



**US Army Corps
of Engineers®**
Philadelphia District



CONGRESSIONAL BRIEFING BOOK

MARCH 2023

Established in 1866, the U.S. Army Corps of Engineers Philadelphia District manages water resources of the Delaware River Basin, builds facilities for the Army and Air Force, and provides engineering and environmental services for other Federal agencies. We serve more millions across portions of Delaware, Maryland, New Jersey, New York and Pennsylvania.

Our reach extends around the world with our support to Overseas Contingency Operations.





US Army Corps of Engineers Philadelphia District

Engineering solutions for our Nation's toughest challenges

The USACE Mission: Deliver vital public and military engineering services, partnering in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters

Civil Works Program (Water Resources Development): We plan, design, build, operate, and maintain projects in support of—

- Maritime navigation
- Flood and coastal storm risk management
- Aquatic ecosystem restoration

The Philadelphia District covers the Delaware River Basin and adjacent portions of the mid-Atlantic coastal plain, and includes—

- Almost 10 million people
- More than 1 million acres of wetlands
- 15,000 square miles total area
- 500-plus miles of federal navigation channels
- About 500 Army Civilian employees
- About 150 miles of coastline
- Parts of 5 states
- 5 earthfill dams
- 5 highway bridges
- 4 sea-level canals
- 1 seagoing hopper dredge

We also carry out—

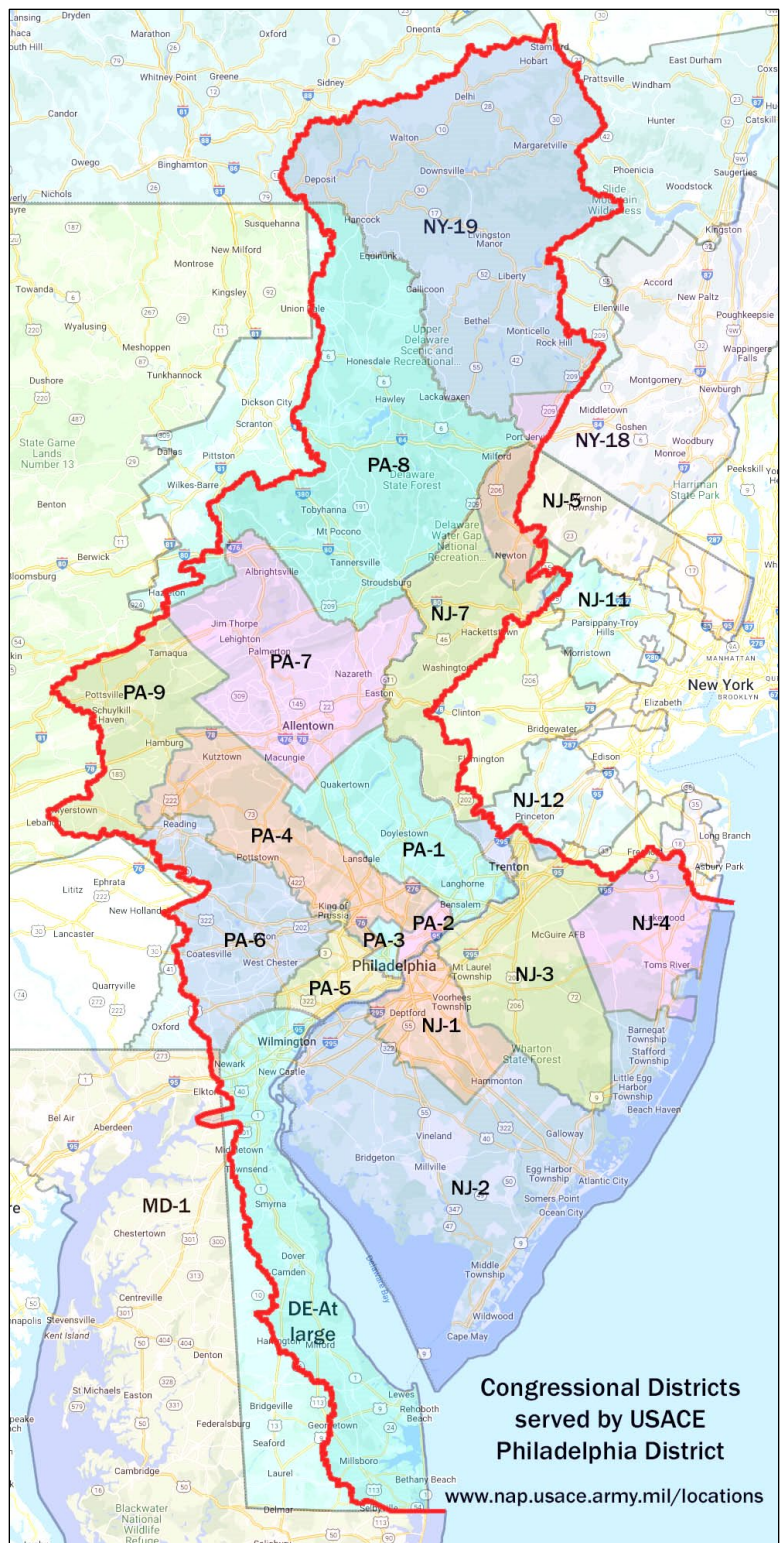
- Military construction and installation support at Dover Air Force Base, Joint Base MDL, and Tobyhanna Army Depot
- Reimbursable technical services to EPA and other federal agencies upon request
- Contingency operations for the Army overseas and emergency operations for FEMA stateside

To our congressional delegation:

- Your first and best line of communication with the Corps is “district-to-district” (i.e. through Philadelphia, not our D.C. headquarters)
- If you're not sure who to call, call us anyway—if we can't help, we'll try to direct you to someone else who can
- Emailing is good, calling is better, face-to-face is best, and formal letters are best left as a last resort!

To your constituents:

- We don't have a blank check to “go forth and do good things”—every dollar we spend is tied to a project
- We can only work on projects that have been specifically authorized and funded by Congress, and for which we have a signed cost sharing agreement with a nonfederal sponsor
- Federal dollars require federal interest—each project has to benefit the Nation as a whole
- What some call a “Corps project” may turn out to be someone else's project for which the Corps issued a permit





**US Army Corps
of Engineers**
Philadelphia District


Philadelphia District

U.S. Army Corps of Engineers

Brief History and Accomplishments

The Philadelphia District was established in 1866, but the U. S. Army Corps of Engineers' local legacy dates back to Revolutionary times, when Army engineers planned the encampment and defense of General Washington's colonial Army at Valley Forge. In 1829, the Corps embarked on its first civil works project in this region- a 1,300-foot-long stone breakwater near Cape Henlopen, Delaware, that provided refuge from storms to the hundreds of ships entering and leaving the Delaware Bay. In 1919, the federal government purchased the Chesapeake and Delaware Canal and it was operated and maintained, and later expanded, by the Philadelphia District. Converted to a free-flowing waterway, the C&D today handles a significant portion of the Port of Baltimore's ship traffic and is one of the District's most important navigation projects. During World War II, the more than 100-mile-long Delaware River federal navigation channel was deepened to its current 40-foot depth between Philadelphia and the sea. The District continues to maintain over 550 miles of navigable channels. After the 1955 floods that claimed ninety lives, the District performed the first comprehensive river basin study in the entire United States. This resulted in the construction of the five earth-fill dams that the district now operates and maintains in eastern Pennsylvania.

Since its inception in 1866, the Philadelphia District for the Corps of Engineers has been a staple in the development and maintenance of the perseverance of the waterways and the construction of military installations and operations. One of the District's bigger tasks is dredging. Dredging is the process where excavation usually carried out partly underwater, in shallow seas or fresh water areas, with the sole purpose of gathering up bottom materials and disposing of them at a different location. This is often used to keep waterways navigable. It is also used as a way to replenish sand on some public beaches, where sand has been lost because of erosion. As time wore on, the duties of the district began to grow. Along with preserving waterways, with the changing waters, flood controls were added. This included emergency response by the Corps, whether it is constructing dams and levees, and also water recourses development and the increasing responsibility of coastal engineering. In response to growing national concern for environmental issues, the 1970s, 80s and 90s saw a significant shift in the district's responsibilities, to include new jurisdiction over wetlands; remediation of hazardous, radioactive and toxic wastes; and projects to restore ecosystems. The District's engineering expertise has been applied to a wide variety of coastal projects.



Since the early 1990s, the District has constructed major beach-fill projects along the Delaware and New Jersey coasts. The District operates and maintaining five dams, four canals, and five highway bridges and is home to the Hopper Dredge McFarland. Within the district, there are nine million people, over 550 miles of federal channels, 150 miles of coast line, and more than 1.1 million acres of wetlands that must be maintained and preserved and protected by the Philadelphia District.

In October of 2012, Hurricane Sandy made landfall near Atlantic City, NJ, causing widespread damage and destruction. In the months following the storm, the Philadelphia District responded to more than 60 mission assignments from FEMA to assist de-watering critical facilities, assisting with emergency power needs and filling a breach at the barrier island community of Mantoloking. The District surveyed existing federal projects in New Jersey and Delaware and worked to restore them from the damages associated with Hurricane Sandy.

The District has a proud history of support of major construction programs including those at Dover Air Force Base; Joint Base McGuire-Dix-Lakehurst; and the C4ISR complex at Aberdeen Proving Ground. The Philadelphia District has more recently expanded its reach overseas with power contracting initiatives and the continued deployment of personnel to Afghanistan and Iraq. The Philadelphia District's approximately 500 men and women capably serve the region by applying global engineering expertise to produce neighborhood solutions and beyond. We are privileged and proud to serve the northeast corridor, the people of our nation; and the people of the world.

OUR MISSION

The U.S. Army Corps of Engineers' mission is to deliver vital engineering solutions, in collaboration with our partners, to serve our Nation, energize our economy, and reduce risk from disaster.

Established in 1866, the Philadelphia District manages water resources of the Delaware River basin; builds facilities for the Army and Air Force; and provides engineering and environmental services for other agencies.

We serve more than nine million people across portions of Delaware, Maryland, New Jersey, New York and Pennsylvania. But our reach extends around the world with our support to Overseas Contingency Operations.



USACE Philadelphia District Civil Works Projects - DE
Budget, Funding & Capabilities (\$000)

Project	CW Acct.	Congr. Dists.	FY22 Funds	FY23 Capab.	FY23 PBUD	FY23 BIL	FY23 Omni	FY23 WP (addl.)	FY23 Funds (total)	FY24 Capab.	FY24 PBUD	FY24 BIL
Delaware Inland Bays & Delaware Bay Coast Study, DE	GI	DE-a/l	1,000						-	600		
Delaware River Dredged Material Utilization - Delaware (PED)	GI	DE-a/l	910						-			
Delaware Bay Coastline, Roosevelt Inlet & Lewes Beach, DE	Const	DE-a/l	4,500						-			
Delaware Coast Protection (Sand Bypass Plant), DE	Const	DE-a/l	1,200	850			150	700	850	150		
Delaware Coast, Bethany Beach/ South Bethany, DE	Const	DE-a/l	8,650						-			
Delaware Coast, Fenwick Island, DE	Const	DE-a/l	4,000						-			
Delaware Coast, Rehoboth Beach & Dewey Beach, DE	Const	DE-a/l	15,331						-			
Brandywine Creek, DE (Sec 206)	CAP	DE-a/l	-	100						550		
Christina River Watershed, DE (Sec. 204)	CAP	DE-a/l	-	100					-			
Delaware Estuary Oyster Restoration (Sec. 206)	CAP	DE-a/l, NJ-2	-	50					-	50		
Mispillion Inlet, DE (Sec. 111)	CAP	DE-a/l	147	200					-	550		
Wilmington Harbor, DE (Sec. 107)	CAP	DE-a/l	50						-	100		
Cedar Creek, DE	O&M	DE-a/l	-	1,060			1,110		1,110	1,110	1,110	
Harbor of Refuge, Delaware Bay, DE	O&M	DE-a/l	250	17,910					-	18,670		
Indian River Inlet & Bay, DE	O&M	DE-a/l	43,901	29,071	281		281		281	50		
Inland Waterway, Del R to Ches Bay, DE & MD (C&D Canal)	O&M	DE-a/l	81,414	84,312	22,327		22,327	8,790	31,117	59,042	20,427	
ICW, Rehoboth Bay to Del Bay, DE (Lewes & Rehoboth Canal)	O&M	DE-a/l	3,934	550	550		7,550		7,550	7,190		
Little River, DE	O&M	DE-a/l	250						-			
Mispillion River, DE	O&M	DE-a/l	400	885					-	715		

USACE Philadelphia District Civil Works Projects - DE***Budget, Funding & Capabilities (\$000)***

Project	CW Acct.	Congr. Dists.	FY22 Funds	FY23 Capab.	FY23 PBUD	FY23 BIL	FY23 Omni	FY23 WP (addl.)	FY23 Funds (total)	FY24 Capab.	FY24 PBUD	FY24 BIL
Murderkill River, DE	O&M	DE-a/I	-	1,050					-	1,455		
Wilmington Harbor (Christina River), DE	O&M	DE-a/I	9,111	14,212	10,537		10,537		10,537	15,345	15,095	
Delaware River, Philadelphia to Sea, NJ, PA & DE	O&M	DE, NJ-1, 2, PA-2,5	95,005	65,635	46,249	500	46,249	3,680	50,429	57,460	47,860	25,000

USACE Philadelphia District Civil Works Projects - DE

PROJECTS AUTHORIZED IN WRDA 2022

Project	CW Acct.	Congr. Dists.
Southeastern Pennsylvania & Lower Delaware River Basin, NJ, PA & DE (\$70M)	566	DE, NJ-1,2, 3,12, PA-1, 2,3,4,5,6,9
Kent County, DE (\$35M)	219	DE-a/l
New Castle County, DE (\$35M)	219	DE-a/l
Sussex County, DE (\$35M)	219	DE-a/l

-

-



US ARMY CORPS OF ENGINEERS
Building Strong

**US Army Corps
of Engineers®**
Philadelphia District

General Investigations

General Investigations Studies (GI)

Planning Assistance to States Program (PAS)

Floodplain Management Services (FPMS)

Investigations are studies to determine the need, engineering feasibility, economic justification, and the environmental and social suitability of a project. Investigations also include preconstruction, engineering, design work, data collection, and interagency coordination and research activities.

- ◆ Coastal and Deep-Draft Navigation
- ◆ Environmental Restoration or Compliance
- ◆ Flood Risk Management
- ◆ Inland Navigation
- ◆ Navigation
- ◆ Other Authorized Purposes (including but not limited to Environmental Restoration or Compliance and Remote, Coastal, or Small Watershed)
- ◆ Remote, Coastal, or Small Watershed
- ◆ Coastal Storm Risk Management
- ◆ Small, Remote, or Subsistence Navigation

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Beneficial Use of Dredged Material for the Delaware River, Delaware

Authority: Senate Resolution
(dated 26 Oct 2005) on
Beneficial Use of Dredged
Material for the Delaware River,
Delaware, New Jersey, and
Pennsylvania and P.L. 113-2

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
Feb 2014

Completion Date:
Mar 2020

Total Estimated PED Cost:
\$1.4M

Federal Funds Appropriated:
\$0



The U.S. Army Corps of Engineers (USACE) was authorized to conduct the Delaware River, PA, NJ and DE Beneficial Use of Dredged Material for the Delaware River Study (DMU) reconnaissance phase and any ensuing feasibility phase investigations by a resolution of the Committee on Environment and Public Works of the United States Senate on October 26, 2005. The resolution directed the USACE to conduct an investigation of beneficial uses of dredged material within the Delaware River and Estuary area.

Approximately 3,000,000 cubic yards of sediment are dredged annually from the 'Delaware River, Philadelphia to the Sea' and 'Delaware River, Philadelphia to Trenton' projects. Essentially all of the sediment is removed from the estuary system and placed in upland Confined Disposal Facilities. This study explored innovative methods for management and reuse of dredged material in order to improve flood risk management. A Feasibility Cost Sharing Agreement (FCSA) was signed with the Delaware Department of Natural Resources and Environmental Control on February 27, 2014. The Chief of Engineers Report was signed on March 6, 2020.

Project Manager

Scott Sanderson

Phone : (215) 656-6571

E-mail:

Scott.A.Sanderson@usace.army.mi

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Beneficial Use of Dredged Material for the Delaware River, Delaware

Project Goals: The beneficial use opportunities are best facilitated utilizing maintenance dredged material from Federal and non-Federal navigation projects including: the Delaware River, Philadelphia to the Sea NJ, PA & DE project; the Delaware River, Philadelphia to Trenton, NJ & PA project; and the Delaware River Main Channel Deepening, NJ, PA & DE project; and several active Federal navigation projects at major tributaries of the Delaware River. This dredged material will be considered for projects that will reduce flood damage from coastal storms, promote coastal resilience and sustainability and create opportunities for restoration of the estuaries functions.

In response to the study resolution above, the USACE Philadelphia District conducted the Delaware River New Jersey, Delaware, and Pennsylvania Beneficial Use of Dredged Material for the Delaware River expedited reconnaissance study. The purpose of this study was to examine beneficial use opportunities using maintenance dredged material from the Delaware River and its tributaries for flood reduction, environmental restoration, and related purposes.

In the aftermath of Hurricane Sandy and the subsequent passage of the Disaster Relief Appropriations Act, 2013 (P.L. 113-2), Congress authorized supplemental appropriations to Federal agencies for expenses related to the consequences of Hurricane Sandy. The DE DMU was identified in a Second Interim Report to Congress (dated 30 May 2013) as an "Ongoing Study" for reducing flooding and storm damage risks in the area affected by Hurricane Sandy. Therefore, the DE DMU study was conducted under the both the October 2005 Senate Resolution as well as P.L. 113-2, which thereby focused the study on coastal storm risk management (CSRM) via dredged material.

Funds were received from the Disaster Relief Appropriations Act of 2013, Public Law 113-2, enacted to assist in the recovery in the aftermath of Hurricane Sandy.

In March 2020, Lt. Gen. Todd T. Semonite, USACE Commanding General and the 54th U.S. Army Chief of Engineers, signed a Chief's Report and the project was subsequently authorized by Congress in WRDA 2020. The next step is to move forward through pre-construction engineering, design, and eventual construction.

The final report had favorable recommendations for the following sites:

- Pickering Beach
- Kitts Hummock
- Bowers Beach
- South Bowers Beach
- Slaughter Beach
- Prime Hook Beach
- Lewes Beach

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TOTAL	Summarized Federal Financial Data (\$000)		
Feasibility Study	2,329	0	2,329	Allocations thru FY21	2,329	
PED	910	490	1,400	FY 22 Budget	0	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Inland Bays and Delaware Bay Coast Coastal Storm Risk Management Feasibility

Authority: U.S. House of Representatives Committee on Public Works and Transportation Resolution on Oct 1, 1986 and U.S. Senate Committee on Environment and Public Works Resolution on Jun 23, 1988

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
28-NOV-2022

Target Completion Date:
28-NOV-2025

Total Estimated Cost: \$2M

Federal Funds Appropriated:
\$1M

Project Manager

Joel Dohm

Phone : (215) 656-6185

E-mail:

Joel.v.dohm@usace.army.mil



Oak Orchard during January 2016 Nor'easter

The Delaware Inland Bays and Delaware Bay Coast (DIBDBC) Focus Area includes the Delaware Inland Bays, the set of interconnected bodies of water that are separated from the Atlantic Ocean by a spit of land, and the Delaware Bay coastline of the State of Delaware in New Castle, Kent, and Sussex Counties. The Inland Bays coastline area is approximately 77 square miles and the Delaware Bay coastline is approximately 145 square miles. The authorities for the DIBDBC Study (Resolutions adopted by U.S. House of Representatives on October 1, 1986 and the U.S. Senate on June 23, 1988) support North Atlantic Coast Comprehensive Study (NACCS) outcomes, are broad in scope and application and address the development of a physical and engineering database as the basis for actions and programs to provide shoreline protection and up-to-date information for state and local management of this coastal area.

The DIBDBC Study is being performed to align with the goals of the NACCS, which are to:

- Provide a risk management framework, consistent with and NOAA/USACE Infrastructure Systems Rebuilding Principles; and
- Support resilient coastal communities and robust, sustainable coastal landscape systems, considering future sea level and climate change scenarios, to reduce risk to vulnerable populations, property, ecosystems, and infrastructure.

Delaware Inland Bays and Delaware Bay Coast Coastal Storm Risk Management Feasibility

- **Project Goals:** The purpose of this project is improved land use, responsible evacuation planning with programmatic measure to manage risk where avoidance is not possible.

Communities must identify their acceptable level of residual risk to plan for long-term, comprehensive, and resilient risk management.

Areas to improve risk management include enhancing collaboration, building new partnerships, and strengthening pre-storm planning. This requires local, regional, Tribal, State and Federal entities, NGOs and academia efforts.

The objective of the DIBDBC CSRM Study is to investigate coastal storm risk management problems and solutions to reduce damages from coastal flooding affecting population, critical infrastructure, critical facilities, property, and ecosystems. The study will consider past, current, and future coastal storm risk management and resilience planning initiatives and projects underway by the USACE and other Federal, State, and local agencies. Three overarching efforts will be performed:

- Assess the study area's problems, opportunities and future without project conditions;
- Assess the feasibility of implementing system-wide coastal storm risk management solutions such as policy/programmatic strategies, storm surge barriers at selected inlet entrances, or tidal gates at selected lagoon entrances; and
- If system-wide solutions are not feasible, assess the feasibility of implementing site-specific solutions, such as a combination of structural, non-structural, and natural and nature-based features.

The end product of this study will be a decision document in the form of a Chief's Report authorizing comprehensive USACE design and construction opportunities using the full array of CSRM strategies and measures for community-based solutions within a watershed-based, systems framework. Also included in the report would be recommendations of actionable and policy implementable items for non-USACE entities, including floodplain management, landscape architecture, hurricane evacuation plans, and Community Rating System enhancement opportunities. Additional recommendations will be provided for incorporating existing USACE and external programs, projects, plans and actions, as well as public-private partnership opportunities into the NACCS DIBDBC study umbrella. A programmatic NEPA document will be developed identifying a range of impacts. The PED Phase will include detailed design with a detailed fully compliant programmatic NEPA document which evaluates impacts for specific solutions.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Feasibility Study	1,000	1,000	2,000	Allocations thru FY20	1,000	
				FY 21 Allocation	0	
				Balance to Complete	0	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Wilmington Harbor Expansion, DE

Authority: Section 204 (f) of the Water Resource Development Act of 1986

Congressional District: DE-AL

Non-Federal Sponsor:
Diamond State Port Corporation

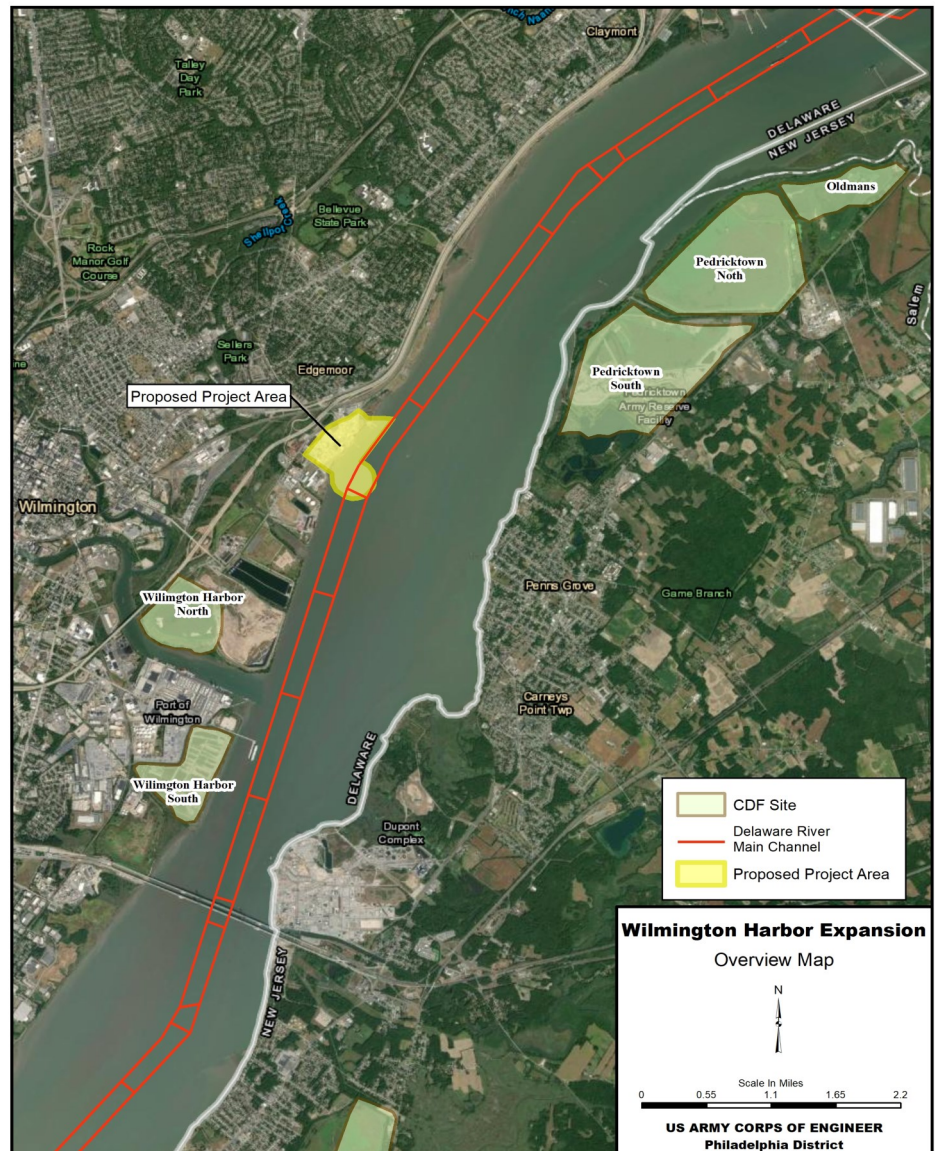
Date of Project Agreement:
Jun 2017

Target Completion Date:
May 2023

Total Estimated Cost: \$1.6M

Federal Funds Appropriated:
\$0

Non-Federal Share:
\$1.6M



Diamond State Port Corporation (DSPC) has contracted the Philadelphia District to provide technical assistance in preparation of permit applications and a formal request to the Assistant Secretary of the Army - Civil Works (ASA-CW) seeking approval to construct a proposed port expansion access channel and turning basin adjacent to the Delaware River Federal navigation channel with subsequent Federal assumption of maintenance, in accordance with WRDA 1986, Section 204(f).

