US Army Corps of Engineers®
Institute for Water Resources

REVIEW AND ANALYSIS OF IN LIEU FEE MITIGATION IN THE CWA SECTION 404 PERMIT PROGRAM

NOVEMBER 2000

U.S. Army Institute for Water Resources
Planning, Policy and Special Studies Programs

The Institute for Water Resources (IWR) is a Corps of Engineers Field Operating Activity, located in Alexandria Virginia. It was created in 1969 to analyze and anticipate changing water resources management conditions, and to develop planning methods and analytical tools to address economic, social, institutional, and environmental needs in water resources planning and policy. Since its inception, IWR has been a leader in the development of tools and strategies to plan and execute Corps water resources planning.

IWR's program emphasizes planning concepts for use by Corps field offices. Initially, this work relied heavily on the experience of highly respected planners and theorists, gained in the many river basin and multiple purpose studies undertaken in the 1960s. As these concepts matured and became a routine part of Corps planning, the emphasis shifted to developing improved methods for conducting economic, social, environmental, and institutional analyses. These methods were essential to implementation of the Water Resources Council's (WRC) Principles and Standards (P&S) and later, Principles and Guidelines (P&G) for water resources planning, which required a multi-objective analysis of tradeoffs among national and regional economic development, environmental quality, and social effects.

Increasingly over the years, IWR has also responded to Corps program development needs by studying policy issues resulting from changes in national objectives and priorities. In addition to directly supporting Corps needs, IWR has established an analytic and strategic competence through the direction of such efforts as the National Drought Management Study, National Waterways Studies, the National Wetlands Mitigation Banking Study, the Federal Infrastructure Strategy, and as a lead participant in the development of policy and procedures for environmental planning and management.

Many of these forward-looking policy and strategic studies were accomplished by the Planning and Policy Studies Division. The mission of the Division is to support the Director of Civil Works by assessing and evaluating changing national water resources and related public works infrastructure management needs as they affect Corps Civil Works missions, policies, practices, legislative mandates, and executive directives.

The Division supports the Office of the Assistant Secretary of Civil Works [OASA (CW)] and the Headquarters, U.S. Army Corps of Engineers (HQUSACE) in analyzing current policy issues, and conducting special studies of national and international significance. The Division's work encompasses the following thematic areas:

- *Planning Studies*
- *Policy Studies*
- *Special and Strategic Studies*
- *National Studies*

For further information related to the program, call:

Dr. Eugene Stakhiv
Chief, Planning and Policy
Studies Division
703-428-6370

Department of the Army Corps of Engineers
Institute for Water Resources
Casey Building, 7701 Telegraph Road
Alexandria, VA 22315-3868

Reports may be ordered by writing (above address) Arlene Nurthen, IWR Publications, by e-mail at arlene.j.nurthen@usace.army.mil or by fax 703-428-8435.

REVIEW AND ANALYSIS OF IN LIEU FEE MITIGATION IN THE CWA SECTION 404 PERMIT PROGRAM

Prepared by:

Paul Scodari and Leonard Shabman
Virginia Water Resources Research Center

Prepared for:

Institute for Water Resources
U.S. Army Corps of Engineers
Alexandria, VA

November 2000 CEIWR-PD

ACKNOWLEDGMENTS

Mr. Paul Scodari (Consultant) and Dr. Leonard Shabman (Director, Virginia Water Resources Research Center) conducted this study and prepared this report for the Policy and Special Studies Division of the U.S. Army Corps of Engineers, Institute for Water Resources (IWR). Dr. Eugene Stakhiv is the chief of the division. Dr. Robert Brumbaugh, the IWR Project Officer, provided technical oversight for the study and prepared the information on Corps district in-lieu fee policies and programs included in an appendix to the report.

The report findings and conclusions rely on case studies of seven In Lieu Fee programs selected by the authors from a list provided by IWR. The authors would like to thank the Corps district program managers and the In Lieu Fee administrators who shared their time and observations with the authors. In addition, Jack Chowning (U.S. Army Corps of Engineers, Headquarters), Mark Matusiak (U.S. Fish and Wildlife Service) and Susan-Marie Stedman (National Marine Fisheries Service) provided comments on an earlier draft of this report. However, the authors remain responsible for the findings and conclusions in this report.

TABLE OF CONTENTS

Executive Summary …… vii

Section 1. **Introduction**…… 1

1.1 Background…….. 1
1.2 Study Purpose and Approach…….…….……. 1
1.3 ILF Mitigation as Defined by Federal Guidance….….…….…….. 2

Section 2. **Review and Analysis of ILF Programs** …….…..……..……..……. 5

2.1 Overview of Studied Programs…….…..……. 5
2.1.1 Program Design…….……...…… 5
2.1.2 Program Objectives and Uses……..……..…….. 7
2.1.3 Program Operation……...…… 8
2.2 Analysis of Asserted Problems with ILF Mitigation……..……. 10
2.3 Summary of Findings……..……. 20

Section 3. **Conclusions and Recommendations** ……..…… 23

Table 2.1 **Overview of Studied Programs**……..…… 6
Table 2.2 **Data on Section 404 Users and Mitigation Activities of Studied ILF Programs** ……...…… 9

Appendix A. Sources of Study Information and Data…….…….. 27
Appendix B. Reported Information on Corps District ILF Policies And Programs……. 35

EXECUTIVE SUMMARY

"In lieu fee" (ILF) mitigation is a mechanism for securing compensation for impacts to wetlands and related aquatic resources authorized under the Clean Water Act Section 404 permit program. Permit recipients, rather than implement "project-specific" mitigation themselves, typically at the site of permitted impacts (on-site mitigation), contribute mitigation fees to natural resource management entities that the Corps has authorized to receive and use fees to implement required compensation. These entities spend fee contributions from multiple permit recipients on consolidated mitigation projects conducted "off-site" from the areas of the permitted impacts.

The emergence of ILF mitigation in the Section 404 program has been driven by 1) Corps district concerns about the ecological failure of on-site mitigation projects, particularly for minor impacts authorized under general permits, and 2) the absence or insufficient supply of mitigation bank credits in many watersheds where permits are issued. To address this lack of effective mitigation options, ILF programs have been established by Corps district offices in cooperation with non-governmental organizations or by state or local government agencies that act as program "administrators". Often ILF program administrators have been selected, the terms of the ILF agreements have been established, and the programs have been operated without oversight from the several federal agencies other than the Corps that are involved with various aspects of Section 404 permitting.

This ILF mitigation process has led the excluded federal agencies, private mitigation bankers, and some environmental groups to assert that ILF programs may compromise the regulatory goal of "no-net-loss" of wetland acres and functions. To address these concerns, federal guidance for ILF mitigation within the Section 404 program has been developed and recently issued by the several federal agencies involved with Section 404 permitting. The guidance applies to the design, operation and use of ILF programs and seeks increased interagency oversight to assure that the guidance provisions are implemented.

This report presents a review and evaluation of ILF mitigation in the Section 404 program and the potential for this mitigation option to advance the no-net-loss regulatory goal. The study approach was to first review the extensive published and gray literature and Congressional testimony on ILF mitigation, and the series of development drafts for the federal ILF guidance and comment letters from reviewers of these early drafts. This review helped to identify important issues for investigation and facilitated the development of a common set of questions that were asked in telephone interviews with Corps district staff and ILF administrators for seven ILF programs. Before conducting the interviews, copies of the agreements that established these programs and documentation for program operations were obtained and reviewed. The interviews allowed those closest to the development and operation of the studied ILF programs to comment on the validity of various asserted problems with ILF mitigation expressed in the literature and that were specified by early drafts of the federal ILF guidance.

The review and analysis of the seven studied ILF programs found that many of these specific criticisms of ILF mitigation appear to be invalid or inconsequential for the achievement of the no-net-loss regulatory goal. Further, program administrators and Corps district staff involved with the studied ILF programs argue that these programs are providing a flexible mitigation option for minor fills that is advancing the no-net-loss goal, and the program operating data provided to the authors generally support this claim.

These study findings do not imply that federal ILF guidance is not warranted, however. On the contrary, they point to the need for guidance to promote the development and use of this mitigation option where it could help achieve regulatory and watershed restoration goals. Indeed, two broad areas of ILF program

design and implementation appear to warrant more detailed instruction and oversight than is offered in the final ILF guidance.

The first involves program components that are important for *site-level* mitigation success. Specifically, ILF programs could benefit from regulatory guidance on 1) procedures for program cost accounting and fee setting and 2) accountability rules and procedures for ensuring site level mitigation success.

The second area involves program mitigation planning procedures that are important for *watershed-scale* mitigation success. Fees collected by ILF programs are being spent on mitigation projects that restore and preserve wetlands to address watershed restoration and protection priorities. However, while the goal of ILF programs is watershed restoration and protection, few areas have a formal watershed plan to assure that expenditures serve priority wetland needs in affected watersheds. Instead, best professional judgment is used by ILF program administrators and Corps district offices to ascertain whether a particular restoration or preservation expenditure best serves the watershed. If best professional judgement is to be relied upon, then expanding the number of professional experts involved in expenditure decisions could contribute to the success of a watershed-oriented program. Accordingly, ILF programs should include identifiable roles for other interested federal and state agencies in determining watershed priorities for the use of ILF program funds.

1. INTRODUCTION

1.1 Background

"In lieu fee" (ILF) mitigation is a mechanism for securing compensation for permitted impacts to wetlands and aquatic resources. Permit recipients, instead of implementing "project-specific mitigation themselves, typically at the site of permitted impacts (on-site mitigation), contribute fees to natural resource management entities. These entities accumulate fees from multiple permit recipients and spend them on a consolidated mitigation projects conducted "off-site" from the areas of the permitted impacts.

The ILF concept closely resembles commercial mitigation banking, in which entrepreneurs restore, create and enhance wetlands and associated uplands to produce mitigation "credits". These credits are then made available for sale to permit recipients. While ILF programs and banks are similar because they provide consolidated, off-site mitigation for multiple permit recipients, these mitigation alternatives differ in the ways they are structured and operated. Of special note is that since 1995 the development and operation of mitigation banks has been governed by federal interagency guidance[1], while ILF programs have been developed and operated outside that framework. Some federal agencies involved with Section 404 permitting as well as other commentators have expressed concern that the lack of a governing framework for ILF mitigation threatens the regulatory goal of "no-net-loss" of wetlands acres and functions. These concerns were behind the development of federal guidance for ILF mitigation in the 404 program that was recently issued by the several federal agencies involved with 404 permitting.[2]

1.2 Study Purpose and Approach

This report presents the results of a review and analysis of ILF mitigation in the Section 404 program that evaluates the potential for this mitigation option to advance regulatory goals. The study was not intended to be a comprehensive survey and examination of all ILF programs now in use throughout the country. Rather, it focused on a limited set of operating ILF programs.

