Public Notice

U.S. Army Corps of Engineers

In Reply to Application Number NAB-2014-00371-P02 (Pennsylvania Integrated Ecological Services Capacity Enhancement and Support)

Pittsburgh District Baltimore District Philadelphia District

SPN-20-11 Comment Period: February 18, 2020 to March 19, 2020

THE PURPOSE OF THIS SPECIAL PUBLIC NOTICE IS TO INFORM INTERESTED PARTIES OF THE PROPOSED ACTIVITY AND TO SOLICIT COMMENTS CONCERNING THE PROPOSED DEVELOPMENT OF AN IN-LIEU FEE (ILF) COMPENSATORY WETLAND AND STREAM MITIGATION PROGRAM BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP) FOR USE THROUGHOUT THE COMMONWEALTH OF PENNSYLVANIA.

This Special Public Notice is issued jointly by the Baltimore, Philadelphia, and Pittsburgh District of the U.S. Army Corps of Engineers.

The PADEP proposes to establish the Pennsylvania Integrated Ecological Services Enhancement and Support (PIESCES) ILF program under the provisions of 33 CFR Part 332.8. On April 11, 2014, the Corps issued joint Special Public Notice SPN-14-24 for the PIESCES ILF prospectus submitted by the PADEP. Comments received in response to the Special Public Notice were provided to the PADEP concurrent with the Corps initial evaluation letter for consideration during the development of the PIESCES ILF draft instrument. Since greater than five years has passed from the date of the initial Special Public Notice, and in consideration that the PADEP is continuing to develop their PIESCES ILF draft instrument, the Corps believes a second Special Public Notice to allow for submittal of any additional comments is appropriate. Comments submitted in response to the original Special Public Notice do not need to be resubmitted, as the PIESCES prospectus attached to SPN-14-24 has not changed, and all previously submitted comments are already part of the record. Comments received in response to this Special Public Notice will be provided to the PADEP for consideration in their continued development of the PIESCES ILF draft instrument.

SPONSOR: Mr. Sidney Freyermuth
Pennsylvania Department of Environmental Protection
Bureau of Waterways Engineering & Wetlands
Rachel Carson State Office Building
400 Market Street
Harrisburg, Pennsylvania 17101

If approved, the proposed PIESCES ILF program will replace the Pennsylvania Wetland Replacement Project ILF program and operate in compliance with the 2008 Mitigation Rule (33 CFR Part 325 and 332) providing a third-party compensatory mitigation option for Department of the Army (DA) authorizations and/or violations under Section 404 of the Clean Water Act (33 U.S.C. 1344) and/or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). This ILF program would potentially provide permit applicants a joint

state/federal option for meeting aquatic resource compensatory mitigation needs in compliance with both state and federal regulations. The proposed PIESCES ILF program would be applicable for use in providing compensatory mitigation of aquatic resources impacts throughout the Commonwealth of Pennsylvania, within the regulatory boundaries of the Baltimore, Philadelphia, and Pittsburgh Districts of the U.S. Army Corps of Engineers.

A copy of the proposed PIESCES prospectus is attached to this Special Public Notice. This prospectus provides a summary of the information regarding the PADEP proposed PIESCES ILF program in accordance with the Department of Defense/Environmental Protection Agency Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230). In addition, a copy of the prospectus is available online in the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) at http://ribits.usace.army.mil

The proposed PIESCES ILF program seeks to:

1. Provide aquatic resource compensatory mitigation that offsets compensatory mitigation requirements for PADEP authorized impacts, DA authorized impacts, Corps of Engineers Civil Works project impacts, and/or to satisfy requirements of non-compliance issues or unauthorized activities (i.e., enforcement) to ensure a no net loss of acreage and/or functions of wetlands, streams, floodplains and other bodies of water.

2. Ensure “no net loss” of acreage and/or functions of wetlands, streams, floodplains, and other bodies of water through establishment, enhancement, and restoration of aquatic resources.

3. Provide a means to ensure that adequate compensatory mitigation of effected aquatic resources occurs within a framework that integrates the Commonwealth’s watershed planning and prioritization processes to the maximum extent practicable.

At this time, no decision has been made as to whether or not the proposed PIESCES ILF program will be approved for use to provide compensatory mitigation for activities authorized by DA permits. On April 10, 2008, the federal rule for “Compensatory Mitigation for Losses of Aquatic Resources; Final Rule” (Mitigation Rule) was published in the Federal Register, and became effective on June 9, 2008. The implementing regulations for the Mitigation Rule are found in Department of the Army, Corps of Engineers 33 CFR Parts 325 and 332, and the U.S. Environmental Protection Agency in 40 CFR Part 230.

The Corps will evaluate the submitted PIESCES ILF program prospectus in accordance with all requirements of the Mitigation Rule in 33 CFR Parts 325 and 332; in consultation with the Pennsylvania Interagency Review Team (IRT); and in consideration of comments received from the general public in response to the Special

Public Notices, to determine the potential of the proposed ILF program to provide compensatory mitigation for activities authorized by DA permits within the Commonwealth of Pennsylvania. The utilization of approved and established mitigation banks with available credits, and approved ILF programs, is given preference to other forms of compensatory mitigation in the hierarchy of potential mitigation options as contained in the Mitigation Rule (33 CFR 332.3(b)(1)-(6)). A final approved ILF instrument does not provide DA authorization for specific future projects impacting waters of the United States; exclude such future projects from any applicable statutory or regulatory requirements; or preauthorize the use of credits from the ILF program for any particular project. The Corps provides no guarantee that any particular individual or permit application will be granted authorization to use the ILF program to compensate for unavoidable aquatic resource impacts associated with a proposed project, even though compensatory mitigation may be available within the defined service area.

Oversight of the PIESCES ILF program will be undertaken by the Pennsylvania IRT, which is comprised of federal and state regulatory and resource agencies. The Baltimore District, U.S. Army Corps of Engineers serves as chair of the IRT, and the Pennsylvania Department of Environmental Protection serves as co-chair of the IRT.