Project Manager

Scott Evans

Phone : (215) 656-6680

E-mail:

scott.r.evans@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Wilmington Harbor Expansion, DE

Project Goals: The purpose of this request is to seek ASA(CW) approval to construct a proposed port expansion access channel and turning basin adjacent to the Delaware River Federal Navigation Channel with subsequent Federal assumption of maintenance, in accordance with Section 204 (f) of the WRDA 1986.

With USACE guidance, DSPC prepared a Section 408 (Federal project modification request) and Section 10 (navigable waters) 404 (shallow water fill) permit application for decision by the Philadelphia District. The Section 408 approval and Section 10/404 permit were issued on August 4, 2022.

DSPC also requested the use of the existing Wilmington Harbor South Dredged Material Placement Facility (DMPF) for initial construction of the proposed port expansion access channel, which required approval under Section 217(b). A letter report approving the 217(b) request was issued on August 20, 2022.

DSPC submitted the final 204(f) report to the Philadelphia District in January 2023. The District endorsed the report and forwarded it to the North Atlantic Division (NAD) on January 13, 2023. NAD transmitted the report to HQUSACE, Office of Water Project Review, on January 27, 2023, and HQUSACE forwarded the report to the ASA(CW) on February 9, 2023, for review and decision. The ASA(CW) decision for the 204(f) request is expected in April 2023.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Request	TBD	1,633	TBD	Allocations thru FY 23	0	
				Balance to Complete	0	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Lakes Management Plan for Silver Lake and Lake Comegys, Delaware

Authority: Section 22 of the Water Resources Development Act of 1974

Congressional District: DE-AL

Non-Federal Sponsor: City of Rehoboth Beach, DE

Date of Project Agreement:
Aug 2021

Target Completion Date:
Spring 2023

Total Estimated Cost: \$200,000

Federal Funds Appropriated:
\$100,000

Non-Federal Share: \$100,000



The Planning Assistance to States program authorized by Section 22 of the Water Resources Development Act of 1974, as amended, provides the Federal funding for this project. Section 22 provides authority for the U.S. Army Corps of Engineers (USACE) to assist states, local governments, and other non-Federal entities in the preparation of comprehensive plans for the development, use, and conservation of water and related land resources.

A cost share agreement was executed with the City of Rehoboth Beach, Delaware in August 2020. Silver Lake is an approximately 40-acre lake, primarily fed by storm water, in Sussex County between the City of Rehoboth Beach and Town of Dewey Beach. Lake Comegys is a smaller lake directly to the south of Silver Lake. Both lakes share a common origin and history. Until the 1800s, the lakes were joined and were a part of a larger wetland, which was drained over the course of the development of the area. High water levels in the lake result in flooding of basements of homes on the south and east of the lake. Low water levels result in a reduction of recreational activities at the northern stretch of Silver Lake. The degree of connection between Silver Lake and Lake Comegys is unknown and may affect the management water levels. Additionally, shoreline and stormwater management surrounding the lake is inconsistent. This has resulted in encroachment on the lake and establishment of invasive species.

Project Manager

Chris Thomas

Phone : (215) 656-6827

E-mail:

Christopher.a.thomas@usace.army

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Lakes Management Plan for Silver Lake and Lake Comegys, Delaware

Project Goals: The purpose of this project is to develop a lakes management plan for the City of Rehoboth Beach in Sussex County, DE.

The study objectives include:

1. Investigate the hydrology of the watershed and hydrological connection between the two lakes.
2. Develop a lakes management plan that provides water level management recommendations and shoreline management and riparian buffer recommendations.
3. Evaluate the potential for alternatives to minimize or eliminate flooding problems associated with the future development land use conditions.
4. Understand ownership and jurisdictions of the shoreline surrounding the lakes, while facilitating the communication between property owners with the various jurisdictions and communicate the various regulations and requirements that govern development.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Feasibility Study	100	100	200	Allocations thru FY20	100	
				FY 21 Allocation	0	
				Balance to Complete	0	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Inland Bays Watershed Rapid Assessment, Delaware

Authority: Section 22 of the
Water Resources Development
Act of 1974

Congressional District: DE-AL

Non-Federal Sponsor:
Delaware Center for the Inland
Bays

Date of Project Agreement:
Dec 2020

Completion Date:
June 2022

Total Estimated Cost: \$116,000

Federal Funds Appropriated:
\$58,000

Non-Federal Share: \$58,000 (in-kind)

Project Manager
Alexander Renaud
Phone : (267) 876-1886

E-mail:
Alexander.D.Renaud@usace.army.mil



The Planning Assistance to States program authorized by Section 22 of the Water Resources Development Act of 1974, as amended, provides the Federal funding for this project. Section 22 provides authority for the U.S. Army Corps of Engineers (USACE) to assist states, local governments, and other non-Federal entities in the preparation of comprehensive plans for the development, use, and conservation of water and related land resources.

A cost share agreement was executed with the Delaware Center for Inland Bays with USACE in December 2020 to develop a Delaware Inland Bays Watershed Rapid Assessment Plan. Eutrophication of Delaware's Inland Bays driven by increased nutrient pollution caused by land-use change within the watershed.

The landscape draining into Delaware's three Inland Bays and associated tributaries is rapidly changing from agricultural and forested lands to developed lands. Much of the new population growth has occurred, and is expected to continue to occur, outside municipal boundaries, mirroring growth in human populations. This trend has continued as real estate booms cause a remarkable conversion of farm fields, forests, and wetlands to new developments as more and more people move into the Inland Bays watershed.

A lack of sustained progress implementing Pollution Control Strategies (PCS) to reduce non-point nutrient loads due to dearth of limited sustained state/federal funding justifies the need for a unified Inland Bays watershed that locates, conceptualizes, and prioritizes projects to achieve the actions outlined in the PCS while utilizing limited resources.

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Inland Bays Watershed Rapid Assessment, Delaware

Project Goals: The purpose of this project is to develop a plan to identify and prioritize sites to restore to reduce nutrients in the Delaware Inland Bays.

The Delaware Inland Bays Watershed Rapid Assessment Green Infrastructure Project Plan (RAPP) Study has addressed the above problems through the following objectives:

1. Recommending mitigation opportunities for future green infrastructure projects to meet Inland Bays Pollution Control Strategies
2. Identifying and prioritizing potential sites within Inland Bays watershed for future green infrastructure projects
3. Documenting study results through mapping and a report that will support Center' acquisition of funds to acquire property to allow for re-forestation, stream restoration wetland creation/restoration, drainage remediation, buffer improvement, permanent land conservation, and other green practices.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Feasibility Study	58	58*	116	Allocations thru FY20	58	
* In-Kind services				FY 21 Allocation	58	
				Balance to Complete	0	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Flood Plain Management Services

Authority: Section 22 of the Water Resources Development Act of 1960

Congressional District:
Numerous

Non-Federal Sponsor:
Numerous

Target Completion Date:
Ongoing by Fiscal Year



The Floodplain Management Services (FPMS) Program authorizes USACE to conduct technical studies using either all federal funding or in combination with a voluntary contribution from a non-federal sponsor. The FPMS authority provides for technical assistance and does not have a provision for construction. Detailed plans and specifications as well as construction would have to be accomplished under other civil works authorities or by the non-Federal sponsor.

USACE has a Silver Jackets Program that establishes interagency flood risk management teams for states. The state teams have an opportunity to submit proposals to receive funding for interagency projects that will reduce flood risk. These projects are being funded through the FPMS program.

Delaware:

Delaware Non-structural Flood Risk Mitigation can significantly reduce flood damage to home and businesses. USACE can help educate the local community on many of the effective flood proofing measures they can implement. USACE will also partner with other State and Federal organizations to provide information on other flood risk management programs that can be beneficial to the public and stakeholders. In Delaware in FY23, Philadelphia District will be executing an Interagency Project Proposal for three Emergency Action Plan Tabetop exercises for local dams in each County.

Project Manager
Jason Miller

Phone : (215) 656-6549

E-mail:

Jason.F.Miller@usace.army.mil

Flood Plain Management Services

Through the Federal Emergency Management Agency's (FEMA) National Hurricane Program, the Corps and FEMA work with the National Oceanic and Atmospheric Administration (NOAA) to conduct hurricane evacuation studies with the ultimate goal of helping local communities understand their evacuation timeline. The Philadelphia District completed a multi-year project to update the Delaware Hurricane Evacuation Study (HES); partnering with the Delaware Emergency Management Agency (DEMA) and all three counties.

New Jersey:

Through the Federal Emergency Management Agency's (FEMA) National Hurricane Program, the Corps and FEMA work with the National Oceanic and Atmospheric Administration (NOAA) to conduct hurricane evacuation studies with the ultimate goal of helping local communities understand their evacuation timeline. In FY22, the Philadelphia District completed a multi-year project to update the New Jersey Hurricane Evacuation Study (HES); partnering with NJ Office of Emergency Management (NJ OEM), NJ Department of Transportation (NJ DOT), and all of the storm surge-affected counties.

In addition, in FY23 the Philadelphia District began an Interagency Project with New Jersey Department of Environmental Protection (NJ DEP) to provide workshops to pilot-areas (counties) on Cost-Effective Mitigation Opportunities.

Pennsylvania:

The Philadelphia District is also working with the City to develop Non-structural Flood Risk Mitigation options for the Eastwick area and on Critical Infrastructure with flood risk areas. The District will also provide outreach, education and risk communication workshops in Eastwick.

In addition, in FY23 efforts are underway to assist the City of Philadelphia with Flood Inundation Mapping that will serve to alert residents and stakeholders of flood potential in the vicinity of Tacony-Frankford Creek and the District is beginning a flood hazard evaluation in Berks County for Maiden Creek.

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

HEC-HMS Model Modifications for the Delaware River Basin

Authority: Section 22 of the Water Resources Development Act of 1974

Congressional District:
Numerous

Non-Federal Sponsor:
Delaware River Basin
Commission

Date of Project Agreement:
Oct 2019

Target Completion Date:
2023

Total Estimated Cost: \$228,000

Federal Funds Appropriated:
\$114,000

Non-Federal Share: \$114,000

Project Manager

Dan Caprioli

Phone : (215) 656-6547

E-mail:

Daniel.J.Caprioli@usace.army.mil

The Planning Assistance to States program authorized by Section 22 of the Water Resources Development Act of 1974, as amended, provides the Federal funding for this study. Section 22 provides authority for the U.S. Army Corps of Engineers (USACE) to assist states, local governments, and other non-Federal entities in the preparation of comprehensive plans for the development, use, and conservation of water and related land resources.

DRBC is seeking assistance related to a comprehensive planning effort for the water resources of the Delaware River Basin. The effort, known as Water Sustainability 2060 (WS2060), is currently underway and requires a variety of tools, models and data to conduct the analyses upon which the comprehensive plan will be based.

USACE has developed the Corps Water Management System (CWMS) for the Delaware River Basin, which is a suite of models used for the operation of five USACE reservoirs. One of the component models of CWMS is HEC-HMS, which is a hydrologic model that can be used to generate runoff (streamflows) based on temperature, precipitation, land use and other relevant parameters. The streamflows generated in HEC-HMS are used as inputs to other CWMS component models and could also be used with non-USACE models.

For WS2060, the DRBC is using the Delaware River Basin Planning Support Tool (DRB-PST) for the simulation of long-term reservoir operations in the basin under current and future conditions. DRB-PST is configured to simulate multiple flow management options and is used by non-USACE reservoir operators (New York City) for the evaluation of flow management evaluation and policy decision-making. The input streamflows used by DRB-PST were generated from observed streamflows recorded at gages in the basin, which reflect what has happened in the past rather than what may be experienced in the future. A hydrologic model is needed so that new streamflows can be generated for both current and future conditions. For the comparison of existing and future conditions, input data sets developed with the same methodology are required.

DRBC is seeking a hydrologic model to generate new long-term streamflow records, which will become inputs to DRB-PST. DRB-PST will then be used to assess reservoir operations and water resource implications, including those affecting recreation, habitat, and reservoir storage for flow augmentation. Rather than develop a new hydrologic model, the DRBC proposes to use the HEC-HMS model developed for CWMS, but some additional work is required before it can be used for long-term planning simulations.

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

HEC-HMS Model Modifications for the Delaware River Basin

Project Goals: The purpose of this project is to provide support to the Delaware River Basin Commission through the generation of new input data sets for the HEC-HMS model. This will provide long term comprehensive planning for the Delaware River Basin.

USACE/DRBC Modeling Status Update:

USACE HEC-HMS Modeling complete and report drafted.

USACE HEC technical review complete.

DRBC mapped HEC-HMS model outputs to DRB-PST model.

DRBC performed diagnostics with HEC-HMS model and compared observed flows for temperature and precipitation. Some issues arose during this step and DRBC has been working with input from USACE to resolve discrepancies and select model parameters.

DRB-PST simulations with future climate conditions completed.

DRBC flow management/reservoir operations model reviewed by ERDC.

DRBC is working toward completing final report documentation to conclude the project.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Feasibility Study	114	114	228	Allocations thru FY20	114	
				FY 21 Allocation	0	
				Balance to Complete	0	



US ARMY CORPS OF ENGINEERS

Building Strong

**US Army Corps
of Engineers®**
Philadelphia District

Continuing Authorities Program

CONTINUING AUTHORITIES PROGRAM						
SECTION	AUTHORITY	AUTHORITY PURPOSE	FEASIBILITY COST SHARE DIVISION (Fed/non-Fed)	GENERALIZED DESIGN AND IMPLEMENTATION COST SHARE DIVISION (Fed/non-Fed) ¹	MAXIMUM FEDERAL EXPENDITURE PER PROJECT ²	NATIONAL PROGRAM LIMIT (Per FY) ³
14	Emergency Stream Bank and Shoreline Protection (Flood Control Act of 1946, as amended, or 33 USC 701r)	Emergency stream bank stabilization and shoreline protection for public works and non-profit public services in imminent danger of failing (e.g., roads, bridges, hospitals, schools, treatment plants). Private properties/facilities not eligible.	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35 ²	\$10,000,000	\$25,000,000
103	Beach Erosion and Hurricane and Storm Damage Reduction (Rivers and Harbors Act of 1962, as amended, or 33 USC 426g)	Protection of utilities, roadways and other public infrastructure, private properties, and facilities against damages caused by storm-driven waves and currents (e.g., construction of revetments, groins, and jetties; may also include periodic sand replenishment).	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35	\$10,000,000	\$37,500,000
107	Navigation Improvements (Rivers and Harbors Act of 1960, as amended, or 33 USC 577(a))	Plan, design, and construct small projects for commercial navigation improvements to ensure safe and efficient use of navigable waterways (e.g., channel dredging, widening of turning basins, breakwaters, jetties).	1st \$100k Fed; 50/50 cost share for any remaining costs	Varies, based on depth	\$10,000,000	\$62,500,000
111	Shore Damage Prevention or Mitigation of Damages Caused by Federal Navigation Projects (Rivers and Harbors Act of 1968, as amended, or 33 USC 426i)	Investigate and construct projects for the prevention or mitigation of shoreline erosion damages to public and privately owned shores along the coastlines when the damages are a result of a Federal navigation project.	Shared in same proportion as the original project causing damage	Shared in same proportion as the original project causing damage	\$12,500,000	N/A
204	Beneficial Uses of Dredged Material (Water Resources Development Act of 1992, as amended, or 33 USC 2326(g))	Use Regional Sediment Management concepts, restore, protect or create aquatic and wetland habitats in connection with construction maintenance dredging of an authorized Federal navigation project. Base disposal plan is least costly for typical disposal of dredged material.	100/0	100/0 for base disposal plan 65/35 for costs beyond base disposal	\$10,000,000	\$62,500,000
205	Flood Risk Management (Flood Control Act of 1948, as amended, or 33 USC 701s)	Local protection from flooding by non-structural measures (e.g., flood warning systems or flood proofing) or by structural flood risk management features (e.g., levees, diversion channels, or impoundments).	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35 ²	\$10,000,000	\$68,500,000
206	Aquatic Ecosystem Restoration (Water Resources Development Act of 1996, as amended, or 33 USC 2330)	Restore degraded aquatic ecosystems and wetland habitats to improve the quality of the environment.	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35	\$10,000,000	\$62,500,000
208	Snagging and Clearing for Flood Damage Reduction (Flood Control Act of 1954, as amended, or 33 USC 701g)	Channel clearing and excavation, with limited embankment construction by use of materials from the clearing operation only.	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35 ²	\$500,000	\$7,500,000
1135	Project Modifications for Improvement of the Environment (Water Resources Development Act of 1986, as amended, or 33 USC 2309a)	Modifications of USACE-constructed water resources projects to improve the quality of the environment. Also, restoration projects at locations where an existing USACE project contributed to the degradation.	1st \$100k Fed; 50/50 cost share for any remaining costs	75/25	\$10,000,000	\$50,000,000

Mispillion River Inlet, Sussex County, DE

Authority: Section 111 of the Rivers and Harbors Act of 1968

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Feasibility Agreement:
Not Required

Target Completion Date:
TBD

Federal Funds Appropriated:
\$300,000

Non-Federal Share: \$0



Mispillion River Inlet, DE

This study is authorized under Section 111 of the Rivers and Harbors Act (RHA) of 1968 as amended – Shore Damage Prevention or Mitigation of Damages Caused by Federal Navigation Projects, P.L. 90-483, as amended by Section 940 of the Water Resources Development Act (WRDA) 1986 (P.L. 99-662); Section 214, WRDA 1999 (P.L. 106-53)

The purpose of the feasibility study would be to determine if there is evidence that the Federal navigation project at Mispillion Inlet has caused damages to the non-Federal publicly and privately owned shorelines adjacent to the inlet. The study would also consider whether mitigation measures would provide storm risk management for the Dupont Nature Center, Delaware Launch Services, and residential and commercial structures located near the inlet, as well as any incidental ecosystem restoration benefits.

The feasibility study would investigate the effects the jetties have on the state-owned beaches adjacent to the inlet, the stability of the inlet, and alternatives for mitigating those impacts.

Project Manager

Brian Bogle

Phone : (215) 656-6585

E-mail:

Brian.p.bogle@usace.army.mil

Mispillion River Inlet, Sussex County, DE

- **Project Goals:** An FID was completed in FY21 and determined that it is in the Federal interest to pursue further study of the area. Efforts are currently underway to prepare a Project Management Plan for the Feasibility Study.

The Delaware Estuary hosts the largest concentration in the Western Hemisphere of spawning horseshoe crabs. This is perhaps most prevalent near the mouth of the Mispillion River. Hundreds of thousands of shorebirds, dependent upon horseshoe crab eggs to fuel their northward migrations and breeding, stop along the shorelines of Delaware Bay to rest and feed almost exclusively on horseshoe crab eggs. The eggs provide the energy necessary for species such as red knots, dunlins, ruddy turnstones, sanderlings, semi-palmated sandpipers and other migratory species.

The U.S. Fish and Wildlife Service proposes to list the *rufa* subspecies of the red knot (*Calidris canutus rufa*) as an endangered species. Like many migratory birds, the red knot is known for its miraculous long-distance flights. Red knots fly 19,000 miles round-trip, leaving the wintering grounds in southern Argentina, making only one stop on the coast of Brazil, then fly nonstop to Delaware Bay, a distance of 5,000 miles.

At Mispillion Inlet, migratory shorebirds and horseshoe crabs have an important connection. In late spring, red knots, ruddy turnstones, sanderlings, short- and long-billed dowagers, black-bellied plovers, and semi-plated and least sandpipers stop at the inlet to feast on the freshly laid horseshoe crab eggs. The Delaware Bay supports a large aggregation of these birds (>500,000 individuals) and is numerically one of the most important migratory stopover points in North America. The red knot, ruddy turnstone, and sanderling have been designated as species of high conservation concern by the US Fish and Wildlife Service. Given the Delaware Bay's significant contribution to these migratory shorebirds, it is identified as a Western Hemispheric Shorebird Reserve Network site of hemispheric importance, a Wetland of International Importance, and an Important Bird Area of Global Significance. (Andres 2003).

DNREC is the non-Federal sponsor. A draft PMP is currently under development to initiate the feasibility study and will be submitted for approval at the end of April 2023.

Summarized Federal Financial Data (\$000)		
Allocations through FY 17	100	
Allocations through FY 17	200	
Balance to Complete	500	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Wilmington Harbor, DE

Authority: Section 107 of the River and Harbors Act of 1960 as amended

Congressional District: DE-AL

Non-Federal Sponsor: DSPC

Date of Project Agreement:
PPA scheduled for September 2023 pending FID approval

Target Completion Date: June 2023

Federal Funds Appropriated:
\$50,000

Non-Federal Share: \$0



Proposed Wilmington Harbor Upper Berth 38-foot Deepening

Diamond State Port Corporation (DSPC) has requested the Philadelphia District study the proposed deepening of the upper portion of the Christina River port berth area from the currently authorized 35-foot depth to match the remaining authorized 38-foot depth berth area.

Prior to conducting a study, the District must first conduct a determination of Federal Interest at Federal expense. Assuming the FID finding is favorable and approved by HQ-USACE and the ASA(CW), a cost sharing agreement to conduct a CAP 107 study will be negotiated with DSPC.

As DSPC is currently proposing to move the majority of future vessel traffic to their newly proposed port facility at Edgemoor DE, an analysis of remaining benefits must first be completed in order to confirm Federal interest in the Section 107 proposal. USACE Deep Draft Navigation Center will conduct this analysis for inclusion in a Federal Interest Determination estimated for completion by June 2023.

Project Manager

Dan Caprioli

Phone : (215) 656-6880

E-mail:

Daniel.J.Caprioli@usace.army.mil

Summarized Federal Financial Data (\$000)

Allocations through FY 21	50	Federal Only
---------------------------	----	--------------



US ARMY CORPS OF ENGINEERS
Building Strong

**US Army Corps
of Engineers®**
Philadelphia District

Construction

Construction projects are construction and major rehabilitation projects that relate to navigation, flood control, water supply, hydroelectric power, and environmental restoration. This also includes projects authorized under the Continuing Authorities Program (CAP).

- ◆ Environmental Infrastructure
- ◆ Environmental Restoration or Compliance
- ◆ Coastal Storm Risk Management
- ◆ Flood Risk Management
- ◆ Hydropower
- ◆ Navigation
- ◆ Other Authorized Purposes (including but not limited to Environmental Restoration or Compliance, Environmental Infrastructure and Hydropower)

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Bay Coastline, DE & NJ, Broadkill Beach, DE

Authority: Section 101 of the
Water Resources Development
Act of 1999

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
TBD

Target Completion Date:
2054

Total Estimated Cost: \$154.8M

Federal Funds Appropriated:
\$683,000

Non-Federal Share: \$130,000



Aerial view of Broadkill Beach, DE

This project was authorized by the House Committee Resolution dated 01 October 1986.

The Delaware Bay Coastline, DE & NJ – Broadkill Beach, DE project was authorized for construction by Title I, Section 101 (a) (11) of WRDA 1999. The plan proposed in the final feasibility report for the purpose of coastal storm risk management at Broadkill Beach is a 100 foot wide berm with an elevation of +8.0 feet NGVD, and a dune with an elevation of +16.0 feet NGVD over a total project length of 14,600 feet. The selected plan includes dune grass, dune fencing and suitable advance beach fill and periodic nourishment every five years to ensure the integrity of the design. The estimated initial project cost is \$14.3 million. The PED phase was completed in FY01 and consisted of completion of detailed plans and specifications for those features recommended in the feasibility report

Project Manager

Scott Evans

Phone : (215) 656-6680

E-mail:

Scott.R.Evans@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Bay Coastline, DE & NJ, Broadkill Beach, DE

- **Project Goals:** The purpose of this project is Coastal Storm Risk Management along Broadkill Beach, which includes dune grass, dune fencing and sustainable advance beach fill and periodic nourishment every five year.