The study approach was to first review the available published and gray literature and Congressional testimony on ILF mitigation, and the series of development drafts for the federal ILF guidance and comment letters from reviewers of these early drafts. This review helped to identify important issues for investigation and facilitated the development of a common set of questions that were asked in telephone interviews with Corps district staff and administrators for seven ILF programs. The seven programs include ILF systems that have been operating for several years in the Corps Chicago and Buffalo districts, Virginia, Georgia, North Carolina, Pennsylvania, and Palm Beach County, Florida.

Before conducting these interviews, copies of the agreements that established the ILF programs and documentation for program operations were obtained and reviewed. The interviews allowed those persons closest to the development and operation of the studied ILF programs to comment on the validity of

---

[1] Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks; Notice. *Federal Register*, Vol. 60, No. 228, p. 58605 (November 28, 1995).

[2] Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act; Notice. *Federal Register*, Vol. 65, No. 216, p. 66914 (November 7, 2000).

various asserted problems with ILF mitigation that were specified by early drafts of the federal ILF guidance and that have been expressed in the literature on ILF mitigation. In addition, each program was asked to submit available operating data and that was also reviewed. Appendix A includes a list of the persons interviewed and materials reviewed for the study.

The study results are reported here and used to draw broad conclusions on the potential advantages and problems with the use of ILF mitigation in the Section 404 program. Recommendations are offered for ways to improve the usefulness of this mitigation option for advancing regulatory goals. These are also used to comment on various aspects of the recently issued federal ILF guidance.

1.3 ILF Mitigation as Defined by the Federal Guidance

The final ILF guidance states: "In lieu fee mitigation occurs in circumstances where a permitee provides funds to an in-lieu-fee sponsor instead of either completing project-specific mitigation or purchasing credits from a mitigation bank approved under the Banking Guidance". The effect is to define an ILF program as any provider of off-site, consolidated mitigation (i.e., compensatory mitigation for multiple permitted impacts) that is not developed and approved in accordance with the 1995 Mitigation Banking Guidance.

The Banking Guidance subjects proposed banks to an interagency "Mitigation Banking Review Team" (MBRT) that must approve bank operating instruments. The MBRT review team includes the Corps as well as the USEPA, federal resource agencies and relevant state agencies. There is also a public review process for bank proposals. MBRT approval for banks to offer compensatory mitigation credits requires that the credit seller first meet a variety of requirements and project milestones. These shape the structure and operation of mitigation banks in two ways that distinguish them from mitigation systems developed outside the MBRT framework.

First, mitigation bank sponsors must commit significant financial resources to securing MBRT approval to produce and sell mitigation credits. Second, implementation of compensatory mitigation projects must be sufficiently far along or mitigation plans sufficiently detailed to enable the MBRT to assess the type and degree of "environmental lift" that will be achieved at the bank site. This assessment is used to determine the type and quantity of credits that will be produced. As a result, the MBRT "advanced crediting" process determines the specific types of permitted impacts that can use bank credits as compensation.

ILF programs generally do not share these features. The cost to establish an ILF program is modest when compared to the cost to become a certified mitigation bank. And since ILF programs typically lack up-front capital, they must collect fee contributions from multiple permit recipients before accumulated funds are sufficient to implement mitigation projects. Also, in most ILF programs there is no advanced determination of the types of credits that will be secured by ILF mitigation projects. Instead, the crediting of mitigation projects is made after fees have been spent. ILF program fees are spent in a way that is expected to compensate for the accumulated mitigation responsibility incurred the program. Regulatory review and approval of proposed ILF mitigation projects determines whether, in consideration of the specific permitted impacts for which fees have been collected, the proposed project will provide acceptable compensation.

Not all ILF programs lack up-front capitalization and advanced crediting of mitigation projects, however. For example, one program examined for this study received up-front funding through state appropriations that enabled it to immediately move forward with mitigation planning and implementation. This initial funding is to be repaid as mitigation fee payments are received for Section 404 permits. In this sense the program is like a mitigation bank that does not go through the MBRT process. Also, in some of the

examined programs fee collections are directed toward specific sites for which mitigation plans have been developed. These programs thus use a form of advanced crediting for mitigation projects, but the crediting is not done by a MBRT.

2. REVIEW AND ANALYSIS OF ILF PROGRAMS

2.1 Overview of Studied Programs

In 1999, the Corps Institute for Water Resources (IWR) collected information from all Corps district offices on ILF policies and programs currently in use in the districts. The reported information is provided in Appendix B.

Seven operating ILF programs identified by the IWR survey were selected for detailed study (see Table 2.1). Several criteria were used to guide the selection process. First, all the ILF programs chosen for study have been in operation for several years and thus have an operating record. Second, the programs vary in their design and operating characteristics. Finally, the set of selected programs includes some programs that have been singled out for criticism in various published materials.

2.1.1 Program Design

The ILF programs examined for this study include a set developed by individual Corps district offices in cooperation with non-profit resource conservation entities, and a set sponsored by state or local government agencies. The first group includes programs developed in the Chicago, Norfolk, Buffalo, and Savannah District offices of the Corps. Each was established through formal agreement between the individual Corps district and one or more conservation entities that act as program “administrators”. The second group includes ILF programs established by Pennsylvania, North Carolina, and Palm Beach County (Florida) in which the state or local agency responsible for environmental regulation serves as program administrator.

The general role of program administrator is to collect mitigation fees and assume the responsibility for assuring that the fees are used to implement the compensatory mitigation required for the permitted impacts served by the program. In some district programs, the administrators identify appropriate mitigation projects and also directly implement projects chosen for funding. In other programs, administrators evaluate projects proposed by other conservation entities and transfer fee revenues to the projects selected for funding. An example is the Chicago district “Wetland Restoration Fund” (commonly known as “CorLands” after the name of the conservation entity that administers the program) which uses a “request for proposal” process to identify and select projects for funding.

Table 2.1 Overview of Studied Programs

Program	Service Area	Administrator	Overview of Mitigation Planning Process
Chicago District Wetlands Restoration Fund	Corps Chicago District	Corporation for Open Lands (CorLands)	The Administrator uses an RFP process to solicit mitigation project proposals by conservation entities in specific watershed areas. The Administrator, with help from a steering committee, recommends project proposals for funding; these are then subject to Corps review and approval. Their respective sponsors implement projects selected for funding.
Virginia Wetlands Restoration Trust Fund	Virginia	The Nature Conservancy	The Administrator develops and submits mitigation project proposals to the Corps district for review and evaluation. The Corps solicits and considers federal resource agency comments on all project proposals, but retains sole authority over project selection and funding.
Buffalo District ILF Arrangement Program	Corps Buffalo District	Various public and private conservation entities	The District has signed "ILF operational agreements" with over 20 separate conservation groups that each specifies target sites and conceptual mitigation plans in specific watershed areas. The respective sponsors implement funded projects.
Georgia Wetlands Trust Fund	Georgia	Georgia Land Trust Service Center	The Administrator works with local land trusts to identify candidate mitigation projects. An advisory committee and interagency review process is used to evaluate and select projects for funding in specific watershed areas. The Corps exercises final authority in funding decisions.
Pennsylvania Wetland Replacement Fund	Pennsylvania	Pennsylvania Department of Environmental Protection	The Administrator works with private and public conservation entities to identify mitigation sites and projects for funding throughout the state. The Administrator chooses projects for funding and implements mitigation work. Standard operating procedures for the program provide for Corps and federal resource agency involvement in project evaluation and selection.
North Carolina Wetlands Restoration Program Compensation Mitigation Fund	North Carolina	North Carolina Department of Environment and Natural Resources	Mitigation project selection is guided by "Basinwide Wetland and Riparian Restoration Plans" developed by the Administrator for each of 17 river basins in the state. State and federal agencies involved with the review of permit decisions are provided the opportunity to participate in the development of restoration plans and comment on projects recommended for funding by the Administrator. The Administrator implements mitigation work for projects selected.
Unit 11 of the Indian Trail Improvement District	Palm Beach County, FL	Palm Beach County Department of Environmental Resources Management	The Administrator is using mitigation fees exclusively for the purchase and enhancement of a specified area within the county that serves as important corridor between wildlife conservation areas.

The studied programs developed by state and local government agencies are linked to the Section 404 program in various ways. The Pennsylvania program ("Pennsylvania Wetland Replacement Fund") was developed under the state's regulatory authority and is linked to the federal Section 404 program through a State Programmatic General Permit (SPGP) issued by the Corps. The Palm Beach County program ("Unit 11 of the Indian Trail Improvement District") has for some years been serving the Section 404 program through an informal arrangement between the county and the Corps Jacksonville district.[3] The "compensation mitigation fund" component of the North Carolina Wetlands Restoration Program operates through an agreement between the state regulatory agency and the Corps Wilmington District. In each program, the state or local administrator collects fees and implements funded mitigation projects directly.

2.1.2 Program Objectives and Uses

The primary focus of the studied ILF programs, as specified by program operating agreements and reflected in information on program use, is the provision of compensatory mitigation for relatively minor impacts principally authorized under general permits (e.g., Nationwide Permits). The regulators interviewed for this study described how the studied programs were conceived and developed to address a gap in effective compensation for activities authorized by general permits. They believe that on-site opportunities for impact avoidance and minimization are often severely limited in such cases. Meanwhile, experience has shown that on-site (project-specific) mitigation for relatively minor impacts fails more often than not. Minor impacts often have been authorized without a compensation requirement because no feasible project-specific mitigation option could be defined. Corps district regulators also believe that the need for effective compensation for relatively minor impacts is not being met fully by private mitigation banks in all watersheds.

The studied programs, by providing another mitigation option for permit recipients, add "flexibility" to a Corps district's ability to require compensatory mitigation. For example, some ILF programs have been used in combination with on-site mitigation to ensure that full compensation is secured for permitted impacts. Some ILF programs are also used to provide compensation for unauthorized impacts facing enforcement action; settlement agreements in such cases have sometimes required violators to pay "non-compliance fees" to the studied programs for use to implement compensation. In addition, some of the studied programs also have on occasion been used to compensate for activities authorized by individual permits involving primarily minor impacts.[4]

It appears that the studied programs are not currently being used to provide a substantial portion of total required mitigation in the areas they serve. Most permit recipients still satisfy their mitigation requirement using project-specific mitigation, primarily conducted on or adjacent to the site of the permitted impact (on-site mitigation). In the Chicago Corps district, for example, of all activities authorized in 1999 (primarily under general permits) that were required to provide compensatory mitigation, about 78% of permit recipients relied on project-specific mitigation, 13% used mitigation banks, and 8% used ILF mitigation.

---

[3] In April 2000 the South Florida Water Management District (the state regulatory agency that has jurisdiction over Palm Beach County) entered into a Memorandum of Understanding (MOU) with the County for the Unit 11 mitigation program. The Corps Jacksonville was not entirely satisfied with that agreement, however, and thus was not a signatory. The Jacksonville district and the county are now finalizing amendments to the MOU that will enable the district to sign the agreement.

[4] Some programs have on rare occasions been used to provide compensation for individual permits involving more than minimal impacts. For example, on several occasions the North Carolina program has been used to provide compensation for state transportation projects involving significant impacts when regulators determined that on-site mitigation opportunities were not favorable for mitigation success.

