursing project funds, and compliance reporting.
8. Work in an efficient and transparent manner with the Interagency Review Team to implement mitigation projects and enact amendments to the program Instrument.
9. Provide a functionally viable option to mitigate for small unavoidable impacts that currently may be falling through the cracks ***[reference code language that authorizes exemptions or reasonable use exceptions]***.

# 4. Definitions

Terms used for in-lieu fee programs may have different meanings than their common usage would suggest. There are also differences in the legal definitions used by ***[jurisdiction in which ILF Program will operate]*** and the federal agencies. For all terms not described below, the definitions used by the Regulatory Program of the U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (EPA) [33 CFR Parts 320-331; 40 CFR Part 230] are adopted for the ILF Program.

1. *Advance credit* means any credits of an approved in‐lieu fee program that are available for sale prior to being fulfilled in accordance with an approved mitigation project plan. Advance credit sales require an approved in‐lieu fee program instrument that meets all applicable requirements including a specific allocation of advance credits, by service area where applicable. The instrument must also contain a schedule for fulfillment of advance credit sales.
2. *Applicant* means an entity seeking a permit for a project that will result in impacts to aquatic resources. Use of the term applicant indicates that a permit has not yet been issued.
3. *Aquatic area*: any non‐wetland water feature including all shorelines of the state, rivers, streams, marine waters, inland bodies of open water including lakes and ponds, reservoirs and conveyance systems and impoundments of these features if any portion of the feature is formed from a stream or wetland. Aquatic areas are regulated by federal, state, and/or local regulations and typically require mitigation when impacts occur.
4. *Aquatic Resources*, including "wetlands" and "aquatic areas”. To be considered a wetland, the aquatic resource must meet the criteria in the Corps of Engineers’ Wetland Delineation Manual (1987) and applicable supplements. These wetlands include isolated wetlands that may not be regulated by the Corps and EPA, but may be regulated by the State and local jurisdiction(s).
5. *Buffer* means an upland and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.
6. *Compensatory mitigation* means the restoration (re‐establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.
7. *Credit* means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.
8. *Credit/Debit Tool* is the abbreviated title for *Calculating Credits and Debits for Compensatory Mitigation in Western Washington* (Ecology Publication #10-06-011) and Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Eastern Washington (Ecology Publication #11-06-015). The Credit/Debit tool provides a predictable and reproducible method for assessing mitigation requirements at a given impact project based on losses of wetland functions and values, and similarly, to assess lift in wetland functions and values resulting from a mitigation project. The tool comprises indicators to rate functions in a wetland unit related to water quality, hydrology, and habitat. The output of the tool (for both impact sites and mitigation projects) will serve as the basis for assigning debits and credits, but it will not be the only factor.
9. *Debit* means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity.
10. *Enhancement* means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
11. *Establishment* (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.
12. *Establishment phase* (*performance period*) means the period of time from project construction until all mitigation credits associated with a project have been released, i.e., when a mitigation project is still “earning” mitigation credit. The end of the establishment phase marks the beginning of the *long‐term management phase.*
13. *Fulfillment of advance credits* means applying credits released, in accordance with an approved credit release schedule, to satisfy the mitigation requirements represented by the sale of advance credits. When advance credits are fulfilled, an equal number of new advance credits are restored to the Sponsor for sale or transfer to permit applicants.
14. *Functional lift* (lift) is the increase in aquatic resource functions provided by mitigation work and usually expressed in terms of credits.
15. *Impact* means adverse effect.
16. *Interagency Review Team (IRT)* means an interagency group of federal, tribal, state, and/or local regulatory and resource agency representatives that review documentation and advises the chair (Corps) on the establishment and management of an in‐lieu fee program.
17. *Long term management phase* means the period beginning at a site when the final credits are released from a mitigation project. During the long term management phase, the monitoring and maintenance will continue according to long term management plans contained in the approved Mitigation Plans for a site.
18. *Mitigation fees* are all fees paid by a permittee using the ILF Program to purchase credits from the Sponsor. Mitigation fees are used to pay for all aspects of implementing and managing mitigation projects, as well as fund the monitoring, maintenance, long-term management, and administrative duties. Mitigation fees represent “full cost accounting,” meaning that permittees will pay the costs to fully and successfully compensate for the impacts to wetland and aquatic functions (“debits”). ***[Mitigation fees may include land fees in addition to credit fees. If charged separately, the following definitions should be included: Credit Fees are fees paid by a permittee to purchase ILF credits from the Sponsor. Credit Fees are used to pay for all aspects of implementing and managing mitigation projects, as well as fund the monitoring, maintenance, long-term management, and administrative duties; but does not include land fees. Land fees are fees paid by a permittee using the ILF Program to account for the land costs associated with implementing a mitigation project. Land Fees may be used by the ILF Program to acquire sites.]***
19. *Mitigation site* (mitigation project) refers to the area where the compensatory mitigation project will be constructed, monitored, maintained, managed, and permanently protected.
20. *Performance standards* are observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.
21. *Permittee* means an entity which has been issued a permit by one or more regulatory agencies.
22. *Preservation* means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.
23. *Re‐establishment* means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re‐establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.
24. *Rehabilitation* means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
25. *Released credits* means credits associated with an approved mitigation plan that the chair, in consultation with the IRT, have made available for sale or fulfillment of advance credits.
26. *Restoration* means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re‐establishment and rehabilitation.
27. *Service area* means the geographic area within which impacts can be mitigated at a specific in‐lieu fee program, as designated in its instrument.
28. *Sponsor* means a public or non-profit natural resource entity responsible for establishing and in most circumstances, operating an in‐lieu fee program.
29. *Temporal loss* is the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site.
30. *Wetland(s)* means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The Growth Management Act (RCW 36.70A.030)furtherdefines *wetlands* as:

Wetland means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities; or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.

This ILF Prospectus incorporates all other terms as defined in 33 CFR 332.2.

# 5. Program Establishment and Operation

## 5.1 Overview

The ILF Program will provide an option to permit applicants and regulatory agencies to provide mitigation for unavoidable impacts to aquatic resources. Under the program, public and private applicants for environmental permits may be allowed to pay into an ILF fund instead of performing permittee-responsible or “their own” mitigation for unavoidable impacts from their development actions. The amount of the payment will be based on “full cost accounting”, meaning that permittees will pay the costs to fully and successfully compensate for the impacts to wetland and aquatic functions (“debits”). Proof of payment will be required before permitted impacts can occur.

Payments into the ILF fund will be used to implement mitigation projects at prioritized locations that provide environmental improvement within the watershed where the impacts occur. Mitigation projects will be selected based on an analysis of their ability to compensate for impacts and provide significant and broad ecological benefits.

Current federal, state, and local regulatory requirements to avoid and minimize impacts before allowing compensation remain unchanged. Mitigation sites will be designed and constructed to ensure success and managed in perpetuity to support ecological functions. Every dollar deposited into the ILF fund will be tracked to ensure that the appropriate actions are funded. The performance of the program will be monitored and reported. Any deficiencies will be corrected or adaptively managed.

## 5.2 Program Scope

This prospectus addresses in-lieu fee mitigation for freshwater wetlands and their buffers ***[insert any other types of resources for which the ILF program intends to provide mitigation]***. However, agencies with regulatory authority may determine, on a case by case basis, ILF mitigation provides the most ecologically preferable option to compensate for unavoidable impacts to other aquatic resources.