The decision whether to approve this ILF program will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonable may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economic, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and consideration of property ownership and in general, the needs and welfare of the people.

ENDANGERED SPECIES: A preliminary review of this prospectus indicates that the proposed program is not likely to adversely affect federally-listed threatened or endangered species or their critical habitat, pursuant to Section 7 of the Endangered Species Act, as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat, including species of concern, life cycle habitat, or Habitat Areas of Particular Concern. The Corps has made a preliminary

determination that the program will have no adverse effect on Essential Fish Habitat. This determination may be modified if additional information indicates otherwise.

HISTORIC RESOURCES: Pursuant to Section 106 of the National Historic Preservation Act of 1966 and applicable guidance, the Corps has made a preliminary determination that the proposed program would have no adverse effecton historic properties. The Corps final eligibility and effect determination will be based on coordination with the State Historic Preservation Office as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps' identified permit area.

TRIBAL RESOURCES: Section 106 of the National Historic Preservation Act also requires federal agencies to consult with federally-recognized American Indian Tribes that attach religious and cultural significance to historic properties that may be affected by the agency's undertaking. Corps Tribal Consultation Policy mandates an open, timely, meaningful, collaborative, and effective deliberative communication process that emphasizes trust, respect, and shared responsibility. The policy further emphasizes that, to the extent practicable and permitted by law, consultation works toward mutual consensus and begins at the earliest planning stages, before decisions are made and actions taken. The Corps final eligibility and effect determination will be based on coordination with interested tribes, in accordance with the Corps current tribal standard operating procedures as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on tribal resources.

MODIFICATION OF CIVIL WORKS PROJECTS: 33 USC 408 (SECTION 408): All Section 408 proposals will be coordinated internally at USACE. The Section 408 decision will be issued along with the Section 404 and/or Section 10 decision. Please see the following link for more information regarding Section 408: https://www.nab.usace.army.mil/section408/.

COASTAL ZONE MANAGEMENT PROGRAMS: Where applicable, the sponsor has indicated in their ILF program prospectus that the proposed activity complies with and will be conducted in a manner consistent with the approved Coastal Zone Management Program.

SUBMISSION OF COMMENTS: The Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of the proposed PIESCES ILF program to provide compensatory mitigation for activities authorized by DA permits. Any comments received will be considered by the Corps of Engineers for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact

Statement pursuant to the National Environmental Policy Act. Comments provided will become part of the public record for this action and are subject to release to the public through the Freedom of Information Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Written comments concerning the proposed PIESCES ILF program described above related to the factors listed above or other pertinent factors must be received by the U.S. Army Corps of Engineers, Baltimore District within the comment period specified above through postal mail at the address below or electronic submission to the project manager email address below. Written comments should reference the Application Number NAB-2014-00371-P02 (Pennsylvania Integrated Ecological Services Capacity Enhancement and Support).

PUBLIC HEARING REQUESTS: Any person who has an interest which may be adversely affected by the approval of the program may request a public hearing. The request, which must be in writing, must be received within the comment period as specified above to receive consideration. Also it must clearly set forth the interest which may be adversely affected by this activity and the manner in which the interest may be adversely affected. The public hearing request may be submitted by electronic mail or mailed to the following address:

Michael Danko
(mike.danko@usace.army.mil)
U.S. Army Corps of Engineers, Baltimore District
Regulatory Branch
Carlisle Field Office
401 East Louther Street
Suite 205
Carlisle, PA 17013-2657

It is requested that you communicate this information concerning the proposed program to any persons known by you to be interested, who did not receive a copy of this notice.

General information regarding the Corps' permitting process can be found on our website at https://www.nab.usace.army.mil/Missions/Regulatory.aspx. This Special Public Notice has been prepared in accordance with Corps implementing regulations at 33 CFR 325.3. If you have any questions concerning this specific program, or would like to request a paper copy of this Special Public Notice, please contact Mr. Wade B. Chandler, Chief, Pennsylvania Section, Baltimore District, U.S. Army Corps of Engineers at (814) 235-0572, wade.b.chandler@usace.army.mil, or Mr. Michael Danko, Regulatory Project Manager, Pennsylvania Section, Baltimore District, U.S. Army Corps of Engineers, at (717) 249-8730, mike.danko@usace.army.mil. This Special Public Notice is issued by the Chief, Regulatory Branch, Baltimore District.

Pennsylvania's Integrated Ecological Services, Capacity Enhancement and Support Program

PIESCES

In Lieu Fee Program Prospectus
03/06/2014

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Waterways Engineering and Wetlands

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Introduction

The following prospectus outlines the circumstances and manner in which a statewide In Lieu Fee (ILF) program entitled Pennsylvania's Integrated Ecological Services, Capacity Enhancement and Support program (PIESCES) will serve to satisfy compensatory mitigation requirements for federal, state, and local regulatory programs within the boundaries of the Commonwealth of Pennsylvania. PIESCES will replace the existing ILF program entitled PA Wetland Replacement Project (PWRP). Any contribution funds remaining in PWRP will be retained in a separate account and utilized for long term maintenance and monitoring of projects constructed through that program.

1.0 Objective

The objective of PIESCES is to provide aquatic resource compensatory mitigation that satisfies the following: (1) compensatory mitigation requirements for Pennsylvania Department of Environmental Protection (DEP) authorized impacts; (2) Department of Army (DA) authorized impacts; (3) Civil Works project impacts; and/or (4) resolution of non-compliance issues or unauthorized activities (i.e., enforcement). These ensure "no net loss" of acreage and/or functions of wetlands, streams, floodplains and other bodies of water. These requirements will be satisfied through the establishment, enhancement and restoration of aquatic resources. PIESCES will provide a means to ensure that adequate compensatory mitigation of effected aquatic resources occurs within a framework that integrates the Commonwealth's watershed planning and prioritization processes to the maximum extent practicable.