2.1.3 Program Operation

Regulators having jurisdiction within the areas in which the studied ILF programs operate reported following standard Section 404 permit review procedures, including investigation of opportunities for impact avoidance and minimization, followed by the determination of the level and acceptable form of compensatory mitigation required for unavoidable impacts. Regulators routinely apply best professional judgment to determine whether a permit applicant's proposed off-site mitigation option (ILF program, mitigation bank, or off-site project-specific mitigation) provides the appropriate compensation mechanism for the permitted impact.

If fee mitigation is accepted as compensation for some permitted impact, the Corps informs the ILF program administrator of the type and amount of the permit recipient's mitigation requirement. In most cases, the administrator determines and collects from the permit recipient the dollar amount needed to implement this requirement.[5] Concurrently, the administrator searches out and identifies candidate mitigation projects and recommends specific projects for funding. Proposed mitigation projects are then subject to Corps district review and approval.[6] In some (but not all) of the studied programs there is an expectation that other interested federal and state agencies will be consulted on plans for expenditures from the fund. Program administrators oversee the implementation of mitigation projects selected for funding when a sufficient amount of fees have been collected.

As with permit issuance and permit-specific mitigation decisions, ILF program administrators and regulators typically rely on best professional judgment for the selection of mitigation projects to serve the needs of the watershed. However, in some cases professional judgment is replaced with more formal watershed planning efforts for setting expenditure priorities. Some state and local ILF programs are operated within, or explicitly linked to, broader watershed management programs and goals. For example, the North Carolina "compensatory mitigation fund" is one of several components of the North Carolina Wetlands Restoration Program (NCWRP), a non-regulatory state initiative "to restore wetland and riparian area functions and values throughout North Carolina". All NCWRP activities must be consistent with restoration plans developed for each of the state's 17 river basins. The operating agreement for the compensation fund explains, "It is the intent of the NCWRP to improve the ecological effectiveness of compensatory mitigation through the development of restoration plans to ensure that compensatory mitigation is conducted within an ecosystem context to address identified problems." Similarly, the Palm Beach County ILF program is linked to a regional planning effort to advance critical watershed needs. This program directs all mitigation fee revenues toward the purchase and enhancement of a regionally important corridor linking wildlife conservation areas.

Table 2.2. references the agreements that established the studied ILF program and summarizes operating data that were provided for this review. The table includes some of the information on the principal users and cash flows into programs, and the uses of program funds to effect compensatory mitigation.

---

[5] In two of the studied ILF programs, the program administrator is not responsible for setting the fee level for some permitted impact. These exceptions are discussed in Section 2.2.

[6] The Pennsylvania program, which was established under State General Programmatic Permit authority issued to the state by the Corps, is an exception. In this program, the Corps does not have final say on the selection of mitigation projects. New "statement of procedures" for the program that are being written into the state's SPGP renewal provide for an "elevation process" for resolving disputes that might arise if the Corps Baltimore district objects to the state's choice of mitigation projects.

Table 2.2. Data on Section 404 Users and Mitigation Activities of Studied ILF Programs		
ILF Program/Operating Instrument	**Program Users**	**Program Activities**
Chicago District Wetlands Restoration Fund ***Agreement for the Administration of the Wetlands Restoration Fund Between the US Army Corps of Engineers, Chicago District and Corporation for Open Lands* (June 20, 1997)**	As of January 2000, permitted activities involving 33 acres of impacts have paid $2.025 million in fees for 50 acres of required compensatory mitigation	As of January 2000, about one-half of fee revenues have been spent on seven completed and ongoing mitigation projects that are providing 87 acres of restored and enhanced wetlands
Virginia Wetlands Restoration Trust Fund *Virginia Wetlands Restoration Trust Fund Memorandum of Understanding Between The Nature Conservancy and the US Army Corps of Engineers, Norfolk District* (August 10, 1995)	As of May 2000, permitted activities involving over 80 acres of impacts have paid about $4 million in fees for 150 acres of required compensation	As of May 2000, $1.463 million in fee revenues have been committed to 11 completed and ongoing mitigation projects that are providing 144 acres of restored wetlands, 50 acres of enhanced wetlands, 1242 acres of preserved wetlands, and 126 acres of preserved or restored upland buffers
Buffalo District ILF Arrangement Program Since 1997 the district has entered into *In Lieu Fee Arrangement Operational Agreements* with 21 separate public and private conservation entities	As of July 2000, permitted activities involving 117 acres of impacts paid $2.806 million in fees	As of July 2000, $1.172 million in fee revenues have been spent to acquire 24 properties and 8 conservation easements that provide 592 acres of preserved wetlands and 16,000 liner feet of stream/river corridor
Georgia Wetlands Trust Fund *Agreement Between the Georgia Land Trust Service Center and the US Army Corps of Engineers, Savannah District* (July 17, 1997)	In calendar year 1999, permitted and enforcement actions involving 4.53 acres of impacts paid about $74,000 in fees for 16.5 acres of required compensatory. As of February 2000 the fund balance was about $320,000.	As of February 2000 the program was finalizing its initial wetland purchases
Pennsylvania Wetland Replacement Fund *Standard Operating Procedures for the Implementation of the Pennsylvania Wetland Replacement Project* (February 14, 2000 draft that replaces SOP dated April 30, 1997)	As of March 2000, permitted activities involving 55 acres of impacts paid about $0.6 million in fees	As of March 2000, $0.306 million in fee revenues have been spent on 18 completed and ongoing mitigation projects that are providing 51 acres of restored wetlands
North Carolina Wetlands Restoration Program Compensation Mitigation Fund *Memorandum of Understanding Between the North Carolina Dept. of Environment and Natural Resources and the US Army Corps of Engineers, Wilmington District*	In fiscal year 1999,permitted activities involving 23 acres of wetland impacts and 16,418 feet of riparian impacts paid $3.85 million for 27 wetland acres and 26,237 riparian feet of compensation.	As of 2000, about $1 million in fee revenues have been spent on 20 projects (in various stages of implementation) that are providing 40 acres of restored wetlands and 47,000 linear feet of restored streams and riparian habitat

Table 2.2. Data on Section 404 Users and Mitigation Activities of Studied ILF Programs		
ILF Program/Operating Instrument	**Program Users**	**Program Activities**
Unit 11 of the Indian Trail Improvement District *Agreement Between the S. Florida Water Management District, Florida Dept. of Environmental Protection and Palm Beach County Board of County Commissioners through its Dept. of Environmental Resources Management* (April 2000).	Permitted activities involving 908 acres of impacts have paid fees for 1,154 acres of required compensation	About 1,000 acres of the Unit 11 area have been purchased. As land acquisition nears completion, restoration and enhancement activities will be implemented in incremental steps

2.2 Analysis of Asserted Problems with ILF Mitigation

Early drafts of the federal guidance for ILF mitigation listed seven perceived problems with ILF mitigation. The analysis presented below uses findings from the studied programs to comment on these criticisms of ILF mitigation.

Criticism 1: ILF programs may implement mitigation outside of the watershed areas in which permitted impacts are located.

Explanation:

This claim posits that fees collected for permitted impacts in one watershed are used to implement the required mitigation in a different watershed. The concern is that this practice would fail to secure no-net-loss in wetland acreage and function in the specific watersheds in which permitted impacts occur.

Findings:

The review of the studied programs found that some programs have used fees to implement mitigation projects in different watersheds from those of permitted impacts. Nevertheless, these as well as the other studied programs report that they are providing full compensation for permitted impacts within the watersheds in which they occur.

Of course, perspectives can differ on the appropriate definition of the geographic extent of drainage areas for implementing compensatory mitigation. Indeed, in the reviewed literature some of the studied programs are criticized for adopting what the authors viewed as an overly broad interpretation of watershed boundaries.

The operating agreements for most of the studied programs specify that mitigation projects must be located within the same general area as the permitted impacts they serve. The North Carolina program, for example, is required to mitigate for permitted impacts within the same 8-digit hydrological cataloging unit. The Chicago district program follows the division of the district into 5 regional watersheds established by the district's mitigation banking guidelines. The Buffalo district program likewise requires mitigation projects to locate in the same watershed area as the permitted impacts served, but does not define the geographic extent of the watershed focus. The administrators for each of these programs report that they are achieving a geographic distribution of mitigation projects for permitted impacts along watershed lines.

On the other hand, some mitigation bankers in South Florida have criticized the countywide service area of the Palm Beach County program on the grounds that it extends beyond the drainage basin in which the

Unit 11 area is located. However, staff from the South Florida Water Management District note that the two existing mitigation banks that are providing mitigation for wetland impacts within Palm Beach County both have state-authorized service areas that span three counties and numerous drainage basins. Therefore, the concern over the location of the Unit 11 compensation actions might be applied to other forms of off-site mitigation in the county as well.

Environmental advocacy organizations have criticized the service area reach of the Virginia program as being too expansive. That program's operating agreement states that the Corps Norfolk district will maintain a running total of impacted wetland acres by type and location, and use this information "if practical, to attempt to mitigate wetland impacts in watersheds suffering the greatest impacts". Norfolk district staff maintain that wetland restoration and preservation actions for permitted impacts have been initiated in all watersheds in which fees have been collected. And while district staff report that the program has in some instances used funds for projects outside of the watersheds where the fees were collected, they argue that these funds were available for that use without comprising the need to secure compensation in the watersheds where the impacts occurred.

The operating agreements for the Georgia and Pennsylvania programs do not restrict the location of mitigation projects to the same watershed as the permitted impacts served, although program administrators say that they try to provide a geographic distribution of mitigation projects according to the watershed locations of permitted impacts. Nevertheless, the Pennsylvania program has been criticized for not yet implementing projects in the southeast corner and urban areas of the state where land values and construction costs are relatively high. The program administrator responds that the geographic distribution of mitigation projects achieved to date reflects the best sites that were available at the time, and that over the long term the location of mitigation projects will match the watershed areas of the permitted impacts the program serves. Mitigation projects for the southeast part of the state are currently in the planning stage and when implemented in years 2000-2001 will provide compensation for all permitted impacts within that area of the state for which fees have been received.[7]

Criticism 2: ILF programs may not provide in-kind mitigation.

Explanation:

The claim that ILF programs deviate from "in-kind" mitigation alleges that the compensation wetlands they provide are not necessarily of the same types as those lost to the permitted activities served by these programs. The concern is that an allowance for "out-of-kind" mitigation will not ensure replacement of the specific wetland functions and services lost due to permitted activities.

Findings:

The review of the studied programs supports the assertion that ILF programs generally are not restricted to in-kind mitigation and that their mitigation efforts have not been specifically directed toward that end. The operating agreements for the studied programs generally require program tracking of the types of wetland impacts for which fee payments to the program are made and consideration of this information for mitigation site selection and planning. Only the agreement for the North Carolina program specifically requires that the program attempt to match types of mitigation and impacted wetlands and streams.