As part of the initial construction of the Delaware River Main Channel Deepening Project there was an opportunity to complete initial construction of the Broadkill project as a beneficial use of dredge material project. The Corps completed the work with DNREC and the local community on the necessary coordination and real estate requirements. The contract to complete initial construction was awarded under the Delaware Deepening project on 6 June 2014. Construction began on 30 Apr 2015 and was completed in March 2016.

The next step for the Broadkill project to continue construction including periodic nourishment is to initiate a General Reevaluation Report (GRR). The GRR would be to update the economics, environmental studies, design and formulation of the project. This would require a letter of intent (LOI) from the sponsor requesting a GRR, their willingness to enter into a cost sharing agreement for the GRR with 50/50% cost share and adequate Federal funding. After a completed GRR reauthorization of the project may be necessary. If reauthorization is not necessary the project could proceed with the development of the Project Partnership Agreement (PPA) with the sponsor. Once executed steps toward initial construction could begin. These steps include adequate funding and acquisition of necessary real estate easements by the non-Federal sponsor.

Timeline	Start	Complete	Comments
Initial Construction	Jan 2015	Mar 2016	
2nd Periodic Nourishment	FY 26 (S)		Was scheduled for FY 21, but without LRR & PPA nourishment will be delayed until at least FY 26

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Total Construction	100,684	54,135	154,820	Allocations thru FY21	683	
				FY 22 Allocation	0	
				FY 23 Work Plan	0	
				FY 24 Budget	0	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	100,001	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Bay Coastline, DE & NJ, Port Mahon, DE

Authority: Title I, Section 101
(a)(12) of the Water Resources
Development Act of 1999

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
TBD

Target Completion Date:
TBD

Total Estimated Cost: \$17.08M
Initial Construction

Federal Funds Appropriated:
\$1,098,000

Non-Federal Share: \$125,000



Overview of Project Site in Port Mahon, DE

The Delaware Bay Coastline, DE & NJ – Port Mahon, DE project was authorized for construction by Title I, Section 101 (a) (12) of WRDA 1999.

The plan proposed in the final feasibility report for the purpose of coastal storm risk management and ecosystem restoration at Port Mahon consists of a 5,200 foot long beach fill with periodic nourishment to provide for horseshoe crab and shorebird habitat. It also includes raising State Road 89 for a distance of 7,500 feet and placing riprap along a 1,200 foot length of the road to protect wetlands, and restoring 21.4 acres of degraded wetland habitat west of the road. The estimated initial project cost is \$14.5 million. The PED phase was completed in FY01 with finishing detailed plans and specifications for those features recommended in the feasibility report.

Project Manager

Scott Evans

Phone : (215) 656-6680

E-mail:

Scott.R.Evans@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Bay Coastline, DE & NJ, Port Mahon, DE

- **Project Goals:** The purpose of this project is Coastal Storm Risk Management and Ecosystem Restoration at Port Mahon, with a beach fill and periodic nourishment to provide for horse-shoe crab and shorebird habitat.

Funds have not been received for this project since FY 2007. A Limited Reevaluation Report (LRR) was completed and approved in May 2006. The LRR was a post authorization study that evaluate a specific portion of the approved plan under current policies, criteria and guidelines, and may be limited to economics, environmental effects or, in rare cases, project formulation. The LRR documented the results of the analysis undertaken.

Initiation of construction is dependent on several steps starting with a General Reevaluation Report (GRR). To initiate a GRR a letter of intent (LOI) is required from the sponsor requesting a GRR, their willingness to enter into a cost sharing agreement for the GRR with 50/50% cost share and adequate Federal funding. The GRR would be to update the economics, environmental studies, design and formulation of the project. After a completed GRR reauthorization of the project may be necessary. If reauthorization is not necessary the project could proceed with the development of the Project Partnership Agreement (PPA) with the sponsor. Once executed steps toward initial construction could begin. These steps include adequate funding and acquisition of necessary real estate easements by the non-Federal sponsor.

The Office of Management and Budget (OMB) provided a clearance letter for this project to the Assistant Secretary of the Army for Civil Works in June 2008.

Timeline	Start	Complete	Comments
Initial Construction	TBD	TBD	Dependent on Adequate funding

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TOTAL	Summarized Federal Financial Data (\$000)		
Initial Construction	10,168	6,914	17,082	Allocations thru FY21	1,098	
				FY 22 Allocation	0	
				FY 23 Work Plan	0	
				FY 24 Budget	0	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	9,070	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Bay Coastline, Roosevelt Inlet- Lewes Beach, DE

Authority: Title I, Section 101
(a)(13) of the Water Resources
Development Act of 1999

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
Nov 2002

Target Completion Date:
2053

Total Estimated Cost: \$31.5M

Federal Funds Appropriated:
\$10.04M

Non-Federal Share: \$3.1M



Beach along Delaware Bay Coastline between Roosevelt Inlet and Lewes Beach

The Delaware Bay Coastline, DE & NJ – Roosevelt Inlet-Lewes Beach, DE project was authorized for construction by Title I, Section 101 (a) (13) of WRDA 1999.

The plan proposed in the final feasibility report for the purpose of coastal storm risk management and navigation mitigation is a 100-foot-wide berm at an elevation of +8.0 feet NAVD, and a dune at an elevation of +14.0 feet NAVD over a total project length of 1,400 feet. The selected plan includes dune grass, dune fencing and suitable advance beach fill and periodic nourishment every six years to ensure the integrity of the design. The plan also provides for reconstruction of the south jetty at Roosevelt Inlet.

Initial placement of beach fill was completed September 2004 while dune crossovers, sand fence, and dune grass were completed in December 2004. Artifacts were discovered on the beach during the dredging and subsequent beach placement operation. As a result, the District completed Phase 1 and 2 cultural investigations.

A portion of the FY 11 funds were used to award a contract to complete periodic nourishment cycle. The Contract was awarded in September 2011 and construction was completed in Jan 2012.

Project Manager

Pete Gori

Phone : (215) 656-3211

E-mail:

Peter.D.Gori@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Bay Coastline, Roosevelt Inlet- Lewes Beach, DE

- Project Goals:** The purpose of this project is Coastal Storm Risk Management and Coastal Storm Damage Risk Reduction and Navigation Mitigation at Roosevelt Inlet-Lewes Beach, which includes dune grass, dune fencing and suitable advance beach fill with periodic nourishment every six years.

Between October 27 & 30, 2012, Hurricane Sandy caused damage to the Delaware coast from Lewes Beach to Fenwick Island and up the Delaware Bay. Flood Control and Coastal Emergencies (FCCE) funds under Public Law 84-99 were utilized to complete a Project Information Report (PIR). The report did not recommend proceeding beyond the PIR because the damages to the project did not qualify for assistance under PL 84-99. A PIR Addendum was developed and approved which concluded the project was eligible for P.L. 113-2 Disaster Relief Appropriations Act (Hurricane Sandy) funding to restore the project to design template. A construction contract to restore the project was awarded 19 Jul 2013. Work began in mid Oct 2013 & was completed on 6 Nov 2013.

This project was damaged by the Jan 2016 Nor'easter. A PIR under the authority of PL 84-99 was completed. Ultimately it was determined that this project did not qualify for FCCE repair funds. However, FY17 Supplemental CG funds were provided which will allow for a contract to complete periodic renourishment. This contract was a truck fill contract and awarded in Sep 2017. Construction began in Dec 2017 and was completed in Jan 2018.

The next periodic nourishment cycle is scheduled for FY23. The FY22 Bipartisan Infrastructure Law (BIL) funded \$4.5M to complete this cycle of nourishment. This contract is scheduled to be awarded by end of FY23 with work in fall 2023.

Timeline	Start	Complete	Comments
Initial Construction		Dec 2004	
Periodic Nourishment	Nov 2011	Jan 2012	
FCCE Emergency (Sandy)	Oct 2013	Nov 2013	
Periodic Nourishment	Dec 2017	Jan 2018	
Periodic Nourishment	FY 23 (S)		Funds provided in FY 22 BIL

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Construction	24,200	7,279	31,479	Allocations thru FY21	10,034	
				FY 22 Allocation	4,500	BIL
				FY 23 Work Plan	0	
				FY 24 Budget	0	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	9,666	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast, Cape Henlopen to Fenwick Island, Bethany Beach & South Bethany Beach

Authority: Title I, Section 101
(a)(15) of the Water Resources
Development Act of 1999

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
Jul 2006

Target Completion Date:
2057

Total Estimated Cost: \$272.9M

Federal Funds Appropriated:
\$47.7M

Non-Federal Share: \$25.8M



Aerial view of South Bethany looking north.

Authorized under the Senate Committee Resolution, 23 June 1988. Project authorized for construction by Title I, Section 101 (a) (15) of WRDA of 1999.

The Bethany Beach/South Bethany project area extends along approximately 3 miles of the Atlantic Ocean coast of Delaware in Sussex County, Delaware. The plan proposed in the final feasibility report for the purpose of coastal storm risk management consisted of a sand fill beach and dune project, in two independent discontinuous segments, for both Bethany Beach and South Bethany. The project includes a 150-foot wide berm with an elevation of +7.0 feet NAVD, and a dune with an elevation of +16.0 feet NAVD over a total project length of 14,950 feet (2.8 miles). The recommended project consisted of providing 3.5 million cubic yards initial beach fill, with subsequent nourishment of 480,000 cubic yards every three years. The plan included dune grass, dune fencing, and suitable advance beach fill and periodic nourishment every three years to ensure the integrity of the design.

Initial construction was completed in June 2008. A periodic nourishment contract was awarded in September 2011 with construction beginning in October 2011. Construction (Pumping) was completed in March 2012 for Bethany and October 2012 for South Bethany.

Between October 27 & 30, 2012, Hurricane Sandy caused damage to the Delaware coast from Lewes Beach to Fenwick Island and up the Delaware Bay. Flood Control and Coastal Emergencies (FCCE) funds under Public Law 84-99 were used to complete a Project Information Report (PIR). The results of the PIR determined that the project was eligible for FCCE funding to repair the project to pre-storm conditions.

Additionally, in response to P.L. 113-2 Disaster Relief Appropriations Act, a PIR Addendum was completed to determine whether the project was eligible for FCCE funding under P.L. 113-2 to restore the project to design template. Both the PIR and Addendum were approved. A contract to complete the repairs and restoration was awarded on 25 June 2013. Pumping began on 18 August 2013 and was completed on 28 September 2013.

Project Manager

Pete Gori

Phone : (215) 656-3211

E-mail:

Peter.D.Gori@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast, Cape Henlopen to Fenwick Island, Bethany Beach and South Bethany Beach, DE

- Project Goals:** The purpose of this project is Coastal Storm Risk Management of a sand fill beach and dune project, in two independent segments, for both Bethany Beach and South Bethany. It includes a berm, a dune, beach fill, dune grass, dune fencing and periodic nourishment every three years.

This project was damaged by the October 2015 & January 2016 Nor'easters. A PIR & PIR Addendum under the authority of PL 84-99 were completed which recommended repair and restoration of the project. The PIR & Addendum were ultimately approved by Corps HQUSACE. PL 84-99 funds were received for engineering and design, plans and specification & construction. Additionally, FY17 Construction Work Plan funds of \$6.5M & FY17 CG Supplemental funds of \$4.0M were received to complete periodic nourishment. The FCCE funds were for construction to minimum design template while to Work Plan funds were used to complete periodic nourishment. CG Supplemental funds were determined to be excess and returned. The contract was awarded in September 2017. Construction began in June 2018 and was completed in August 2018.

FY20 Work Plan funds were used to award a periodic nourishment contract in September 2020. Construction began in October 2020 and was completed in February 2021.

FY22 Bilateral Infrastructure Law (BIL) provided \$8.65M to initiate and complete periodic nourishment. Contract was awarded in NOV 2022 with construction scheduled to start in APR 2023. Project has been combined in a singular contract with Rehoboth Beach/Dewey Beach and Fenwick Island projects.

Next scheduled nourishment is scheduled for FY25 but is dependent on receipt of adequate funds.

Timeline	Start	Complete	Comments
Initial Construction		Jun 2008	
Emergency Work	Jan 2009	Jun 2009	
Periodic Nourishment	Oct 2011	Oct 2012	
FCCE Emergency (Sandy)	Aug 2013	Sep 2013	
FCCE Emergency (Oct 15 & Jan 16)	Jun 2018	Jul 2018	
Periodic Nourishment	Jun 2018	Jul 2018	
Periodic Nourishment	Oct 2020	Feb 2021	
Periodic Nourishment	APR 2023 (S)		Contract awarded in NOV 2022

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Construction	177,400	95,518	272,918	Allocations thru FY21	39,028	
				FY 22 Allocation	8,650	BIL
				FY 23 Work Plan	0	
				FY 24 Budget	0	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	129,722	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast, Cape Henlopen to Fenwick Island, Fenwick Island, DE

Authority: Water Resources
Development Act of 2000

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
Sep 2004

Target Completion Date:
2054

Total Estimated Cost: \$160.3M

Federal Funds Appropriated:
\$12.3M

Non-Federal Share: \$11.2M



Aerial view of Fenwick Island looking south.

This project is authorized under the Senate Committee Resolution, 23 June 1988. Project authorized for construction is included in the Water Resourced Development Act (WRDA) of 2000.

The plan proposed in the final feasibility report for the purpose of costal storm risk management at Fenwick Island is a 200-foot wide berm with an elevation of +7.7 feet NAVD, and a dune with an elevation of +17.7 feet NAVD over a total project length of 6,500 feet. The plan includes dune grass, dune fencing, and suitable advance beach fill and periodic nourishment every four years to ensure the integrity of the design.

Initial construction was completed in November 2005. Limited Construction funds were received between FY 08 and FY 17. The funds received were used for project monitoring. Periodic nourishment originally scheduled for FY09 was delayed until FY17 which is 4 years from the completion of the repair and restoration work in response to Hurricane Sandy. The 4 years is based on the approved periodic nourishment cycle.

Between October 27 & 30, 2012, Hurricane Sandy caused damage to the Delaware coast from Lewes Beach to Fenwick Island and up the Delaware Bay. Flood Control and Coastal Emergencies (FCCE) funds under Public Law 84-99 were used to complete a Project Information Report (PIR). The results of the PIR determined that the project was eligible for FCCE funding to repair the project to pre-storm conditions. Additionally, in response to P.L. 113-2 Disaster Relief Appropriations Act, a PIR Addendum was completed to determine whether the project was eligible for FCCE funding under P.L. 113-2 to restore the project to design template. Both the PIR and Addendum were approved.

Project Manager

Pete Gori

Phone : (215) 656-3211

E-mail:

Peter.D.Gori@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast, Cape Henlopen to Fenwick Island, Fenwick Island, DE

- **Project Goals:** The purpose of this project is Coastal Storm Risk Management at Fenwick Island, with a berm and a dune that includes dune grass, dune fencing, and beach fill and periodic nourishment every four years.

A contract to complete the repairs and restoration required due to the damage of Hurricane Sandy was awarded on 25 June 2013. Pumping began in mid-July 13 & was completed on 9 August 2013.

This project was damaged by the Jan 2016 Nor'easter. A Project Information Report (PIR) under the authority of PL 84-99 were completed which recommended repair and restoration of the project. This PIR was ultimately approved by Corps HQUSACE. PL 84-99 funds have been received for engineering and design, plans and specification & construction. Additionally, FY17 Work Plan funds of \$4.0M & FY17 CG Supplemental funds of \$1.9M were received. The FCCE funds were for construction to minimum design template while the Work Plan funds were used to complete periodic nourishment. CG Supplemental funds were excess and returned. The contract was awarded in Sep 2017. Construction began in Jul 2018 and completed in Aug 2018.

FY22 Work Plan provided \$7.65M to initiate and complete periodic nourishment. Contract was awarded in NOV 2022 with construction scheduled to start in APR 2023. Project has been combined in a singular contract with Rehoboth Beach/Dewey Beach and Bethany Beach/South projects.

Next scheduled nourishment is scheduled for FY26 but is dependent on receipt of adequate funds.

Timeline	Start	Complete	Comments
Initial Construction	Sep 2004	Nov 2005	
FCCE Emergency (Sandy)	Jul 2013	Aug 2013	
FCCE Emergency (Jan 16)	Jul 2018	Aug 2018	
Periodic Nourishment	Jul 2018	Aug 2018	
Periodic Nourishment	APR 2023 (S)		Contract awarded in NOV 2022

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Construction	81,031	79,222	160,254	Allocations thru FY21	8,327	
				FY 22 Allocation	4,000	
				FY 23 Work Plan	0	
				FY 24 Budget	0	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	68,704	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast, Cape Henlopen to Fenwick Island: Rehoboth Beach and Dewey Beach, DE

Authority: Section 101 (b)(6)
of the Water Resources
Development Act of 1996 with a
modification in 2000

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
Dec 2003

Target Completion Date:
2054

Total Estimated Cost: \$130.1M

Federal Funds Appropriated:
\$54.7M

Non-Federal Share: \$20.6M

Project Manager
Peter Gori

Phone : (215) 656-3211

E-mail:

Peter.D.Gori@usace.army.mil



A view of the beach looking south

Authorized under the Senate Committee Resolution, 23 June 1988. Project authorized by Section 101 (b)(6) of WRDA 1996 and modified by Section 307 of WRDA 2000.

The plan proposed in the final feasibility report for the purpose of coastal storm risk management at Rehoboth Beach and Dewey Beach consists of one continuous project, from the northern end of Rehoboth Beach to the southern border of Dewey Beach, a distance of 13,500 linear feet. Along Rehoboth Beach, the plan provides for a 125-foot wide berm at elevation +7.2 feet NAVD and a dune at elevation +13.2 feet NAVD. At Dewey Beach, the project would transition to a 150-foot wide berm at elevation +7.2 feet NAVD and a dune at elevation +13.2 feet NAVD. The plan includes dune grass, dune fencing, and suitable advance beach fill and periodic nourishment every three years to ensure the integrity of the design. The PED phase consisted of the completion of detailed plans and specifications for those features recommended in the feasibility report.

The beach fill portion of initial construction was completed in July 2005 with the other project features, including dune grass, dune fencing and crossovers completed in January 2006. FY08 funds were used to award a contract to initiate the periodic nourishment. Due to limited funds, only Dewey Beach received nourishment. FY11 funds were used to modify the FCCE contract to complete the periodic nourishment cycle (originally scheduled for 09).

FY 12 funds were used to permanently extend three outfalls that were covered after the completion of the renourishment. Work on these outfall extensions was completed in July 2013.

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast, Cape Henlopen to Fenwick Island: Rehoboth Beach and Dewey Beach, DE

- **Project Goals:** The purpose of this project is Coastal Storm Risk Management at Rehoboth Beach and Dewey Beach, with a berm and a dune for each beach, including dune grass, dune fencing, beach fill and periodic nourishment every three years.

Between October 27 & 30, 2012, Hurricane Sandy caused damage to the Delaware coast from Lewes Beach to Fenwick Island and up the Delaware Bay. Flood Control and Coastal Emergencies (FCCE) funds under Public Law 84-99 were used to complete a Project Information Report (PIR). The results of the PIR determined that the project was eligible for FCCE funding to repair the project to pre-storm conditions. Additionally, in response to P.L. 113-2 Disaster Relief Appropriations Act, a PIR Addendum was completed to determine whether the project was eligible for FCCE funding under P.L. 113-2 to restore the project to design template. Both the PIR and Addendum were approved.

The Corps awarded the contract for FCCE Sandy work on 25 June 2013. Pumping was completed on 3 Nov 2013. Crossover, etc repairs were completed in March 2014.

FY15 work plan funds were used to award a periodic nourishment contract on 16 July 16. Pumping began in November 2016 & was completed in December 2016. Outfall extension, sand fence & dune grass were completed in April 17.

FY19 Work Plan funds were used to complete periodic nourishment. Contract was awarded in Sep 2019. Construction began in Oct 2019 and was completed in Nov 2019.

FY22 Work Plan provided \$7.65M to initiate and complete periodic nourishment. Contract was awarded in NOV 2022 with construction scheduled to start in APR 2023. Project has been combined in a singular contract with Bethany Beach/South Bethany Beach and Fenwick Island projects.

Next scheduled nourishment is scheduled for FY25. FY22 Bilateral Infrastructure Law (BIL) Addendum funded \$7,680,500 for this project. These funds are not required for the current nourishment cycle and will be utilized in FY25 for the next cycle.

Timeline	Start	Complete	Comments
Initial Construction		Jan 2006	
Periodic Nourishment	Nov 2008	Jun 2009	Dewey Beach Only
Periodic Nourishment	Oct 2011	Feb 2012	
FCCE Emergency (Sandy)	Jun 2013	Nov 2013	
Periodic Nourishment	Nov 2016	Dec 2016	
Periodic Nourishment	Oct 2019	Nov 2019	
Periodic Nourishment	APR 2023 (S)		Contract awarded in NOV 2022

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Construction	82,552	47,527	130,079	Allocations thru FY21	39,358	
				FY 22 Allocation	7,650	
				FY 23 Work Plan	7,681	FY22 BIL Addendum for \$7,680,500
				FY 24 Budget	0	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	27,863	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast Protection, Sand Bypass Plant, Indian River Inlet, DE

Authority: Water Resources
Development Act of 1986

Congressional District: DE-AL

Non-Federal Sponsor: DNREC

Date of Project Agreement:
Oct 1988, Amended Jun 2021

Target Completion Date:
2028

Total Estimated Cost: \$27.9M

Federal Funds Appropriated:
\$11.6M

Non-Federal Share: \$677K

Project Manager

Pete Gori

Phone : (215) 656-3211

E-mail:

Peter.D.Gori@usace.army.mil



The state of Delaware operates the Indian River Inlet sand bypass plant in Sussex County, DE. Sand is pumped from the south side to the sand-starved north side. Federal construction funds are used to reimburse the

**Sand bypass plant pump
house & crane**

This project is authorized by the Flood Control Act of 1968 and the Water Resources Development Act of 1986 (P.L. 99-662). The plan of improvement consisted of constructing a sand bypassing plant and operation of said plant for periodic nourishment of a feeder beach (approximately 100,000 cubic yards of sand, annually) to nourish approximately 3,500 feet of feeder beach on the north side of the inlet and protect the Delaware Route 1 highway. Construction of the sand bypass plant began in 1989 and was completed in 1990. Per the agreement the State of Delaware operates and maintains the plant and the Corps reimburses them for the Federal share of the operation and maintenance.

Between FY 91 & FY15 the project consistently received Federal appropriations. These funds were used to reimburse the State of Delaware along with conducting proper project monitoring.

Between October 27 & 30, 2012, Hurricane Sandy caused damage to the Delaware coast from Lewes Beach to Fenwick Island and up the Delaware Bay. Flood Control and Coastal Emergencies (FCCE) funds under Public Law 84-99 were utilized to complete a Project Information Report (PIR).

The results of the PIR determined that the project was eligible for FCCE funding to repair the project to pre-storm conditions. Additionally, in response to P.L. 113-2 Disaster Relief Appropriations Act, a PIR Addendum was completed to determine whether the project was eligible for FCCE funding under P.L. 113-2 to restore the project to design template. Both the PIR and Addendum were approved. A contract to complete the repairs and restoration was awarded on 15 May 2013. Physical construction began in July 2013 and completed on 12 November 2013.

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware Coast Protection, Sand Bypass Plant, Indian River Inlet, DE

- **Project Goals:** The purpose of this project provides for construction of a sand bypassing beach plant and operation of the plant for periodic nourishment of a feeder beach.

Some of the FY 15 funds were used to award a contract for pump house renovations. Contract was awarded on 19 Feb 16. Construction began in June 2016 and was completed in March 2017.

Per the partnership agreement executed on 26 October 1988 the project was authorized through end of 2021. Utilizing WRDA 2014 Section 1037(a)(2) which allows for extensions of authorized water resources development projects that will expire within 10 years, Corps worked with DNREC on a LCA Amendment. This LCA Amendment was executed on 14 June 2021 and extends the project through December 2028.

FY22 Work plan provided 1.2M. Until FY22 Work Plan the project had not been funded to capability since FY15. There were nominal allocations of \$49,999 in FY 16, FY18, FY19 & FY21 through reprogramming. The FY22 Work Plan funds have been used to reimburse the State of Delaware for shortages from 2016 and 2022. These funds were for the federal share of operation and maintenance of the plant.

The sand bypass plant has recently had the crane and engine overhauled. Currently the plant is being converted to electric. Expected to resume in operations in early 2023.

Utilizing Section 8129(a)(2)(B) of WRDA 2022 Corps is working with DNREC to further extend the project from 2028 to 2034. This section of WRDA 2022 authorizes an additional 6 years. A draft LCA Amendment (#2) similar to the LCA Amendment (#1) executed in June 2021 is being developed for review which when executed would extend the project to 2034.