PIESCES will help protect, maintain, and restore sustainable, functional aquatic ecosystems through:

- Performing high quality mitigation for unavoidable impacts to aquatic resources;
- Providing ecologically-based site selection process resulting in greater ecological benefits to watersheds;
- Utilizing scale efficiencies by combining impacts from individual smaller projects within a service area into larger more effective projects;
- Meeting regulatory requirements by streamlining the compensatory mitigation process more efficiently;
- Providing an alternative to permittee-responsible mitigation which has been demonstrated to perform poorly;
- Providing an effective and transparent accounting structure for collecting fees, disbursing project funds, and compliance reporting; and
- Working in an efficient and transparent manner with the Interagency Review Team (IRT)[1] to implement mitigation projects and enact amendments to the program Instrument.

[1] The IRT is an advisory group of state and federal agencies established by the ACOE for reviewing and providing comment on proposed instruments and projects as required by 33 CFR Part 332 and 40 CFR Part 230.

2.0 Establishment and Operation

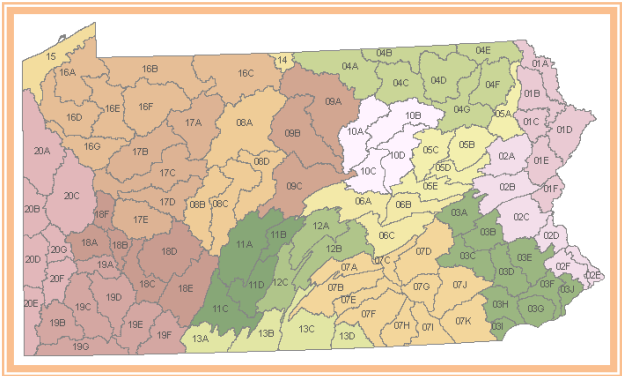
The DEP will establish the ILF through adoption of policy in accordance with Commonwealth procedures thereby replacing the existing ILF program PWRP for providing third party compensatory mitigation associated with: (1) DEP and DA authorized impacts; (2) non-compliance of permit conditions; and/or (3) resolution of unauthorized (enforcement) activities under Chapter 105 and section 404 of the Clean Water Act. The DEP will assume all legal responsibility for satisfying the compensatory mitigation requirements of permits for which fees have been accepted (i.e., implementation, performance, and long-term management of compensatory projects performed under the ILF instrument and subsequent mitigation plans).

The DEP shall establish and maintain a system for tracking the debiting of credits, production of credits, credit transactions, and financial transactions between DEP and permittees. Debiting of credits, production of credits, credit transactions, and financial transactions will be tracked on annual and individual project ledgers.

This program does not take the place of avoidance and minimization of a project's proposed impact or does not take the place of a project specific review and evaluation. The state law requirements for a mitigation plan and the procedures to assure proper mitigation found at 25 Pa. Code §105.1, 105.13(d)(1)(ix) remain applicable.

3.0 Service Areas

The geographic service area for PIESCES is defined as the entire Commonwealth of Pennsylvania and its boundaries. The DEP, through the operation of PIESCES, will provide compensatory mitigation for aquatic resource impacts within the same State Water Plan Subbasin and the two Coastal Zone Management areas in which the impacts occur unless the District Engineer, in consultation with the IRT, has agreed to an exemption.



The Water Resources Planning Act, No. 220, signed into law on December 16, 2002, established a Statewide Water Resources Committee and six Regional Water Resources Committees that have guided DEP since 2003 in the development of a new State Water Plan and updating it at five year intervals. The State Water Plan Subbasins will provide the basis for service area boundaries and will be utilized by all compensatory mitigation efforts (ILF, banking and permitee responsible) because it is a historic, and on-going level of planning within the Commonwealth, and DEP has concluded that the scale is appropriate to ensure that the projects selected will be able to effectively compensate for environmental impacts across the entire service area. Individual projects for specific service areas will be proposed in project specific mitigation plans.

The DEP will not accept fees for compensatory mitigation requirements for DA permits in service areas in which all of the advanced credits have been sold and has been unable to identify appropriate mitigation sites. Unused advanced credits in service areas within the same DA District may be transferred in consultation with the IRT and approval of an ACOE District Engineer.

Service Area Table

Major Basins	Subbasins & Coastal Zone Areas	
Delaware	1	Upper Delaware
	2	Middle Delaware
	3	Lower Delaware
	CZM	Delaware Estuary Coastal Zone Management Area
Susquehanna	4	Upper Susquehanna
	5	Upper Middle Susquehanna
	6	Lower Middle Susquehanna
	7	Lower Susquehanna
	8	Upper West Branch Susquehanna
	9	Middle West Branch Susquehanna
	10	Lower West Branch Susquehanna
	11	Upper Juniata
	12	Lower Juniata
Potomac	13	Potomac
Greatlakes	14	Genesee
	15	Lake Erie
	CZM	Lake Erie Coastal Zone Management Area
Ohio	16	Upper Allegheny
	17	Middle Allegheny
	18	Lower Allegheny
	19	Monongahela
	20	Ohio

4.0 Need and Technical Feasibility

The need for a strategic and comprehensive approach to compensatory mitigation in Pennsylvania's watersheds is critical, given the historic losses of surface waters and related functions as well as degraded and impaired aquatic resources due to a myriad of anthropogenic activities such as: (1) residential, commercial and industrial land development; (2) resource extraction; (3) transportation; (4) dams; (5) agricultural practices; and (6) non-native/invasive. The recent development of a Total Maximum Daily Load (TMDL) for the Chesapeake Bay, which affects a significant portion of Pennsylvania, further demonstrates the need for comprehensive approaches and watershed based restoration.