Rather than an in-kind mitigation focus, administrators of the studied programs reported that the guiding principle used for mitigation site selection is to secure priority wetlands needs within watersheds.

[7] At any rate, the Pennsylvania ILF program is used exclusively for very minor wetlands impacts (one-half acre or less) that statewide total only about 10 acres annually.

According to ILF administrators and Corps regulators, these programs are guided by a "watershed vision" that directs mitigation efforts toward priority areas in need of restoration and protection, regardless of their relationship to the specific types of impacted wetlands for which they are used to mitigate.

Two of the studied programs (Palm Beach County and North Carolina) are part of regional planning efforts that relied on some formal planning process to identify critical watershed needs. However, in the other studied programs, regulators and program administrators rely on best professional judgement (sometimes but not always involving other federal and state agencies) to make compensation decisions they expect to serve priority wetlands needs within watersheds. These judgments make use of information on regionally important areas and resource needs developed by local land trusts, conservation districts, public resource agencies, and other conservation entities. Program administrators and Corps regulators note that their ability to partner with private and public conservation entities results in mitigation activities that best serve watershed needs.

Regulators and administrators also contend that the watershed focus and partnering arrangements of ILF programs contribute to watershed needs in ways not possible with other mitigation options. Corps regulators point to the high risk of failure inherent in on-site mitigation efforts, particularly for relatively minor permitted impacts that typically must proceed in disturbed environments. And while they note that operating private mitigation banks have a favorable record of site-level ecological success, some express the view that private banks tend to be located in areas where land and restoration costs and risks are relatively low. As a result, mitigation banks often involve the restoration of prior-converted croplands to a limited number of wetland types in remote locations. In addition the MBRT process often encourages bank credit creation tied to in-kind replacement of permitted wetland impacts rather than to the most valued wetland types in watersheds. Corps regulators and ILF administrators argue that the watershed focus and partnering arrangements of ILF programs can result in a greater diversity of compensatory mitigation projects, including projects involving relatively costly but regionally important wetland protection and restoration efforts.

Criticism 3: ILF programs spend fee revenues on wetland preservation or other activities that do not ensure at least 1:1 compensation for permitted impacts.

Explanation:

The concern underlying this criticism is that, if ILF programs do not spend fee revenues to establish "new" or significantly improved wetlands (i.e., secure some "environmental lift"), then these programs may result in a net loss in wetland acreage and function. The primary concern of this criticism relates to the reliance on wetlands "preservation", defined as the purchase of existing wetlands without any significant improvements made to these lands. Some fee programs have also been criticized for directing fee revenues to activities that do not directly involve aquatic resource protection or improvement.

Findings:

Only two of the seven studied programs prohibit the use of fee revenues for the preservation of existing wetlands. The Pennsylvania program is restricted to wetland restoration or creation to effect mitigation, and the Chicago district program focuses on wetland restoration and enhancement.

While the Chicago district program focuses on wetland restoration and enhancement, its operating agreement says that program objectives also include research of wetland restorations as well as education and technical assistance for general watershed management. Accordingly, the program has funded one "planning" study designed to generate information for guiding the development of restoration plans for a specific aquatic system, and one "monitoring" project designed to generate information for guiding

general mitigation project planning. However, these expenditures from the fund are not counted as credits toward the compensatory mitigation requirements for the permitted impacts served by the program. In other words, the program is still required to undertake restoration and enhancement activities sufficient to provide full compensation required for the permitted impacts for which fees are collected.

Some of the other studied programs use preservation as one of several mitigation activities. For example, while the North Carolina program focuses primarily on wetland restoration, its operating agreement allows for wetland preservation provided that preservation sites have been purchased and management plans for them developed prior to their use as compensation for permitted impacts. (This is possible because the program has initial state funding.) Similarly, the Virginia program allows for wetland preservation on a case-by-case basis, but subjects preservation use to very high mitigation ratios. And the Palm Beach County program also involves a significant preservation component in addition to the restoration and enhancement of both wetland and upland habitat.

While ILF some programs do spend fee revenues on wetlands preservation that does not provide environmental lift at the wetlands site, the ILF administrators and Corps regulators argue that this does not mean that these programs will fall short of the no-net-loss goal. There are two bases for this argument: 1) that preservation is a compensation requirement imposed on top of required restoration activities and, 2) that preservation viewed at the watershed scale serves to protect in perpetuity important wetland areas that otherwise might be lost to development.

As an example of the first argument, program data for the Chicago district and Virginia programs indicate that their wetland restoration (or enhancement) activities are providing significantly more restored (or enhanced) wetlands than is required as compensatory mitigation for the permitted impacts for which fees are collected. That is, for every one acre of wetland restoration required as compensation for some permitted impact, the Chicago district and Virginia programs report providing more than one acre of restored wetlands. This suggests that the non-restoration activities of these programs are providing an extra level of watershed benefit beyond full compensation for permitted impacts.

The Georgia program may lead to a similar result, even though this program focuses exclusively on the use of preservation to effect mitigation. The Corps Savannah district uses a formula for determining mitigation requirements that allows for a different mix of mitigation methods to compensate for any permitted impact. However, generally at least 50% of a permit recipient's mitigation requirement must involve wetland restoration. The Georgia ILF program, since it focuses on preservation, thus can only be used to satisfy the non-restoration part of a permit recipient's mitigation requirement. To the extent that permitted impacts are largely offset by required restoration (because of the use of higher than 1:1 compensation ratios), then the preservation part of an overall mitigation requirement satisfied through the Georgia program would provide an extra level of watershed benefit. In fact, preservation would be accepted under the district's compensation requirements even in the absence of the Georgia ILF program.

The second argument favoring preservation at a watershed scale is made by Corps staff involved with the Buffalo district ILF program, which focuses primarily on wetlands preservation to effect mitigation, as well as other studied programs that use preservation to some extent. They argue that preservation efforts often center on wetlands facing significant threat of imminent development. For example, the Corps manager for the Norfolk district program reports that over half of the wetlands acquired by the program for preservation were at extreme risk of "post-Tulloch" drainage. To the extent that these wetlands would eventually be lost to development in the absence of protection, then their preservation through ILF programs contributes to the no-net-loss regulatory goal.[8]

[8] Some of the regulators interviewed for this study noted that this logic is also used in the case of project-specific mitigation. That is, permit recipients are sometimes allowed to meet their project-specific mitigation requirement by

More generally, Corps regulators suggest that the watershed management focus of ILF programs argues for the purchase and protection of critical wetlands in order to ensure their long-term survival. The Corps officials interviewed for this study expressed the view that the Section 404 program can not generally prevent the development of even high-quality wetlands, and the only way to insure against that possibility is to acquire them for preservation. According to this view, fee-based compensatory mitigation provides the most effective means available to the Section 404 program for preventing the loss of regionally significant wetlands.

Criticism 4: There may be long lag times between permitted wetland impacts and the use of fee revenues to initiate required compensation.

Explanation:

This criticism is based on the reality that many ILF programs must collect fees from multiple permit recipients before they accumulate enough money to initiate mitigation projects. And even when fee revenues are sufficient for mitigation purposes, their use toward that end can then be delayed by the need to first identify and secure mitigation sites. Therefore, mitigation will not be accomplished "in advance" of or concurrently with permitted impacts. The implication is that ILF mitigation involves a longer time lag between permitted impacts and the initiation of required compensation as compared with mitigation banking and on-site mitigation.

The concern underlying this criticism is that ILF mitigation will result in temporal losses in wetland acreage and function relative to other mitigation forms. Longer lag times can lead to temporal wetland loss in a watershed even if over time the required compensatory mitigation does succeed. But it is important to note that this conclusion may not always be straightforward. For example, a large body of evidence suggests that many on-site mitigation projects required in the past never did achieve ecological success. Also, it is rare that "advanced" mitigation projects have achieved ecological success at the time impacts are permitted, although it is the case that in mitigation banking the compensatory mitigation must be initiated in some way and perhaps secured by a financial instrument before credits can be used.

Findings:

The studied ILF programs vary considerably in the time at which mitigation activities are implemented relative to permitted impacts. Some spend collected fees within one year of receipt, while others can take significantly longer to initiate mitigation projects. The time lapse between fee collections and use by any one program appears to be driven largely by the program's structure and mitigation focus.

The Palm Beach county program illustrates how mitigation focus can affect the timing of mitigation activities. This program is using mitigation fees for permitted impacts in the county to acquire and restore a 1,700-acre area that includes an equal mix of wetlands and upland communities of regional significance. Since this area had previously been divided into and sold as individual 1.25-acre residential lots, the program has been purchasing lots from hundreds of separate property owners, one lot at a time. Since 1996 the program has purchased almost 1,000 acres of the area, and is now in the final phase of its land acquisition efforts. The program's operating agreement says that when a specified percentage of lots have been acquired within "individual units of restoration" (i.e., specific parcels within the greater mitigation

---

preserving wetlands at impact sites (through conservation easements and deed restrictions) that are not directly affected by permitted activities.

area), then wetland restoration for that unit must commence. In one sense the land acquisition actions might be interpreted as initiating the mitigation plan even though the actual restoration has not begun.[9]

The structure and focus of the Buffalo district program also appears to bear significantly on the timing of its mitigation activities. The program implements wetland preservation activities through more than a dozen public and private conservation entities that use mitigation fees to purchase or obtain conservation easements on specific wetland areas targeted by each entity. The distribution of fees among many separate mitigation providers can affect mitigation timing since each provider must accumulate enough money to fund its targeted wetland purchases. To date, about 42% of the roughly $2.8 million in mitigation fees collected since 1997 by conservation entities participating in the Buffalo district program have been spent on wetland acquisitions and conservation easements.

In general, it appears that the studied programs that focus primarily on the preservation of existing wetlands to effect mitigation experience relatively longer delays between the collection of fees and the initiation of mitigation projects. The Georgia program, for example, has been accepting fees since mid-1997 but is just now finalizing its first set of wetland purchases. Program administrators and Corps regulators note that land acquisition deals can often take several years to negotiate and finalize.

One means often suggested to compensate for temporal wetland loss is to require higher ratios of mitigation to the impacts permitted. Although the studied programs all experience some time lapse between fee collection and initiation of mitigation projects, the data on projects initiated to date by many of the studied programs indicate they are securing higher than required levels of compensation once projects are underway. This suggests that temporal losses in wetlands resulting from permitted impacts proceeding before initiation of the mitigation projects might be offset by the eventual achievement of higher than expected replacement of wetland acreage and function. Indeed, once a program has been operating for a few years, at any given time the mitigation projects already initiated might be sufficient to meet the requirements of newly permitted activities when they contribute fees to the program. In effect, if the program could initiate restoration and preservation *ahead of* the rate of fill permitting, then the time lag between permitted fills and compensation would disappear.

The Virginia program appears to illustrate this possibility. Since its inception in late 1995 the program has collected about $3.8 million in mitigation fees for permitted impacts requiring roughly 150 acres of compensatory mitigation. Despite having spent only about one-third of total fee revenues, completed and ongoing mitigation projects are providing 142 acres of restored wetlands and 100 acres of enhanced wetlands, and another 1,250 wetland acres have been purchased for preservation.