FY23 Work Plan funds will be used to reimburse the state for operations and maintenance of the sand bypass plant including the electric conversion and project monitoring.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TO TAL	Summarized Federal Financial Data (\$000)		
Construction	12,487	15,435	27,922	Allocations thru FY21	9,552	
				FY 22 Allocation	1,200	
				FY 23 Work Plan	850	
				FY 24 Budget	TBD	President's Budget
				FY 24 Work Plan	TBD	
				Balance to Complete	885	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Southeastern Pennsylvania and Lower Delaware River Basin Environmental Improvement Program

Authority: Section 566 of the Water Resources Development Act of 1996, as amended by Section 552 of WRDA 1999 and Section 8376 of WRDA 2022

Congressional District: DE-At large, NJ-1, NJ-2, NJ 3, NJ4, NJ12, PA-1, PA-2., PA-3, PA-4, PA-5, PA-6, PA-7, PA-9

**SEPA Federal Funds
Appropriated:** \$16.6M
(Authorized to \$50M)

**Lower DE River Basin Federal
Funds Appropriated:** \$0
(Authorized to \$20M)

Non-Federal Share: 25%

SEPA Jurisdictions:
Bucks County
Chester County
Delaware County
Montgomery County
Philadelphia County

**Lower Delaware River Basin
Watersheds**
Schuylkill Valley
Upper Estuary
Lower Estuary
Delaware Bay

Project Manager
Erik Rourke

Phone : (215) 656-6616

E-mail:

Erik.J.Rourke@usace.army.mil



Construction of a vault structure to control sewer overflow, Philadelphia, PA

The Southeastern Pennsylvania and Lower Delaware River Basin Environmental Improvements Program (566 Program) is authorized under Section 566 of the Water Resources Development Act (WRDA) of 1996, as amended by Section 552 of WRDA 1999 and Section 8376 of WRDA 2022.

Funding for this authority is provided to the Corps through appropriated funding under Environmental Infrastructure and distributed to specific projects through the annual Work Plan or Congressional Earmark. The 566 Program allows USACE to provide design and construction assistance to non-Federal interests for carrying out water related environmental infrastructure, resource protection and development projects in southeastern Pennsylvania, including projects for wastewater treatment and related facilities (including sewer overflow infrastructure improvements and other stormwater management), water supply and related facilities, surface water resource protection and development, and environmental restoration.

Section 552 of WRDA 1999 amended the authority to include environmental restoration as an authorized project purpose under this program. Section 8376 of WRDA 2022 amended the authority to expand the geographical area from Southeastern Pennsylvania to include the Lower Delaware River Basin in New Jersey and Delaware.

All phases are cost-shared with a non-Federal sponsor with the sponsor providing 25% of the total project costs. Implementation Guidance from USACE HQ is pending

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Southeastern Pennsylvania Environmental Improvement Program

The authority allows the Government to enter into agreements with a non-Federal sponsor to provide design assistance, construction assistance or both design and construction assistance. The authority also allows for the non-Federal sponsor to provide some or all of the work for design and/or construction. While sound judgment and prudent analytical approaches should be employed, the specific requirements for conducting and reporting on economic and environmental procedures as outlined in Principles and Guidelines (P&G) and Corps regulations based on P&G are not required. Because this is a service to non-Federal parties, the character and form of the Assistance should be established in partnership with the non-Federal partner.

Active/Potential Projects	Sponsor	Status	Allocation/Budget Data (000)					
			Prior to FY18	FY18	FY19	FY20	FY23	FY24
Abington Township Environmental Improvement	Abington Township	Design Phase	200	500	0	2,100	1,000	TBD
Roosevelt Boulevard Dam Removal	PWD	Design Phase	1,400*	0	1,000	0	-1,000	TBD
New Castle County, DE	TBD	Project Approval	0	0	0	0	0	TBD

Note: \$1M transferred from Roosevelt Boulevard Dam Removal to Abington Township Environmental Improvement to support construction

Closed/Inactive Projects	Sponsor	Status	Federal Funds	Non-Fed Funds	Credits	Total
Cobbs Creek Fish Passage Restoration	PWD	Deferred	733,732	239,847	306,578	1,280,158
Cobbs Creek Habitat Restoration	PWD	Closed	3,386,891	628,184	500,779	4,515,856
Hatfield Borough Sewer Improvements	Hatfield Borough	Closed	340,886	26,298	87,330	454,516
Mill Creek Diversion	PWD	Closed	671,618	112,740	112,041	896,401
Tacony Creek Ecological Improvements	PWD	Closed	1,900,794	283,253	350,344	2,534,393
Chester, Delaware and Montgomery County Watershed	PADEP	Closed	506,354	0	230,299	736,653
Sandyford Run	PWD	Closed	9,262	0	0	9,262
Logan/Wissinoming Homes	PWD	Closed	293,600	97,866		391,466
Philadelphia Incinerator	PWD	Closed	3,277,825	1,092,608		4,370,433
Delaware Canal	None	Closed	273,524	91,174		364,698
New Logan Homes	PWD	Closed	27,808	9,269		37,077

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware River Main Channel Deepening, DE, NJ & PA

Authority: Water Resources Development Act of 1992, 1999 & 2000

Congressional District: DE-a/
1, NJ-1, NJ-2, PA-2, PA-5

Non-Federal Sponsor:
PhilaPort

Date of Project Agreement:
June 2008

Target Completion Date:
Feb 2020

Total Estimated Cost: \$473.5M

Federal Funds Appropriated:
\$339.8M

Non-Federal Share: \$133.7M



The project was authorized for construction by Public Law 102-580, Section 101 (6) of WRDA 1992; modified by Public Law 106-53, Section 308 of WRDA 1999 and further modified by Public Law 106-541, Section 306 of WRDA 2000.

The project included: deepening the existing Delaware River Federal Navigation Channel from 40 to 45 feet from Philadelphia, Pennsylvania, and Camden, New Jersey, to the mouth of the Delaware Bay; appropriate bend widening; partial deepening of the Marcus Hook anchorage; and relocation and addition of aids to navigation. Cutter-suction, hopper, and mechanical dredges will be used to remove material from the channel. The dredged material from the Delaware River portion of the project will be placed in Federally -owned confined upland disposal facilities. Dredged material from the Delaware Bay portion of the project will be used for two beneficial use projects.

Since FY 99, Congress appropriated funds for project construction. The Project Partnership Agreement (PPA) between the Corps and the non-Federal sponsor, the Philadelphia Regional Port Authority (PRPA), was executed on 23 Jun 2008. Sponsor subsequently changed its name to PhilaPort.

In Oct 2009, the Corps awarded a contract for the regularly scheduled maintenance dredging of the existing Federal channel. An Option for deepening Reach C (Station 182+000 to Station 242+514) was awarded in Feb 2010. Dredging in Reach C commenced in Mar 2010 and was completed in Sep 2010.

The second project construction contract awarded was to deepen the lower portion of Reach B (Station 155+000 to Station 176+000). Bids for the contract were opened on 21 Jul 2011, and the contract was awarded on 6 Oct 2011 using accelerated non-Federal funds as there were not adequate Federal funds. Dredging began in Nov 2011 and was completed in Jan 2012.

The third project construction contract awarded was to deepen the upper portion of Reach A (Station 32+755 to Station 82+700). Contract was awarded on 31 Jul 2012 using FY 12 funds. Dredging began in Sep 2012 and was completed in Feb 2013.

The fourth project construction contract awarded was to deepen Reach D (Station 261+000 to Station 317+000). Contract was awarded on 18 Oct 2012 using FY 13 CRA funds. Dredging began in Feb 2013 and was completed in Nov 2013.

The fifth project construction contract awarded was to deepen the lower portion of Reach A (Station 72+574 to Station 90+000). Contract was awarded on 28 Jan 2014. Construction began in Jul 2014 and was complete in Jan 2015.

Project Manager

Scott Evans

Phone : (215) 656-6680

E-mail:

Scott.R.Evans@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware River Main Channel Deepening, DE, NJ & PA

- Project Goals:**
 The purpose of this project provides deepening of the existing Delaware River Federal Navigation Channel, bend widening, partial deepening of the Marcus Hook anchorage with relocation and addition of aids to navigation.

The sixth project construction contract awarded was to deepen Reach AA (Station 20+300 to Station 32+900). The contract was awarded on 30 May 2014 using FY14 funds. Construction started in Sept 2014 and was completed in Mar 2015.

The seventh project construction contract is to deepen the lower portion of Reach E (Station 432+200 to Station 512+000) with beneficial use of dredge material at Broadkill Beach. The contract was awarded on 6 Jun 2014 using FY14 funds and later supplemented with FY15 CRA funds of \$35M. Dredging began in Apr 2015 and was completed in May 2016.

The eighth construction contract. FY15 Work Plan funds were used to award the rock removal contract on Sep 30, 2015. Work began in Dec 2015 and continued the following years (2016, 2017, 2018) to complete rock blasting. In Mar 2019, just prior to the end of the environmental window for blasting and dredging, contractor encountered additional rock at approx. 43 feet below MLLW at several locations. A portion of the area was located within 50 feet of an active pipeline. NAP worked with the contractor, pipeline company and sponsor to develop a path forward that was technically acceptable. Utilizing rock blasting, hydrohammer, bucket dredge, clamshell dredge and drag barge the remaining rock above 45 feet was removed between Nov 2019 & Feb 2020. This was the final construction activity.

The ninth construction contract. FY16 Work Plan & a portion of FY17 CRA funds were used to award the contract to deepen Upper Reach E on 21 Oct 2016. Work began in Sep 2017 & completed in Aug 2018. The 10th and final project contract was to deepen Upper Reach B. Contract was awarded in Jul 2017 utilizing FY 17 Budgeted and Work Plan funds. Construction began in Aug 2017. Due to differing site conditions the work was not completed and de-scoped. The work was completed in Mar 2018 under a construction modification to the eighth contract (rock removal) utilizing FY19 Work Plan funds.

With the completion of the rock blasting contract (8th construction contract) the project to deepen the Delaware River Main Channel to 45 feet was completed in Feb 2020. Fiscal close-out is underway.

The Pilots' Association for the Bay and River Delaware & Maritime Advisory Committee requested in a May 2020 letter that hazardous shoal areas be removed as they directly affect their ability to safely turn and dock container vessels in the vicinity of Packer Avenue Marine Terminal. Corps reviewed the request & USACEHQ in a 1 Dec 2020 memorandum delegated authority to the NAD Commander to approve proposed dredging under Section 5 of the RHAA of 1915, subject to the NAD Commander's determination that the work is necessary to allow design vessels to maneuver with greater ease and safety. A determination analysis has been completed by the District & on 24 Mar 21 NAD completed its review and approved NAP's Determination Analysis and concluded the work is necessary to allow design vessels to maneuver with greater ease and safety. On 30 Mar 21 meeting held with PhilaPort to discuss approval, path forward and need for NFS funding for investigations, design and construction. As approved the work would be singular dredging operation and not apply to future dredging cycles. It is also understood that the work would be considered a project cost for cost sharing purposes. Additional Federal funds are not required. PhilaPort would fund this work with a combination of accelerated funds and Section 308 credits as permitted in the PPA. NAP awaiting PhilaPort decision on path forward.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TOTAL	Summarized Federal Financial Data (\$000)		
Construction	339,793	133,698*	473,491	Allocations thru FY21	339,793	
*Does not include non-Federal associated costs.				FY 22 Allocation	0	
				FY 23 Work Plan	0	
				Balance to Complete	0	



US ARMY CORPS OF ENGINEERS
Building Strong

**US Army Corps
of Engineers®**
Philadelphia District

Operations and Maintenance

Operations and Maintenance (O&M)

Operations and maintenance projects include the preservation, operation, maintenance, and care of existing river and harbor, flood control, and related activities at the projects that the Corps operates and maintains.

- ◆ Deep-Draft Harbor and Channel Maintenance
- ◆ Flood Risk Management /Flood Control
- ◆ Navigation Maintenance
- ◆ Other Authorized Project Purposes
- ◆ Small, Remote, or Subsistence Navigation Maintenance

Cedar Creek, Sussex County, DE

Authority: Section 107 of the
Rivers and Harbors Act

Congressional District: DE-AL



Confluence of Mispillion River and Cedar Creek

The existing project was adopted by the Chief of Engineers on 23 December 1981 under the authority of the Rivers and Harbors Act of 1960, Section 107.

The Project provides a channel five feet deep, 80 feet wide and 3,730 feet long from the confluence of Cedar Creek with the Mispillion River to the state launching ramp, and five feet deep and 50 feet wide thereafter for a distance of 2,470 feet to a point 1,000 feet upstream of the State Route 36 Bridge.

In 2019, maintenance dredging of approximately 5,000 cubic yards of material was removed from the Cedar Creek channel between the Delaware Bay Launch Service and the juncture with Mispillion River.

Sediment sampling was conducted in the channel in 2022 and an updated channel condition survey was completed in January 2023 to prepare for development of a maintenance dredging project in 2024.

Project Manager

Monica Chasten

Phone : (215) 656-6683

Monica.A.Chasten@usace.army.mil

Cedar Creek, Sussex County, DE

- **Project Goals:** The purpose of this project is to deepen the channel from the confluence of Cedar Creek with the Mispillion River, to the state launching ramp.

The U.S. Coast Guard has expressed concerns that poor channel conditions could delay the response of oil spill emergency clean-up and containment contractors during lower tide stages.

This waterway supports the only launch service that provides safe transport of personnel and supplies to large tanker vessels anchored in the Delaware Bay and the nearby Atlantic Ocean. This is a critical part of the logistics of lightering tankers so they can proceed up the Delaware River to the various refineries. The launch service operates four commercial crew boats that require drafts up to 6 feet. They annually complete over 5000 vessel trips per year and transport 12,000 tons of supplies, as well as transporting 10,000 passengers including Delaware River pilots, Coast Guard and Homeland Security Inspectors.

The local commercial fishing fleet stationed within this project totals approximately 35 vessels. A large number of tourists are attracted to the charter fishing opportunities at Cedar Creek. Recreational use of this waterway is also significant. The State of Delaware operates a public launching facility within the project limits.

Summarized Federal Financial Data (\$000)

FY 19 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 20 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 21 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 22 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 23 Allocation	1,099	Maintenance Dredging
FY 24 Budget	1,110	Maintenance Dredging

Harbor of Refuge, Lewes, DE

Authority: HD 52-112, 70-15
and 74-56

Congressional District: DE-AL



Harbor of Refuge Lighthouse and Breakwater

Authorized by HD 52-112 in 1894, HD 70-15 in 1930 and HD 74-56 in 1935.

The Harbor of Refuge project provides for the stone breakwater, which is listed in the National Register of Historic Places. The Harbor of Refuge Lighthouse, an historic 1926 structure, is located on the south end of the National Harbor of Refuge Breakwater.

The Corps of Engineers built two stone breakwaters in the 19th and early 20th centuries to create a safe refuge near the entrance to the Delaware Bay. A lighthouse was built in 1926. The Federal project was originally authorized to protect commercial navigation. The navigation channel was authorized to provide deep draft landing for vessels such as tugs, and vessels carrying passengers and injured seafarers. The lighthouse is still used as a navigation aid, and the breakwater provides protection for the Lewes shoreline. The entire Harbor of Refuge complex is listed on the National Register of Historic Places. Cape May-Lewes Ferry vessels, commercial fishing boats, marine lubricant delivery vessels, Coast guard vessels, and recreational watercraft still actively seek shelter from bad weather at the Harbor of Refuge.

Project Manager

Daniel Kelly

Phone : (215) 656-6889

Daniel.J.Kelly@usace.army.mil

Harbor of Refuge, Lewes, DE

- **Project Goals:** The purpose of this project provides for a breakwater approximately 8,000 feet long; 11 ice piers; and an inner navigation channel and turning basin.

In the interest of protecting the historic Harbor of Refuge Breakwater itself along with the historic lighthouse, periodic inspections of the breakwater, especially after hurricane season, should be conducted. FY 2022 IIJA funds have been utilized to conduct surveys and an inspection as well as to complete a Major Maintenance Report (MMR) as required by HQUSACE guidance. The purpose of the MMR is to document current conditions, make recommendations for repairs and refine repair cost estimates.

Both the Delaware River and Bay Lighthouse Foundation and the Delaware State Historical Preservation Office have repeatedly indicated that the deterioration of the government-owned breakwater is impacting valuable historic properties in the Harbor of Refuge. A recent inspection of this site confirms these concerns. The destructive wave action from past storms, have had an erosive effect on the breakwater especially in the vicinity of the lighthouse. Many of the huge breakwater stones that once formed an interlocking protection wall at the base of the lighthouse have been dislodged.

During calendar year 2011, repairs of a near-breach on the north side of the wall, replacement of missing breakwater stone and grouting of voids threatening to undermine the stability of the breakwater where the lighthouse is located were successfully completed. All of this work has experienced significant deterioration and damage by several storms.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 20 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 21 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 22 Allocation	250	Allocation is IIJA Funds.
FY 23 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 24 Budget	0	Impacted by Low Use Navigation budget cuts

Indian River Inlet & Bay, Sussex County, DE

Authority: R&H Doc. 41. HD 330

Congressional District: DE-AL



Aerial View of the project area showing Indian River Inlet with Real Estate Boundaries

The project was authorized in 1937 (R&H Doc 41, 75th Cong, 1st Session) and modified in 1945 (HD 330, 76th Cong, 1st Session).

The project authorization includes stabilizing the inlet by construction of parallel jetties 500 ft apart; the dredging of a channel generally 200 ft wide and 15 ft deep from the inner ends of the jetties to a point in the Bay substantially 7000 ft from the ocean shoreline, dredging a channel 9 ft deep, 100 ft wide in the Bay and 80 ft wide in the River, from that depth in the existing channel in Indian River Bay to and including a turning basin 9 ft deep, 175 ft wide and 300 ft long at Old Landing; then about 8200 ft to highway bridge at Millsboro, 60 ft wide, 4 ft deep.

Condition Surveys of the channel and jetties were conducted in FY22. Additional data collection is ongoing in FY23 as part of the Bipartisan Infrastructure Law (BIL) funds to repair the jetties and failed north bulkhead. Continued monitoring of the channel, jetties and scour holes is critical to protect surrounding infrastructure and assets and to inform the critically needed and complex repairs.

These repairs have complicated designs but technical expertise from the long-standing Indian River Inlet Working Group and across USACE are being utilized for these critical and high profile repairs.

Project Manager

Monica A. Chasten

Phone : (215) 656-6683

Monica.A.Chasten@usace.army.mil

Indian River Inlet & Bay, Sussex County, DE

- Project Goals:** The purpose of this project provides safe navigation channel for commercial, recreational and U.S. Coast Guard use. Indian River Inlet is the only water access point into the Delaware Inland Bay area that includes Indian River Bay and Rehoboth Bay.

Concerns: A failed section of bulkhead/revetment along the interior north shoreline is compromising a section of sidewalk and other infrastructure near Delaware Seashore State Park. The condition continues to deteriorate and expand to adjacent areas. Public access to the failed area has been restricted due to the safety risk and USACE continues to monitor the damage. Funding for investigations, design and repair was received in 2022 and repair is anticipated to be costly due to the steep slope into the inlet. Additionally, the Indian River Inlet jetties are in poor condition with over 350 linear ft of loss from the north jetty seaward end since 1960 and the south jetty requires sand tightening.

A Major Maintenance Report will be finalized for repair of the degraded bulkhead and jetties. An initial Class 4 cost estimate to repair the failed jetties is included in the 2022 Report to Congress on Cost to Repair the most degraded coastal navigation structures in the nation.

Ongoing Activities: BIL funds in the amount of \$43.9M were received in 2022 for design and repair of the failed bulkhead on the north interior shoreline, repair of the north and south jetties including sand tightening and to conduct a sediment budget for the inlet system. Final design Plans & Specifications for repair of the failed bulkhead, repair of the north jetty and sand tightening of the south jetty are anticipated by May 2023. Contract award is anticipated in July 2023. Construction is planned to start in Fall 2023. Coordination with Delaware Seashore State Park, DelDOT, and DNREC has been ongoing throughout design and will continue until construction is complete in FY2025. Work on the sediment budget is ongoing in FY23.

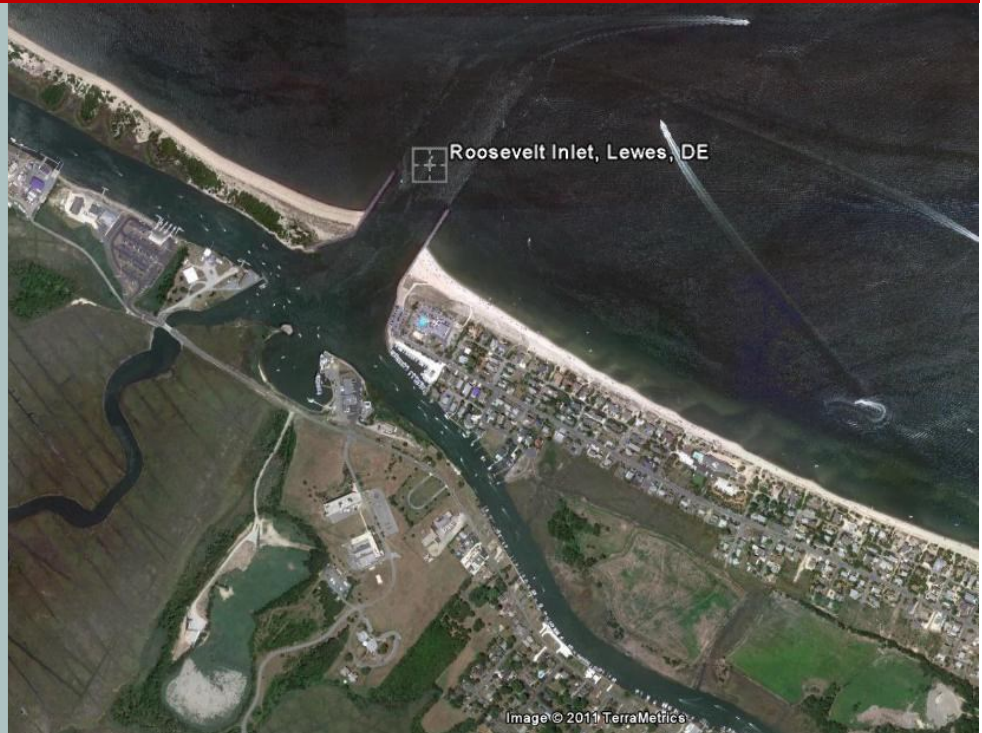
Summarized Federal Financial Data (\$000)		
FY 19 Allocation	27	Impacted by Low Use Navigation budget cuts; Additional funding (\$20) provided thru Work Plan
FY 20 Allocation	33	Funds will be used for managing the project, channel surveys and geospatial real estate efforts.
FY 21 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 22 Allocation	43,901	\$43,871 is BIL funds.
FY 23 Allocation	278	Impacted by Low Use Navigation budget cuts
FY 24 Budget	40	Impacted by Low Use Navigation budget cuts

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Inland Waterway from Rehoboth Bay to Delaware Bay, Sussex County, DE

Authority: HD 832, 77-344,
R&H Comm. Doc. 54, 74-56

Congressional District: DE-AL



Roosevelt Inlet at Lewes, DE

The existing project was adopted in 1912 (HD 823, 60th Congress, 1st session and R&H Committee Doc. 51, 61st Congress, 3rd session) and modified in 1935 (R&H Committee Doc 74-56) and 1945 (HD 77-344)

The project provides for an entrance channel through Roosevelt Inlet near Lewes, Delaware, 10 feet deep and 200 feet wide protected by two parallel jetties 500 feet apart, an extension of the jetties; a channel 10 feet deep and 100 feet wide to the Savannah Road Bridge at Lewes; a channel 6 feet deep and 50 feet wide from Savannah Road Bridge to the Rehoboth Bay entrance and a channel 6 feet deep and 100 feet wide from Roosevelt Inlet to Broadkill River.

A channel condition survey of the entire waterway was last performed in March of 2022. Maintenance dredging of the Roosevelt Inlet Entrance Channel was conducted using the Government Dredge Murden in February 2023. Sand was dredged from the inlet channel and placed in a designated nearshore area to support the federal beach nourishment project in Lewes. FY 22 IIJA funds will be utilized to conduct maintenance dredging of the canal between Roosevelt Inlet and the Rt. 9 Bridge in Lewes, DE in October 2023 thru a contract awarded to Dredgit of Houston, TX in September of 2022.

Project Manager

Daniel Kelly

Phone : (215) 656-6889

Daniel.J.Kelly@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Inland Waterway from Rehoboth Bay to Delaware Bay, Sussex County, DE

- **Project Goals:** The purpose of this project provides for an entrance channel through Roosevelt Inlet near Lewes, Delaware, a channel to the Savannah Road Bridge at Lewes, a channel from the inlet to the Broadkill River and a channel from Savannah Road Bridge to the Rehoboth Bay entrance.

The Inland Waterway from Rehoboth Bay to Delaware Bay (DE) is a shallow draft navigation project utilized by both commercial and recreational users. It has an authorized depth of 10 feet through the entrance channel.

The local commercial fleet consists numerous charter and head boats. The University of Delaware maintains several research vessels that are stationed within the project, and mooring for research vessels from visiting universities.

The Roosevelt Inlet Coast Guard Station located on the waterway performs routine patrols and emergency response activities. Lack of periodic maintenance of the channel will affect the ability of the Coast Guard to respond to emergency situations at lower tide stages.