In this prospectus, the Sponsor proposes the following service areas (*insert Figure(s)* *showing vicinity map with location of ILF program area with individual service areas demarcated*):

* ***[List proposed service areas by WRIA # and name or name of drainage basin within a WRIA if proposing smaller service areas]***

***[Insert Figure(s) showing vicinity map (with some recognizable landmark or feature, such as major water body, mountain range, interstate or other major HWY and the location of ILF program boundary and proposed service areas.]***

## 5.3 Regulatory Authorities

The Sponsor seeks approval of the ILF program through the federal rules for Compensatory Mitigation, published in 2008 (33 CFR Part 332) and under the state Water Pollution Control Act (90.48 RCW.) If approved, the ILF program would provide an option for permit applicants to provide compensatory mitigation. Specifically, the program allows applicants to pay a fee to the program Sponsor in-lieu of completing their own compensatory mitigation projects. However, compensatory mitigation becomes an option only after higher priorities in the mitigation sequence, specifically avoidance and minimization, have been exhausted.

The establishment, use, operation, and maintenance of this ILF program will be carried out in accordance with all applicable authorities. The following list includes the most relevant authorities:

A. Federal

1. Clean Water Act (33 USC §1251 et seq.)
2. Rivers and Harbors Act of 1899 Section 9 and 10 (33 USC § 403)
3. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332)
4. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under the Clean Water Act, Section 404(b)(1) Guidelines (February 6, 1990)
5. Guidelines for the Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230, Section 404(b)(1))
6. National Environmental Policy Act (42 USC §§ 4321 et seq.)
7. Council on Environmental Quality Procedures for Implementing the National Environmental Policy Act (40 CFR Parts 1500-1508)
8. Executive Order 11990 (Protection of Wetlands)
9. Executive Order 11988 (Floodplains Management)
10. Executive Order 13112 (Invasive Species)
11. Fish and Wildlife Coordination Act (16 USC §§ 661 et seq.)
12. Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)
13. Endangered Species Act (16 USC 1531-1544, 87 Stat. 884);
14. Magnuson-Stevens Fishery Conservation & Management Act (16 USC § 1801 et seq.)
15. Coastal Zone Management Act (16 USC 1451-1465);
16. National Historic Preservation Act, Section 106 (16 USC§ 470)

B. State of Washington

1. Water Pollution Control Act (Chapter 90.48 RCW and Chapter 173 -225 WAC)
2. Environmental Policy Act (Chapter 43.21C RCW and Chapter 197-11 WAC)
3. Growth Management Act (Chapter 36.70A RCW and Chapter 365-195 WAC)
4. Construction Projects in State Waters (Chapter 77.55 RCW)
5. Shoreline Management Act of 1971 (Chapter 90.58 RCW and Chapter 173-20 RCW)
6. Salmon Recovery Act (Chapter 75.46 RCW)
7. Aquatic Resources Mitigation Act (Chapter 90.74 RCW)
8. Aquatic Lands (Chapters 79.105 - 79.140 RCW)

C**. *[Insert location of jurisdiction where ILF program will operate]*** Code and other Local Authorities

1. ***[Insert code title of local jurisdiction Administration]***
2. ***[Insert code title of local jurisdiction Critical Areas Ordinances]***
3. Shoreline Master Programs

The Sponsor intends that its ILF program would be available to compensate for impacts to wetlands and their buffers ***[insert any other types of resources for which the ILF program intends to provide mitigation]***, regulated at all levels of government, including local, state, tribal, and federal permits.

## 5.4 Mitigation Sequencingand Participating Agencies

The ILF Program provides project applicants an option for compensatory mitigation after higher priorities in the mitigation sequence have been exhausted. Specifically, the program provides applicants the opportunity to pay a fee to the program Sponsor in-lieu of completing mitigation on their own.

Local, state, and federal governments all adhere to regulations requiring mitigation sequencing for proposals that will adversely affect wetlands and other aquatic resources. Mitigation sequencing refers to a series of steps. Applicants must follow these steps and revise their project proposals to the maximum extent practicable in order to eliminate or decrease the negative effects of a proposed project. The following are the steps in the mitigation sequence according to the implementing rules of SEPA (Chapter 197-11-768 WAC) and ***[insert title of local jurisdiction code describing mitigation sequencing]***:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.
6. Monitoring the impact and taking appropriate corrective measures.

Projects that require Clean Water Act authorization by the Corps must also comply with the Section 404(b) (1) guidelines. These guidelines presume, unless clearly rebutted by the applicant, that less environmentally damaging alternatives to filling special aquatic sites, such as wetlands, are available for non-water-dependent activities. Whether a project is water dependent or not, the guidelines presume that all practicable alternatives that do not involve a discharge into a special aquatic site, which includes wetlands, have less adverse impact on the aquatic ecosystem.

The Section 404(b)(1) guidelines prohibit the Corps from authorizing a project under an individual permit unless that project would use the “least environmentally damaging practicable alternative” (as determined by the Corps and EPA). If a less environmentally damaging alternative is available and practicable, then a permit would be denied.

In order to qualify for this in-lieu fee program, a project applicant would have to demonstrate, and regulatory agencies concur, that all practicable avoidance and minimization measures have been taken. In addition, the applicant would need to demonstrate that in-lieu fee compensation offers the most ecologically preferable option for offsetting losses.

The ILF Program becomes an option for compensation only when the applicant can demonstrate that on-site mitigation alternatives are impracticable or of low ecological value and that greater ecological benefits in the basin or watershed can be achieved through off-site, in-lieu fee mitigation.

***[Insert title or citation of local jurisdiction code that allows the use of an ILF Program and/or off-site mitigation.]***

On a case-by-case basis, regulatory agencies may determine that it is appropriate to de-couple the functions associated with the impacts. This means that compensation for some functions that cannot be transferred off-site would occur on-site. However, compensation for other functions could occur off-site, such as through the purchase of ILF credits.

## 5.5 Sponsor Qualifications and Responsibilities

***[Insert name of sponsoring organization]*** will serve as Sponsor of the ***[insert ILF program name]*** ILF program.

***[Insert language describing the Sponsor’s qualifications, including: mission of the sponsoring organization, past experience to successfully complete mitigation or restoration projects, and other information or resources available to the Sponsor that would indicate the Sponsor’s reliability and help insure the success of the program]***

The Sponsor will retain sole responsibility for ensuring the success of its mitigation sites and the ***[insert ILF Program name]*** ILF program. As such, the Sponsor will perform all roles required of a program Sponsor in 33 CFR Part 332.8, including the following:

1. Prioritize, identify, select, and acquire sites for ILF projects.
2. Design, permit, and oversee construction of mitigation sites.
3. Monitor, maintain, and manage ILF projects.
4. Ensure the success of compensatory mitigation for which fees have been collected.
5. Maintain accounting ledgers, tracking all fees collected and expenditures.
6. Attain IRT approval for mitigation plans and expenditures from the ILF account.
7. Maintain sufficient funds for the long-term management of mitigation projects.
8. Report annually on the progress and status of the program including financial accounting reports, credit transaction reports, mitigation site monitoring and progress toward success, status of long term management endowment account, amount of mitigation provided for authorized impacts/fees collected, and any changes in land ownership or transfers of long term management responsibilities.

## 5.6 Interagency Review Team

The Interagency Review Team (IRT) is made up of representatives of federal, state, local, and tribal agencies with regulatory authority or natural resource expertise. The Corps will chair the IRT. The composition of the IRT will vary depending upon the location of the program and its relevant service area. Agencies and tribes represented on the IRT may change through time depending on the nature of the impacts and location of the proposed mitigation sites.

The primary role of the IRT is to assist and advise the Corps in their role as chair, in the review and approval of proposed ILF programs. The IRT reviews, advises, and influences the establishment, operation, and management of in-lieu fee programs. The IRT guides development of the instrument providing review and comments to develop the final instrument and subsequent modifications or amendments.

Once the program is approved and operational, the IRT plays an integral role in reviewing the mitigation site selection and the proposed mitigation plans. IRT members also review annual monitoring reports, credit release requests, and remediation plans. The IRT agencies also provide expertise on other related matters, such as assessing the achievement of performance standards, reviewing long term management plans, and recommending corrective actions or adaptive management. Some IRT member agencies also play a role in reviewing permits for impact projects as well.