Other studied programs likewise appear to be achieving high ratios of compensation for the fee revenues spent. The Chicago district program collected about $2 million in mitigation fees from permit recipients requiring 50 acres of compensatory mitigation from 1997 through 1999. As of the end of 1999, the program had spent about one-half of total revenues on seven completed and ongoing projects that are to provide 87 acres of restored and enhanced wetlands. Since its inception in 1996, the Pennsylvania program has collected about $600,000 in fees from permit recipients requiring 55 acres of compensatory mitigation. To date the program has spent about one-half of accumulated fee revenue on 18 completed mitigation projects that include 51 acres of restored wetlands. And the Buffalo district program, which so far has spent less than one-half of collected fees, has preserved over 5 acres of wetlands for every acre of permitted impact for which fees have been received, in addition to providing protection for over 16,000 linear feet of stream/river corridor.

[9] Private bankers similarly argue that once they have a mitigation plan and have initiated land acquisition they should be allowed to sell a share of their MBRT approved credits.

The North Carolina system is unique among the studied programs in that it received initial state funding for the development of watershed plans and the implementation of mitigation projects following these plans. The program currently has 20 mitigation projects in various stages of implementation. Concurrently with mitigation work the program has been accepting and setting aside fees from Section 404 permit recipients in a "compensation fund". As mitigation projects are completed, costs incurred by the state are reimbursed from the compensation fund. The ILF operating agreement states: "The NCWRP is committed to providing compensatory mitigation for the majority of wetlands impacts in advance of the loss of those wetlands". The program administrator indicates that this represents a long-term program goal that likely will not be met for several more years.

Criticism 5: ILF programs do not provide sufficient assurances and accountability for mitigation success.

Explanation:

The concern here is that insufficient assurances and accountability for mitigation success at the site level increase the risk that ILF programs will fail to provide full compensation for the permitted impacts served. In this context, "assurances" refers to mechanisms to ensure the construction and ecological success of individual mitigation sites, while "accountability" refers to mechanisms to allocate legal and financial responsibility for securing these outcomes.

Concerns about the sufficiency of ILF assurances and accountability are often expressed with reference to benchmarks established by the 1995 Mitigation Banking Guidance. Importantly, the MBRT process can require bank sponsors to provide financial assurances (e.g., performance bonds) for the construction and success of mitigation credits before they are allowed to offer credits for sale. Bank operating agreements make bank sponsors liable for, and the release of responsibility and financial assurances contingent upon, the achievement of stated performance standards.

Findings:

The review of the studied programs appears to justify some concern about a lack of specificity regarding program assurances and accountability. The program operating agreements and written policies do not always speak directly to these issues. And while the sufficiency of assurances for mitigation success largely depends on the adequacy of the fee rates charged, the cost accounting and fee setting processes used by the studied programs are less than transparent.

In general, the studied programs apply the same controls and standards that are typically required for mitigation banks. For example, conservation easements are required for project sites and performance standards are applied to restoration activities. Unlike mitigation banks, however, ILF programs can not post financial assurances for mitigation success prior to fee collections since program capitalization comes entirely from fee revenues.

Instead, some of the studied programs rely on "self-insurance" for assuring mitigation success by including a failure risk "premium" in the fee rates charged permit recipients. These premiums provide extra financial resources that might be needed for the repair or replacement of failed mitigation projects. Under this approach, a failure risk cost is imposed on permit recipients, and the ILF program itself accepts responsibility for the construction and ecological success of required mitigation.

The Chicago district program illustrates this self-insurance approach. The district's written policies explicitly require the inclusion of assurances in fee rates charged and their use by the program to modify or replace mitigation projects that fail to meet stated performance standards. Assurance monies are kept in a separate account reserved for this purpose. Administrators and Corps regulators for some other studied

programs indicate that these programs follow essentially the same basic approach for assuring mitigation success. However, this is not clearly specified in program operating agreements and written policies.

Moreover, program agreements do not always clearly specify legal responsibility and program procedures for ensuring mitigation success. Some agreements explicitly say that program administrators do not accept legal responsibility for the long-term ecological success of mitigation projects. Corps regulators for the studied programs indicate that the ILF program itself assumes this responsibility, although this is not always clearly specified. The lack of specifics on the incorporation of assurances into fee rates, and the responsibility and procedures for addressing mitigation failure, leaves some of studied programs open to questions about the adequacy of mitigation assurances and accountability.

Criticism 6: Fee rates charged by ILF programs may be insufficient to cover the full costs of implementing required compensation for the permitted impacts served.

Explanation:

Since ILF programs collect fees for permitted impacts prior to mitigation activities, fee rates must be based on predictions of eventual mitigation costs. The expressed concern is that the fees charged may ultimately prove insufficient to cover the full costs of implementing required mitigation, including failure risk costs. In that event ILF programs could fail to provide required compensation for the permitted impacts served.[10]

Full-cost fees would accurately reflect all program costs, both financial costs and opportunity costs, of implementing and ensuring the long-term success of required mitigation. Relevant cost include land values and costs of securing sites, mitigation planning and construction costs, maintenance and monitoring costs, long-term site management costs, assurance funding for possible remedial action and other contingencies, and administrative costs (including management time).[11]

Findings:

Administrators and Corps regulators for the studied ILF programs contend that all program costs are reflected in the fee rates charged. Nevertheless, it is unclear how systematically program costs are accounted for and how well they are estimated. Program operating agreements and policies generally do not speak to the specifics of cost accounting and fee setting. One exception is the Chicago district program that spells out the various component costs that must be considered for fee setting. The Virginia program also uses a formal cost accounting process; however, as noted below the costs estimated are those that the applicant would incur for on-site compensation and are not related to the cost of the compensation sites. The on-site cost is used as the basis for setting the fee for the off site projects. Other programs appear to have less transparent cost accounting and fee setting procedures. What was learned about the fee setting procedures of the studied programs is outlined below.

Most of the studied ILF programs charge standard per acre fees as set by program administrators. According to program administrators and Corps regulators, fee rates are based on the sum of estimated average values for all relevant component costs to implement and maintain ILF mitigation projects. These programs generally have relied on data from disparate sources for the estimation of wetland restoration costs, including land trusts and other private conservation groups, public resource agencies,

[10] Conversely, if fees charged are significantly higher than mitigation costs, then fee-based mitigation may not be an affordable mitigation option for some permit recipients.
[11] Some of these cost components may not apply to ILF programs that focus mitigation activities exclusively on wetland preservation.

and permitting consultants. For the estimation of land costs, some programs have relied on average property values for the entire area served, while other programs adjust rates to more precisely reflect average land values in the general area of each permitted impact.[12]

The operating agreements for some programs require program administrators to periodically reevaluate program costs and adjust fee rates if necessary. In 1998 the Chicago district adjusted its fee rate for permitted impacts in certain areas to better reflect land values in those areas. Similarly, the Palm Beach County program recently increased its per acre fee rate by roughly 35% to cover additional costs associated with the need for the county to acquire remaining land in the Unit 11 area through a condemnation process.

The fee setting procedures of the Buffalo District and Virginia ILF programs appear to depart from those used in the other studied programs in two important respects. First, in these programs the fee rates are set on a permit-by-permit basis, and are determined in part based on the estimated cost that permit applicants would incur if they were required to implement *project-specific mitigation*. In other words, data on estimated project-specific mitigation costs as well as ILF program mitigation costs are jointly used to determine the fee rates charged to some permit applicant. Second, the Corps district regulators involved with these programs appear to have a role in determining fee rates charged to permit applicants that are allowed to use these ILF programs.[13]

To the extent that all ILF program costs are accurately estimated and reflected in the fee rates charged, then we would expect that collected fees would approximately equal the costs of implementing *and* maintaining the compensatory mitigation. As noted earlier, the operating data provided for the studied programs suggests that fee revenues are more than covering the costs of implementing compensatory mitigation required for the permitted impacts served. It is unclear what accounts for this apparent (and preliminary) result, however. One possibility is that the programs are not including future maintenance costs as a future obligation and as part of the cost of each project. Another possibility is that funds collected for addressing project remedial actions have not been drawn upon because many of the projects are relatively new, but such funds may be needed in the future. A third possibility that was suggested by fee program administrators is that they are successfully partnering with private landowners who are securing conservation easement tax advantages and so can sell their land to the ILF program at a lower price. A similar possibility was suggested when fees are contributed to larger public sector acquisition efforts and a lower-than-market land price is secured. Such unexpected production efficiencies or other factors could be at least partly responsible for the apparent high rates of compensation being achieved by the studied programs.

Finally, in some cases fees are being set in part with reference to the costs to permit applicants of implementing project-specific mitigation. If project-specific mitigation reflects relatively higher production costs due to diseconomies of lower scale or other factors, then fees based on estimated project-specific mitigation costs could be significantly higher than the out-of-pocket mitigation costs incurred by ILF programs.

---

[12] The Pennsylvania program, unlike the other studied programs, does not factor land values into fee rates. The program's goal is to provide successful yet affordable compensatory mitigation for permitted impacts involving very minor impacts (one-half acre or less). Program costs are kept down through the use of donated private lands for mitigation project siting. Land values are thus not a recognized program cost and not reflected in fee rates charged

[13] Questions have been raised about the legality of Corps district involvement in fee setting. See: Royal Gardner. 2000. "Money for nothing? The rise of wetland fee mitigation." *Virginia Environmental Law Journal*. 19(1).

Criticism 7: Persons who have a potential conflict of interest make regulatory decisions regarding the use of ILF programs.

Explanation:

This claim is based on the view that Corps (and state/local regulatory agency) involvement in the establishment of ILF programs gives regulators a vested interest in ensuring program use. The concern is that such an interest would conflict with other regulator roles and responsibilities. For example, regulators participate in the MBRT process that evaluates and approves proposed mitigation banks (which eventually could compete with ILF programs). More generally, regulators have final say on the acceptability of mitigation options proposed for permitted impacts. This has led some to suggest that whenever an ILF program is available in some area, regulators may not adequately consider on-site mitigation opportunities, or may unfairly limit the ability of banks to operate or secure credit buyers in the same area.

Findings:

Regulators in the studied programs' districts indicated that when compensation is required as a condition for permit issuance, on-site mitigation opportunities are investigated before off-site mitigation options are considered. At the same time, however, regulators note that experience has shown that on-site mitigation for relatively minor impacts fails more often than not. Thus, regulators routinely balance the federal policy encouraging a preference for on-site mitigation against the prospect of on-site failure when determining the appropriate compensation option for some permitted impact.