The 2008 regulations for Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332 and 40 CFR Part 230) (2008 Rule) recognizes that mitigation banks and ILF programs are environmentally preferable over permittee-responsible projects. This is because they involve consolidating compensatory mitigation projects and resources to target more ecologically significant functions, provide financial planning and scientific expertise, reduce temporal losses of function, and reduce risk and uncertainty over project success. At present, few mitigation banks exist in the Commonwealth of Pennsylvania and PIESCES represents a significant opportunity to have greater ecological benefits than small, geographically separated, permittee-responsible mitigation.

Recently completed investigations into wetland compensatory efforts across Pennsylvania comparing hydrogeomorphic types of wetlands and functioning levels of constructed wetlands as compared to reference standards has revealed significant deficiencies in the siting, design, construction and overall implementation of past compensatory efforts (Gebo and Brooks 2012). PIESCES will have significant expertise and resources at its disposal that permittees and banking interests would not normally have available to them to ensure the most ecologically suitable sites and latest research and restoration techniques are employed.

An increasing demand has been placed upon aquatic resource compensatory requirements over the past decade to help restore or ameliorate environmental degradation problems across the nation. To date, this effort has mostly resulted in establishing a no net loss of wetland acreage but has not been

able to demonstrate a no net loss of functions; the information related to the effectiveness of compensatory actions for other aquatic resources, such as waterways and floodplains, is sparse or non-existent. In many instances, the ability of permittee responsible mitigation to address the needs of a watershed is limited at best. Applicants generally do not have adequate resources to identify watershed needs, plan for and identify high value project sites, and/or secure rights to and produce significant restoration activities.

PIESCES proposes to utilize a watershed-based approach in selecting sites based upon need, level of ecological condition potential for restoration success and/or habitat values. The DEP will seek to identify and prioritize aquatic resource restoration, establishment, and enhancement activities to improve ecological functions of watersheds.

5.0 Site Ownership and Long Term Management

The type of ownership and long-term management strategy will vary by mitigation project site.
The 2008 Rule requires the project site to be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust) (33 C.F.R. 332.3(h)).

The 2008 Rule assumes that title ownership alone of a project site by a government agency provides the necessary long-term site protection, based on the assumption that a resource agency or non-profit is committed to long-term protection of the project and would not act in a manner contrary to that interest (33 CFR 332.7). The agency's responsibility would include the management of such lands consistent with the terms and conditions of any mitigation and long-term management plan approved by the ACOE in connection with a compensatory mitigation project.

Where an ILF mitigation project is or has been placed on government-owned property or property already subject to an appropriate real estate or other legal instrument, no additional recorded site protection measures are necessary. In the event the agency or land owner proposes any incompatible change in use of the property set aside for compensatory mitigation, DEP will assume the responsibility to submit alternative compensatory mitigation proposals acceptable to the ACOE.

For privately-owned lands upon which an ILF mitigation project is proposed, DEP, as ILF sponsor, will draft and record a perpetual Deed of Conservation Easement in a form acceptable to ACOE.

After securing approval from the ACOE district engineer, DEP may transfer long-term management responsibilities to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager. Transfer of long term stewardship responsibilities shall not occur until after performance standards have been achieved. Once long term management has been transferred to a land stewardship entity, said party is thereby responsible for meeting any and all long-term management responsibilities outlined in the project-specific mitigation plan. Until such time as long-term management responsibilities are transferred to another party, DEP will be considered responsible for long-term management of the mitigation project.

6.0 Sponsor Qualifications

DEP has significant organizational, legal, technical and logistical assets at its disposal to adequately administer and implement a comprehensive ILF compensatory mitigation program. DEP administers numerous regulatory, grant, construction, planning and technical assistance programs across the Commonwealth and has consistently demonstrated leadership in aquatic resource protection, planning and restoration. DEP as an administrative agency under the Executive Branch has the ability to enter into arrangements with other administrative agencies as well, extending the potential scope of expertise at its disposal.

The DEP has the necessary technical expertise to administer, investigate, design and implement aquatic resource restoration projects as well as independent and regional research and development efforts advancing aquatic resource restoration practices and the understanding of resources. These efforts provide invaluable insights into what practices provide the greatest chance of success and identifying conditions early in site selection that are likely to complicate or prevent successful restoration.

In addition, DEP has extensive relationships with other local and regional governmental and non-profit organizations that can assist in identifying, procuring and implementing aquatic resource restoration across the Commonwealth. No other entity is as uniquely qualified or has the organization and technical expertise that DEP has related to the Commonwealth's varied and complex resources.

7.0 Program Account

The PIESCES account will track funds accepted from permittees separately from those accepted from other entities and for other purposes (i.e., fees arising out of an enforcement action, such as supplemental environmental projects). The account will be held at a financial institution that is a member of the Federal Deposit Insurance Corporation. Any and all interest accruing from the account will be used to provide compensatory mitigation for impacts to aquatic resources. The program account will be established after the instrument is approved and before any fees are accepted. If the ACOE determines that the DEP is failing to provide compensatory mitigation by the 5th full growing season after the first advance credit is secured, the agency may direct the funds to alternative compensatory mitigation projects.

The Corps has the authority to audit the program account records at any time. Funds paid into the PIESCES account for the purposes of purchasing compensatory mitigation credits for DA compensatory mitigation requirements may only be used for the direct replacement and management of aquatic resources. This means, in particular, the selection, design, acquisition (i.e., appraisals, surveys, title insurance, etc.), implementation and management of ILF compensatory mitigation projects. This may include fees associated with securing a permit for conducting mitigation activities, activities related to the restoration, enhancement, creation, of aquatic resources, maintenance and monitoring of mitigation sites, and the purchase of credits from mitigation banks. Use of fees collected for DA compensatory mitigation requirements is explicitly prohibited for activities such as research, education and outreach. Up to 15 % of the fees paid into PIESCES may be used for administrative costs. Such costs include bank charges associated with the

establishment and operation of the program, staff time for carrying out program responsibilities, and expenses for day to day management of the program such as bookkeeping, mailing expenses, printing, office supplies, computer hardware or software, training, travel, and hiring private contractors or consultants.