The Delaware Bay and River Cooperative (DBRC), whose mission is oil spill emergency response/cleanup for events occurring in the Delaware River and Bay, is based in this waterway. The DBRC has positioned the oil spill response vessel DELRIVER in Lewes. The location of DELRIVER in the University of Delaware's harbor, with direct access to Roosevelt Inlet, is strategically important for response to potential spills in the Big Stone Beach Anchorage and approaches. On average more than one million barrels of crude oil a day move into the Delaware Bay and River area. A majority of the bulk crude oil carriers lighter at Big Stone Beach Anchorage, and require spill coverage before proceeding up the Bay to the Delaware River refineries. DBRC located the DELRIVER in Lewes because a 45 minute response time is possible from its mooring location at Roosevelt Inlet. Continuing maintenance dredging, when needed, is critical to the ability of the DELRIVER to respond to emergency situations in a timely manner regardless of tide stage.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	30	Impacted by Low Use Navigation budget cuts
FY 20 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 21 Allocation	30	Impacted by Low Use Navigation budget cuts
FY 22 Allocation	3,934	\$3,785,000 is IJIA funds.
FY 23 Allocation	7,475	
FY 24 Budget	150	Impacted by Low Use Navigation budget cuts

Mispillion River, Sussex County, DE

Authority: HD 56-102, 74-83,
678. R&H Comm. Doc. 83. SD
229

Congressional District: DE-AL



Mispillion Project Area

Authorized under HD 56-102 in 1907 and modified as HD 74-83 in R & H Act HD 678, 62nd Congress, 2nd Session (1919) and modified by R & H Com Doc. 83, 74th Congress, 2nd Session (1937) and modified by SD 229, 81st Congress, 2nd Session (1954).

The waterway rises in Kent and Sussex Counties, Delaware. It flows northeasterly 13 miles along the boundary line between the two counties and empties into the Delaware Bay about 16 miles above Cape Henlopen, Delaware. The waterway provides an entrance channel six feet deep and 60 feet wide from Delaware Bay to the landward side of the jetties.

Along with the Cedar Creek federal channel, this waterway supports the only launch service that provides safe transport of personnel and supplies to tanker vessels anchored in Delaware Bay and the nearby Atlantic Ocean. The U.S. Coast Guard has expressed concern that future shoaling in the channel could delay the response of oil spill emergency clean-up and containment contractors during lower tide stages. Failure to perform routine maintenance dredging will result in hazardous navigating conditions, damage to commercial, charter and recreational vessels, delays in service to the shipping industry utilizing the Delaware River, Philadelphia to Sea Channel, restricted and/or delayed Coast Guard national security. vessel audits and economic hardships.

Project Manager

Monica A. Chasten

Phone : (215) 656-6683

E-mail:

Monica.A.Chasten@usace.army.mil

Mispillion River, Sussex County, DE

- **Project Goals:** The purpose of this project provides for an entrance channel from the Delaware Bay to the landward side of the jetties.

Dredging and placement with the Government Dredge Currituck was designed and permitted in FY 19 . Maintenance dredging has been conducted annually from February 2020 to February 2023 with the Government Dredge Murden removing up to 5,000 cubic yards of sediment each year from the Mispillion entrance channel and Cedar Creek confluence with beneficial use placement. Use of the government dredges has proven to cost-effectively remove the relatively small but critical shoaling from the interior channel and the entrance to the Delaware Bay. The placement area is located to the north of the entrance, keeping sediments in the system and supporting coastal resilience and the adjacent beaches.

Channel condition and maintenance dredging surveys were performed in FY 21 and FY 22. Channel shoaling rates will be monitored.

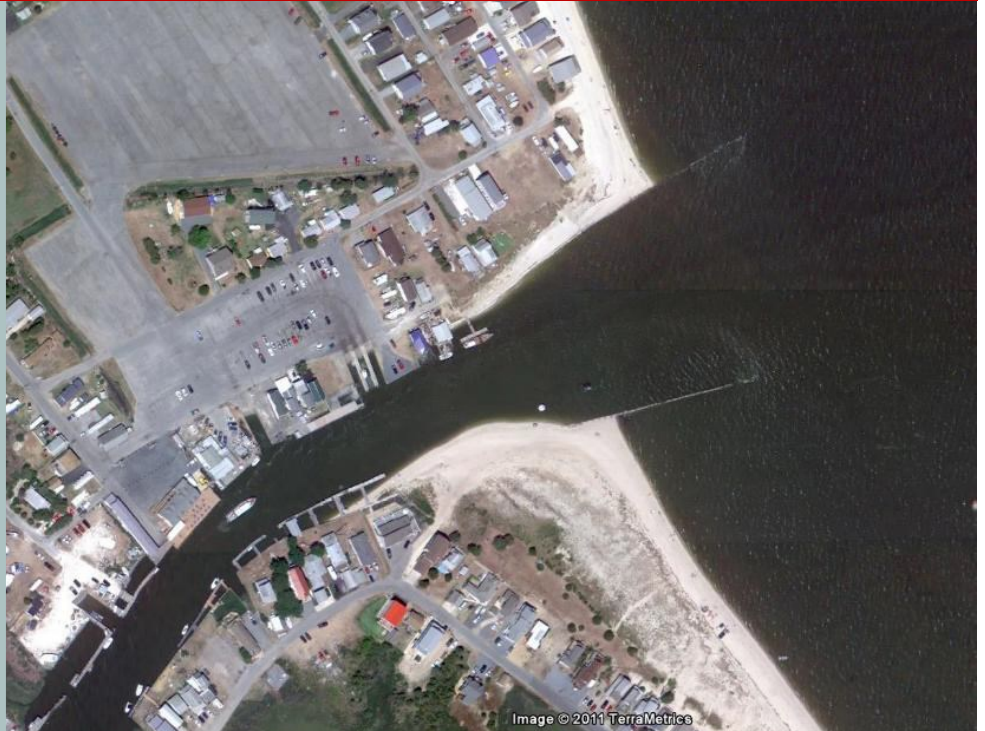
The jetties were assessed and rated failed relative to structural condition, but are still considered adequate relative to functional condition ratings. Funding has been requested for a Major Maintenance Report as the decision document needed for jetty repairs. An initial cost estimate to repair the failed jetties is included in the 2022 Report to Congress on Cost to Repair the most degraded coastal navigation structures in the nation.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 20 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 21 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 22 Allocation	\$400	\$400 was provided thru the Work Plan.
FY 23 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 24 Budget	0	Impacted by Low Use Navigation budget cuts

Murderkill River, Sussex County, DE

Authority: HD 21, 62-1058.
SD 71-106

Congressional District: DE-AL



Entrance channel of Murderkill River at Delaware Bay

The existing project was authorized in 1892 (HD 21, 52nd Cong, 1st Session) and modified in 1912 (HD 62-1058) and 1930 (SD 71-106).

The project provides for a channel 7 feet deep at mean low water, 60 feet wide in Delaware Bay to mouth, and then 60 feet wide to Frederica, 7.5 miles above mouth. Total length of section included in project is about 8.5 miles.

A channel condition survey of the federal channel was conducted by the USACE Philadelphia District in January 2021 and again in August 2022 following channel dredging by the State of Delaware and for USCG use to re-mark the channel.

Since federal funds have not been received in recent years, the channel was dredged by the State of Delaware in 2014 and again in July 2022 with sandy material beneficially used on adjacent beaches and fines placed in a disposal area within the bay.

Project Manager

Monica A. Chasten

Phone : (215) 656-6683

Monica.A.Chasten@usace.army.mil

Murderkill River, Sussex County, DE

- **Project Goals:** The purpose of this project provides for a channel in Delaware Bay and Frederica.

A new channel exam was conducted in January 2021 and again in August 2022 to update conditions and inform project users of conditions in the federal channel.

Prior to the dredging that was conducted by the State of Delaware in July 2022, concerns were raised by congressional interests and locals that the USCG had removed the seasonal markers from the federal channel and not reinstalled them due to excessive shoaling and unsafe conditions. The USCG cannot adequately mark navigable water until maintenance dredging is accomplished. Markers were replaced by the CG in late summer 2022 following the dredging and channel exam by USACE.

Failure to maintain this channel will result in deteriorated channel conditions that will negatively impact the use of this project by first responders and as a safe harbor for recreational and commercial users. The channel supports first responders including the Bowers Beach fire suppression boat, South Bowers water rescue boat, State of Delaware police vessels and the USCG auxiliary station operation for response to emergency situations. The channel also supports a local commercial fishing fleet. Failure to maintain waterway would result in impacts to the USCG mission, inability for emergency responders to conduct their critical missions, damage to commercial vessels and economic hardship for the region.

Coordination of this project with federal, state, academic and local partners significantly increased in FY22 and continues in FY23, with objective to develop a federal maintenance dredging project for beneficial use of the mixed channel sediments on both beaches as well as degraded marshes, vs disposal of the fines in the bay.

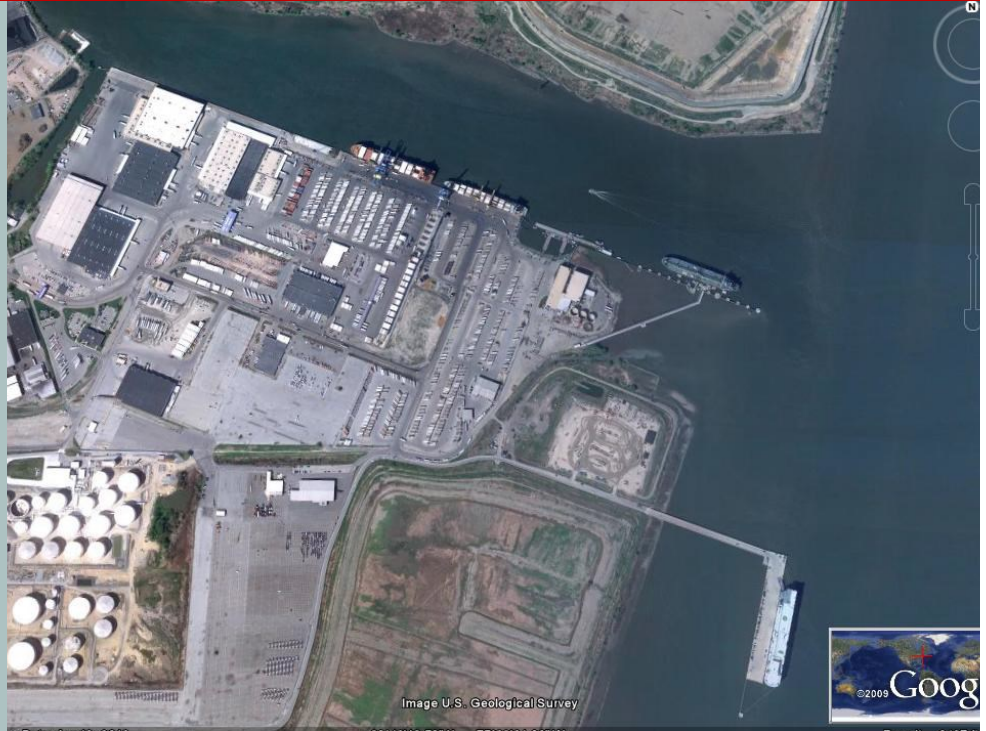
Summarized Federal Financial Data (\$000)		
FY 19 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 20 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 21 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 22 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 23 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 24 Budget	0	Impacted by Low Use Navigation budget cuts

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Wilmington Harbor, New Castle County, DE

Authority: HD 54-66, 67-114, 71-20, 73-32, 76-568. SD 86-88. Section 10 of the River and Harbor Act of 1960

Congressional District: DE-AL



Aerial view of Wilmington Harbor

The existing project, adopted as HD 54-66 in 1896 and 1899, and modified by HD 67-114 in 1922, by HD 71-20 in 1930, by HD 73-32 in 1935, by HD 76-658 in 1940, by SD 86-88 in 1960, and further modified pursuant to the authority of Section 107 of the River and Harbor Act of 1960 (PL 86-645).

The project provides for a channel with depths of 38, 35, 21, 10, and 7 feet from the Delaware River to Newport, DE, a turning basin 2050 feet long, 640 feet wide and 38 feet deep opposite the Wilmington Marine Terminal, and jetties at the mouths of Christina and Brandywine Rivers.

The Port of Wilmington is a full service Mid-Atlantic seaport strategically located to provide overnight access to 200 million North American consumers. Wilmington ranks as the world's top banana port, and the nations leading gateway for imports of fresh fruit and juice concentrates. An economic engine for the State of Delaware and the region, it is responsible for over thousands of jobs, hundreds of millions of dollars in business revenue impact, and tens of millions of dollars in regional annual tax revenue. The Port is owned by the Diamond State Port Corporation, a corporation of the State of Delaware and operated by GulfTainer, USA.

Project Manager

Daniel Kelly

Phone : (215) 656-6889

DanielJ.Kelly@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Wilmington Harbor, New Castle County, DE

- **Project Goals:** The purpose of this project is to provide for a channel from the Delaware River to Newport, DE, a turning basin opposite of the Wilmington Marine Terminal, and jetties at the mouths of Christina and Brandywine Rivers.

The FY 22 annual maintenance dredging for both the 35-foot and 38-foot project channels and turning basin was completed in January of 2023. Approximately 715,000 cubic yards of material was removed.

The following work will be accomplished in FY 2023: semi-monthly channel condition surveys and issuance of channel statements to the maritime community, disposal area maintenance and construction activities by in house hired-labor group along with earthwork preparation service contract work and environmental support services.

The annual maintenance-dredging contract for both the 35-foot and 38-foot project channels and turning basin is scheduled to be advertised in July of 2023. Actual dredging should commence in October of 2023 with completion within approximately 30 days. Similar to FY22, it is anticipated that this work will be advertised as a consolidated contract with the Delaware River, Philadelphia to Sea, Project Maintenance Dredging solicitation.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	11,291	Additional funds (\$5,800) was received thru the Work Plan.
FY 20 Allocation	10,263	Additional funds (\$2,600) was received thru the Work Plan.
FY 21 Allocation	10,640	Additional funds (\$2,750) was received thru the Work Plan.
FY 22 Allocation	9,111	Additional funds (\$250) was received thru the Work Plan.
FY 23 Allocation	10,432	
FY 24 Budget	15,095	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware River, Philadelphia to the Sea, DE, NJ & PA

Authority: HD 733, 304, 580, 340, 358, 185. R&H Comm. Doc. 5. SD 159.

Congressional District: DE-AL, NJ-1, NJ-2, PA-2, PA-3 & PA-5



Packer Ave Marine Terminal with Center City Philadelphia in background

The existing project was authorized in 1910 (HD 733, 61st Cong., 2nd Session) and modified in 1930 (HD 304, 71st Cong., 3rd Session); 1935 (R&H Comm. Doc 5, 73rd Cong., 1st Session); 1938 (SD 159, 75th Cong., 3rd Session); 1945 (HD 580, 76th Cong., 3rd Session and HD 340, 77th Cong., 1st Session); 1954 (HD 358, 83rd Cong., 2nd Session) and 1958 (HD 185, 85th Cong., 1st Session).

Project channel dimensions are 45' and 40' deep, and 400' to 1000' wide. The Hopper Dredge McFarland will dredge 70 days in the river to address any spot, edge, or sand wave shoaling within the Federal channel. Additionally, annual contract maintenance dredging removes approximately 2.5M CY of material in high shoal areas. There will also be maintenance work done in the upland disposal areas to assure there is sufficient capacity to accept the dredged material from these events.

Project Manager

Timothy Rooney

Phone : (609) 217-8525

E-mail:

Timothy.J.Rooney@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware River, Philadelphia to the Sea, DE, NJ & PA

- **Project Goals:** The purpose of this project provides for a 102 mile channel from Allegheny Avenue in Philadelphia, to deep water in Delaware Bay, six anchorages, construction of dikes and training works for the regulation and control of tidal flow.



Container Vessels being unloaded at Port of Philadelphia

The Port of Philadelphia is located in the heart of the Northeast Corridor, with superior connections to New York City, Washington DC, the U.S. Midwest, and Canada. It is estimated that 100 million people live within a day's drive of Philadelphia. All of the terminal facilities have access to major trucking routes (e.g. I-95), and rail lines. The Port handles many different types of cargo (containers, bulk, break-bulk, fruit). It is ranked 2nd after New York based on total tonnage. It is considered to be the #1 port for perishable cargo in the U.S.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	31,857	Additional Work Plan funding (\$4,350) was provided.
FY 20 Allocation	40,760	Additional Work Plan funding (\$8,725) was provided.
FY 21 Allocation	75,536	Additional Work Plan funding (\$53,216) was provided.
FY 22 Allocation	99,005	\$25,000 is BIL funds and additional Work Plan funding (\$28,600) was provided.
FY 23 Allocation	49,967	\$500 is BIL funds and additional Work Plan funding (\$3,680) was provided.
FY 24 Budget	72,860	\$25,000 is BIL funds

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware River, Philadelphia to Trenton, NJ & PA

Authority: HD 679, 358. R&H
Comm. Doc. 3, 11, 66, 90

Congressional District: NJ-3,
NJ-1, PA-1, PA-2



Port of Bucks County—Fairless Turning Basin

Adopted in 1930 (R&H Com Doc 3, 71st Cong., 1st Session) and modified in 1935 (R&H Com Doc 11, 73rd Cong., 1st Session and R&H Com Doc 66, 74th Cong., 1st Session), 1937 (R&H Com Doc 90, 74th Cong., 2nd Session), 1946 (HD 679, 79th Cong., 2nd Session), and 1954 (HD 358, 83rd Cong., 2nd Session).

The project provides for a channel 40-feet deep and 400-feet wide from Allegheny Avenue in Philadelphia, PA to the upper end of Newbold Island, thence to various depths from 25 feet to 12 feet upstream to the Penn Central Railroad Bridge at Trenton, NJ.

Project Manager

Daniel Kelly

Phone : (215) 656-6889

Daniel.J.Kelly@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Delaware River, Philadelphia to Trenton, NJ & PA

- **Project Goals:** The primary purpose of this project is to provide a 40-foot channel from Allegheny Avenue in Philadelphia, PA to the upper end of Newbold Island, New Jersey as well as the Fairless Turing Basin.

FY 2022 O&M funding accomplished periodic channel examinations, environmental support services, earthwork services at the Money Island Disposal Area to create additional dredged material storage capacity and contract maintenance dredging of the upper reach of the 40-foot channel that included the Fairless Turning Basin in Falls Township, PA.

FY 2023 O&M funds will be utilized to accomplish periodic channel examinations, environmental support services and a contract for maintenance dredging in both the lower and upper reach of the 40-foot channel, as well as the Fairless Turning Basin. This contract is scheduled to be advertised in March of 2023. Approximately 500,000 cubic yards of material will be dredged between the Tacony Palmyra Bridge and Newbold Island and placed at the Palmyra Cove Disposal Area in Burlington County, NJ as well as the Money Island and possibly Biles Island Disposal Areas in Falls Township, PA.

The past failure of the State of New Jersey to properly maintain the disposal areas previously utilized by the Army Corps along the lower reach of the 40-foot channel has been a longstanding operational issue. Recent developments however, have NJDOT and NJDEP working to re-establish capacity at the Palmyra Cove, Cinnaminson and Burlington Island CDFs. The Palmyra Cove CDF is ready to accept the dredged material from the lower reach of the project in the Summer of 2023.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	3,812	
FY 20 Allocation	9,964	\$5,875 in Work Plan funds was provided.
FY 21 Allocation	7,954	\$3,350 in Work Plan funds was provided.
FY 22 Allocation	13,573	
FY 23 Allocation	17,548	
FY 24 Budget	18,070	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Lower Delaware River Dredged Material Management Plan Study

Authority: HD 733, 304, 580,
340, 358, 185. R&H Comm.
Doc 5. SD 159

Congressional District: DE-
AL, NJ-1, NJ-2, PA-2, PA-3 &
PA-5

Target Completion Date:
2025

Total Estimated Cost: TBD

Federal Funds Appropriated:
\$150,000



As authorized in ER 1105-2-100, the Dredged Material Management Plan (DMMP) study for the Lower Delaware River to support successful maintenance of reaches of the Delaware River, Philadelphia to the Sea project and associated navigation projects that share dredge material placement sites in such a manner that sufficient disposal capacity is available for a minimum of 20 years. The DMMP will ensure that the NAP soundly manages material dredged from the channel in a manner that minimizes risk and detrimental impacts to the environment while staying within the authority of the project.

The study launched Phase I in January 2022. This phase focuses on documenting the degree of engineering, environmental, and economic risks and unknowns associated with the project and identify what tasks and resources are necessary to manage them.

While operating within existing management operations and constraints, this phase will also define opportunities to anticipate and request needs that fully represent Operation needs to enable dredged material volume/capacity. These opportunities include the potential for regional sediment management, beneficial use, and other potential uses of sediment. The phase is also refining future scenarios and confirming decision criteria and metrics for developing and evaluating alternatives. Through the execution of these tasks, Phase I will delineate the tasks, resources, and schedule required to implement Phase II of the study.

Project Manager
Alexander Renaud
Phone : (267) 876-1886

E-mail:
Alexander.D.Renaud@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Lower Delaware River Dredged Material Management Plan Study

- **Project Goals:** The purpose of this project is to ensure that NAP soundly manages material maintained from its channel and associated tributaries and projects in such a manner that minimizes risks and impacts to the environment while maintaining disposal capacity for at least 20 years, while staying within the authority of the project.

Upon delineating these tasks, Phase II will evaluate the base plan and array of alternative plans to address disposal problems and opportunities and provide a trade-off analysis that will inform a final DMMP and approach that upon review can be implemented by the navigation project O&M managers.

Total Estimated Project Cost (\$000)	FEDERAL	NON-FEDERAL	TOTAL	Summarized Federal Financial Data (\$000)		
Phase I	150	0	150	Allocations thru FY22	150	
Phase II	TBD	0	TBD	Balance to Complete	0	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Intracoastal Waterway, Delaware River to Chesapeake Bay, DE & MD (C & D Canal)

Authority: HD 201. R7H
Comm. Doc. 11, 18, 24. PL
310. SD 123

Congressional District: DE-
AL, MD-1



Senator Roth Bridge (SR-1) carries ~34 million vehicles over the C&D canal per year

The project was authorized in 1935 (HD 201, 72nd cong., 1st Session) and modified in 1935 (R&H Com Doc 11, R&H Docs 18 and 24, 73rd Cong., 2nd Session), in 1939 (PL 310, 76th Cong., 1st Session and in 1954 (SD 123, 83rd Cong., 2nd Session).

This project includes the canal waterway, five high-level fixed highway bridges, a vertical lift railroad bridge, entrance jetties at Reedy Point, and maintenance of Delaware City Branch channel and basin. The waterway channel is 35 feet deep and 450 feet wide, extending from Reedy Point on the Delaware River, about 46 miles below Philadelphia, PA, through a land-cut westward to Elk River and onto deep water near Pooles Island in the upper Chesapeake Bay. The average annual traffic over the Chesapeake and Delaware Canal bridges equates to roughly 55 million vehicles per year (2018).

The Chesapeake and Delaware (C&D) Canal connects the Delaware River to the Chesapeake Bay. The C&D Canal system provides a continuous sea level channel connecting the Port of Baltimore to the ports of Wilmington (DE), Philadelphia, and the northern trade routes.

Project Manager

Mike Hart

Phone : (215) 656-6513

Michael.F.Hart@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

Intracoastal Waterway, Delaware River to Chesapeake Bay, DE & MD (C & D Canal)

- **Project Goals:** The purpose of this project provides for a waterway extending from Reedy Point on the Delaware River through a land-cut westward to Elk River, five high-level fixed highway bridges, a vertical lift railroad bridge, extensions of the entrance jetties at Reedy Point, enlargement of the anchorage and mooring basin in Back Creek, and maintenance of Delaware City Branch channel and basin.



Large vessel passing through the C&D Canal

FY22 funds were used for routine operation and maintenance of the project, including five high level highway bridges, dispatching, channel exams, canal banks and dredge material containment facilities. Major bridge maintenance projects included redecking of the Senator Roth Bridge, steel and concrete repairs on the Chesapeake City Bridge and concrete pier repairs on the St. Georges Bridge. Major channel maintenance dredging projects included dredging the Pooles Island, Turkey Point and Town Point Approach Channels to the C&D Canal.

FY23 funds will be used for routine operation and maintenance of the project. Major channel maintenance dredging projects will include the dredging of the southern Approach Channels to the C&D Canal, major bridge maintenance projects include the redecking of the St. Georges Bridge and Reedy Point Bridge bearing replacement and steel repairs.

Summarized Federal Financial Data (\$000)		
FY 19 Allocation	18,011	Additional Work Plan funding (\$5,685) was provided.
FY 20 Allocation	22,283	Additional Work Plan funding (\$250) was provided.
FY 21 Allocation	38,335	Additional Work Plan funding (\$20,000) was provided.
FY 22 Allocation	81,414	\$3,200 is BIL funds and additional Work Plan funding (\$59,275) was provided.
FY 23 Allocation	30,894	Additional Work Plan funding (\$8,790) was provided.
FY 24 Budget	20,427	

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

U.S. Army Corps of Engineers Hopper Dredge McFarland

Authority: Section 2047 (a) of the Water Resources and Development Act

Congressional District: DE-AL, NJ-1, NJ-2, NJ-3, PA-1, PA-2, PA-3 & PA-5



Hopper Dredge McFarland

One of four oceangoing hopper dredges owned and operated by the U.S. Army Corps of Engineers as part the Corps' "minimum fleet" for national security and safe navigation, the McFarland is the only dredge in the world with triple capability for direct pump out, bottom discharge and side casting or boom discharge. Designed by the Corps' Marine Design Center, it was built in April 1967. Its name honors the late Arthur McFarland, a Corps of Engineers authority on dredging. The McFarland has a twofold mission: 1) Emergency and national defense dredging — as required and on short notice — anywhere in the world. 2) Planned dredging tests in the Delaware River and Bay.