# 6. Credit and Debit Procedure

The standard unit of measure used for in-lieu fee programs to quantify an impact is a “debit”. Lift at a mitigation site is measured in “credits.”

The Sponsor proposes to use *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington, Final Report, March 2012* (Ecology publication #10-06-011), also called the Credit/Debit Tool. The Credit/Debit Tool assesses impacts and mitigation needs within the service areas in the ILF program. ***[The Credit/Debit Tool is the preferred method for determining debits and credits for programs addressing freshwater wetland systems. Sponsors should consult with the Corps if proposing another method for calculating credits and debits.]***

The Credit/Debit Tool is a method that estimates and quantifies:

1. The loss of functions and values when a wetland is altered, also called *Debits*
2. The gain in functions and values that result from compensatory mitigation, also called *Credits*.

The use of the Credit/Debit Tool offers a critical step needed to establish a functional equivalency of credits and debits.

## 6.1 Method for Determining Debits and Credits

The ILF process will begin with the assessment of unavoidable impacts to wetland functions resulting from the proposed development. Applying the Credit/Debit Tool will result in the quantification of units of functional loss, or “debits”, associated with the development project. A debit equates to one unit of function per acre or square foot of impact. When quantifying an impact to a wetland system, the debits will be divided into three buckets based on wetland functions: (1) habitat debits, (2) hydrology debits and (3) water quality debits. The relative level of functioning is determined based on the presence of indicators. Once the number of debits has been determined, then the appropriate number of credits can be purchased from the ILF program to offset the debits.

The Credit/Debit Tool is designed to assess wetland impacts. Determinations of debits (and thereby an applicant’s credit requirement) must be approved by regulatory agencies permitting an impact. If all regulatory agencies issuing permits for an unavoidable impact project agree that the ILF Program is the most practicable way for the applicant to meet mitigation needs, then mitigation requirements must be quantified and approved prior to permit issuance. The tool will provide the initial basis for quantifying wetland impact debits. However, the number of debits associated with the impact as determined by the tool may be adjusted for site-specific variables such as implementation of best management practices, etc.

At the proposed mitigation site, the Credit/Debit Tool will be applied to document existing conditions (units of function currently being provided). The tool will also be applied to determine the potential lift associated with the conceptual mitigation plan (anticipated units of function provided by the site after the proposed mitigation has been implemented). A “credit” equates to one unit of function gained per acre or square foot of mitigation at the mitigation site.

The Credit/Debit Tool will be used to assess wetland mitigation, including the preservation, enhancement, re-establishment, rehabilitation, and establishment of wetlands. Mitigation projects will earn credits in the same three wetland functional buckets: (1) habitat credits, (2) hydrology credits, and (3) water quality credits. There may be cases when pre-mitigation project functions in one or more categories are already high. In these cases, the project will only achieve lift in the functional bucket(s) in which functions were improved (i.e. only when the tool calculates a lift in functions as a result of the project). For example, a reed canary grass-dominated riverine wetland with ample over bank storage may provide high hydrologic and water quality functions in its pre-mitigation project condition. If the mitigation project mainly improves habitat complexity, the project might only earn habitat credits, and not earn any hydrology credits or water quality credits.

The IRT must review and approve the proposed amount and type of mitigation credit generated by mitigation sites. Any time best professional judgment is used to alter mitigation requirements or proposed earned mitigation credit, the Sponsor will provide detailed rationale based on best available science. The Sponsor will document and deliver this rationale to the appropriate entities (i.e. regulatory agencies for impact projects and the IRT for mitigation projects).

In cases where the Credit/Debit Tool is inappropriate (e.g. for impacts to streams, marine/nearshore, riparian areas, or buffers) or for jurisdictions that require the use of mitigation ratios in their Critical Area Ordinances, mitigation requirements may be determined according to area-based ratios[[1]](#footnote-1) or other ecologically appropriate method on a case-by-case basis.

## 6.2 Advance credits

Advance credits pertain to any credits that are available for sale prior to being fulfilled as specified in an approved mitigation project plan. As described in the federal rule on compensatory mitigation (33 CFR 332.8(n)(1)), the ILF program Sponsor may request advance credits within each service area based on:

1. The Compensation Planning Framework.
2. The Sponsors past performance for implementing aquatic resource restoration, establishment, enhancement and/or preservation activities in the proposed service area or other areas.
3. The projected financing necessary to begin planning and implementation of ILF projects.

Advance mitigation credits are like a pre-approved mitigation “credit card” with a set spending limit that the IRT issues to the in-lieu fee program Sponsor based on the three criteria listed above. When an unavoidable impact project occurs, the Sponsor can “borrow” a mitigation credit from the pre-approved credit card, and in turn sell that mitigation credit to the applicant who uses it to satisfy the compensatory mitigation requirements. The Sponsor must then pay off the balance on the credit card by fulfilling (i.e. “producing”) mitigation credits equal to (or greater than) the number of credits borrowed from the credit card. The remaining allowable “spending limit” on the credit card decreases as mitigation credits are sold to applicants, but increases accordingly when the Sponsor produces mitigation credits at mitigation projects (i.e. pays off the balance on the card). Section 33 CFR 332.8(n)(3) of the federal rule describes this concept.

# 7. Program Account

The Sponsor shall establish a mechanism to ensure that funds from in-lieu fee permittees are deposited into an ILF Program Fund. This fund will be separate from any accounts that receive money from entities other than permit applicants. The Sponsor shall ensure that the ILF program fund is established at a financial institution that is a member of the Federal Deposit Insurance Corporation (FDIC). All interests and earnings accruing to the program fund shall remain in that fund for use by the ILF Program for the purposes of providing compensatory mitigation.

## 7.1 Mitigation Fees

According to the federal rule, mitigation fees must represent full-cost accounting. “For in-lieu fee programs, 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 in-lieu fee program.” 33 CFR 332.8(o)(5)(ii).

The Sponsor will ensure that the mitigation fees will reflect the average costs for implementing all aspects of a mitigation project, including land acquisition. The Sponsor will base the average costs upon analyses of projects completed within ***[insert desired timeframe for past project cost analysis]***.

Mitigation fees are used to fund activities related to producing mitigation credit. Section 332.8(o)(5)(ii) of the federal rule states that credit costs may also be used for “administration of the in-lieu fee program”. This statement implies that mitigation fees can be used for administrative activities, so long as they are directly related to production of mitigation credit.

Mitigation fees cannot be used for activities such as trail maintenance, litter patrol, and other types of routine public land stewardship or maintenance activities unrelated to management of a mitigation site.

## 7.2 Calculation of Mitigation Fees

The Sponsor will establish the credit price by accounting for all aspects of mitigation project implementation, including site selection, land acquisition ***[if the Sponsor chooses to separate the mitigation fee into a land fee and a credit fee, this section should be revised]***, design and permitting, construction (plus costs associated with contracting), performance period maintenance and monitoring, long-term stewardship, and program administration. The credit price will also account for inclusion of contingency funds for each project. The Sponsor will base the credit price on the cost of mitigation or restoration projects within ***[insert desired timeframe for past project cost analysis]*** in ***[insert location or jurisdiction where ILF program will operate]***. The Sponsor will use a three-step process to determine a cost per credit for each project (see below). A final credit price will result from a weighted average of costs per credit from the recent projects.

The three-step process for each project will entail:

1. Evaluating the (proposed) number of credits of lift generated by each previous project, as determined by using the Credit/Debit Tool. Each analysis will calculate the number of habitat credits, hydrology credits, and water quality credits gained as a result of activities performed at each project.
2. Determining full costs for each project, including all expenditures to date and all expected future expenditures necessary to complete the project (achieve desired performance standards) and manage the mitigation site into the future. The Sponsor will review and analyze project budgets thoroughly to ensure that budgeted costs will be sufficient to cover all requirements for implementing a mitigation project according to the federal rule.
3. Calculating the cost per credit by dividing the total (adjusted) project costs by the total number of credits (i.e. the sum of all functional credit types) of lift associated with the project.