The Chicago district's policies reflect this movement away from automatic preference for on-site mitigation in the case of relatively minor impacts. If the Corps project manager concludes that on-site mitigation is not likely to succeed, then the permit recipient is allowed to choose among all available off-site mitigation options that can meet their compensation requirement, including ILF mitigation, approved mitigation banks operating within the area, and off-site project-specific mitigation. That is, the district does not automatically require on-site mitigation when that option is available, nor do they dictate or influence the choice of one form of applicable off-site mitigation over another. The district ILF program currently operates alongside about a dozen operating banks whose service areas together extend throughout the district. District records show that about 8% of all authorized activities in 1999 for which compensation was required used the ILF program, 13% used mitigation banks, and the remainder relied on (mostly on-site) project-specific mitigation.

Regulators in several other case study districts appear to determine the appropriate form of mitigation for minor impacts in essentially the same manner. Corps staffs in the Buffalo and Jacksonville districts said that those permit recipients that are allowed by these districts to mitigate off-site are free to choose any available option that meets their compensation requirement. The Buffalo district currently only has a few operating mitigation banks. And while the Jacksonville district as a whole includes a significant concentration of mitigation banking activity, only two banks are currently authorized to operate in Palm Beach county.

On the other hand, Corps officials in other case study districts indicate that as a matter of informal policy, these districts *do* dictate or otherwise influence the choice of applicable off-site mitigation options. But these districts maintain that they favor the use of banks over ILF programs rather than the reverse. That is, these districts give preference to approved banks over ILF programs whenever each option is applicable to a particular permitted impact.

For example, Corps Savannah district staff indicate that district policy disallows use of the Georgia ILF program for permitted impacts located within the service areas of approved banks with available credit balances. The administrator of the Georgia program suggest that as a result, contributions to the program have been drying up as more banks in the district have gained approval, extending bank service areas throughout the state. Similarly, the administrator of North Carolina ILF program indicates that the Corps Wilmington district also restricts use of the fee program to permit recipients that do not have available bank options.

And while the Norfolk district does not dictate the choice of off-site mitigation options, it makes sure that fee rates charged by the Virginia ILF program for permitted impacts located within an approved bank's service area do not undercut credit prices charged by that bank. For any permitted impact within an approved mitigation bank's service area, the ILF option would be made available only at fee rates that exceed credit prices charged by the applicable bank.

2.3 Summary Findings

Summary findings from the review and analysis of the studied ILF programs are outlined below. The findings relate to the seven specific ILF programs examined for this study.

1. ILF programs have been developed by individual Corps district offices, as well as by state and local regulatory agencies, to fill a perceived need for effective compensatory mitigation for relatively minor impacts authorized by the Section 404 program. Some state and local programs were developed as a sub-part of broader wetlands and watershed management programs.

2. In ILF programs developed by Corps districts in cooperation with non-profit conservation entities, the latter serve as program "administrators" whose role is to collect mitigation fees and ensure they are used to implement required compensation for permitted impacts. ILF programs sponsored by state or local regulatory agencies are administered by these agencies.

3. ILF programs are primarily used to provide compensation for relatively minor impacts principally authorized under general permits. To a much lesser extent, they have also been used to secure compensation for unauthorized impacts subject to Section 404 enforcement action, and to offset primarily minor impacts authorized under individual permits.

4. Regulators report following standard Section 404 permit review procedures for general and individual permits in the areas where ILF programs have been established, including investigation of opportunities to avoid and minimize impacts, followed by the determination of the level and acceptable form of required compensatory mitigation for unavoidable impacts. For the mitigation decision, regulators have moved away from the automatic preference for on-site mitigation due to a history of mitigation failure, especially for minor impacts authorized under general permits. Regulators routinely use their best professional judgement to evaluate whether a proposed use of ILF mitigation provides appropriate compensation for some permitted impact.

5. ILF program administrators identify and recommend mitigation projects for funding; these are then subject to Corps review and approval. In some (but not) all programs there is an expectation that a variety of interested federal and state agencies will be consulted on mitigation plans.

6. When spending collected fees, ILF programs generally use a watershed perspective in which the guiding principle for site selection and development is to secure priority wetlands types for the watershed. In a few cases, mitigation project sites and methods are guided by established watershed plans. More typically, program administrators and oversight agencies rely on best professional judgement to make wetland restoration and preservation decisions that serve watershed priorities.

7. The desire to enhance watershed functions often leads ILF programs to pursue a mix of restoration and preservation of regionally important wetland areas. Regulators defend spending fees on preservation either 1) because preservation serves only part of overall compensation requirements for permitted impacts that also include restoration, or 2) by the need to ensure the long-term protection of existing wetlands of critical watershed significance because the Section 404 regulatory program is not a fail-safe protection system.

8. ILF mitigation involves a lag between the time impacts are permitted and the time collected fees are used to initiate compensatory mitigation that is typically longer than that experienced with other mitigation options. Any added temporal loss of wetland acres and functions with ILF mitigation may be offset in practice when ILF programs implement restoration and preservation projects that, over time, result in more acres of compensatory mitigation than is required for permitted impacts.

9. The ILF program operating data provided to the study authors suggest that the fee rates being charged are more than sufficiently covering the costs of implementing the compensatory mitigation required for the permitted impacts served. It is unclear what accounts for this apparent (and preliminary) result, however.

10. ILF program operating agreements do not always specifically address financial assurances and legal accountability for site level mitigation success. And while the sufficiency of assurances for mitigation success largely depends on the adequacy of the fee rates charged, the cost accounting and fee setting practices of ILF programs often are not transparent.

11. Corps regulators do not appear to unfairly dictate the use of ILF programs at the expense of established mitigation banks. On the contrary, some Corps district offices say that they give regulatory preference to the use of approved banks over ILF programs whenever each option would provide appropriate compensation for some permitted impact.

3. CONCLUSIONS AND RECOMMENDATIONS

The emergence of ILF mitigation in the Section 404 program has been driven by Corps district concerns about the ecological failure of on-site mitigation projects for minor impacts principally authorized under general permits, and by the absence in many watersheds of effective alternative compensation options for minor impacts. The districts believe that ILF programs developed in cooperation with non-governmental organizations or by state or local government agencies (who act as program administrators) can expand the possible compensation alternatives for minor impacts when a permit review finds that on-site compensation is infeasible or ecologically unwise.

In general, the Corps district staff interviewed for this study and the ILF program operating data provided to the authors indicate that the studied ILF programs are providing a flexible mitigation option for minor impacts that is advancing the no-net-loss regulatory goal. Importantly, fee revenues are being spent on mitigation projects identified by program administrators and reviewed and approved by the Corps that are addressing watershed restoration and protection priorities.

Corps regulators and ILF program administrators defend the studied ILF programs, in part, because their establishment involved significantly less time and cost than that required of private mitigation banks under the interagency MBRT approval process. However, it is this very absence of interagency involvement in the establishment of ILF agreements, and in the compensatory mitigation efforts of ILF programs, that has been a concern of some federal agency staff. These parties pushed the development and issuance of federal ILF guidance in part to avoid several asserted problems with ILF mitigation that they believe compromise the no-net-loss regulatory goal. The validity of these specific criticisms as they relate to the seven studied ILF programs was examined in Section 2 of this report. That analysis found that many of the criticisms of ILF mitigation appear to be invalid or inconsequential for achieving no-net-loss of wetland acres and function in watersheds.

These study findings do not imply that federal ILF guidance is not warranted, however. On the contrary, they point to the need for guidance to promote the development and use of this mitigation option where it could help achieve regulatory and watershed restoration goals. Indeed, two broad areas of ILF program design and implementation appear to warrant more detailed instruction and oversight than is offered in the final ILF guidance. The first area involves program components that are important for *site-level* mitigation success. Specifically, ILF programs could benefit from regulatory guidance on 1) procedures for program cost accounting and fee setting and 2) accountability rules and procedures for ensuring site level mitigation success. The second area involves program mitigation planning procedures that are important for *watershed-scale* mitigation success. Specifically, ILF programs could benefit from structured analytical and interagency review procedures for considering watershed scale needs to guide the selection of wetland restoration and preservation actions.

More specific conclusions and recommendations following these broad themes are presented below.

1. Improve Cost Accounting for Setting Fees

Currently, the fees being charged by the ILF programs examined for this study appear more than adequate to fund wetland restoration and preservation actions that, at the watershed scale, meet compensation requirements. In fact, many of the studied programs report securing more compensation than was required of the permit recipients that have contributed fees. Nonetheless, the fee setting procedures used by some programs may not be systematically tied to a comprehensive accounting of all program costs necessary to

implement mitigation projects and maintain them over time. Insufficient attention to reflecting all program costs in the fee structure might mean that the full cost is not charged for securing ecologically successful mitigation. Conversely, if fees are set well above costs then high fees may discourage the use of ILF mitigation for some permitted impacts for which fee-based mitigation is appropriate.

The final ILF guidance specifies that funds collected under any ILF arrangement "should be based upon a reasonable cost estimate of all funds needed to compensate for the impacts to wetlands or other waters that each permit is authorized to effect". Toward that end, district offices and ILF program administrators could benefit from instruction and training on cost estimation and fee setting. As an alternative to initiating comprehensive cost accounting, ILF programs could be encouraged to use an RFP process whereby the administrator could secure bids on requested mitigation projects that incorporate all necessary assurances for mitigation success. As the inventory of competitively bid projects develops, the costs of different mitigation actions as determined by a competitive bidding process could be used as a basis for setting fees.

2. Clarify Accountability for Ensuring Mitigation Success

Permit recipients, by making regulator-approved fee contributions to an ILF program, transfer to the program the financial and legal responsibility for successful completion of their compensatory mitigation requirement. The program administrator in turn agrees to identify and implement mitigation projects that provide compensation for permitted impacts. However, the non-governmental organizations and public conservation agencies that serve as ILF administrators in some ILF programs do not themselves accept legal or financial responsibility for the long-term ecological success of mitigation projects. Instead, accountability for ensuring the success of project implementation and for long-term site maintenance appears to remain with the ILF program itself, and therefore with the Corps or other applicable regulator.

District field office may need instruction on establishing mitigation accountability rules and procedures in ILF program agreements. These agreements need to explicitly recognize that the program administrator may be called on by the Corps to repair and secure the success of mitigation projects using fee revenues. Further, they should include a clear statement of who is accountable for determining when program funds will be used to repair or replace failed mitigation projects, and to provide for the transfer of an endowment fund for long-term site maintenance to the party that assumes this responsibility. These suggestions reinforce recommendation 1—that all program costs should be built into the fee structure to ensure the availability of funds for mitigation repair or replacement and for endowments for long-term site maintenance.

3. Support the Watershed Logic for Mitigation Planning

Within the watersheds where permitted impacts occur, ILF program administrators and Corps district staff select the types and locations of mitigation actions that serve watershed priorities for wetland restoration and protection. There are examples of both formal and informal watershed planning approaches for setting ILF expenditure priorities. A formal watershed planning approach identifies one or more wetland restoration and preservation sites in the watershed that deserve special priority for funding. The North Carolina Wetlands Restoration Program invests significant resources in this type of planning, and formal plans are expected to guide ILF program expenditures. However, such a planning program is costly and should not be expected to be in place in many watersheds.