Dredging is accomplished by a drag arm on each side of the ship with a drag head at each end. As the ship navigates the channel with its dredging pumps engaged, the drag heads are lowered to the channel bottom. Like vacuum cleaners, they pull the dredged material into the ship's hoppers.

The McFarland can then discharge the material any of three ways:

1. As a conventional hopper dredge with bottom discharge into deep water.
2. As a side caster discharging dredged material aside the channel.
3. As a pipeline dredge pumping material into disposal areas or through a direct ship-to-shore pipeline to confined upland areas.

McFarland Operations Manager

David C. Evinger

Phone : (267) 284-6513

E-mail:

David.C.Evinger@usace.army.mil

U.S. Army Corps of Engineers Hopper Dredge McFarland

The Dredge McFarland was fully funded annually through FY 2009 using O&M funding for which the vessel worked. FY 2010 was the first year in Ready Reserve. February 2019, the Dredge was called out for 32 days to Southwest Pass for New Orleans District and completed 70 days in the Delaware River for FY19. McFarland went into the shipyard in April 2019 for repairs and USCG Inspections and completed shipyard repairs in April 2020 and performed the 70 days of readiness exercises for FY20 in the Delaware River. In FY21, the vessel completed her 70 scheduled training days in the Delaware River, and entered the shipyard for over-haul in the final quarter of FY21. The McFarland entered the shipyard for overhaul first quarter of FY22 and due to the COVID restrictions and shipyard delays, she did exercise in FY22. The McFarland over haul tentative date of completion is April 30th, she will then execute her FY23, 70 day scheduled training days in the Delaware River.

The McFarland offers a degree of performance and flexibility unmatched by any other dredge: It can handle a variety of materials including silt, sand, clay, shell and mixtures, thanks to these features:

1. High-powered pumps, large single open-hopper design amidships, and hopper distribution system with retention capability for efficient handling of fine materials
2. It can dredge year-round in any environment, working around the clock while on assignment.
3. Its average removal rate in a typical year (140 days) is 1.5 to 2 million cubic yards — enough dredged material to fill the area of a football field 900 to 1,200 feet high.

The McFarland is operated by a civilian crew of about 44. Many of the members, including all the deck and engine room officers, hold U.S. Coast Guard licenses. Certified as an oceangoing vessel, it undergoes regular annual safety inspections by the U.S. Coast Guard and the American



Dredging is accomplished by a drag arm on each side of the ship with a drag head at each end. As the ship navigates the channel with its dredging pumps engaged, the drag heads are lowered to the channel bottom. Like vacuum cleaners, they pull the dredged material into the ship's hoppers.

THE USACE CIVIL WORKS MISSION

The origins of the U.S. Army Corps of Engineers (USACE) can be traced back to 1775 and the early days of the American Revolution when the Massachusetts Provincial Congress appointed Richard Gridley to the rank of Colonel and Chief Engineer. In 1779, Congress created a separate Corps of Engineers, but the engineers dissipated from military service after the Revolutionary War ended. Congress reestablished the Corps of Engineers within the Army in 1802. At the same time, it established the United States Military Academy at West Point, NY, the country's first, and for 20 years its only, engineering school. With the Army having the Nation's most readily available engineering talent, successive Congresses and Administrations established a role for USACE as an organization to carry out both military construction and works "of a civil nature." In 1824, the Supreme Court ruled that Federal authority covered interstate commerce, including riverine navigation. Shortly thereafter, Congress enacted laws that marked the beginning of USACE's continuous involvement in civil works, with a mission focus on water resources.

Three primary mission areas are the heart of the USACE Civil Works Program.

- The **flood risk management** mission includes both inland and coastal flood risk management and addresses assessment, management, and communication of current and future flood risk in a systematic and comprehensive manner.
- The **navigation** mission focuses on safe, reliable, and efficient waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, navigational access for the Coast Guard, and recreation. Inland (riverine) and deep draft navigation, as well as small boat harbors, are all part of the USACE navigation mission.
- The **ecosystem restoration** mission restores, protects, and manages aquatic ecosystems. Ecosystem restoration projects assist in the recovery of ecosystems that have been degraded, damaged, or destroyed and focuses on establishing the ecological processes necessary to make aquatic ecosystems sustainable, resilient, and healthy under current and future conditions.

Congress has also directed the USACE Civil Works Program to address **recreation, hydropower, and water supply**. USACE engagement in these areas is generally required to be associated in some relevant manner with one or more of the three primary mission areas, e.g., a flood risk management project that also provides recreation benefits to the community.

In addition, the USACE Civil Works Program has a robust mission area in **emergency response**, including providing infrastructure and engineering response services to the Nation.

Flood Risk Management

The USACE flood risk management mission area, including both inland and coastal storm risk management, encompasses ongoing and diverse flood risk management projects, programs, and authorities, and includes engagement and partnerships with other Federal agencies, State and Tribal organizations, and regional and local agencies. USACE activities related to flood risk management include technical services, project planning and construction, dam safety, levee safety, emergency operations, and emergency response.

USACE flood risk management projects utilize structural and nonstructural measures to manage the hazards associated with flooding and reduce the negative consequences of flooding to people and property. Structural and nonstructural flood risk management measures include channel modifications, levees, floodwalls, dams,

diversion culverts, natural and nature-based features, elevating structures in the floodplain, floodproofing, acquisition or relocation, flood warning systems, floodplain management, and increasing road elevations.

USACE has an active role in assessing, managing, and communicating flood risk associated with approximately 14,000 miles of levees in the USACE Levee Safety Program portfolio, and operates and maintains approximately 700 dams through the USACE Dam Safety Program portfolio that provide multiple significant benefits to the Nation. USACE manages these important elements of the Nation's flood risk management infrastructure to ensure its civil works projects deliver their intended benefits.

Navigation

The Federal interest in navigation derives from the Commerce Clause of the Constitution and is limited to the navigable waters of the United States. Navigation was USACE's first civil works mission dating to Federal laws in 1824, which authorized and funded USACE to improve safety on the Ohio and Mississippi Rivers and several ports. The primary objective of the USACE navigation mission is to provide safe, reliable, and efficient waterborne transportation systems, including channels, harbors, and waterways for movement of commerce, national security needs, and recreation.

Today, USACE operates and maintains nearly 12,000 miles of commercial inland and intracoastal shallow draft (9- to 14-foot) navigation channels and waterways, and 13,000 miles of channels greater than 14 feet deep, for a total of 25,000 miles operated and maintained for commerce. USACE also assists in the movement of commerce by operating about 190 lock sites on 41 waterways, dredging more than 200 million cubic yards of construction and maintenance material annually, and maintaining 926 coastal, Great Lakes, and inland harbors.

Navigation studies and projects employ various measures to improve navigation. Port and harbor development typically consists of navigation channels that permit safe passage of vessels and any necessary breakwaters or jetties for protection against hazardous wave conditions. Inland waterway projects include navigation channels and locks. USACE's non-Federal partners or other non-Federal interests are responsible for providing the infrastructure necessary for full harbor and waterway development, including dredging of berthing areas, docks, and landside warehousing and transportation facilities.

Ecosystem Restoration

The USACE Civil Works Program's ecosystem restoration mission area focuses on restoring degraded aquatic ecosystem structures, improving function and dynamic processes to a less degraded and more natural condition, and employing system-wide watershed approaches to problem solving and management for ecosystem restoration projects.

USACE's principal ecosystem restoration focus is on ecological resources and processes that are directly associated with, or directly dependent upon, the hydrological regime of the ecosystem and watershed(s). Ecosystem restoration opportunities that involve modification of hydrology or substrate are likely to be most appropriate for USACE initiatives; USACE is most likely to partner in activities addressing ecosystems associated with wetland, riparian, and aquatic systems.

Not all ecosystem restoration opportunities are appropriate for USACE involvement. Generally, it will not be appropriate for USACE to conduct ecosystem restoration activities on upland, terrestrial sites that are not closely linked to water and related land resources; such activities may best be addressed by other Federal agencies through their missions and programs.

Recreation

USACE is the second largest Federal provider of outdoor recreation, with more than 400 lake and river projects in 43 states. Recreational features can be, and often are, considered as an element to enhance the overall benefit of a USACE project to the public. However, when partnering with USACE in cost-shared civil works studies and projects, recreational features cannot be the primary objective of the project.

Hydroelectric Power

Hydropower is one of the products of developing rivers for multiple purposes. Over the years, Congress has directed USACE to build water resource projects to serve public needs. Where feasible, hydropower has also been included. USACE-operated hydropower plants offer reliable hydroelectric power services at the lowest possible cost as a benefit to the Nation, consistent with sound business principles and in partnership with other Federal and non-Federal hydropower generators, power marketing administrations such as the Tennessee Valley Authority, and hydropower customers. USACE collaborates on its hydropower efforts with the Department of Energy, the Federal Energy Regulatory Commission, and a variety of other Federal, regional, and State agencies and some private Corps-permitted hydropower facilities.

USACE is the largest operator of hydroelectric power plants in the U.S., and one of the largest in the world. The 75 Corps hydropower plants across the country have a total installed capacity of over 20,000 megawatts and produce nearly 100 billion kilowatt-hours a year. At nearly a third of the Nation's total hydropower output, it is enough energy to serve about ten million households.

Water Supply

USACE may participate and cooperate with states and local communities in developing water supplies in connection with water resource improvements when certain conditions of non-Federal participation are met. These water supply features may be included in Federal navigation, flood risk management, or multipurpose projects when they are being considered for construction, operation, maintenance, and/or modification. This USACE involvement policy is based on a recognition that states and local governments, not the Federal Government, have the primary responsibility for the development and management of their water supplies.

Emergency Management

USACE is prepared to respond to natural and man-made disasters as part of the Federal Government's unified national response to disasters and emergencies. As part of its Emergency Management mission, USACE prioritizes saving lives, protecting property, and supporting immediate emergency response needs for USACE, the Department of Defense (DoD), the Federal Emergency Management Agency (FEMA), and the Federal Government. During natural disasters and other emergencies, USACE can respond under its own authorities; as a component of the DoD; and as the designated lead agency in support of FEMA for the Public Works and Engineering Emergency Support Function. Some examples of USACE's primary Emergency Management activities include: preparing for disasters; providing technical assistance related to flood fighting, mapping, and modeling; and inspecting and rehabilitating coastal and inland flood risk management projects that have been damaged or destroyed by floods.

USACE'S ORGANIZATION & OPERATION

While largely composed of civilians, USACE operates as part of the U.S. Army and has both military and civilian leadership that operate in tandem. It is an organization of thousands of dedicated civilian and military employees representing over 100 different professional engineering, scientific, environmental, and managerial specialty areas.

The military leadership operates through a chain of command that provides a direct link within the hierarchy of the U.S. Army, USACE Headquarters, regional Division offices, and local Districts. The Headquarters, Division, and District offices are generally organized in the same way: executive leadership at all levels rests with a military commander supported by a senior civilian program manager or director.

The USACE Commanding General and Chief of Engineers is located at the USACE Headquarters (HQUSACE) in Washington D.C. Reporting to HQUSACE are nine Division offices, also known as Major Subordinate Commands (MSCs). Each Division office oversees multiple District offices within its Division boundaries.

Divisions serve as the regional USACE interface with other regional agencies and organizations within their boundaries. The Districts' Civil Works Programs are responsible for conducting and completing assigned civil works studies, projects, and programs within their respective areas of responsibility. District boundaries are based on watersheds, and thus may not correspond directly with state or other governmental boundaries.

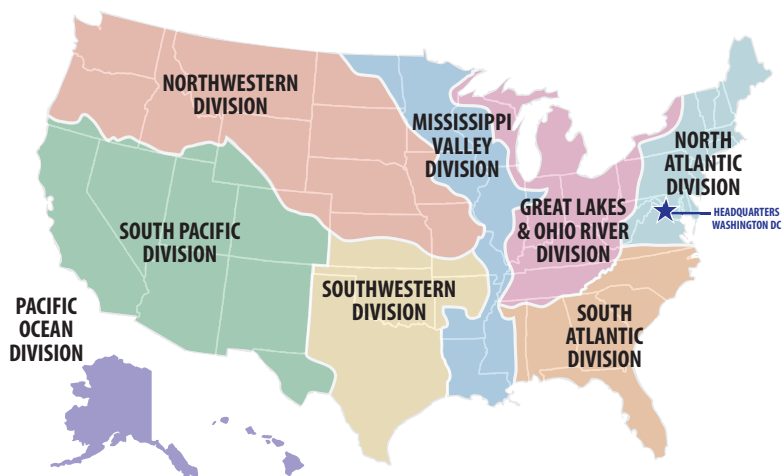
In addition to the nine Division offices, USACE also operates a number of other organizations including specialized labs and research branches such as the Army Geospatial Center (Alexandria, VA), the Engineer Research & Development Center (Vicksburg, MS), the Institute for Water Resources (Alexandria, VA), and the Marine Design Center (Philadelphia, PA).

Need Help Answering Questions?

The online location map for Headquarters, Divisions, Districts, and other organizations includes hyperlinks with specific information about each office. You can also find USACE offices using your favorite search engine.

<https://www.usace.army.mil/Locations>

USACE REGIONS



Office of the Assistant Secretary of the Army for Civil Works

The USACE Commanding General and Chief of Engineers reports to the Assistant Secretary of the Army for Civil Works (ASA(CW)). The ASA(CW) is appointed by the President, confirmed by the U.S. Senate, and establishes policy direction and provides supervision of the Department of the Army functions relating to all aspects of the USACE Civil Works Program. The Office of the ASA(CW) represents USACE's interests to the Administration, and represents the Administration's interests to USACE in:

- The annual legislative program, which usually includes recommended authorizations to conduct studies and construct projects;
- The development of the annual Civil Works Program budget included in the President's Budget submission to Congress, which includes requests to fund selected studies and projects;
- The annual appropriations process, providing operations and maintenance and project-based funding for the Civil Works Program; and
- Providing policy direction and interpreting policy guidance on specific USACE studies, projects, and programs.

U.S. Army Corps of Engineers Headquarters (HQUSACE)

At HQUSACE, the Chief of Engineers is the Commanding General of the Corps of Engineers. Reporting to the Chief of Engineers, the Director of Civil Works is the senior civilian leader overseeing the Civil Works Program, and the Deputy Commanding General for Civil and Emergency Operations is the senior military leader overseeing the Civil Works Program.

HQUSACE is responsible for organizational leadership and management of the programs and resources of the agency. It ensures that policy established by the ASA(CW), including associated USACE interpretive policy and guidance on specific projects and programs, is applied to all phases of project development. HQUSACE staff also monitor and provide guidance to the Divisions and Districts; provide progress reports to the ASA(CW); support and help the ASA(CW) to work with other agencies and organizations; and, together with the ASA(CW), provide requested testimony to Congress in support of the Civil Works Program and the Administration.

Regional Divisions

Division leadership rests with the military Division Commanders, sometimes referred to as Division Engineers. The Divisions are the regional offices responsible for the supervision and management of their subordinate Districts. Divisions are also responsible for efficient use of personnel and funds, ensuring that the Districts' activities are compatible with policy, and monitoring and reporting to HQUSACE on progress. Divisions serve as the regional interface with other regional agencies and organizations within their boundaries.

Local Districts

The Districts are led by military District Commanders, sometimes referred to as District Engineers. The Districts are the local offices responsible for conducting and completing their assigned civil works studies, projects, and programs.

With their focus on implementation, the Districts represent "one door to the Corps." Large regional projects that cross state lines or District boundaries will be managed by a single District and include multidisciplinary team members from multiple USACE offices.

PARTNERING TO DEVELOP A CIVIL WORKS PROJECT

NON-FEDERAL PARTNERS

In most cases, non-Federal interests will be both a partner with, and client to, USACE. We will work together to meet the needs of the local community and Nation.

Throughout this Guide, non-Federal interests that are contractual or cost-sharing partners with USACE to plan and deliver a civil works project may also be referred to as "sponsors."

USACE works hand-in-hand with non-Federal partners throughout the country to investigate water resources and related land problems and opportunities and, if warranted, develop projects that would otherwise be beyond the sole capability of the non-Federal partner(s). Study and project non-Federal partners are States, Tribes, county or local governments, or agencies that are interested in partnering with USACE to participate in civil works projects.

These partnerships are multifaceted, and vary by the scope and scale of the project being developed. The development of a civil works project can be a complex undertaking and requires a successful partnership and a contractual agreement between USACE and the non-Federal study or project partner. In contrast, as a technical services client, a non-Federal partner's engagement with USACE may be limited in scope and duration.

USACE civil works water resources activities are initiated by non-Federal partners or potential non-Federal partners, authorized by Congress, funded by Federal and non-Federal partners, and typically constructed by private contractors supervised by USACE. A civil works project partnership between USACE and a non-Federal partner progresses through four phases: feasibility study (planning); preconstruction, engineering, and design

(PED); construction; and, once project construction is complete, operation, maintenance, repair, replacement, and rehabilitation (OMRR&R). Most civil works projects – from planning through construction – are cost-shared between the Federal Government and a non-Federal partner or partners. With the exception of navigation projects, the non-Federal partner is generally responsible for the OMRR&R phase of the project.

Project Delivery Team

Each individual civil works study or project will have a Project Delivery Team (PDT) led by a project manager. PDTs are typically made up of members from the USACE planning, engineering, construction, operations, and real estate functions that bring needed expertise for that specific study or project. Other USACE personnel from branches and divisions of the District are needed from time-to-time to perform certain functions, like assisting with contracts, scheduling tasks, and funding activities.

Non-Federal partner (also referred to as the non-Federal sponsor) representatives are also members of the PDT. The sponsor is expected to contribute knowledge and perspectives on local conditions, agencies' and public views, the environmental setting, potential solutions to the water resources problem(s), and other information. While some PDT staff changes are expected as a project moves from planning, to PED, to construction, certain sponsor and USACE representatives will remain involved and play a key role throughout the entire project development process.

The PDT, including the non-Federal partner(s), works closely with other Federal, State, Tribal, and local government agencies, businesses, interest groups, homeowners, and other members of the public.

NON-FEDERAL PARTNER (SPONSOR) PROJECT DELIVERY TEAM ROLE

- *Participate as active PDT member(s).*
- *Provide funding and/or in-kind contributions that amount to the statutory share of financial costs of studies and projects.*
- *Meet agreed-upon budget, scope, quality, and schedule reporting requirements.*

Non-Federal Partner Roles and Responsibilities

A partnership combines the resources and expertise of USACE and the non-Federal partner to address water resources problems. Most USACE water resources studies and projects require non-Federal partners to share the cost of the study and the project. Sponsoring a study or project requires a formal, legal agreement that is binding, but not irreversible. Cost-sharing requirements vary by the type of problem (i.e., USACE mission area) as well as the phase of the effort (e.g., planning phase, design, or construction) and are specified by Congress. The local share generally ranges from 25 percent to 50 percent of the cost depending on the project type and the phase of project development, although some elements must be fully funded by the non-Federal partner. Sponsors may also provide negotiated “in-kind contributions” for a portion of the required cost share.

Most study and project partnerships are initiated via a request to the local USACE District office. A project manager in the District will work with an interested non-Federal partner to learn about the water resources problem and make an initial determination whether USACE has a program under which it could be considered. This is often followed by an in-person meeting and site visit to gather more information, and to discuss the details and requirements of a partnership.

If it is determined that the problem is appropriate for USACE involvement, the non-Federal partner and the USACE team will work together to define the actions to be taken, e.g., technical data needed, public involvement, or next steps in the process to advance a civil works study or project.

CONGRESSIONAL COORDINATION: AUTHORIZATION & APPROPRIATIONS

Before any USACE civil works project or study can begin, three steps must take place: 1) Congress establishes the authority for USACE to conduct the study; 2) the study is included in the President's Budget, indicating Administration support for addressing that specific study; and 3) Congress provides Federal appropriations to initiate the study or project. Each are separate actions which must happen sequentially and therefore, can take several years. There are, of course, exceptions – emergency authorities and appropriations by Congress following a large scale national disaster can enable USACE and non-Federal partners to move forward on studies or projects expeditiously.

Congress provides permission to undertake a study by providing “study authority” to USACE to evaluate the feasibility of a recommended solution (project) for a specific water resources problem. The local District can identify if there may be an existing study authority available to meet specific water resources needs. New study authorizations can be provided by a House of Representatives or Senate committee resolution, in the periodic USACE authorization laws known as “Water Resources Development Acts” (WRDAs), or, less commonly, via another legislative vehicle.

STUDY AUTHORITIES

There are many existing study authorities that cover much of the Nation's water resources needs. Check with your local District for assistance to determine what authority may be already available in advance of outreach to Congressional interests.

Congress also provides permission for USACE to undertake construction of a water resources project by providing “project authority” for a specific water resources project. Generally, Congress will not provide project authority until a completed study results in a recommendation to Congress of a water resources project, conveyed via a Report of the Chief of Engineers (Chief's Report) or Report of the Director of Civil Works (Director's Report). Without project authority, USACE cannot invest Federal dollars to construct a water resources project, even if it has been studied by USACE and recommended for authorization.

There are also several standing authorities or “continuing authorities” that cover both the study and construction authorities for certain types of water resources development projects under a total project cost threshold.

The recommended first step for any community considering a partnership on a USACE civil works project is to contact the local District office to

determine whether there is already a study or project authority associated with the problem, and identify the opportunities that may exist to address the issue.

For those projects that do not fall either under an existing study or project authority or a standing authority, such as the Continuing Authorities Program (CAP) or the Tribal Partnership Program (TPP), potential non-Federal project or study partners may submit their requests for study and project authorization to the Corps for inclusion in the Annual Report to Congress on Future Water Resources Development (see Section 7001 of WRRDA 2014, as amended). Proposals are included in the report if they meet five criteria outlined by Congress. Since this process has begun in 2015, Congress has used the Annual Report to Congress to identify areas where new study and project authorities are required.

Budgetary Process

Once authorized, a study or project must have Federal funding before it can begin. Federal funding from the annual USACE appropriations will not be available for a specific study or project until the authorized study is

included in either the President's Budget, which is submitted to Congress each February, or the Administration's work plan, which is submitted by the Office of Management and Budget.

The President's Budget categorizes requested funds by the phase of the civil works project. Funds for all pre-construction activities, including feasibility studies and preconstruction, engineering and design (PED) up to the award of the first construction contract are "Investigation" funds. "Construction General" funds are then provided to complete engineering and design after award of the first construction contract and cover all remaining project construction and implementation requirements. "Operations and Maintenance" (O&M) funds are allocated for the operations and maintenance of all USACE-owned and operated projects, along with the Inspection of Completed Works program.

USACE is always looking at least two fiscal years ahead in the budgetary process. Therefore, a newly authorized study may not appear in the President's Budget in the Investigations category for at least two years. Similarly, a newly authorized project may take years before it is included in the Construction General budget.

Federal Funding: Annual Appropriations Processes

Congress provides funding for USACE civil works studies and projects through the annual Energy and Water Development Appropriations Act. This Act is one of several appropriations bills that Congress passes each year to fund the operations of the Federal Government. Other agencies are also funded by the Energy and Water Development Appropriations Act, including the Department of Energy, Department of Interior, and other agencies and commissions. Congress typically describes the studies and projects they want USACE to work on in the report attached to the appropriations bill, and requires USACE to develop a work plan that describes how the Federal funding will be allocated to specific projects and programs.

THE FEASIBILITY STUDY

Often referred to as the first step toward construction of a USACE civil works water resources development project, the feasibility study is the disciplined process under which USACE planners work with non-Federal study sponsors and multi-disciplinary study teams to identify water resources problems, formulate and evaluate solutions, resolve conflicting interests, and prepare recommendations. A feasibility study is used to establish the Federal interest, engineering feasibility, economic justification, and environmental acceptability of a recommended water resources project. A feasibility study determines if Congressional authorization and USACE implementation of a specific civil works project are warranted.

Feasibility studies are generally cost-shared equally between USACE and a non-Federal partner, and reflect the shared responsibility for management and protection of the Nation's water resources. The non-Federal share may be in the form of 100 percent work-in-kind in lieu of a partial or complete cash contribution.

The feasibility phase concludes with either the finding of no Federal interest or the recommendation for the authorization of a specific water resources project. The analyses that support the recommendation are documented in a decision document. The final feasibility report will include documentation required by the National Environmental Policy Act (NEPA) and other applicable laws and guidance. The recommended project and the technical and engineering appendices in the decision document will lay the groundwork for the preconstruction, engineering and design (PED) phase of the project.

The recommendation to Congress for authorization of a water resources project will be made by the Chief of Engineers in the form of a "Chief's Report." After the Chief's Report is signed, the ASA(CW) will officially transmit the Chief's Report to Congress along with the views of the Administration.

Note that there are other USACE post-authorization decision documents that follow a similar process to the feasibility study process. For example, General Reevaluation Reports are developed to affirm, reformulate, or modify a previously completed feasibility study and the resulting recommended water resources project, or portions of the project. Although these reports are not technically "feasibility studies," the process they follow is extremely similar.