The prices of credits will be adjusted periodically to reflect actual costs associated with implementing mitigation projects through the program.

## 7.3 Allocation and Use of Mitigation Fees

Upon receipt of mitigation fees, the Sponsor will allocate funds to an account specific for the service area in which the impact occurred. Within the service area account, the Sponsor will allocate pre-determined percentages of the fee into the following sub-accounts:

1. Contingency Fund usedto ensure financial resources for construction cost overruns, site repair, implementation of adaptive management plans, and site replacement during the performance period. Any unused contingency funds will be transferred into long-term management fund at the end of the performance period.
2. Long Term Maintenance and Management Fund solely for use in long term management, such as long-term monitoring, s**i**te protection enforcement, site management and maintenance (if needed), long-term reporting, and all other aspects involved in implementing the long-term management plans included in IRT-approved Mitigation Plans. Long term management funds are not available for use on a project until the project enters the long term management phase (i.e., after the performance period is complete and all credit associated with a project is released.
3. Program Administration Fund will pay for program administration duties, including but not limited to:
	1. Site selection and concept designs.
	2. Fee and Credit accounting.
	3. Legal services.
	4. Data management (e.g., maintaining spreadsheets and a database).
	5. Reporting.
	6. Correspondence and meetings with the IRT and other regulatory agencies.
	7. Program development (e.g., working to improve how the program works to ensure highest quality mitigation).
	8. Other program administration duties as necessary,

D. The remaining money from the mitigation fees (after percentages have been allocated to the above funds) will fund Project Implementation, including the following aspects of future mitigation site development:

1. Land acquisition,
2. Mitigation site design and project permitting,
3. Construction and implementation,
4. Performance period maintenance and monitoring,

The process for planning and implementing mitigation projects is described in Section 15.

Prior to using any mitigation fees for land acquisition or project implementation, the Sponsor must submit proposed in-lieu fee projects to the Corps for funding approval. Disbursements from the program account may only be made upon receipt of the written authorization from the Corps, after consultation with the IRT, per the federal rule 33CFR 332.8 (i)(2).

If advance credits are used, the ILF Program will have three growing seasons (~3 years) from the date the fees are collected to complete land acquisition and initial physical and biological improvements, unless the IRT chair determines that more or less time is needed to plan and implement an ILF project. The terms of the program account must specify that the Corps has authority to direct those funds to alternative compensatory mitigation projects in cases where the Sponsor does not provide compensatory mitigation within this timeframe, per the federal rule, 33CFR 332.8 (n)(4).

# 8. Ledger

The Sponsor will maintain two ledgers: one to track mitigation fees and expenditures, and a second to track debits and credits. Both ledgers will be organized by service area, and the two will be related to each other. The ledgers will be used to track the source of funding for mitigation projects as well as where and how impact mitigation fees are spent. The program Sponsor will compile an annual ledger report for the Corps that will include the program account ledger and credit ledger.

## 8.1 Program Account Ledger

The program account ledger will track all income (Mitigation Fees) and expenditures within the program. The program account ledger will comprise separate “sub-ledgers” for each service area. The ledger for each service area will clearly show the following:

1. Mitigation fees collected for each impact project:
2. Credit Fee amounts and date of transactions.
3. Land cost surcharges, if applicable.
4. Impact project Permit Number.
5. Jurisdictional notation – indicates whether fees collected for unavoidable, permitted impacts involved federally jurisdictional wetlands, non-federally jurisdictional wetlands (i.e., isolated wetlands), locally-regulated critical area resources (i.e., buffer only impacts), or some combination.
6. Deposits and Expenditures for the Contingency Fund:
7. Origin of deposits (Impact Permit Number(s)).
8. Amount of deposits.
9. Date of transactions.
10. Contingency Expenditures (Mitigation Project Name(s)).
11. Deposits and Expenditures for the Long-term Management Fund:
12. Origin of deposits (Impact Permit Number(s)).
13. Amount of deposits.
14. Date of transactions.
15. Long-term Management Expenditures (Mitigation Project Name).
16. Deposits and Expenditures for the Program Administration Account:
17. Origin of deposits (Impact Permit Number(s)).
18. Amount of deposits.
19. Date of transactions.
20. Program Administration Expenditures.
21. Deposits and Expenditures for each Project Implementation Fund:
22. List of expenditures by Task categories covering all aspects of implementing mitigation-receiving projects, e.g., land acquisition, design, permitting, construction, maintenance and monitoring, etc. (See Section 15 for implementation tasks).

## 8.2 Credit Ledger

The credit ledgers will track credits that are sold, as well as credits that will be released once mitigation projects achieve performance standards. At no point will the Sponsor have a negative credit balance.

1. The credit ledger must include the following information.
2. Beginning and ending balances of available credits for each resource type and service area.
3. Beginning and ending balances of permitted impacts for each resource type and service area.
4. All additions of credits including date of transactions.
5. All subtraction of credits including permit numbers and date of transactions.
6. Any other changes in credit availability (e.g., additional credits released, credit sales suspended).
7. The credit ledger will contain basic information about each impact site and mitigation project. The Sponsor will include an example of the spreadsheet in the ILF Program Instrument.

# 9. Reporting

The ILF program Sponsor will compile an annual ledger report for the Corps that will include all financial activity in the program account, the beginning and ending balance of available credits, permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released or if credit sales are suspended).

The following sections of the federal rule describe reporting requirements:

33 CFR 332.8(q) *Reporting.*

* + - 1. *Ledger account.* The Sponsor must compile an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended). The ledger report must be submitted to the district engineer, who will distribute copies to the IRT members. The ledger report is part of the administrative record for the mitigation bank or in-lieu fee program. The district engineer will make the ledger report available to the public upon request.
			2. *Monitoring reports*. The Sponsor is responsible for monitoring the mitigation bank site or the in-lieu fee project site in accordance with the approved monitoring requirements to determine the level of success and identify problems requiring remedial action or adaptive management measures. Monitoring must be conducted in accordance with the requirements in 33 CFR 332.6, and at time intervals appropriate for the particular project type and until such time that the district engineer, in consultation with the IRT, has determined that the performance standards have been attained. The instrument must include requirements for periodic monitoring reports to be submitted to the district engineer, who will provide copies to other IRT members.
			3. *Financial assurance and long-term management funding report.* The district engineer may require the Sponsor to provide an annual report showing beginning and ending balances, including deposits into and any withdrawals from, the accounts providing funds for financial assurances and long-term management activities. The report should also include information on the amount of required financial assurances and the status of those assurances, including their potential expiration.

Finally, as provided in 33 CFR 332.8(i)(4), “the district engineer may audit the records pertaining to the program account. All books, accounts, reports, files, and other records relating to the in-lieu fee program account shall be available at reasonable times for inspection.”