A more detailed description of the program account will be included in the draft instrument.

8.0 Compensation Planning Framework

The following subsections address the 2008 Rule requirements for the compensation planning framework.

8.1 Geographic Service Areas

The service areas described and discussed in **Section 3.0 Service Areas** of the Prospectus pertain to this section of the Compensation Planning Framework. The table below lists the Commonwealth's 20 State Water Plan Subbasins and the two Coastal Zone Management Areas. Individual service area maps will be provided in the draft instrument.

Service Areas

Major Basins	State Water Plan Subbasins & Coastal Zone Areas	
Delaware	1	Upper Delaware
	2	Middle Delaware
	3	Lower Delaware
	CZM	Delaware Estuary Coastal Zone Management Area
Susquehanna	4	Upper Susquehanna
	5	Upper Middle Susquehanna
	6	Lower Middle Susquehanna
	7	Lower Susquehanna
	8	Upper West Branch Susquehanna
	9	Middle West Branch Susquehanna
	10	Lower West Branch Susquehanna
	11	Upper Juniata
	12	Lower Juniata
Potomac	13	Potomac
Greatlakes	14	Genesee
	15	Lake Erie
	CZM	Lake Erie Coastal Zone Management Area
Ohio	16	Upper Allegheny
	17	Middle Allegheny
	18	Lower Allegheny
	19	Monongahela
	20	Ohio

8.2 Aquatic Resource Threats

Threats to Pennsylvania wetlands, streams and floodplains vary with the landscape. The current direct loss threats to aquatic resources include transportation, commercial/industrial and residential development; agricultural activities, and energy/resource extraction.

The amount of wetland impacts that occur in any given service area is relatively minor compared to the resources that are present. The long term average of wetland impacts from individual state permit activity is well below 100 acres statewide; and this level of activity does not represent a significant threat within any of the service areas as described in the table to the right. The long term average annual wetland impacts based upon state permitting data from 1996-2004 for each service demonstrates that direct losses of wetlands through regulated activities does not represent a significant threat, with an average of wetland impact of 64 acres statewide during that period of time.

Major Basin Name	Service Area	Average Annual Wetland Impact (acres) *	NWI Wetlands (acres)
Delaware	1	2.21	33,997.65
	2	5.83	25,240.90
	3	4.98	15,470.45
Susquehanna	4	3.40	28,098.13
	5	5.66	10,652.03
	6	0.87	3,004.85
	7	4.81	11,040.65
	11	2.83	6,467.51
	12	0.54	4,941.54
	8	0.56	7,631.30
	9	3.70	1,567.17
	10	0.88	2,948.74
Potomac	13	0.13	4,479.80
Genesee	14	0.00	125.64
Erie	15	2.55	11,026.91
Ohio	16	5.06	51,752.59
	17	3.07	6,225.84
	18	5.01	3,359.84
	19	5.31	4,335.14
	20	6.30	17,623.05

*Avergae calculated using 9 years of w etland impact data from 1996-2004.

An assessment of wetland conditions across the Mid-Atlantic States was recently completed and data analysis is currently on-going. When the results are available, this information will be incorporated into this section and more information will be available on indirect threats (such as stressors, land use, etc.) contributing to degradation of wetlands in each service area. This data should provide detailed profiles of activities or causes that contribute to the degradation of wetlands for each service area. Although these are not direct impacts (losses of wetlands) associated with permit activities, the information can provide a basis for developing comprehensive long term management strategies.

The table on the next page depicts the activity source profile of statewide individual permit wetland impacts over a five year period from 1999-2003. Public highway construction, and residential, commercial and industrial development, respectively, was primarily responsible for the majority of authorized wetland impacts within the Commonwealth.

Wetland Permit Data by Activity Group for 1999-2003

Activity Group	Activity Description	1999-2003 Wetland Impact Totals	1999-2003 Wetland Replacement Totals	% of Total Wetland Impact
Infrastructure	Forestry/State Park Roads	0.22	0.00	0.1%
	Landfill	4.02	11.79	1.2%
	Public Highway	118.09	138.92	35.0%
	Sewerage/Water Project	2.06	1.34	0.6%
	Utility Facilities	5.12	3.22	1.5%
Land Development	Commercial/Industrial Devel.	96.76	128.32	28.7%
	Government Facilities	15.87	19.99	4.7%
	Private Road/Residence	6.54	3.64	1.9%
	Residential Subdivision	30.62	38.96	9.1%
Miscellaneous	Agricultural	2.33	2.43	0.7%
	Other	15.16	43.46	4.5%
	Peat Extraction	10.83	11.12	3.2%
	Recreation	9.37	10.69	2.8%
	Unknown - Data Unavailable	0.80	0.23	0.2%
Public Safety	Flood Protection Project	0.65	0.63	0.2%
Env. Restoration	Abandoned Mine Project	18.57	25.58	5.5%
	Restoration	0.56	9.77	0.2%

Note: Data provided in "acres".

The individual permit data for direct waterway impacts has not been historically tracked by service area and is only available on a regional and statewide basis. The impacts are related to a variety of activities associated with infrastructure such as roads and utilities; public safety and protection; restoration; dredging; etc. Historically, approximately 180,000 to 225,000 linear feet of stream and floodways statewide have been affected annually authorized by individual state permits. The majority of these threats occurs on a regular ongoing basis within each service area and is widespread throughout the service areas. The following data is provided as typical historic ranges of stream and floodway impacts:

- 2002 – 225,000 linear feet
- 2003 – 210,000 linear feet
- 2004 – 180,000 linear feet

The chart below breaks down the stream and floodway effected from individual state permits issued in 2004 by activity type to show the general distribution of the impact activities. It should be noted that a significant portion of the impacts are associated with stream restoration or bank protection.