Non-Federal partners are also authorized to independently undertake feasibility studies of proposed projects for submission directly to the ASA(CW) and transmission to Congress. The Secretary of the Army reviews the feasibility study and the process under which the study was developed to determine the following: (1) whether the study complies with Federal laws and regulations, and (2) whether the project is feasible. The Secretary of the Army can also provide recommendations concerning the plan or design of the project, as well as set additional conditions that will be required for construction of the project. The local USACE District can provide valuable advice for a non-Federal partner interested in this path to a civil works project.

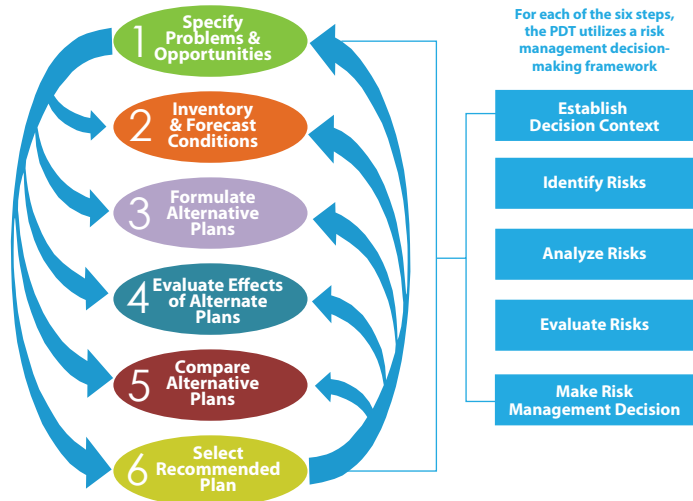
Planning Process

USACE follows the six-step planning process defined in the *Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies* developed in the 1980s to guide the formulation and evaluation of water resources projects. This process is a structured approach to problem solving which provides a rational framework for sound decision making.

The six-step process is used for all USACE feasibility studies, regardless of scale. This process is typically presented and discussed in a sequential manner for ease of understanding, but usually requires multiple, and sometimes

THE SIX STEP PLANNING PROCESS

The USACE Planning process is both sequential (left side of the diagram) and iterative (right side). Past steps can be revisited as more information is developed and more decisions are made during the study.



concurrent, iterations to formulate efficient, effective, complete, and acceptable plans, and to identify a single recommended plan.

USACE applies the six-step planning process within a risk management decision-making framework, so teams are better able to identify and communicate the way they use information and reduce uncertainty to inform decisions through iterations of the planning process. The approaches and techniques of planning provide USACE and its non-Federal partners with tools to efficiently reduce uncertainty by gathering the evidence needed to make the next planning decision and to manage the risks that result from doing so without more complete information.

Initiating a Planning Study

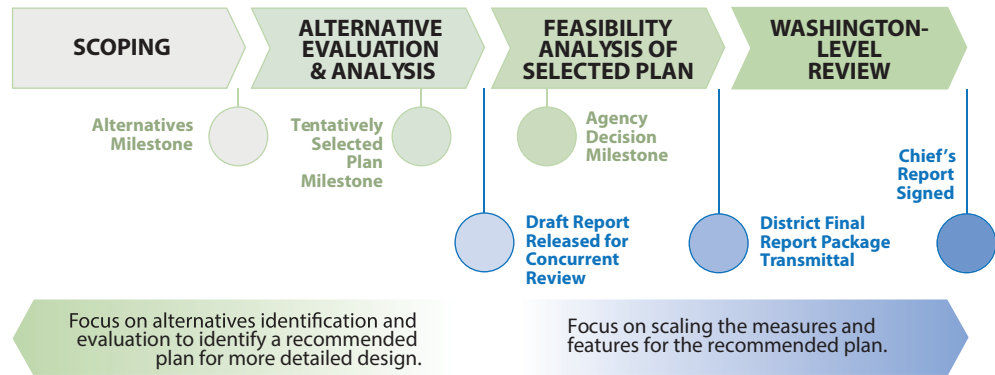
No work may begin on a study until execution of a cost-sharing agreement between USACE and the non-Federal sponsor occurs. The USACE model feasibility cost-sharing agreements (FCSAs) for projects that will require specific authorization are based on completion of the study within three years, using no more than a total combined funding and in-kind contributions amount of \$3 million for both the Federal and non-Federal share. The three-year timeline begins with the signing of the FCSA and ends with a signed decision document (such as a Chief's Report) or the termination of the study. Consideration of exemptions to these time and cost limits is part of the USACE feasibility decision-making process in which risk and uncertainty, scope, schedule, and funding. As a general rule, exemptions should only be required for the most complex studies. The three-year timeframe and funding limit for a feasibility study do not apply to studies conducted under the Continuing Authorities Program.

Once the FCSA has been signed, the PDT determines the initial framework for how decisions will be made and communicated, how risks will be managed, and what level of detail of information is needed to support the decision-making process. Adjustments may be made to the scope, schedule, and budget as a result of early PDT interaction, leading to agreement among principal parties on realistic expectations about study outputs, resource commitments, timeframe, and affirmation that the study can be completed within three years and for

SMART PLANNING

*To emphasize the need to make risk-informed decisions throughout the planning process, USACE implemented **SMART (Specific, Measurable, Attainable, Risk-Informed, Timely) Planning** in 2012 to conduct civil works feasibility studies for water resources development projects. The SMART Planning process relies on a structured multi-step risk-informed decision-making process, and is intended to improve and streamline feasibility studies (and other studies), reduce cost, and expedite completion.*

SMART FEASIBILITY STUDY PROCESS — KEY DECISION & PRODUCT MILESTONES



Note: The duration of each phase of a feasibility study is unique for each study. Not to scale.

no more than \$3 million. Throughout the study, the PDT will communicate with its Division office and HQUSACE if adjustments are needed that impact schedule and funding.

The USACE project manager works with the non-Federal partner and other PDT members to develop a mutually acceptable project management plan that outlines tasks, costs, schedule, and responsibilities (the what, when, and how). The resulting project management plan is signed by the study sponsor and USACE representatives and serves as a road map for the conduct of a study, and, potentially, for the related design and construction of a project.

The nature of planning is such that it is accepted that circumstances change based on new information, and decisions made leading up to that point in the study may need to be revisited. It is expected that the PDT and sponsor may identify changes to study scope, schedule, and budget during scoping and other stages of the study. Therefore, the project management plan is regularly updated and maintained throughout the study.

From Scoping to Washington-level Review

During the first months of a study, the PDT is expected to complete at least one iteration of the six-step planning process to formulate and evaluate an array of distinctly different alternative plans, and a rough order of magnitude of costs, benefits, and environmental impacts using existing and available information. The PDT coordinates with representatives from its Division and HQUSACE to affirm that there is Federal interest in developing a recommendation to address the water resources problem, and a representative array of distinctly different solutions has been formulated and will be evaluated.

Early coordination with Federal and State resource agencies, such as the National Marine Fisheries Service and / or U.S. Fish and Wildlife Service, will inform the study scope and path forward, as well as jump start Fish and Wildlife Coordination Act activities, Endangered Species Act (ESA) compliance, and other environmental and cultural resources activities. Within 90 days of study initiation, the PDT will convene an interagency meeting of all Federal, Tribal, and State agencies that may be required by law to conduct or issue a review, analysis, or opinion on, or to make a determination concerning a permit or license for the study. If the study will require an Environmental Impact Statement (EIS), the PDT's letter inviting the relevant agencies to the meeting will request that they serve as either a cooperating agency or a participating agency, if applicable.

The PDT will also hold a public scoping meeting early in the process, providing another opportunity to define the scope of the study and consider external views on the water resources problem(s).

After a focused array of alternatives is identified, the PDT continues to use iterations of the risk-informed six-step planning process, and evaluates and compares the array of distinct strategies for achieving the water resources objectives in the study area against the forecasted "future without project" condition. The result is determination

of Federal interest in recommending a water resources project and the identification of a “Tentatively Selected Plan” (TSP), which may be either the “national economic development” (NED) or “national ecosystem restoration” (NER) plan identified as reasonably maximizing the economic or ecosystem restoration benefits, respectively, of the project compared to its costs. At this point, a “Locally Preferred Plan” (LPP) may also be identified. An LPP is a plan that is preferred by the non-Federal sponsor over the NED or NER plan, and is sometimes recommended for project authorization instead of the NED or NER plan, with caveats. The analysis to determine and describe the TSP is documented in the draft feasibility report. The PDT usually takes 12 to 18 months to gather the necessary information, conduct required analyses, and develop the draft feasibility report.

The draft feasibility report is a pre-decisional document. The plan presented in the study is, at this point, the tentatively selected plan; it is not yet the recommended plan. The draft feasibility report documents the process to date, but the concurrent public comment, technical review, and policy review of the draft feasibility report may result in a change to the TSP. In addition, there are technical and policy elements that are required for the final feasibility report that will not yet be completed when the draft report is released for review.

The PDT considers all public, technical, and policy comments on the draft report as it moves forward to complete additional design and analyses of the TSP to reduce risk and uncertainty with cost data, engineering effectiveness, environmental impacts, and economic benefits. The PDT will also analyze design requirements to assure functionality of the recommended project and life safety.

There are several procedural and policy requirements that must be met by the PDT during the development of the final feasibility report and NEPA documentation. During this period, USACE and the sponsor continue to document environmental compliance activities under relevant laws and policies including NEPA, the National Historic Preservation Act, the Fish and Wildlife Coordination Act, the ESA, the Clean Water Act, the Clean Air Act, and others.

The District Commander’s signed feasibility report represents the District’s response to the study authority with the recommendation of a project to address the water resources problem. Once the District Commander signs the recommendations in the final feasibility report, the District will forward the final report, final NEPA document, and related materials to the applicable Division and/or HQUSACE for final USACE policy review, final NEPA review, and State & Agency review (for studies that lead to a Chief’s Report).

The Chief’s Report

The recommendation to Congress for authorization of a water resources project will be made by the Chief of Engineers in the form of a “Chief’s Report.” If a project has already received congressional authorization pending identification of an acceptable solution during the feasibility phase, the final recommendation may be made by the Director of Civil Works in a “Director’s Report,” depending on the project and study.

The Chief’s Report provides Congress with a succinct recommendation of a project for authorization and assurance that the process to develop the recommendation is consistent with Administration policy and all applicable laws. After the Chief’s Report is signed, the ASA(CW) will officially transmit the Chief’s Report to Congress, along with the views of the Administration.

PRECONSTRUCTION, ENGINEERING & DESIGN (PED)

During preconstruction, engineering and design (PED), USACE and the non-Federal partner(s) complete the detailed engineering, technical studies, and design needed to begin construction of the project as recommended in the planning decision document, including engineering design documentation and the plans and specifications ("Plans and Specs") of the first significant project construction contract.

PED may begin after the District Engineer's transmittal of the final feasibility report, once PED funds have been appropriated by Congress and a Design Agreement is executed with the non-Federal sponsor. The costs of PED activities are usually shared using the same percentages as construction of the project based on the mission area (e.g., flood risk management, navigation, ecosystem restoration). This is different than the typical 50%-50% cost-sharing of feasibility studies.

PED activities usually require several years to complete, and are a critical engineering component to prepare for project construction. PED activities continue under the original study authorization and may begin before congressional project authorization and construction funding of the project are received. However, construction may not begin until the project has been authorized and construction funding has been appropriated.

USACE and its non-Federal partners use the more detailed engineering design documentation developed during PED as a resource to draft and negotiate the Project Partnership Agreement (PPA) for project construction.

PROJECT CONSTRUCTION

USACE must be congressionally authorized to participate in the construction or modification of a water resources project. The authorization can be project-specific, programmatic, or general. While most USACE project authorizations are included in Water Resources Development Acts, some construction projects are undertaken under other authorities. Your local District can help determine if there is existing authority for the construction or modification of a water resources project.

USACE's ability to act on an authorization also requires congressional funding. Once a project is authorized, appropriations are sought through annual Energy and Water Development Appropriations Acts. Once a project has secured Federal funding, the non-Federal sponsor and USACE can sign a Project Partnership Agreement (PPA). The PPA outlines Federal and non-Federal responsibilities for construction and for OMRR&R of the project once construction is complete.

After the PPA is signed, the non-Federal partner can begin acquisition of the real estate required for project implementation, as established during the feasibility study. Non-Federal partners are responsible for providing all lands, easements, rights-of-way, relocations, and disposal/borrow areas (LERRD) required for construction, operation, and maintenance of the project, and may receive credit towards cost-share responsibilities for costs associated with acquiring the LERRD necessary to implement a project. Typically, the construction is then performed by private contractors with oversight by USACE construction staff.

After the project has completed its final construction contract, a final inspection will be conducted by USACE to ensure that the project has been completed as designed. If the project will be operated and maintained by the non-Federal partner, USACE transfers the project to the sponsor along with an operation and maintenance manual.

PROJECT OPERATION & MAINTENANCE

Project operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) requirements are initially identified during the feasibility phase and considered in the economic analysis when weighing project costs and benefits. Responsibility for OMRR&R is described in the feasibility report and is outlined in the construction PPA. Responsibilities for OMRR&R are based on the project purpose. If the non-Federal partner will eventually operate and maintain the project, USACE will prepare an Operation and Maintenance manual. During the lifetime of the project, the non-Federal partner completes operations reports on a regular basis, and USACE will periodically inspect the project through the Inspection of Completed Works program.

In most cases, costs for OMRR&R for newly completed projects are 100 percent sponsor costs. Exceptions to this are for commercial navigation projects, where USACE usually pays 100 percent of OMRR&R costs for projects with depths to 50 feet, and 50 percent of increased OMRR&R costs for depths in excess of 50 feet.

TRIBAL PARTNERSHIP PROGRAM

Most Districts have a Tribal Liaison. Contact a local District office for additional assistance or use the following link: [Tribal Nations Community of Practice](#)

USACE is authorized to study and determine the feasibility of carrying out projects that will substantially benefit Indian Nations. The Tribal Partnership Program (TPP) provides USACE with broad authorities to assist with water resources projects that address economic, environmental, and cultural resource needs through studies including flood risk management, environmental restoration, and protection and preservation of natural and cultural resources. Other opportunities for TPP involvement include watershed assessments and planning activities as well as other projects as the Secretary of the Army, in cooperation with Indian Tribes and the heads

of other Federal agencies, determines to be appropriate. The TPP also includes an "Ability to Pay" provision for studies and projects carried out under its authorities.

Upon request, USACE will cooperate with Tribes to study water resources problems primarily located within Tribal lands. Because the TPP is a programmatic authority, specific Congressional authorization is not needed to initiate a feasibility study. After a Tribe requests a study, a 50 percent Federal / 50 percent Tribal cost-shared feasibility study is initiated. The Tribal cost share may be in the form of 100 percent work-in-kind. During the feasibility study, potential solutions are identified, the costs, benefits, and environmental impacts are analyzed, and a recommended project is developed.

If the Federal cost share of the recommended project is below \$12,500,000, USACE can carry out the project design and implementation without specific Congressional authorization. If the Federal cost share is above \$12,500,000, Congressional authorization is required. Depending on the type of project to be developed, different cost-sharing responsibilities for the Tribe and Federal Government will apply. A cost-share waiver up to \$482,000 may be applied to any TPP project that recommends project implementation (i.e., not a watershed study).

CONTINUING AUTHORITIES PROGRAM

In addition to project-specific authorities and the Tribal Partnership Program, there are nine additional “continuing authorities” to plan, design, and construct water resources projects under a certain cost threshold. For many communities, if a water resource problem can be addressed by an authority in the Continuing Authorities Program (CAP), the entire project may be implemented more expeditiously. Studies conducted under CAP authorities are approved at the Division level. CAP authorities and cost limits, however, are generally insufficient for particularly large or complex water resources problems.

Local governments and agencies seeking assistance can request that USACE investigate potential water resource issues that may align with a particular CAP authority. USACE will review a non-Federal partner’s request to determine if it is aligned with an existing authority or whether the request would require additional Congressional authorization. Following an initial site visit to inform the determination if a project is potentially eligible to be included as a CAP project, the USACE Headquarters CAP manager will determine if and when the proposed new CAP project can be funded and started. Once approved, the District requests funds (up to \$100,000 initially) to prepare a Federal Interest Determination (FID) on the advisability of continuing work consistent with the principles, priorities, and constraints of the specific CAP authority, and initiates the feasibility phase, which is then followed by a design and implementation phase. The first \$100,000 for a CAP feasibility study is entirely federally funded, and then cost-shared above that amount for costs to complete the study.

Both phases of a CAP project are cost-shared between the Federal Government and the non-Federal partner. Certain territories of the U.S., including Puerto Rico and the U.S. Virgin Islands, as well as Tribes, are eligible for a reduction of the non-Federal cost-share requirement.

Timelines vary, but the feasibility phase of a CAP project is typically completed within two years. Cost and duration of the design and implementation phase of a CAP project will vary based on the size and complexity of the project.

CAP authorities are described in the following table.

PARTNERING WITH THE U.S. ARMY CORPS OF ENGINEERS
CONTINUING AUTHORITIES PROGRAM

CONTINUING AUTHORITIES PROGRAM

SECTION	AUTHORITY	AUTHORITY PURPOSE	FEASIBILITY COST SHARE DIVISION (Fed/non-Fed)	GENERALIZED DESIGN AND IMPLEMENTATION COST SHARE DIVISION (Fed/non-Fed) ¹	MAXIMUM FEDERAL EXPENDITURE PER PROJECT ³	NATIONAL PROGRAM LIMIT (Per FY) ³
14	Emergency Stream Bank and Shoreline Protection (Flood Control Act of 1946, as amended, or 33 USC 701r)	Emergency stream bank stabilization and shoreline protection for public works and non-profit public services in imminent danger of failing (e.g., roads, bridges, hospitals, schools, treatment plants). Private properties/facilities not eligible.	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35 ²	\$10,000,000	\$25,000,000
103	Beach Erosion and Hurricane and Storm Damage Reduction (Rivers and Harbors Act of 1962, as amended, or 33 USC 426g)	Protection of utilities, roadways and other public infrastructure, private properties, and facilities against damages caused by storm-driven waves and currents (e.g., construction of revetments, groins, and jetties; may also include periodic sand replenishment).	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35	\$10,000,000	\$37,500,000
107	Navigation Improvements (Rivers and Harbors Act of 1960, as amended, or 33 USC 577(a))	Plan, design, and construct small projects for commercial navigation improvements to ensure safe and efficient use of navigable waterways (e.g., channel dredging, widening of turning basins, breakwaters, jetties).	1st \$100k Fed; 50/50 cost share for any remaining costs	Varies, based on depth	\$10,000,000	\$62,500,000
111	Shore Damage Prevention or Mitigation of Damages Caused by Federal Navigation Projects (Rivers and Harbors Act of 1968, as amended, or 33 USC 426i)	Investigate and construct projects for the prevention or mitigation of shoreline erosion damages to public and privately owned shores along the coastlines when the damages are a result of a Federal navigation project.	Shared in same proportion as the original project causing damage	Shared in same proportion as the original project causing damage	\$12,500,000	N/A
204	Beneficial Uses of Dredged Material (Water Resources Development Act of 1992, as amended, or 33 USC 2326(g))	Use Regional Sediment Management concepts, restore, protect or create aquatic and wetland habitats in connection with construction maintenance dredging of an authorized Federal navigation project. Base disposal plan is least costly for typical disposal of dredged material.	100/0	100/0 for base disposal plan 65/35 for costs beyond base disposal	\$10,000,000	\$62,500,000
205	Flood Risk Management (Flood Control Act of 1948, as amended, or 33 USC 701s)	Local protection from flooding by non-structural measures (e.g., flood warning systems or flood proofing) or by structural flood risk management features (e.g., levees, diversion channels, or impoundments).	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35 ²	\$10,000,000	\$68,500,000
206	Aquatic Ecosystem Restoration (Water Resources Development Act of 1996, as amended, or 33 USC 2330)	Restore degraded aquatic ecosystems and wetland habitats to improve the quality of the environment.	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35	\$10,000,000	\$62,500,000
208	Snagging and Clearing for Flood Damage Reduction (Flood Control Act of 1954, as amended, or 33 USC 701g)	Channel clearing and excavation, with limited embankment construction by use of materials from the clearing operation only.	1st \$100k Fed; 50/50 cost share for any remaining costs	65/35 ²	\$500,000	\$7,500,000
1135	Project Modifications for Improvement of the Environment (Water Resources Development Act of 1986, as amended, or 33 USC 2309a)	Modifications of USACE-constructed water resources projects to improve the quality of the environment. Also, restoration projects at locations where an existing USACE project contributed to the degradation.	1st \$100k Fed; 50/50 cost share for any remaining costs	75/25	\$10,000,000	\$50,000,000

¹ For structural flood risk management purpose, non-Federal share is 35% up to 50% (based on cost of LERRDs), plus 5% must be in cash

² For non-structural flood risk management purpose, non-Federal share is limited to 35% with no cash requirements

³ Per project limits and national program limits are subject to change; program funds' availability are subject to annual appropriations

TECHNICAL ASSISTANCE PARTNERSHIP OPPORTUNITIES

Floodplain Management Services

The Floodplain Management Services (FPMS) program (authorized by Section 206 of the 1960 Flood Control Act, as amended) provides information on flood hazards to local interests, State agencies, Tribes, and other Federal agencies to guide floodplain development. The FPMS program addresses the needs of people who live and work in floodplains by helping them better understand flood hazards and the actions they can take to reduce property damage and prevent the loss of life caused by flooding. The program's objective is to foster public understanding of the options available to address flood hazards and promote prudent use and management of the Nation's floodplains.

FPMS program services are provided to State, Tribal, regional, and local governments at no cost, within program funding limits. When funding is available, USACE will work with the requesting organization to develop a scope of work and assemble the appropriate study team for the effort being requested. FPMS program services for other Federal agencies and private persons are provided on a cost-recovery or fee basis. USACE may also accept voluntarily contributed funds to expand the scope or accelerate the provision of services requested. All requestors are asked to furnish available field survey data, maps, historical flood information, etc. to help reduce the cost of services. Requests for assistance under the FPMS program should be submitted by an appropriate representative of a non-Federal partner to the local District and include the location and nature of the problem to be investigated.

The FPMS program provides a full range of information, technical services, and planning guidance and assistance on floods and floodplain issues that is needed to support effective floodplain management. Under the FPMS program, USACE can compile and disseminate information on floods and flood damages, including identification of areas subject to inundation by floods of various magnitudes and frequencies, and general criteria for guidance of Federal and non-Federal interests and agencies in the use of floodplain areas. FPMS activities include advice to other Federal agencies and local interests for their use in planning to address local flood hazards. Examples of FPMS technical services include the development or interpretation of site-specific data on obstructions to flood flows, flood formation, and timing; flood depths or stages; floodwater velocities; and the extent, duration, and frequency of flooding. USACE may also provide information on natural and cultural floodplain resources of note, and flood loss potentials before and after the application of floodplain management measures.

On a larger scale, FPMS general planning guidance provides assistance in the form of "special studies" on all aspects of floodplain management planning including the possible impacts of off-floodplain land use changes on the physical, socio-economic, and environmental conditions of the floodplain. Special studies can range from helping a community identify present or future floodplain areas and related problems, to a broad assessment of which various remedial measures may be effectively used. Some of the most common types of special studies include: floodplain delineation/flood hazard evaluation studies; dam break analysis studies; hurricane evacuation studies; flood warning/preparedness studies; regulatory floodway studies; comprehensive floodplain management studies; flood damage reduction studies; urbanization impact studies; stormwater management studies; flood proofing studies; and inventories of flood-prone structures.

Through the FPMS program, USACE can also prepare guides and pamphlets to disseminate to States, Tribes, local governments, Federal agencies, and private citizens to convey the nature of flood hazards and to foster public understanding of floodplain data and available options including flood proofing techniques, floodplain regulations, floodplain occupancy, natural floodplain resources, and other related aspects of floodplain management.

Planning Assistance to States

The Planning Assistance to States (PAS) program (authorized by Section 22 of WRDA 1974, as amended) offers comprehensive planning and technical assistance. Any State, or group of States, may partner with USACE under the PAS program. Federally-recognized Tribes, U.S. Territories, non-profits or other non-Federal interests working with a State, and regional coalitions of governmental entities and institutions of higher education are also eligible non-Federal partners in the PAS program. In addition, qualifying federally-recognized Tribes, U.S. Territories, and Commonwealths are eligible to apply a waiver to part or all of the cost of a PAS study. Requests for assistance under the PAS program should be submitted by an appropriate representative of a non-Federal partner to the local District and include the location and nature of the problem to be investigated.

Typical PAS studies are only conducted at a planning level of detail and do not include detailed design for project construction. Implementation of the plan is the responsibility of the State, Tribe, or Territory.

COMPREHENSIVE WATER RESOURCES PLANNING

Comprehensive water resources plans include planning for the development, utilization, and conservation of the water and related resources of drainage basins, watersheds, or ecosystems located within the boundaries of a state, including plans to comprehensively address water resource challenges such as the State Water Plan. Comprehensive plans can extend across state boundaries, provided both states agree.