# 10. Compensation Planning Framework

***[Insert Compensation Planning Framework specific to the location of the proposed ILF program and its service areas.***

***The prospectus must include a compensation planning framework that will be used to select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities. The compensation planning framework must support a watershed approach to compensatory mitigation. All specific projects used to provide compensation for permits must be consistent with the approved compensation planning framework.***

***From 33 CFR 332.8(c)(2-3):***

***(2) The compensation planning framework must contain the following elements:***

***(i) The geographic service area(s), including a watershed-based rationale for the delineation of each service area;***

***(ii) A description of the threats to aquatic resources in the service area(s), including how the in-lieu fee program will help offset impacts resulting from those threats;***

***(iii) An analysis of historic aquatic resource loss in the service area(s);***

***(iv) An analysis of current aquatic resource conditions in the service area(s), supported by an appropriate level of field documentation;***

***(v) A statement of aquatic resource goals and objectives for each service area, including a description of the general amounts, types and locations of aquatic resources the program will seek to provide;***

***(vi) A prioritization strategy for selecting and implementing compensatory mitigation activities;***

***(vii) An explanation of how any preservation objectives identified in paragraph (c)(2)(v) of this section and addressed in the prioritization strategy in paragraph (c)(2)(vi) satisfy the criteria for use of preservation in §332.3(h);***

***(viii) A description of any public and private stakeholder involvement in plan development and implementation, including, where appropriate, coordination with federal, state, tribal and local aquatic resource management and regulatory authorities;***

***(ix) A description of the long-term protection and management strategies for activities conducted by the in-lieu fee program Sponsor;***

***(x) A strategy for periodic evaluation and reporting on the progress of the program in achieving the goals and objectives in paragraph (c)(2)(v) of this section, including a process for revising the planning framework as necessary; and***

***(xi) Any other information deemed necessary for effective compensation planning by the district engineer [IRT chair].***

***(3) The level of detail necessary for the compensation planning framework is at the discretion of the district engineer [IRT chair], and will take into account the characteristics of the service area(s) and the scope of the program. As part of the in-lieu fee program instrument, the compensation planning framework will be reviewed by the IRT, and will be a major factor in the district engineer's decision on whether to approve the instrument.***

***Include appropriate figures to demonstrate service areas and notable features******.]***

# 11. Descriptions and Assessments of Service Areas

***[The following is applicable if the service areas in the ILF program will be based on WRIAs. If service areas will be based on some other method of delineating watershed boundaries then identify and describe the method and explain why it is appropriate for determining service areas.]***

For the purposes of ***[ILF program name]*** ILF Program, service areas are defined by Water Resource Inventory Area (WRIA) boundaries. Ecology and other state natural resource agencies developed the WRIAs as a way to delineate the state’s major watersheds. A watershed is the geographic region that drains water (and everything water carries) into a river, stream, or body of water. In the state of Washington, the WRIA provides a common denominator for natural resource planning. Watershed goals and objectives and watershed plans for improving water quality and water quantity/in-stream flows and recovering salmon are based on WRIAs.

The Sponsor proposes the following service areas, which align with the Water Resource Inventory Areas (WRIAs) in ***[name of jurisdiction in which ILF program will operate]***:

***[List proposed service areas by name and WRIA # or other naming convention if using a different watershed based system (e.g., HUC, local drainage basins)]***

***[Insert figure(s) showing the proposed service area boundaries in relation to the area in which the ILF program will operate]*.**

## 11.1 Service Area 1

***[Suggested organization:***

1. ***Begin with first proposed service area***
	1. ***Provide general description of service area, including:***
		1. ***Geographic boundaries such as rivers, lakes, marine water bodies, mountain ranges, county, state, or tribal boundaries, cities or towns.***
		2. ***Size of drainage area***
		3. ***List of major water bodies within the proposed service area with a brief description of their general location within or route through the service area***
		4. ***Estimated population of service area***
		5. ***List of major population centers, such as cities, towns, unincorporated areas, tribal reservations, and military installations***
		6. ***List of any locally based sub-divisions of the proposed service area, such as basins or sub-basins***
		7. ***A figure depicting geographic boundaries, landmarks, major cities and towns, and any basins or sub-basins***
	2. ***Describe historic conditions of the service area with a focus on aquatic areas and resources, including:***
		1. ***Geologic history of the area, such as glaciations, volcanic activity, massive floods, seismic events, and other geologic processes that influenced the topography, soils, and location, route, flow of water in the area***
		2. ***Pre-European settlement history, such as description of ecosystems and Native American use and influence on ecosystems***
		3. ***History and effect of settlement (19th century to present) on aquatic resources, such as ditching, draining, filling, dredging, damming, straightening, installing levees and shoreline armoring, increasing impervious surfaces, industrial pollution, logging, construction of roads, railroads, canals, lochs, airports, ports, etc.***
		4. ***Estimation of loss of aquatic resources since European settlement (e.g., acres of wetlands, linear feet of streams or shoreline)***
	3. ***Describe current condition of aquatic resources in the proposed service area***
		1. ***Estimation of existing aquatic resources (acres of remaining wetland and dominant class – Cowardin and hydrogeomorphic, linear feet of unarmored shoreline, etc)***
		2. ***Describe status of water quality, such as in lakes, rivers, streams, marine areas, groundwater aquifers etc. Are there any water bodies that have impaired water quality e.g. 303d listed waters or areas where a TMDL has been developed If so, for what attribute? Are beaches closed to swimming because of bacteria or other contamination? Is commercial or recreational shellfish harvesting restricted because of bacteria or other contamination?***
		3. ***Describe the status of water quantity. Are there issues with flooding? Are there issues with summer low flow or no flow? Are there conflicts over use of water, such as between irrigation, sufficient flows for fish passage, residential usage, and industrial usage?***
		4. ***Describe the status of habitat associated with aquatic resources? Is there any critical habitat for ESA listed, water-dependent species in the service area? Are there any ESA recovery plans that encompass all or part of the service area? Do any ESA listed species occur or use aquatic habitat within the service area? Are there any access issues for ESA listed species, such as dams without fish ladders, under-sized or hanging culverts?***
	4. ***Describe any threats to aquatic resources in the proposed service area, and explain the ramifications of the threat. Examples include the following:***
		1. ***New development, including residential, commercial, industrial, suburban sprawl, transportation and utility infrastructure, shoreline armoring (e.g., bulkheads). Results in increased impervious surfaces, habitat loss and fragmentation***
		2. ***Surface water run-off/stormwater***
		3. ***Failing septic systems, out-dated or under-sized waste water treatment plants***
		4. ***Alteration of water courses and water flow, such as from channelization, dikes, levees, dams, weirs, culverts. Results can include loss of fish passage and habitat, disconnection from floodplains, increased flow velocity and volume, erosion problems, etc.***
		5. ***Climate change, including increased temperatures, changes in volume and timing of precipitation, frequency and intensity of storm events, reduction in snowpack, sea level rise, etc.***
		6. ***Invasive species, including terrestrial, freshwater, and marine***
		7. ***Any other threats identified in the proposed service area***
	5. ***List the aquatic resource goals and objectives for the proposed service area including a description of the general amounts, types and locations of aquatic resources the program will seek to provide. Sources for this information include:***
		1. ***Watershed planning conducted through the Watershed Management Act (chapter 90.82 RCW, also known as ESHB 2514)***
		2. ***Salmon recovery plans, including Habitat Work Schedules, conducted through the Salmon Recovery Planning Act (ESHB 2496)***
		3. ***Watershed action plans conducted under WAC 400-12( the Nonpoint Rule)***
		4. ***Watershed characterizations***
		5. ***Local shoreline inventory and characterization reports***
		6. ***Local Flood Hazard Management Plans***
		7. ***Local watershed council’s action agenda***
		8. ***Local basin plans***
		9. ***Other pertinent information]***

## 11.2 Service Area 2

1. ***[Repeat a.-e. for each additional service area]***

# 12. Site Selection Process

***[The text below should be revised and expanded to pertain to the specific ILF Program.]***

One of the main objectives of this ILF program is to provide compensation for resource impacts that result in greater ecological benefit to a sub-basin, basin, or watershed than could be achieved through permittee-responsible mitigation. In addition the program aims to achieve “no net loss” of functions on a watershed scale. Therefore, sites will be prioritized based on their ability to meet watershed goals and restore watershed processes.

***[The following section applies if the location of the ILF program is within a Puget Sound county.]***

TheILF Program will use a method developed by the Puget Sound Watershed Characterization Project as an initial screen (<http://www.ecy.wa.gov/services/gis/data/pugetsound/characterization.htm>) coupled with assessments and recommendations within existing basin plans. Watershed characterization has integrated information from several environmental assessments to provide an ecosystem view of the landscape. The results of this characterization are useful for local governments in many ways. For the purposes of ILF, the results can help to develop restoration and protection strategies within a watershed.