2004 STATEWIDE SUMMARY

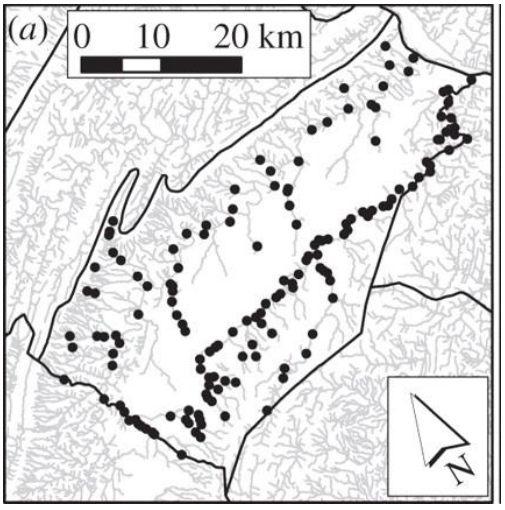
Category	Subfacility Type		No. of Permits Issued with Activity Occurring *	Linear Feet of Stream Affected		Floodway Activity Auhtorized
	Code	Description		Maintenance, Replacement or Reauthorization of Activity	New Authorized Activity	
Structures and Associated Activity						
	BRDG	Bridges	151	5,371	3,059	N/A
	CULV	Culverts	127	2,905	6,533	
	STENC	Stream Enclosure	37	3,061	10,722	
	CW	Channel Work	80	N/A	18,595	
	Totals:		**395**	**11,337**	**38,909**	
Stream Restoration and Protection						
	STRS	Stream Restoration	28	N/A	40,276	N/A
	STRDR	Dam Removal	10		6,725	
	SBP	Bank Stabilization	44		14,152	
	Totals:		**82**		**61,153**	
Stream Relocation						
	STRE	Stream Relocation	1	N/A	360	N/A
	Totals:		**1**		**360**	
Public Safety and Protection						
	GBR	Gravelbar Removal	3	N/A	1,900	N/A
	BHGR	Bulkheads or Groins	1		1,015	
	FLPRT	Flood Protection Project	3		20,479	
	FLVWL	Flood Levee or Wall	5		N/A	4,875
	Totals:		**12**		**23,394**	**4,875**
Dredging - Commercial, Navigational or Flood Protection Related						
	DRG	Dredging	1	0	4752	N/A
	Totals:		**1**	**0**	**4,752**	
Docks - Commercial and Recreational						
	DOCK	Boat Dock	10	N/A	5,385	N/A
	RAMP	Boat Launch Ramp	2		40	
	Totals:		**12**		**5,425**	
Infrastructure and Support Activities						
	PIPE	Pipeline or Conduit	25	N/A	4,985	N/A
	FORD	Ford Crossing	1		80	
	INTAK	Intake Structure	6		45	
	OUTFL	Outfall Structure	66		1,112	
	NJD	Nonjurisdictional Dam	6		1,609	
	DRG	Dredging (maintenance)	5		13,130	
	FILSC	Fill/Divert Water Courses	5		3,026	
	Other	Uncategorized Activities	0		0	
	FLACT	Floodway Activity	54		N/A	502
	FLPL	Floodplain Activity	15			2,024
	Totals:		**183**		**23,987**	**2,526**

8.3 Historic Aquatic Resource Losses

Aquatic resources have been affected by several major events in Pennsylvania history including: extensive agricultural clearing; two statewide clear cutting events; mineral extraction in the form of surface coal mining; and deep underground mining, and oil and gas extraction. Clearing and hydrologic modification of forested lands for agricultural production has likely had the greatest overall effect on aquatic resources. Even though lands have been long abandoned in some areas, the effects of this landscape change are still present today in the form of legacy sediments, straightened streams, incised streams, lowered water tables and significantly degraded resource conditions throughout Pennsylvania.

It is estimated that Pennsylvania once had over 1.1 million acres of wetlands; this estimate may even be low considering the more recent understanding of the widespread modifications of landscapes that occurred during colonization. There are now an estimated 500 thousand acres of wetlands and shallow water habitats representing approximately 45% of the original acreage. Most of the historic loss of wetlands occurred through conversion for agricultural land uses, including ponds and through modifications of streams and valleys through dam building (USFWS Status and Trends).

More recent work funded through state and federal research grants has established convincing evidence that extensive stream alterations as a result of dam building during the water power era and the first clear cutting event were widespread, and have had wide ranging effects on watershed resources and functions. Effects include extensive wetland acreage and function loss; changes in watershed profiles resulting in increased erosion of remnant sediments left after dam breaching; changes in biogeochemical processes; lost flood storage capacity; lost habitat; and many other effects. The image to the right shows an example of the widespread distribution of mill dams in Cumberland County circa 1858; at least 153 dams existed at that time. There were likely dams that predated this census as well; it was common practice to build new dams on top of old dams when the reservoir capacity filled with accumulated sediments.



At least 153 milldams were located in Cumberland County, **PA, based on an 1858 historic** map (Merritts D et al. Phil. Trans. R. Soc. A 2011;369:976-1009)

In addition to dam building, many streams were straightened and deepened to increase land use capacity and to convey runoff faster. These efforts had extensive impacts that were similar to the original construction of the dam. The total amount of alterations from these two activities is not known; however, it is believed that most, if not all, watersheds were affected and in some cases the alterations have been extensive.

8.4 Current Aquatic Resource Conditions

As discussed in Section 8.2 Aquatic Resource Threats, an assessment of wetland conditions across the Mid-Atlantic States was recently completed and data analysis is currently on-going. When the results are available this information will be incorporated into this section for each service area. This data will provide the current conditions of wetland resources in each service area and will be integrated into other spatial analysis efforts combining both stream and wetland resource information to establish broader watershed health information for use in prioritizing restoration areas.