More typically, ILF administrators and the Corps districts do not have a formal planning process and established watershed plans to guide the use of fee revenues. Instead, the best professional judgment of program administrators, Corps district staff and sometimes staff from other federal agencies are pooled and decisions are made on what expenditures from the fund will best serve the needs of the watershed.

These needs may be linked to related watershed management activities or programs, as is the case for the Palm Beach County ILF program (Unit 11).

The desirability of such a watershed focus for mitigation planning is explicitly recognized by the final ILF guidance. It states that "In lieu fee mitigation projects should be planned and developed to address the specific resource needs of a particular watershed". At the same time, however, the guidance gives regulatory preference to the use of on-site mitigation and approved mitigation banks over ILF mitigation whenever these other mitigation forms are available to a permit applicant. This mitigation preference is generally inconsistent with the notion that the location and design of mitigation activities should be guided by watershed priorities.

Corps headquarters should issue supplemental guidance that clarifies the desirability of a watershed perspective for mitigation project location and design, and how watershed planning considerations should enter into decisions regarding the choice of mitigation options for permitted impacts. This should express Corps support for the use of watershed logic in setting expenditure priorities for ILF mitigation activities, whether based on established watershed plans or the best professional judgement of program administrators and oversight agencies.

4. Increase Interagency Contributions to the Project Selection Process

The use of ILF programs within the general permit process has allowed the Corps to secure compensation for minor permitted impacts while not unduly extending the time for permit review. Other federal agencies can comment on a permit decision and the use of the ILF option as part of the regular permit review process. However, the administrative efficiency in securing compensatory mitigation made possible by an ILF program is in part realized because the Corps is able to take action without waiting for comments from other agencies on either the permitting or mitigation decisions.[14]

Two broad concerns about this independent Corps activity have been expressed by other federal agencies involved with Section 404 permitting. First, often only the Corps and the program administrator develop the ILF agreement. Second, ILF program expenditures on mitigation projects proposed by the program administrator might be reviewed and approved by the Corps without any consultation with other interested federal agencies. Although a lack of formal requirements for interagency input in ILF program design and operation is not evidence of a problem for wetlands in the affected watersheds, there is a concern among some agencies that their influence on the establishment and use of this compensatory mitigation option is limited.

The final ILF guidance addresses these concerns by specifying that ILF agreements should be developed by the Corps in consultation with other interested federal agencies. Corps headquarters should instruct district offices that such interagency involvement in the establishment of ILF agreements should *not* mirror the MBRT process that is now being used for the development and approval of mitigation banks (and that includes interagency involvement in all areas of bank establishment and operation). Forcing ILF program development into the MBRT process *as it now is practiced* would increase the costs and time to develop ILF programs and so impede the ability of Corps districts to establish and use the fee option to meet mitigation needs for minor permitted impacts. Instead, Corps districts should be instructed to solicit and consider the comments and suggestions of other interested federal agencies on the development of ILF operating agreements.

[14] This same administrative efficiency might be realized for the increased number of individual permit applications involving minor impacts that will likely result from recently implemented changes to the Nationwide Permit Program, and that may be good candidates for fee-based mitigation.

Corps headquarters should also clarify that interagency involvement in the operation of ILF programs should focus on review procedures for considering watershed scale needs to guide the selection of ILF mitigation activities. The goal of ILF programs, whether recognized explicitly or by implication, is watershed restoration and protection. This may be the intent, but few areas have a formal watershed plan to assure that expenditures serve watershed needs. Instead, best professional judgment (informed by available analyses) is used to ascertain what particular expenditures best serve the watershed. In reality, best professional judgment may be all that is possible given the cost and complexity of watershed plan development for wetland management. If best professional judgment is to be relied upon, then expanding the number of professional experts involved in expenditure decisions would contribute to the success of a watershed-focused program. Therefore, Corps headquarters should instruct the districts to include in ILF agreements identifiable roles for other federal and state agencies in the determination of watershed priorities for the use of ILF funds.

The Corps might also direct that a more formalized watershed priority-setting for ILF mitigation site selection should be expected when ILF programs are used to provide a significant share of total compensation requirements. For example, use of ILF mitigation in a watershed that grows past some threshold level (perhaps defined in terms of the percentage of total compensation required in the area served by the ILF program) might be expected to refer to a more structured watershed priority setting process. This priority setting process need not result in a written plans similar to those used by the North Carolina ILF program.

APPENDIX A.

SOURCES OF STUDY INFORMATION AND DATA

Persons Interviewed

Greg Culpepper, Army Corps of Engineers, Norfolk District
David Crosby, Army Corps of Engineers, Savannah District
Linda Ferrell, Army Corps of Engineers Jacksonville District
Ron Ferrell. North Carolina Department of Environment and Natural Resources
Irwin Garskof, Army Corps of Engineers, Baltimore District
Kelly Heffner, Pennsylvania Department of Environmental Protection
Mitchell Isoe, Army Corps of Engineers, Chicago District
Mark Matuziak, US Fish and Wildlife Service
John Meyer, South Florida Water Management District
Hans Neuhauser, Georgia Land Trust Service Center
Tom Pluto, Army Corps of Engineers, Baltimore District
Joseph Roth, Corporation for Open Lands
Rebecca Rowden, Army Corps of Engineers, Savannah District
Kathleen Ryan, Army Corps of Engineers, Buffalo District
G. Wayne Wright, Army Corps of Engineers, Wilmington District

Materials Reviewed

1. General

Federal guidance on the use of in-lieu fee arrangements for compensatory mitigation under section 404 of the clean water act and section 10 of the rivers and harbors act. *US Army Corps of Engineers, US Environmental Protection Agency, US Fish and Wildlife Service, National Oceanic and Atmospheric Administration. (Fed. Reg. 6898-3, Vol. 65, No. 216, November 7, 2000).*

Gardner, Royal C. 2000. "Money for nothing? The rise of wetland fee mitigation." *Virginia Environmental Law Journal.* 19(1).

"In-lieu-fee programs belong among mitigation options." *National Wetlands Newsletter.* 21(4). July-August, 1999. (Two separate articles, one by Richard Martin and one by Jack Chowning).

"A lieu-lieu policy with serious shortcomings." *National Wetlands Newsletter.* 21(4). July-August, 1999. (Two separate by articles, one by David Urban and John Ryan, and one by Robin Mann).

Proceedings from the First National Mitigation Banking Conference. April 6-7, 1998. Terrene Institute.

Proceedings from the Second National Mitigation Banking Conference. June 13-15, 1999. Terrene Institute.

Proceedings from the Third National Mitigation Banking Conference. May 17-19, 2000. Terrene Institute.

Agreement Between the Nature Conservancy and the Regulatory Branch, U.S. Army Corps of Engineers, Sacramento District. To Establish a Fee-Based Compensatory Mitigation Program Under Section 404 of the Clean Water Act, May 1, 2000.

Ohio Wetlands Foundation, "Background and Position on Mitigation Banking and In Lieu Fee Payments," May 6, 1999.

2. Letters and Comments (including attachments) on Draft Federal In-Lieu-Fee Guidance

Rebecca Rowden, Assistant District Council, Savannah District, Corps of Engineers, June 1, 1999.

Hans N. Neuhauser, Georgia Environmental Policy Institute, Letter to Gregory E. Peck, U.S. Environmental Protection Agency, May 28, 1999.

Lydia W. Quinn, American Consulting Engineers Counsel, Letter to Lisa Morales, U.S. Environmental Protection Agency, June 1, 1999.

Constance Bersok, Florida Department of Environmental Protection, Letter to Gregory E. Peck, U.S. Environmental Protection Agency, May 12, 1999.

Margaret Coon, The Nature Conservancy, Letter to Gregory E. Peck, U. S. Environmental Protection Agency, May 14, 1999.

Margaret Strand, National Mitigation Bankers Association, Letter to Gregory E. Peck, U.S. Environmental Protection Agency, May 17, 1999.

Benjamin N. Tuggle, U.S. Fish and Wildlife Service, Letter to Gregory E. Peck, U.S. Environmental Protection Agency, June 3, 1999.

John F. Studt, Chief, Regulatory Branch, U.S. Army Corps of Engineers, Letter to Gregory E. Peck, U.S. Environmental Protection Agency, June 7, 1999.

Ann F. Jennings, Chesapeake Bay Foundation, Letter to John Goodin, U.S. EPA, May 21, 1999.

Joyce O'Keefe, Open Lands Project, Letter to Lisa Morales, U.S. Environmental Protection Agency,May 28, 1999.

Gerould Wilhelm, Conservation Design Forum, Letter to Lisa Morales, U.S. Environmental Protection Agency, June 4, 1999.

Valerie Spale, Save the Prairie Society, Letter to Lisa Morales, U.S. Environmental Protection Agency, June 3, 1999.

Thomas Hahn, Corporation for Open Lands, Letter to Lisa Morales, U.S. Environmental Protection Agency, May 26, 1999.

3. ILF Program Specific

<u>Chicago District Wetlands Restoration Fund</u>

Agreement for the Administration of the Wetlands Restoration Fund Between the US Army Corps of Engineers, Chicago District and Corporation for Open Lands (June 20, 1997)

US Army Corps of Engineers Chicago District policies for the implementation of the Wetlands Restoration Fund. December 10, 1999.

Chicago District regulatory program mitigation policies. Undated.

Summary of mitigation projects implemented through the Wetland Restoration Fund. March 1999. Supplied by Mitchell Isoe, Corps Chicago District.

Spreadsheet data on use and mitigation activity of the WRF as of as of December 31, 1999. Excel files supplied by Mitchell Isoe that include data on: 1) Section 404 permit recipients who have paid fees into the fund, 2) mitigation projects supported by the fund, and 3) mitigation credits purchased by the fund, by watershed.

Spreadsheet data on mitigation requirements and the use of the WRF, mitigation banks, and project-specific mitigation options in the Chicago District, 1993-1999. Excel file supplied by Mitchell Isoe.

Virginia Wetlands Restoration Trust Fund

Virginia Wetlands Restoration Trust Fund Memorandum of Understanding Between The Nature Conservancy and the US Army Corps of Engineers, Norfolk District (August 10, 1995)

The Virginia Wetlands Trust Fund. *May 2000. Includes: 1) discussion of fund philosophy, 2) spreadsheet data on permitted activities that have paid into the fund, 2) spreadsheet data on mitigation projects implemented through the fund, and 3) spreadsheet data on costs of implementing fund mitigation projects (all as of April 26, 2000).*

"South Chesapeake farm field to be restored through wetlands trust fund". Article by Scott Harper in the *Virginia Pilot.* March 14, 2000.

Jennings, Ann, R. Hoagland and E. Rudolph. 1999. "Downsides to Virginia mitigation banking." *National Wetlands Newsletter*. 21(1). January-February 1999.

Scott Harper, "Nature Conservancy Acquires 817 Acres," Virginian Pilot, January 12, 1999, page b.1.

Gregg Culpepper, "The Virginia Wetlands Trust Fund," Memorandum for Leonard Shabman, May 22, 2000.