The characterization results prioritize general areas for restoration based on the following:

* The importance of the area for providing specific watershed processes (e.g., surface water storage, recharge, and discharge, and sediment export).
* The level of degradation the area has experienced which has reduced an area’s ability to contribute to the performance of watershed processes.

The Sponsor plans to use the characterization results to prioritize the general areas (similar to sub-basins) within a service area where mitigation activities would provide the greatest potential improvement to watershed processes (i.e., important for watershed processes but degraded). Characterization results can be considered in total, or for a specific watershed process. For example, if flooding is a major issue in a service area, the Sponsor would focus on the characterization results that prioritize the best areas to restore surface water storage processes.

In addition, as regulators approve the use of ILF credits as compensation for unavoidable, permitted impacts, the acreage and functions lost will be recorded as debits within general function categories (refer to Section 6.1). If there is an imbalance in the number of debits across function categories (e.g., many more debits to a specific function category, such as water quality), it may influence the site selection prioritization (refer to Section 8.2.1). For example, if impact projects have many more debits to the water quality function, this may use up all the water quality credits and result in a surplus of hydrologic and habitat function credits. For the next selection of a mitigation site, the Sponsor, in consultation with the IRT, may focus on the characterization results that prioritize the best areas to restore water quality processes. An imbalance of credits among function groups may also influence the site-scale selection. In the example of more debits to water quality functions, the Sponsor may focus on sites with a high potential to improve water quality functions.

After sub-basins (general areas) have been prioritized, the Sponsor will review more detailed information to narrow the focus to a specific sub-basin or down to the level of potential sites within a couple of the prioritized sub-basins. The ILF Sponsor will utilize the following existing plans and lists that identify priority habitats needing particular attention, vulnerable locations within the watershed, and areas most likely to benefit from restoration, creation, enhancement, and preservation:

* Salmon Conservation and Recovery Plans and three year work plans.
* Watershed Action Plans, developed through Chapter 400-12 WAC.
* Watershed Plans, developed through RCW 90.82.
* County Basin Plans.
* County Rivers Flood Hazard Management Plan.
* Ecoregional Assessments.
* County Biodiversity Network Plans.
* Staff resources: Puget Sound Partnership Ecosystem Recovery Coordinators, Ecology Watershed leads; Tribal biologists.

In addition, the Sponsor will consult with local stakeholders, such as watershed groups to gain an understanding of recent local developments/conditions/situations and opportunities.

When evaluating sites at the site-scale, the Sponsor will refer to *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Hruby, et. al. 2009) to review the ecological suitability of any potential sites. This review will generally assess the ability of a site to provide benefits at a watershed scale. Further, the review will evaluate whether, and to what degree mitigation activities will be able to remove constraints on a site, thereby restoring processes and providing a lift in functions.

To the extent practicable, the Sponsor will review and consider the following basic information to further refine the list of possible sites:

1. Watershed-scale characteristics, such as aquatic habitat diversity, habitat connectivity, surface water areas (wetlands and streams), ground water flow patterns (including recharge, discharge, and storage areas), other landscape scale functions, and the degree of impairment of these characteristics.
2. Extent to which the site has potential to contribute to the restoration or protection of watershed processes.
3. Potential of the mitigation site to successfully contribute to a gain in functions as a result of mitigation activities.
4. Hydrologic conditions, soil characteristics, and other physical and chemical characteristics.
5. The size and adequacy of buffers necessary to protect the mitigation site from adjacent development or land use.
6. Location and availability of hydrologic sources (including availability of water rights, presence of State-Owned Aquatic Lands) and other ecological features.
7. Compatibility with adjacent land uses and watershed management plans.
8. 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 threatened or endangered species.
9. Other relevant factors including, but not limited to:
10. Development trends.
11. Anticipated land use changes.
12. Habitat status and trends.
13. Local or regional goals for the restoration or protection of particular habitat types or functions (e.g., re-establishment of habitat corridors or habitat for species of concern).
14. Water quality goals.
15. Floodplain management goals.
16. The relative potential for chemical contamination of the aquatic resources.
17. The relative locations of the impact and mitigation sites in the stream network.
18. Cost of acquisition and implementation.
19. Location with respect to urban centers.

## 12.1 Stakeholder Involvement Strategy

***[The text below should be revised and expanded to pertain to the specific ILF Program.]***

The Sponsor anticipates working with stakeholders, such as watershed groups, to help identify potential sites within the general areas prioritized for mitigation within each of the geographic service areas. The Sponsor anticipates meeting with local stakeholders to help narrow the focus to a specific sub-basin or down to the level of potential sites within a couple of the prioritized sub-basins. The local watershed groups will provide input based on local priorities, individual expertise, and on-the-ground understanding of site feasibility, important ecological characteristics, and expected development pressures.

The Sponsor will coordinate with watershed councils and tribes to gain an understanding of recent local developments, conditions, situations and opportunities within the prioritized areas.

## 12.2 IRT Approval

When the Sponsor has identified an appropriate site, the Sponsor will formally submit the proposed site, including the site selection rationale, to the IRT for approval. If approved, the IRT will request that the Sponsor collect additional data, such as:

* Rating the aquatic resource using HGM criteria and the Wetland Rating System for Western Washington (Hruby 2004) as appropriate.
* Applying the Credit/Debit Tool (or another IRT-approved mitigation assessment tool) based on existing conditions.
* Assessing whether existing conditions are conducive to generating the desired number of credits.

The data collected will be used to create a conceptual mitigation plan specific to the selected site.

# 13. Preservation Strategy

Preservation of high value aquatic resources that are under immediate and verifiable threat of impact, i.e., conversion to residential development, commercial development, silvicultural forest practices, or other activity that would significantly alter ecosystem functions and values, may be used as a compensatory mitigation strategy by the ILF Program. In general, these lands must meet the selection criteria in section 12 and must be determined to be consistent with the preservation criteria in the Federal Rules (33 CFR 332.3(h)) and Interagency guidance (Wetland Mitigation in Washington State pub #06-06-011a),

To the extent appropriate and practicable, preservation shall be done in conjunction with aquatic resource restoration, creation, enhancement, or a combination of activities. The Credit/Debit Tool can be used to assess existing conditions relative to the potential effects of conversion of the aquatic resources and adjacent terrestrial areas that support them (if present). This assessment will consider the likelihood of impacts actually occurring and weigh the assessment accordingly through application of risk and temporal loss factors.

# 14. Site Acquisition and Protection

Mitigation sites in the ***[insert ILF program name]*** ILF Program will be protected in perpetuity. The federal rule provides for flexibility in how sites are protected. “Long-term protection may be provided through real estate instruments such as conservation easements held by entities such as federal, tribal, state, or local resource agencies, non-profit conservation organizations, or private land managers; the transfer of title to such entities; or by restrictive covenants,” (33 CFR 332.7(a)(1)). All site protection mechanisms must be approved by the Corps following consultation with the IRT.

When the Sponsor uses a conservation easement as the mechanism to provide long-term protection for a mitigation site, the easement will be held by a qualified third-party entity approved by the Corps. Conservation easements and restrictive covenants placed on ILF sites will grant the Sponsor the right to construct a mitigation project on the land and access the mitigation site for maintenance and monitoring. Each easement or covenant will be negotiated individually based on specific attributes of the property.

Long-term ownership, stewardship of the property, or both may be passed to a qualified third-party entity. If ownership or stewardship is transferred, the easement holder retains the ability to enforce the conservation easements. Otherwise, the Sponsor retains the ability to enforce other protection mechanisms. Where a real estate instrument, such as an easement, is used to protect the site, the protection mechanism will include a provision requiring 60-day advance notification to the Sponsor and Corps before any action is taken to modify the instrument, including transfer of title.