The following information from an earlier pilot study is provided as an example of what type of information may be available for each service area and some information that will be available for the NWI mapped wetlands. In 2006, DEP conducted a pilot program to assess the condition of natural wetlands. During the pilot, a probability based sampling design was implemented that covered one assessment unit or approximately 20% of the Commonwealth. Wetland conditions were evaluated for 204 wetlands occurring in four categories of land cover domains within natural cover, two non-forested cover and effectively disturbed area settings. Approximately 45% of the wetlands sampled exhibited conditions in the lowest condition group.

Level 2 Wetland Condition Categories

Condition Category	Number of Wetlands	Total Acreage	Percent of Resource
Highest	13	127.74	6.10%
High	59	556.19	26.70%
Medium	41	468.89	22.50%
Low	91	930.07	44.70%
Totals	**204**	**2082.88**	**100.00%**

The dominant categories of stressors reported involved hydrologic modification, sedimentation, erosion, and vegetation alteration. The vegetation alteration category represented 59% of all the stressors recorded. Examples of vegetation alteration include: mowing; right of way clearing; agriculture; grazing; etc. Examples of sedimentation or erosion include: sediment deposits; intensive grazing; active timber harvesting; active construction etc. Examples of hydrologic modification include: ditching; tile drainage; stream channelization; stormwater discharges; etc.

Wetland Stressors

Stressor Category	Occurrences
Acidification	2
Contaminant Toxicity	9
Dissolved Oxygen	2
Eutrophication	4
Hydrologic Modification	**58**
Sedimentation/Erosion	**56**
Thermal Alteration	1
Turbidity	2
Vegetation Alteration	**150**
Total	**284**

The Commonwealth's Water Quality Monitoring program includes a wadeable stream assessment program that looks at stream health through an integrated comprehensive monitoring program that conducts water quality sampling, aquatic life sampling, habitat evaluation and other activities. This effort is part of duties under the Clean Water Act and the information is vast and in a process of continuous update. A particularly useful set of information available for use is the potential causes or sources of impairment that are recorded during assessments; however, this is qualitative and not necessarily a quantitative evaluation of impairment for these sources.

The DEP stream assessment program has identified 36 sources of waterway degradation with the seven largest sources of waterways degradation identified as: abandoned mine drainage, agriculture related activities, habitat modification, and runoff from roads, residential and urban sources.

Agricultural activities as a combined group represent the largest source of waterways degradation. This group currently effects approximately 5,447 miles of waterways across the commonwealth. Abandoned mine drainage is the next largest source of degradation with approximately 5,178 miles of waterways effected. Urban runoff and storm sewers represent the next largest source of degradation effecting approximately 2,226 miles of waterways.

This information collected and managed by the water quality assessment programs has been incorporated into Section 8.6 Prioritization Strategy.

Primary Degradation Source	Stream Miles Effected
Abandoned Mine Drainage	5178.75
Agriculture	3483.72
Animal Feeding Agric	5.13
Atmospheric Deposition	260.53
Bank Modifications	106.27
Channelization	219.12
Combined Sewer Overflow	71.56
Construction	220.68
Crop Related Agric	771.62
Draining or Filling	11.72
Dredging	0.94
Erosion from Derelict Land	4.51
Flow Regulation/Modification	54.27
Golf Courses	25.74
Grazing Related Agric	1191.87
Habitat Modification	841.38
Highway, Road, Bridge Const.	7.44
Hydromodification	95.28
Industrial Point Source	216.28
Land Development	145.84
Land Disposal	15.07
Municipal Point Source	459.8
Natural Sources	95.83
On site Wastewater	142.2
Other	396.04
Package Plants	21.35
Petroleum Activities	6.56
Removal of Vegetation	340.93
Road Runoff	415.71
Silvaculture	6.65
Small Residential Runoff	575.91
Source Unknown	188.85
Subsurface Mining	73.9
Surface Mining	42.61
Upstream Impoundment	109.34
Urban Runoff/Storm Sewers	2226.95

8.5 Service Area Goals and Objectives

The primary goals and objectives of each service area will encompass providing the credit obligations established by the contributing permittees. Projects targeting those resources identified in the strategies for each identified service area will receive higher priority during evaluation of project selection and development. As part of the project development process the source of historic losses, impairment or degradation as identified in Sections 8.3 and 8.4 will be evaluated and if possible addressed in the most comprehensive manner to restore or rehabilitate the lost or degraded resource functions.

Specific goals and objectives in addition to the credit obligations will be provided for each service area in the instrument.

8.6 Prioritization Strategy

PIESCES will utilize the data, analysis, watershed and stream reach prioritization results from the comprehensive aquatic resource classification effort entitled "*Classifying Lotic Systems for Conservation: Methods and Results of the Pennsylvania Aquatic Community Classification"* (Walsh and Nightingale 2007). The following are excerpts from the User's Manual (Manual):

Goals of the Aquatic Community Classification

The goal of the Pennsylvania Aquatic Community Classification (ACC) project is to describe patterns in aquatic biodiversity for the purpose of prioritizing conservation activities and informing aquatic resource management. Although assessments and aquatic inventories are numerous and ongoing in Pennsylvania's waters, little public information for Pennsylvania and the surrounding region is available to natural resource managers, watershed groups, local government officials, conservation planners, and others about biodiversity and watershed quality.

In order to address immediate threats faced by our region's flowing waters, the Pennsylvania Aquatic Community Classification was designed to systematically identify stream community and habitat types for the freshwater mussels, macroinvertebrates, and fish that reside in Pennsylvania's streams. Descriptions of biological communities and stream habitat types provide a baseline for monitoring and conserving flowing water systems. Stream community typing can be used to help assess the status of streams and rivers, restore waters in poor condition and preserve high quality aquatic habitats. The results of the ACC project provide information on biological community types, the condition of Pennsylvania's streams and rivers, and the physical habitats of these aquatic systems.