Memorandum from Norfolk District Chief, Regulatory Branch to regulatory branch project managers on "nationwide permit mitigation and trust fund guidance". Dated August 31, 2000.

Buffalo District ILF Arrangement Program

Draft in lieu fee program summary. October 16, 1997.

"In lieu fee arrangement operational agreement". Standard form used to establish agreements with individual conservation entities that agree to use fund resources to implement mitigation projects.

"In lieu fee arrangement process table and flowchart."

"In lieu fee arrangement information." Form letter sent by the District to conservation entities who send to the District the organizational and other information necessary for inclusion of the organization in the District's "In-house directory of potential sources of mitigation."

"Understanding the US Army Corps of Engineers regulatory program." Regulatory, Buffalo District. Undated.

Georgia Wetlands Trust Fund

Agreement Between the Georgia Land Trust Service Center and the US Army Corps of Engineers, Savannah District (July 17, 1997)

Neuhauser, Hans and R. Rowden. Undated. "The Georgia Wetlands Trust Fund: An in lieu fee program for wetlands mitigation."

Letter from Joseph Schmitt of the Corps Savannah District to Hans Neuhauser dated November 9, 1998 providing for amendments to the program agreement regarding the holding of fee revenues in trust.

Standard operating procedure for compensatory mitigation: Wetlands, openwater and streams. Department of the Army, Savannah District, Corps of Engineers. Draft edition. June 5, 2000.

Georgia Land Trust Service Center, "Georgia Wetlands Trust Fund: 1999 Annual Report," March 2000 (with updates through February 16, 2000).

Pennsylvania Wetland Replacement Project

Standard Operating Procedures for the Implementation of the Pennsylvania Wetland Replacement Project (February 14, 2000)

"Compensatory wetland replacement and the Pennsylvania wetland replacement project (fund)." Chapter 5 in *Pennsylvania state programmatic general permit-1 (PASPGP-1) monitoring report*. US Army Corps of Engineers, Baltimore District. March 2000.

Pennsylvania wetland replacement project: Status report 1996-1999.

Department of Environmental Protection Fact Sheet: "Pennsylvania wetland replacement project."

"Replacement wetlands are usually inferior to originals". *Online Post-Gazette*. November 15, 1999.

North Carolina Wetlands Restoration Program Compensation Mitigation Fund

Memorandum of Understanding Between the North Carolina Dept. of Environment and Natural Resources and the US Army Corps of Engineers, Wilmington District. November 1998.
North Carolina Department of Environment and Natural Resources, North Carolina Wetlands Restoration Program, "The North Carolina Restoration Program: An Overview of the Local Watershed Planning Initiative," undated.

North Carolina Department of Environment and Natural Resources, North Carolina Wetlands Restoration Program, "The North Carolina Wetlands Restoration Program 1999 Annual Report," November 1999.

North Carolina Department of Environment and Natural Resources, North Carolina Wetlands Restoration Program, " Basinwide Wetlands and Riparian Restoration Plan for the Neuse River Basin," undated.

Associated Press, "Transportation, Environment Department Agree to Protect Wetlands," http://www.journalnow.com/news/wires/northcarolinawire/ak506108.htm.

Unit 11 of the Indian Trail Improvement District

Agreement Between the S. Florida Water Management District, Florida Dept. of Environmental Protection and Palm Beach County Board of County Commissioners through its Dept. of Environmental Resources Management (April 2000).

Florida Office of Program Policy Analysis and Government Accountability. 2000. *Policy review: Wetland mitigation*. Report No. 99-40 (March).

Florida mitigation banking study database. Developed by Lotspiech & Associates, Inc. for the US Army Corps of Engineers, Jacksonville District.

+

APPENDIX B.

REPORTED INFORMATION ON CORPS DISTRICT IN LIEU FEE POLICIES AND PROGRAMS

Prepared by Dr. Robert Brumbaugh, Institute for Water Resources

The IWR National Wetland Mitigation Banking Study and the American Petroleum Institute examined early ILF programs.[1] Since that time Corps districts use of ILF appears to have greatly increased. In 1992, in response to an informal IWR survey, four Corps districts reported establishment of ILF arrangements to satisfy compensatory mitigation requirements without regard to any specific project impact. Eleven additional districts reported collected in lieu fees on a *case-by-case basis*; that is, the recipient of the fees was defined only for the purpose of securing compensation for a specific permitted project. By mid-1999, only twelve districts did not report using ILFs on a case by case basis or as a part of a formal agreement. Of twenty-six districts using ILFs, eighteen involved formal program agreements. A comparison of the IWR survey of district use of ILFs for 1992 and 1999 is presented in Appendix Table A-1. It should be noted that the two surveys did not provide a precise ILF definition for context. In the 1999 survey, districts reported that there were about 50 ILF programs with some type of formal documentation or agreement. Appendix Table A-2 presents a list of district arrangements for ILF use (i.e., general guidance or specific arrangements). The information presented in these tables was collected through correspondence with Corps field staff and was not confirmed with detailed follow up study.

[1] 1) "Alternative mechanisms for compensatory mitigation: Case studies and lessons learned about fee-based compensatory mitigation". Working Paper prepared by Apogee Research Inc. for the National Mitigation Banking Study, Institute for Water Resources, March 1993. and; 2) "Alternative wetland mitigation programs". Discussion Paper No. 077, American Petroleum Institute. February 1995.

Table A-1. In-Lieu Fee Compensation, 1992 & 1999 (source: unpubl. IWR surveys, 1992, 1999).
Note: This information has not been verified.

District	1992	1999
NAD		
Baltimore	Yes, formal program	Yes, formal program
New England	No	No
New York	No	Yes, case by case
Norfolk	No	Yes, formal program
Philadelphia	No	Yes, formal program
SAD		
Charleston	No	Yes, case by case and formal [1]
Jacksonville	Yes, formal program	Yes, formal program
Mobile	No	Yes, case by case
Savannah	No	Yes, formal program
Wilmington	No	Yes, formal program
LRD		
Buffalo	No	Yes, formal program
Chicago	Yes, case by case	Yes, formal program [2]
Detroit	No	No
Huntington	No	Yes, case by case
Louisville	Yes, case by case	No
Nashville	No	No [3]
Pittsburgh	No	Yes, case by case
MVD		
Memphis	Yes, case by case	No
New Orleans	Yes, case by case & formal	Yes, formal program
Rock Island	Yes, case by case	Yes, case by case
St. Louis	No	No
St. Paul	No	No
Vicksburg	Yes, case by case & formal	Yes, formal program
SWD		
Fort Worth	Yes, case by case	Yes, formal program
Galveston	Yes, case by case	No
Little Rock	Yes, case by case	No
Tulsa	No	No
NWD		
Kansas City	No	Yes, formal program
Omaha	Yes, case by case	
Portland	No	Yes, formal program
Seattle	No	No
Walla Walla	No	No
SPD		
Albuquerque	No	No
Los Angeles	No	Yes, formal program
Sacramento	Yes (ad hoc)	Yes, formal program
San Francisco	Yes (ad hoc)	Yes, case by case
POD		
Alaska	No	Yes, formal program
Hawaii	Yes, case by case	No

[1] Statewide MBRT guidelines
[2] And District policy statement
[3] ILF directory

Table A-2. Wetland Mitigation In-Lieu Fee (ILF) Arrangements: 1999.
Note: This information has not been verified.

Fee Arrangement or Guidance	Administrator	Other information and/or document
Philadelphia District New Jersey Compensatory Mitigation Fund	NJ Dept of Environ. Prot., Div. of Coastal Resources	State act & administrative rules
Norfolk District VA Wetlands Restoration Trust Fund	Corps District/The Nature Conservancy	MOU with Corps
Baltimore District Pennsylvania Wetlands Replacement Fund (and Philadelphia District) MD NonTidal Wetlands Compensation Fund	PA Dept Environmental Protection MD Dept Natural Resources	Draft SOP, SPGP MD General Programmatic Permit & state act
Charleston District So. Carolina MBRT Team ILF Guidelines Peter's Creek Mitigation ILF Project	Not applicable SC Dept Natural Resources	Interagency guidance Pilot project
Wilmington District North Carolina Wetlands Restoration Program	NC Dept Environ. & Natural Resources Div. Water Quality	MOU with Corps & state act
Jacksonville District Cash Donation Mitigation St. Johns WMD So FL WMD (Pennsuco, Corkscrew, Dupuis, Shingle Creek, Upper Lakes Basin) Unit 11 ILF Program	Water Management Districts (WMDs) Palm Beach Co.	State act
Savannah District Georgia Wetland Trust Fund	GA Land Trust Service/GA Envir Policy Institute	Agreement with Corps
Chicago District Wetlands Restoration Fund (CORLANDS) County of DuPage, Illinois	Corporation for Open Lands DuPage Co. Dept Environ. Concerns	Agreement with Corps County Ordinance
Buffalo District Buffalo District ILF Arrangements ILF Operation Agreements with 22 entities	(In Ohio & NY) land associations, parks, land trusts, towns, natural areas, Ohio DNR, TNC, Audubon Soc.	Agreements with Corps
Huntington District Lake Choctaw Wetland Mitigation ILF Singer Lake Bog	Ohio Wetlands Corporation Cleveland Museum of Natural History	Agreement with Corps Agreement with Corps
Vicksburg District Oil & Gas Exploration GP 19 Nature Conservancy Mitigation Pooling (also MVN) Delta Land Trust ILF Mitigation Areas (2 sites) Delta Wildlife Foundation ILF Mitigation Area	The Nature Conservancy Delta Land Trust Delta Wildlife Federation	GP 19 Permit
New Orleans District Cypress Island Mitigation Area Louisiana Wetland Conservation & Restoration Fund	Nature Conservancy Louisiana Dept Natural Resources	State administrative rules; PGP
Fort Worth District ILF Trust Fund Program, Fort Worth District	Nature Conservancy	Agreement with Corps

Fee Arrangement or Guidance	Administrator	Other information and/or document
Kansas City Missouri Conservation Heritage Foundation Stream Stewardship Trust Fund	Missouri Conservation Heritage Foundation	MOU with Corps
Portland District Oregon Div State Lands, In-Lieu of Compensatory Wetland Mitigation	Oregon Division State Lands	State administrative rules
Alaska District Great Land Trust Kachemak Heritage Land Trust Conservation Fund Southeast Alaska Land Trust (SEAL Trust)	 Great Land Trust Kachemak Heritage Land Trust Conservation Fund Southeast Alaska Land Trust	 Agreement with Corps Agreement with Corps Agreement with Corps Agreement with Corps
Sacramento District Tri-Dam Project Agreement	Tri-Dam Project (Oakdale & South San Joaquin Irrigation Districts)	Agreement with Corps
Los Angeles District Santa Margarita Arundo Control Fund ILF Mitigation Program Ventura River Watershed ILF Mitigation Program	 Mission Resource Conservation District Ojai Valley Land Conservancy	 MOU with Corps Agreement with Corps