Lands that are already encumbered with conservation easements or covenants may also be eligible as ILF mitigation sites so long as there are no restrictions on the site to implement mitigation activities such as restoration, establishment or enhancement. However, as with any other sites, prior approval must be received from the Corps. These sites may result in lower credit generation because they will not receive the credits associated with recording a site protection mechanism.

In the event that a site is not adequately protected, and the landowner intentionally or unintentionally fails to abide by the terms of the conservation easement or restrictive covenant, resulting in compromised functions of the applied mitigation, the Sponsor or easement holder will enforce conservation easements, restrictive covenants, and other protection mechanisms through application of any or all of the following actions:

* Require the landowner to pay for restoration and/or enhancement necessary to return the site to conditions that meet the original mitigation project performance requirements and the terms of the instrument.
* File a civil suit against the landowner for failure to meet the terms of the instrument.

Following the signing and recording of the conservation easement or restrictive covenant, the Sponsor will coordinate initiation of project design and construction according to the steps described in Section 15 *Mitigation Project Implementation*.

# 15. Mitigation Project Implementation

***[Briefly describe who will be responsible for designing, permitting, constructing, monitoring, and maintaining the mitigation site during the regulatory performance period. Briefly describe who is anticipated to perform the long-term maintenance and monitoring]***

## 15.1 Mitigation Plan

The Sponsor will ensure that mitigation plans and site designs for each site selected to compensate for unavoidable, permitted impacts are produced. The plan will include a description of the proposed credits to be established.

1. The mitigation plan will meet the requirements specified in 33 CFR §332.4(c) and contain the following elements:
2. Goals and Objectives: A description of the resource type(s) and amount(s) that will be provided, the functions targeted, the method of compensation, and the manner in which the resource functions of the project will address the needs of the watershed.
3. Site Selection: A description of the factors considered during the site selection process.
4. Site Protection Instrument: A description of the legal arrangements and instrument that will ensure the long-term protection of the mitigation site.
5. Baseline Site Information: A description of the ecological characteristics of the proposed site.
6. Determination of Credits: A description of the number of credits to be provided, including a brief explanation of the rationale for this determination.
7. Credit release schedule see section 15.3.
8. Mitigation Work Plan: Detailed written specifications and work descriptions for the project, including geographic boundaries; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan; soil management; and erosion control measures.
9. Maintenance Plan: A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.
10. Performance Standards: Ecological and measurable standards that will be used to determine whether the compensatory mitigation project is achieving its objectives.
11. 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. A schedule for monitoring and reporting on monitoring results will also be included.
12. Long-term Management Plan: A description of how the project will be managed after achievement of performance standards to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.
13. Adaptive Management Plan: A management strategy to address unforeseen changes in site conditions or other components of the project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect the project’s success.
14. 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 successfully completed, in accordance with its performance standards.
15. Other information, such as
	1. Nearby mitigation or restoration projects and how the mitigation project may compliment them.
	2. Adjacent land uses and potential effects of adjacent land uses on mitigation project.
	3. Other information as identified by the IRT as necessary for inclusion in the Mitigation Plan.
16. All Mitigation Plans for the ***[insert ILF program name]*** ILF Program will adhere to the requirements for Mitigation Plans outlined in the federal rule, and the IRT will review and make approval decisions on all Mitigation Plans.
17. Mitigation Plans will also clearly delineate the areas of a site where mitigation activities can occur. For example, Mitigation Plans will identify features that would disallow creation of credits such as trail corridors, utility easements, prior mitigation projects without any available additional credit, and restoration projects.

## 15.2 Fulfillment of Advance Credits

For fulfillment of the sale of “advance credits”, a compensatory mitigation project plan will be submitted to and approved by the IRT, and the initial physical and biological improvements will be initiated by the end of the third full growing season after the impact that generated the credit sale(s). The submittal of the Mitigation Plans to the IRT will include a credit release schedule. Generally, the Sponsor will request credit release consistent with target schedules identified in Section 15.3.

Typically, mitigation projects require baseline data collection in order to reduce risk of project failure. The collection of data will generally occur within one year of the unavoidable impact that generated the advance credit sale, but actual construction may not occur within three growing seasons. These cases would be limited to those which require multiple years of baseline data collection and would be contingent on Corps approval, in consultation with the IRT as appropriate.

## 15.3 Credit Release

For each mitigation site, the Sponsor will negotiate a credit release schedule with the IRT. The terms of the credit release schedule must be specified in the approved mitigation plan. The credit release shall correspond with the achievement of specific performance standards as observed during official monitoring events identified in the monitoring schedule. The credit release schedule should reserve a significant share of the total credits for release only after full achievement of ecological performance standards.

Sections 33 CFR 332.8(o)(8)(i) and (iii) of the federal rule describe details related to the Credit release schedule for in-lieu fee programs:

The table below provides an example credit release schedule. Actual credit release schedules for each project may differ from the example below depending on site conditions and project variables.

**Example Credit Release Schedule**

|  |  |  |
| --- | --- | --- |
| **Proposed Project Milestone** | **Portion of Credit Released** | **Cumulative Portion of Fulfillment** |
| Site acquisition and recording of site protection mechanism (mitigation site plan approved by IRT) | 1/8  | 1/8 |
| Installation (approval of As-Built) | 1/8  | 1/4 |
| Year 1 performance standards achieved (primarily hydrologic) | 1/8 | 3/8 |
| Year 3 performance standards achieved | 1/8  | 1/2 |
| Year 5 performance standards achieved | 1/8 | 5/8 |
| Year 7 performance standards achieved | 1/4 | 7/8 |
| Year 10 performance standards achieved (including delineation, running credit debit tool) and transition to long-term stewardship (IRT sign-off on achievement of performance standards) | 1/8 | Credit fulfilled |

Credit releases for in-lieu fee projects must be approved by the Corps. In order for credits to be released, the Sponsor will submit documentation to the Corps demonstrating that the appropriate milestones for credit release have been achieved and requesting the release. The Corps will provide copies of this documentation to the IRT members for review. IRT members may provide comments on this document. (See 33 CFR 332.8 (o)(9))

The Corps may determine that a site visit is necessary prior to the release of credits.

If the in-lieu fee project does not achieve the performance-based milestones, the Corps, in consultation with the IRT, may modify the credit release schedule, including reducing the number of credits.

If at any step in the credit release schedule, it is determined through monitoring that performance standards are not being met, the Sponsor, in consultation with the IRT, shall identify appropriate adaptive management and/or contingency measures and devise a plan for implementation.

## 15.4 Project Implementation

Once the IRT has approved a mitigation plan and credit release schedule, the Sponsor will request spending authorization to initiate implementation of the mitigation project. The Sponsor will oversee contract development, select a qualified construction contractor, and perform construction management and oversight. The construction process will include routine inspections, special inspections, pre-construction site review meetings, post-construction meetings, and compliance reporting as necessary.

## 15.5 Monitoring and Maintenance

Monitoring will require qualitative and quantitative assessments of physical, chemical and biological characteristics of the project as appropriate, using scientifically appropriate analytical methods. The purpose of monitoring is to determine the level of compliance with ecological performance standards established in the site-specific mitigation plan. In addition, the monitoring data will help identify problems that may trigger maintenance activity, contingency plans, remedial action, or adaptive management measures.

Monitored parameters depend in large part on the type, scale and scope of a proposed project, but will generally include hydrologic conditions, vegetative cover, soil stability, and presence/extent of noxious weeds and nuisance species.

As necessary, the Sponsor will coordinate with land managers and appropriate contractors to outline maintenance protocols for each mitigation project. Active maintenance practices will generally follow a three to ten year program that may include repair/replacement of engineered structures, nuisance species control, and adaptive management measures, such as grade or hydrology modifications, species substitutions, replanting, replacement of habitat features, and temporary fencing.