Watershed Restoration Prioritization

The goal of this portion of the study was to use all of the data compiled in the ACC project to determine which watersheds are in the worst shape and therefore a priority for habitat restoration. To do so, we combined information from our Least Disturbed Streams reach analysis (see Manual Chapter 9), biological metric scoring (see Manual Chapter 10) and the locations of biological communities 2-3 indicative of poor-quality stream habitat (Table 12-1). A multi-faceted approach such as this is more useful than simply examining developed land use or the occurrence of pollution-tolerant taxa; with the combination of both biotic and abiotic factors we are able to paint a picture of watersheds that are physically altered and the resident stream assemblages are experiencing the direct effects. The watershed restoration prioritization is detailed in Manual Chapter 11.

Watershed Enhancement Areas

A third category of watersheds was developed for those areas that do not fall within either the Conservation or Restoration Prioritization categories. These intermediate quality "Watershed Enhancement Areas" represent watersheds that would likely benefit the most from restoration action, since they continue to hold some ecological value despite having some water quality issues. The same abiological and biological datasets were used in defining and describing these areas. This analysis is detailed in Chapter 12 of the Manual.

The ACC project is a comprehensive effort evaluating an extensive amount of available information from numerous sources and to date is the most extensive effort to comprehensively look at watershed conditions and needs in manner that establishes a framework for comparison, prioritization, identification of least disturbed conditions, and locations that can be used as reference systems for project design and success standards. Since most compensatory mitigation projects will be centric to waterways, the ACC project will also be used to establish priority areas for wetland restoration and rehabilitations efforts. As an integrated effort it is anticipated that most projects will likely involve both resources to some extent. The palustrine wetland community classification has recently been completed and the community profile data available will be utilized to establish resource community templates for project design and success standards.

Due to the size and amount of mapping detailing the service areas, the maps of each service area will be included in the instrument. The maps will include priority rankings for enhancement and restoration for subwatersheds as well as specific waterways within the service areas.

The manual will not be included in the prospectus or instrument but can be accessed and reviewed at the following website:
www.naturalheritage.state.pa.us/aquaticsIntro.aspx

ACC mapping resources are available at the following website:
www.naturalheritage.state.pa.us/acc/acc.htm

Information on wetland palustrine wetland communities can also be found at this website:
http://www.gis.dcnr.state.pa.us/hgis/Communities.aspx

8.7 Preservation Objectives

PIESCES will not utilize preservation of existing aquatic resources as compensation for affected aquatic resource functions. PIESCES will follow the draft Pennsylvania Function Based Compensation Protocol (technical guidance document # 310-2137-001). This document was developed by DEP as a basis for consideration of areas that are conserved as part of a project entailing enhancement or restoration of aquatic resources.

8.8 Public and Stakeholder Involvement

DEP will publish projects proposed to be funded with monies collected through the ILF in the *Pennsylvania Bulletin* for public participation and public comment, as well as, any changes to the instrument. Additional efforts will be made in each service area to engage local stakeholders through representative organizations, local and regional watershed planning efforts.

DEP will be seeking a longer term process for conservation planning and participation and will adapt that process to PIESCES when completed and available. The IRT and representative agencies will be invited to participate in the development of that system/process.

8.9 Long-term Protection and Management

DEP will be responsible for ensuring long-term protection of each ILF project.

On publicly owned property, long-term protection may be provided through facility management plans or integrated natural resource plans. On privately held property, including property held by conservation organizations, real estate instruments shall be recorded. DEP will ensure that such protection mechanisms are in place prior to site closure or final credit release, as stipulated in each mitigation plan. The draft conservation easement or equivalent protection mechanism shall be submitted to the IRT for review.

Where permanent legal property protection instruments are appropriate, conservation easements will be held by entities such as Federal, Tribal, other State or local resource agencies, or non-profit conservation organizations. The protection mechanism shall assign long-term stewardship roles and responsibility for the project and will, to the extent practicable, prohibit incompatible uses that might otherwise jeopardize the objectives of the ILF project. Copies of such recorded instruments will be sent to the Corps and become part of the official project record. Each protection instrument will contain a provision requiring 60 days prior notification to DEP and the District Engineer if any action is taken to void or modify it.

PIESCES will utilize a variety of models for financing and managing the long-term protection efforts based upon a project's particular circumstances and the long-term partner.

8.10 Evaluation and Reporting

The program will be periodically evaluated to ensure that the goals and objectives are being achieved through ILF project implementation for each service area. The results of any evaluation will be provided to the IRT and District Engineer(s). Based upon amount of activity in a given service area evaluations will occur on an as needed basis in consultation with the IRT. Should an evaluation identify problems or recommend changes to the Compensation Planning Framework, a proposal will be prepared and presented to the IRT for modifying it in accordance with the 2008 Rule procedures.

8.11 Additional Information

Currently no additional information is provided nor was any requested by the District Engineer. Should additional information be requested, it will be placed under this section.

References/Resources

Brooks, Robert P. and Gebo, Naomi A. 2011. Hydrogeomorphic (HGM) Assessments of Mitigation Sites Compared to Natural Reference Wetlands in Pennsylvania. Wetlands DOI 10.1007/s13157-011-0267-3.

Environmental Law Institute. 2009. In-Lieu Fee Mitigation: Model Instrument Language and Resources

Walsh, M.C., J. Deeds, and B. Nightingale. 2007. Classifying Lotic Systems for Conservation: Methods and Results of the Pennsylvania Aquatic Community Classification. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy, Middletown, PA, and Pittsburgh, PA.

PA ACC: www.naturalheritage.state.pa.us/aquaticsIntro.aspx

PA ACC Mapping: www.naturalheritage.state.pa.us/acc/acc.htm

USFWS Status and Trends: http://www.fws.gov/wetlands/Status-and-Trends/index.html

Wetland Community Classification: http://www.gis.dcnr.state.pa.us/hgis/Communities.aspx