## 15.6 Adaptive Management and Contingency Planning

Once ILF mitigation projects are installed, they will be adaptively managed in response to the outcome of regular and routine maintenance and monitoring events. If any monitoring data reveal that a mitigation project is failing in whole or in part, the Sponsor will determine whether conditions can be remedied through maintenance activities. If the failure is beyond the scope of routine maintenance, the Sponsor will submit a Contingency Plan to the IRT. The Contingency Plan may range in complexity from a list of plant substitutions, to cross-sections of proposed engineered structures. Once approved by the IRT, the contingency plan will be implemented and will replace the approved mitigation plan. If the failure is substantial, the Sponsor will extend the maintenance and monitoring period for that project.

# 16. Long Term Management/Site Stewardship

Projects will be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. The ILF Sponsor will ensure that projects are maintained and managed to protect their long-term viability as functional aquatic resources.

Following the performance period (i.e., regulatory monitoring period) and release of all credits, ILF mitigation projects will be managed in accordance with long-term stewardship guidelines. A long-term maintenance and management plan will be submitted to the IRT for approval prior to final credit release.

The ILF Sponsor will either retain ownership of ILF project properties or upon approval by the Corps, transfer interests in property in part or in whole to a qualified local land manager such as a tribe, conservation district, or a non-profit land trust or other non-profit that has experience in conservation land management. The Sponsor will also either transfer maintenance funds to the new owner or enter into an agreement to provide the necessary long-term maintenance through other means.

Regardless of who owns the project properties, the recorded site protection mechanism will ensure long-term protection of the site for its ecological values. The site protection mechanism must grant the Sponsor, the site steward/easement holder, or both access for monitoring and enforcement, and stipulate long-term protection obligations. The Sponsor will include templates for a conservation easement and a restrictive covenant with the program Instrument.

# 17. How Mitigation Relates to Restoration Projects

Mitigation credit shall not be available from other county, state or federal restoration projects in existence outside this ILF Program. In cases where mitigation sites are adjacent to or near to existing or proposed restoration sites, the Mitigation Plan will clearly show areas of restoration (where no credit is available) and where mitigation credit can be generated.

The Sponsor will not derive credit from any project(s) already funded with Salmon Recovery Fund money nor any projects already planned and funded or completed to meet a permit condition. However, there may be cases when ILF mitigation fees can be used to implement a salmon recovery project or other restoration project. For this to occur, all of the following must apply:

* The project is not funded.
* There is not a restriction related to the funding used to acquire a site where the project will occur.
* The project is not a requirement associated with a permit (e.g. a mitigation project).

The federal rule, [332.3(j)(2)] states:

“Except for projects undertaken by federal agencies, or where federal funding is specifically authorized to provide compensatory mitigation, federally-funded aquatic resource restoration or conservation projects undertaken for purposes other than compensatory mitigation, such as the Wetlands Reserve Program, Conservation Reserve Program, and Partners for Wildlife Program activities, cannot be used for the purpose of generating compensatory mitigation credits for activities authorized by DA permits. However, compensatory mitigation credits may be generated by activities undertaken in conjunction with, but supplemental to, such programs in order to maximize the overall ecological benefits of the restoration or conservation project.”

If mitigation fees are used to implement projects or portions of projects prioritized in a Salmon Recovery Plan, the unavoidable, permitted impacts for which mitigation fees were collected must be accounted for when measuring progress toward watershed-wide salmon recovery goals. For each mitigation project implemented through the ILF Program, the Sponsor will provide details of the mitigation project to WRIA Forum staff for entry into the Habitat Work Schedule, which is an online mapping and tracking tool used to measure progress and increase accountability for implementation of salmon recovery projects statewide.

At a minimum, information added to the Habitat Work Schedule database will include the amount of funding from mitigation fees, the type and amount of enhancement, restoration, creation, etc. to aquatic resources and buffers at the mitigation project, and the reports about unavoidable, permitted impact projects from which mitigation fees were derived. Mitigation projects will be clearly categorized as such in the Habitat Work Schedule database so it is evident to salmon recovery planning staff that ecological lift at mitigation projects is achieved at the expense of allowing permitted ecological impacts elsewhere in the watershed.

# 18. Evaluation and Reporting

In addition to annual monitoring reports, which describe how well individual sites are doing at achieving performance standards, objectives, and goals, the ILF Sponsor will review ***[insert how often, e.g., annually, every 5 years, etc.]*** how the program as a whole is doing at meeting the goals and objectives within each service area. Furthermore, the ILF Sponsor, in consultation with the IRT, will review and update the goals and objectives for each service area based on new information, changing conditions, and the effects of restoration activities completed by other programs. The ILF Sponsor will submit a report to the IRT describing the progress the ILF program has made within each service area. This report will also identify any changes that may be needed in the Compensation Planning Framework (CPF). If changes are needed, the report will include an explanation of how the CPF will be revised.

# 19. References

Brass, T.W. 2009. *Who Is Affected by Wetland Mitigation Banking? A Social and Geographic Evaluation of Wetland Mitigation Banking in Benton, Lane, Linn, and Polk Counties, Oregon.* (Master’s Thesis, University of Oregon). Retrieved November 3, 2011, from Scholars' Bank, University of Oregon Libraries: <https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/9853/Brass_Timothy_William_mcrp2009sp.pdf?sequence=1>

ESA and Ross & Associates Environmental Consulting, Ltd. 2008. *Making Mitigation Work: The Report of the Mitigation that Works Forum*. Publication No. 08‐06‐018. Olympia, WA: Washington State Department of Ecology. Retrieved May 24, 2011, from Ecology’s Mitigation That Works Forum website:

<http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/forum/index.html>

Hruby, T. 2004. *Washington State Wetland Rating System for Western Washington – Revised.* Washington State Department of Ecology Publication No. 04-06-025. Olympia, WA: Washington State Department of Ecology.

Hruby, T., K. Harper, and S. Stanley. 2009. *Selecting Wetland Mitigation Sites Using a Watershed Approach*. Publication No. 09-06-032. Olympia, WA: Washington State Department of Ecology.

Hruby, T. and K. Richter, B. Fuerstenberg, M. Murphy. 2011. *Calculating Credits and Debits for Compensatory Mitigation in Wetland of Western Washington: Operation Draft*. Publication No. 10-06-011. Olympia, WA: Washington State Department of Ecology.

Johnson, P., D.L. Mock, A. McMillan, L. Driscoll, and T. Hruby. 2002. *Washington State Wetland Mitigation Evaluation Study Phase 2: Evaluating Success*. Publication No. 02-06-009. Olympia, WA: Washington State Department of Ecology.

Johnson, P., D.L. Mock, E.J. Teachout, and A. McMillan. 2000. *Washington State Wetland Mitigation Evaluation Study Phase 1: Compliance*. Publication No. 00-06-016. Olympia, WA: Washington State Department of Ecology.

Mockler, A, L.Casey, M. Bowles, N. Gillen, and J. Hansen. 1998. Results of Monitoring King County Wetland and Stream Mitigations. King County Department of Development and Environmental Services. Seattle, WA.

National Research Council. 2001. Compensating for Wetland Losses under the Clean Water Act. Washington, DC: National Academy Press.

Puget Sound Partnership. 2009. *Puget Sound Action Agenda, Protecting and Restoring the Puget Sound Ecosystem by 2020*. Retrieved February 3, 2010, from the Puget Sound Partnership, Puget Sound Action Agenda website: <http://www.psp.wa.gov/aa_action_agenda.php>

Sheldon, D., T. Hruby, P. Johnson, K. Harper, A. McMillan, T. Granger, S. Stanley, and E. Stockdale. 2005. *Wetlands in Washington State - Volume 1: A Synthesis of the Science*. Washington State Department of Ecology. Publication #05-06-006. Olympia, WA.

Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. 2006. *Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 1)*. Washington State Department of Ecology Publication #06-06-011a. Olympia, WA.

1. Ecology recommends mitigation ratios based on area and wetland category, as described in the interagency document, *Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance* (Ecology 2006). [↑](#footnote-ref-1)