Typical water resources problems and opportunities included in comprehensive state water resource planning efforts include flood risk management, water supply, water conservation, environmental restoration, water quality, hydropower, erosion, navigation, coastal zone protection, fish and wildlife, cultural resources, and environmental resources. These PAS water resources planning efforts do not result in a recommendation for a USACE civil works project.

Comprehensive planning activities through the PAS program are cost-shared (50% USACE, 50% non-Federal partner); the partner may provide voluntarily contributed funds in excess of its cost share. The non-Federal cost share for preparation of a state comprehensive water resources plan may be provided by funds or through the provision of services, materials, supplies, or other in-kind contributions.

TECHNICAL ASSISTANCE SUPPORTING STATE WATER RESOURCES MANAGEMENT PLANS

Technical assistance provided through the PAS program also includes support of planning efforts related to the management of state water resources, provision and integration of hydrologic, economic, or environmental data, and analysis in support of the state's water resources management and related land resources development plans. These plans are often identified in the State Water Plan or other water resources management related planning documents, such as state hazard mitigation, preparedness, response, and recovery plans and plans associated with changing hydrologic conditions, climate change, long-term sustainability, and resilience. This technical assistance cannot include the preparation of site-specific designs or construction.

Technical assistance activities through the PAS program are only conducted at a planning level of detail and are cost-shared (50% USACE, 50% non-Federal partner). The non-Federal partner may provide voluntarily contributed funds in excess of its cost share. The cost share for technical assistance must be provided by funds, not in-kind contributions. Some financial credit is available for qualifying federally-recognized Tribes and U.S. Territories.

Interagency and International Services

Through the Interagency and International Services (IIS) program, USACE can provide technical assistance to non-Department of Defense Federal agencies, State and local governments, Tribal nations, private U.S. firms, international organizations, and foreign governments. Through the IIS program, USACE may provide engineering and construction services, environmental restoration and management services, research and development assistance, management of water and land-related natural resources, relief and recovery work, and other management and technical services. Most IIS work is funded on a reimbursable basis.

Teaming to Address State Flood Risk Priorities: Silver Jackets

The Silver Jackets program is an approach facilitated by USACE to bring together multiple State, Federal, and sometimes Tribal and local agencies to learn from one another and apply their knowledge to reduce the risk of flooding and other natural disasters in the Nation.

Silver Jackets teams are state-based and state-led, with organizational and technical support provided by USACE flood risk managers or planners. Although each State's Silver Jackets team is unique, common agency participants include State agencies with mission areas of hazard mitigation, emergency management, floodplain management, and natural resources management or conservation. Federal participation typically includes, but is not limited to, USACE, the Federal Emergency Management Agency (FEMA), the National Weather Service, the U.S. Geological Survey, the U.S. Environmental Protection Agency, and the U.S. Department of Housing and Urban Development. USACE Silver Jackets coordinators can assist State and Federal agencies interested in expanding their Silver Jackets teams. Resources for activities associated with the Silver Jackets team come through the individual programs of participating agencies within the constraints of available budgets.

Silver Jackets teams work together to:

- Facilitate strategic life-cycle flood risk management.
- Create or supplement a continuous mechanism to collaboratively solve state-prioritized issues and implement or recommend those solutions.
- Improve processes, identify and resolve gaps and counteractive programs.
- Leverage and optimize resources.
- Improve and increase flood risk communication and present a unified interagency message.
- Establish close relationships to facilitate integrated post-disaster recovery solutions.

The relationships and teamwork established in a Silver Jackets team often pay dividends, benefitting response and recovery efforts when flooding or large-scale events do occur.

PARTNERING IN TIMES OF NEED: EMERGENCY RESPONSE AND EMERGENCY MANAGEMENT

Each year, USACE responds to domestic and world-wide disasters. In the event of a natural or man-made disaster, USACE is prepared and ready to respond as part of the Federal Government's unified national response to disasters and emergencies. In any disaster, USACE's top priorities are to save lives and protect property, and to support the Federal Government's immediate emergency response priorities.

USACE has many subject matter experts that support the Department of Defense and other Federal agencies in response to disasters around the world in areas such as emergency management, flood risk management, landslides, construction, urban search and rescue, oceanography, hydrology and hydraulics, and engineering.

FEMA Support

Domestically, USACE supports the Department of Homeland Security and the Federal Emergency Management Agency (FEMA), the Nation's primary disaster response agency. USACE assists FEMA by coordinating Federal public works and engineering-related support, as well as providing technical assistance, engineering expertise, and construction management to prevent, prepare for, respond to, and/or recover from domestic incidents or disasters.

Under the National Response Framework, USACE is assigned as the primary agency for the Public Works and Engineering Emergency Support Function, which establishes responsibilities and expertise beyond its three primary civil works mission areas. USACE Emergency Operations responsibilities include conducting needs assessments, debris management, providing emergency power to public facilities, emergency infrastructure assessments, temporary housing, temporary roofing, critical public facility restorations, demolition or structural stabilization, and technical assistance.

Public Law 84-99 and the Flood Control and Coastal Emergencies Act

During natural disasters and other emergencies, USACE can respond under its own emergency management authority, Public Law 84-99 (PL 84-99) authorized by the Flood Control and Coastal Emergency Act (33 U.S.C. 701n) (69 Stat. 186)). Under PL 84-99, USACE can undertake a variety of activities. Some activities require a Project Cooperation Agreement (PCA) between USACE and non-Federal partners:

- Disaster Preparedness, ensuring that USACE activities are available to respond to a broad range of disasters and emergencies, including coordination, planning, training, and exercises with key local, State, Tribal, and Federal stakeholders/partners under USACE statutory authorities and in support of FEMA. For example, disaster preparedness authorities provide for the purchase and stockpiling of critical supplies and equipment for flood fighting efforts. Levees and other flood risk management projects are inspected to identify issues that may keep the project from providing reliable design-level flood risk management during the next flood or coastal storm.
- Advance Measures Assistance may be provided in order to prevent or reduce damages when there is an imminent threat of unusual flooding. Technical assistance may be provided when there is a significant potential that an imminent threat of unusual flooding will develop, and is provided to Tribes, States, and local communities to help them prepare for the threat. Advance Measures projects are temporary projects that prevent or reduce impacts of floods that pose a significant threat to life and/or improved property, and are beyond the capability of Tribal, State, or local interests to perform in a timely manner. Advance Measures projects must be engineeringly feasible and capable of being constructed in time to meet the anticipated threat.

- Emergency Operations during flood and storm-related disasters include activating USACE Emergency Operations Centers to command and control the operation, providing liaisons to FEMA, States, Tribes, and local governments, providing technical assistance and direct assistance for flood fighting, and conducting rescue operations. Technical assistance includes advice on flood fighting methods and techniques, inundation mapping, flood modeling, and historical data. Direct assistance includes the provision of sandbags, pumps, and other types of flood fight materials, and emergency contracting to raise and stabilize threatened flood risk management projects.
- The Rehabilitation Program provides for the inspection and rehabilitation of Federal and non-Federal flood risk management projects damaged or destroyed by floods and coastal storms. There are approximately 9,500 miles of levees in the Rehabilitation Program, and all projects must meet certain standards in order to be eligible for rehabilitation assistance. Rehabilitation of eligible non-Federal flood risk management projects is cost-shared 80% Federal 20% local funding; rehabilitation of eligible Federal projects may be 100% percent federally funded.
- The Restoration Program provides for the inspection and restoration of Federal coastal storm damage reduction projects damaged or destroyed by floods and coastal storms. All projects must meet certain standards in order to be eligible for restoration assistance.
- Drought Assistance includes technical assistance, well drilling in limited circumstances, and transportation (but not purchase) of water to drought-distressed areas to make up for inadequate supplies of water.
- Emergency Water Assistance due to a contaminated water source may be provided when a locality is confronted with a source of contaminated water causing, or likely to cause, a substantial threat to the public health and welfare of the local inhabitants. Emergency water assistance includes technical assistance, purchase of water, transport of water to local water points, delivery of bulk or bottled water to community-level distribution points, temporary connection of a new water supply to the existing distribution system, and installation of temporary filtration.

Interested Federal and non-Federal partners should contact their local District office to get more information or request assistance.

FOR MORE INFORMATION

Find a local contact – the District public affairs or project management office is the best “first stop” for most questions.

- *Corps District and Division Office Locator:*
<https://www.usace.army.mil/Locations/>

Study and Project Partnership Agreement Models

- *HQUSACE Project Partnership Agreement website:*
<https://www.usace.army.mil/Missions/Civil-Works/Project-Partnership-Agreements/>

Technical Services & Engagement

- *Floodplain Management Services Fact Sheet:*
https://planning.erdc.dren.mil/toolbox/library/FactSheets/fpmsfactsheet_June2017.pdf
- *Planning Assistance to States Fact Sheet:*
https://planning.erdc.dren.mil/toolbox/library/FactSheets/PAS_FS_Aug2019.pdf
- *Silver Jackets Program:* <https://silverjackets.nfrmp.us/>

Emergency Management & Emergency Response

- *HQUSACE Emergency Operations website:* <https://www.usace.army.mil/Missions/Emergency-Operations/>

Submit a proposal for Congressional authority for a water resources study or project

- *Report to Congress on Future Water Resources Development website, HQUSACE:*
<https://www.usace.army.mil/Missions/Civil-Works/Project-Planning/WRRDA-7001-Proposals/>

Project Planning & Feasibility Studies

- *HQUSACE Project Planning website:* <https://www.usace.army.mil/Missions/Civil-Works/Project-Planning/>
- *Corps Planning Community Toolbox:* <https://planning.erdc.dren.mil/toolbox/index.cfm>
- *Continuing Authorities Program:* [https://planning.erdc.dren.mil/toolbox/processes.cfm?Id=229&Option=Continuing%20Authorities%20Program%20\(CAP\)](https://planning.erdc.dren.mil/toolbox/processes.cfm?Id=229&Option=Continuing%20Authorities%20Program%20(CAP))
- *Tribal Partnership Program:* <https://www.usace.army.mil/Missions/Civil-Works/Tribal-Nations/>
- *Planning Manual:* <https://planning.erdc.dren.mil/toolbox/library/IWRServer/96r21.pdf>
- *Planning Manual Part II: Risk Informed Planning:*
https://planning.erdc.dren.mil/toolbox/library/Guidance/PlanningManualPartII_IWR2017R03.pdf
- *SMART Planning Feasibility Studies: A Guide to Coordination and Engagement with the Services:*
https://planning.erdc.dren.mil/toolbox/library/smart/SmartFeasibility_Guide_highres.pdf

U.S. Army Corps of Engineers Commonly Used Acronyms and Abbreviations

404(b)(1) – Water quality permit per CWA 77	CF – Copy Furnished
902 limit – Maximum project cost per WRDA 86	CFR – Code of Federal Regulations
905(b) – Reconnaissance Report per WRDA 86	CFS – Cubic Feet per Second
AAA – Army Audit Agency	CG – Construction General/Commanding General
AAE – Average Annual Equivalent	CI – Command Inspection
AAR – After Action Review	CMR – Command Management Review
ABC – Army Benefits Center	COB – Close of Business/Command Operating Budget
ACTEDS – Army Civilian Training, Evaluation and Development System	COL – Colonel
ADR – Alternative Dispute Resolution	COLA – Cost of Living Adjustment
AE – Architect-Engineer	CONUS – Continental United States
AF – Acre Feet	COP – Community of Practice
AFB – Alternatives Formulation Briefing	COR – Contracting Officer's Representative
AICP – American Institute of Certified Planners	CP – Career Program
AIS – Automated Information System	CPAC – Civilian Personnel Advisory Center
AKO – Army Knowledge Online	CRA – Continuing Resolution Authority
AM – Asset Management	CRREL – Cold Regions Research and Engineering Laboratory
AOR – Area of Responsibility	CSRA – Cost & Schedule Risk Analysis
APIC – Army Performance Improvements Criteria	CSRM – Coastal Storm Risk Management
ARC – Annual Report to Congress	CSRS – Civilian Service Retirement System
ASA(CW) – Assistance Secretary of the Army for Civil Works	CW – Civil Works
ASAP – As Soon As Possible	CWA – Clean Water Act, 1977
ASCE – American Society of Civil Engineers	CWCCIS – Civil Work Construction Cost Index System
ATR – Agency Technical Review	CWIS – Civil Works Information System
AWOL – Absent Without Leave	CX – Center of Expertise
BC – Benefit Cost	CY – Cubic Yard/Current Year
BCR – Benefit Cost Relationship	CZM – Coastal Zone Management
BFE – Base Flood Elevation	CZMA – Coastal Zone Management Act
BG – Brigadier General	DA – Department of Army
BLUF – Bottom Line Up Front	DC – District Commander/Division Commander
BMP – Best Management Practice	DCG – Deputy Commanding General
BOD – Biological Oxygen Demand	DCW – Director of Civil Works
BOY – Beginning of Year	DDC – Deputy District Commander
BRAC – Base Realignment and Closure	DDE – Deputy District Engineer
BUB – Battle Update Briefing	DDR – Design Documentation Report
BY – Budget Year	DE – District Engineer/Division Engineer
C – Construction	DEIS – Draft Environmental Impact Statement
CADD – Computer Aided Design Drafting	DEMOB – Demobilization
CAP – Continuing Authorities Program	DDN – Deep Draft Navigation
CCG – Consolidated Command Guidance	DIST – District
CDR – Commander	DIV – Division
CE – Corps of Engineers	DMP – Decision Management Plan
CEA – Cost Effectiveness Analysis	DOD – Department of Defense
CEFMS – Corps of Engineers Financial Management System	DOE – Department of Energy
CE/ICA – Cost Effectiveness/Incremental Cost	DOI – Department of Interior
CERC – Coastal Engineering Research Center	DOJ – Department of Justice
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act, 1980 (Superfund)	DOT – Department of Transportation
CERL – Construction Engineering Research Laboratory	DQC – District Quality Control
CEQ – Council on Environmental Quality	DP – Decision Point
	DPM – Deputy for Project Management
	DPR – Detailed Project Report
	DSAP – Dam Safety Assurance Program

DX – Directory of Expertise
 E&D – Engineering & Design
 E&PW – Energy & Public Works (Senate)
 EA – Environmental Assessment
 EAB – Expected Annual Benefits
 EAD – Expected Annual Damages
 EC – Engineering Circular
 EDR – Engineering Decision Report
 EEO – Equal Employment Opportunity
 EFH – Essential Fish Habitat
 EFT – Electronic Funds Transfer
 EIS – Environmental Impact Statement
 EM – Engineering Memorandum
 EO – Executive Order
 EOC – Emergency Operations Center
 EOY – End of Year
 ENR – Engineering News Record
 EP – Engineering Pamphlet
 ER – Engineering Regulation
 ERDC – Engineering Research & Design Center
 EROC – Electronic Reporting Organization Code
 EPA – Environmental Protection Agency
 ESA – Endangered Species Act
 ESG – Executive Steering Group
 EQ – Environmental Quality
 ETL – Engineer Technical Letter
 F&A – Finance & Accounting
 FID – Federal Interest Determination
 FCA – Flood Control Act
 FCCE – Flood Control and Coastal Emergencies
 FCSA – Feasibility Cost Sharing Agreement
 FEHB – Federal Employee Health Benefits
 FEIS – Final Environmental Impact Statement
 FEMA – Federal Emergency Management Agency
 FERC – Federal Energy Regulatory Commission
 FERS – Federal Employees Retirement System
 FFE – First Floor Elevation/Finished Floor Elevation
 FOA – Field Operating Agency/Activity
 FOI – Freedom of Information
 FOIA – Freedom of Information Act
 FONSI – Finding of No Significant Impact
 FORCON – Force Configuration
 FPMS – Floodplain Management Services
 FR – Federal Register
 FRC – Feasibility Review Conference
 FRM – Flood Risk Management
 FS – Feasibility Study
 FSM – Feasibility Scoping Meeting
 FTE – Full-time Employee
 FUDS – Formerly Used Defense Site
 FUSRAP – Formerly Utilized Sites Remedial Action Program
 FWCA – Fish and Wildlife Coordination Act
 FY – Fiscal Year
 FYI – For Your Information
 FYSA – For Your Situational Awareness

G&A – General & Administrative
 GAO – Government Accountability Office
 GE – General Expense
 GI – General Investigations
 GIS – Geographic Information Systems
 GIWW – Gulf Inter-Coastal Waterway
 GNF – General Navigation Features
 GOV – Government/Government-owned Vehicle
 GPO – Government Printing Office
 GRR – General Reevaluation Report
 GS – General Schedule
 GSA – General Services Administration
 H&H – Hydrology & Hydraulics
 HAC – Hydropower Analysis Center
 HAZMAT – Hazardous Materials
 HD – House Document
 HEC – Hydrologic Engineering Center
 HEP – Habitat Evaluation Procedures
 HES – Habitat Evaluation System
 HIS – Habitat Suitability Index
 HQ – Headquarters
 HQUSACE – Headquarters, U.S. Army Corps of Engineers
 HR – Human Resources/House of Representatives/House Resolution
 HSDR – Hurricane and Storm Damage Reduction
 HTIC – House Transportation & Infrastructure Committee
 HTRW – Hazardous, Toxic and Radioactive Waste
 HU – Habitat Unit
 HUD – Housing and Urban Development
 IA – Initial Appraisal
 IAG – Inter-agency Agreement
 ICA – Intergovernmental Cooperation Act/Incremental Cost Analysis
 IDC – Interest During Construction/Indefinite Delivery Contract
 IDIQ – Indefinite Delivery/Indefinite Quantity
 IEPR – Independent External Peer Review
 IG – Inspector General
 IN – Inland Navigation
 IPA – Intergovernmental Personnel Act
 IPR – In-Progress Review
 IRC – Issue Resolution Conference
 ITR – Independent Technical Review
 IWR – Institute for Water Resources
 IWW – Inland Waterways
 IWTF – Inland Waterway Trust Fund
 IWUB – Inland Waterway User Board
 JTR – Joint Travel Regulation
 L&D – Lock & Dam
 LCC – Life Cycle Cost
 LERRD – Lands, Easements, Rights-of-Way, Relocations, and Disposal
 LOI – Letter of Intent
 LPP – Locally Preferred Plan

LRB – Buffalo District
 LRC – Chicago District
 LRD – Great Lakes & Ohio River Division
 LRE – Detroit District
 LRH – Huntington District
 LRL – Louisville District
 LRN – Nashville District
 LRP – Pittsburgh District
 LRR – Limited Reevaluation Report
 LSF – Local Service Facilities
 LTC – Lieutenant Colonel
 LWOP – Leave Without Pay
 M&I – Municipal & Industrial
 M&IE – Meals & Incidental Expenses
 MACOM – Major Army Command
 MARAD – Maritime – Administration
 MCASES – Micro-computer Aided Cost Engineering System
 MCX – Mandatory Center of Expertise
 MFR – Memorandum for Record
 MG – Major General
 MHHW – Mean Higher High Water
 MHW – Mean High Water
 MILCON – Military Construction
 MIPR – Military Interdepartmental Purchase Request
 MLW – Mean Low Water
 MLLW – Mean Lower Low Water
 MOA – Memorandum of Agreement
 MOB – Mobilization
 MOU – Memorandum of Understanding
 MOY – Middle of Year
 MR&T - Mississippi River & Tributaries
 MRC – Mississippi River Commission
 MSC – Major Subordinate Command
 MVD – Mississippi Valley Division
 MVK – Vicksburg District
 MVM – Memphis District
 MVN – New Orleans District
 MVP – St. Paul District
 MVR – Rock Island District
 MVS – St. Louis District
 NAB – Baltimore District
 NAD – North Atlantic Division
 NAE – New England District
 NAN – New York District
 NAO – Norfolk District
 NAP – Philadelphia District
 NAS – National Academy of Sciences
 NAV – Navigation
 NDC – Navigation Data Center
 NED – Net Economic Development
 NER – National Ecosystem Restoration
 NEPA – Nation Environmental Protection Act
 NFIP – National Flood Insurance Program
 NGO – Nongovernmental Organization
 NGVD – National Geodetic Vertical Datum

NHPA – National Historic Preservation Act
 NLT – No Later Than
 NMFS – National Marine Fisheries Service
 NOAA – National Oceanic and Atmospheric Administration
 NPS – National Park Service
 NRHP – National Register of Historic Places
 NTE – Not to Exceed
 NTP – Notice to Proceed
 NWD – Northwestern Division
 NWK – Kansas City District
 NWO – Omaha District
 NWP – Portland District
 NWS – Seattle District/National Weather Service
 NWW – Walla Walla District
 O&M – Operations & Maintenance
 OBE – Overcome by Events
 OMB – Office of Management and Budget
 OMRR&R – Operations, Maintenance, Repair, Replacement, & Rehabilitation
 OSA – Office of the Secretary of Army
 OSD – Office of the Secretary of Defense
 OSE – Other Social Effects
 OSHA – Occupational Safety and Health Administration
 OWPR – Office of Water Project Review
 P&D – Planning & Design
 P&G – Principles & Guidelines
 P&S – Plans & Specifications/Principles & Standards
 PA – Per Annum
 PAB – Planning Advisory Board
 PAC – Post-authorization Change Report
 PAS – Planning Assistance to States
 PCoP – Planning Community of Practice
 PCA – Project Cooperation Agreement
 PCX – Planning Center of Expertise
 PDT – Project Delivery Team
 PE – Professional Engineer
 PED – Pre-construction Engineering and Design
 PGM – Project Guidance Memorandum
 PGN – Planning Guidance Notebook
 PIR – Project Implementation Report
 PL – Public Law
 PM – Project Manager/Management
 PMBP – Project Management Business Process
 PMP – Project Management Plan
 PMF – Probable Maximum Flood
 POA – Alaska District
 POC – Point of Contact
 POD – Pacific Ocean Division
 POH – Honolulu District
 POTUS – President of the United States
 POV – Privately Owned Vehicle
 PPA – Project Partnership Agreement
 PR&C – Purchase Request & Commitment
 PRB – Project Review Board

PROSPECT – Proponent Sponsored Engineer Corps Training	SOF – Statement of Findings
PTL – Planning Technical Lead	SOP – Standard Operating Procedure
Q&A – Question & Answers	SOS – Scope of Services/Scope of Studies
QA/QC – Quality Assurance/Quality Control	SOW – Scope of Work
QM – Quality Manual	SPA – Albuquerque District
QMP – Quality Management Plan	SPD – South Pacific Division
QMR – Quality Management Representative	SPF – Standard Project Flood
QMS – Quality Management System	SPK – Sacramento District
RA – Risk Analysis/Risk Assessment/Remedial Action	SPL – Los Angeles District
R&D – Research & Development	SPN – San Francisco District
R&H – River & Harbor	SR – Senate Resolution
R&U – Risk and Uncertainty	SWD – Southwestern Division
RBRCR – Remaining Benefits Remaining Costs Ratio	SWF – Fort Worth District
RCRA – Resource Conservation and Recovery Act	SWG – Galveston District
REC – Recreation	SWL – Little Rock District
RED – Regional Economic Development	SWT – Tulsa District
REP – Real Estate Plan	T&A – Time & Attendance
RIT – Regional Integration Team	T&ES – Threatened & Endangered Species
RFP – Request for Proposal	T&I – Transportation & Infrastructure
RP – Review Plan/Resource Provider	TAD – Transatlantic Division
RMB – Regional Management Board	TAPES – Total Army Performance Evaluation System
RMC – Risk Management Center	TBA – To Be Announced
RMO – Resource Management Office	TBD – To Be Determined
RMP – Risk Management Plan	TDY – Temporary Duty
ROD – Record of Decision	TMDL – Total Maximum Daily Load
ROW – Right of Way	TRC – Technical Review Conference
RR – Risk Register	TQSE – Temporary Quarters Subsistence Expenses
RTS – Regional Technical Specialist	UDV – Unit Day Value
S&A – State & Agency	USACE – U.S. Army Corps of Engineers
S&I – Supervision & Inspection	USC – United States Code
S&S – Savings & Slippage	USCG – United States Coast Guard
SAC – Charleston District	USEPA – United States Environmental Protection Agency
SAD – South Atlantic Division	USFWS – United States Fish and Wildlife Service
SADBU – Small and Disadvantaged Business Utilization	USGS – United States Geological Survey
SAJ – Jacksonville District	VE – Value Engineering
SAM – Mobile District	VT – Vertical Team
SAR – Safety Assurance Review	WMP – Watershed Management Plan
SAS – Savannah District	WBS – Work Breakdown Structure
SAV – Submerged Aquatic Vegetation	WCSC – Waterborne Commerce Statistics Center
SAW – Wilmington District	WFO – Work for Others
SBH – Small Boar Harbor	WMA – Wildlife Management Area
SCORP – State Comprehensive Recreation Plan	WQC – Water Quality Certification
SCOTUS – Supreme Court of the United States	WRC – Water Resources Council
SCS – Soil Conservation Service	WRDA – Water Resources Development Act
SD – Senate Document	WS – Water Supply
SEPWC – Senate Environment and Public Works Committee	WTA – Willingness to Accept
SES – Senior Executive Schedule	WTP – Willingness to Pay
SFO – Support for Others	
SHPO – State Historic Preservation Office	
SITREP – Situational Report	
SMART – Specific, Measurable, Attainable, Risk-Informed, Timely	
SME – Subject Matter Expert	

The 118th Congress and the USACE Philadelphia District

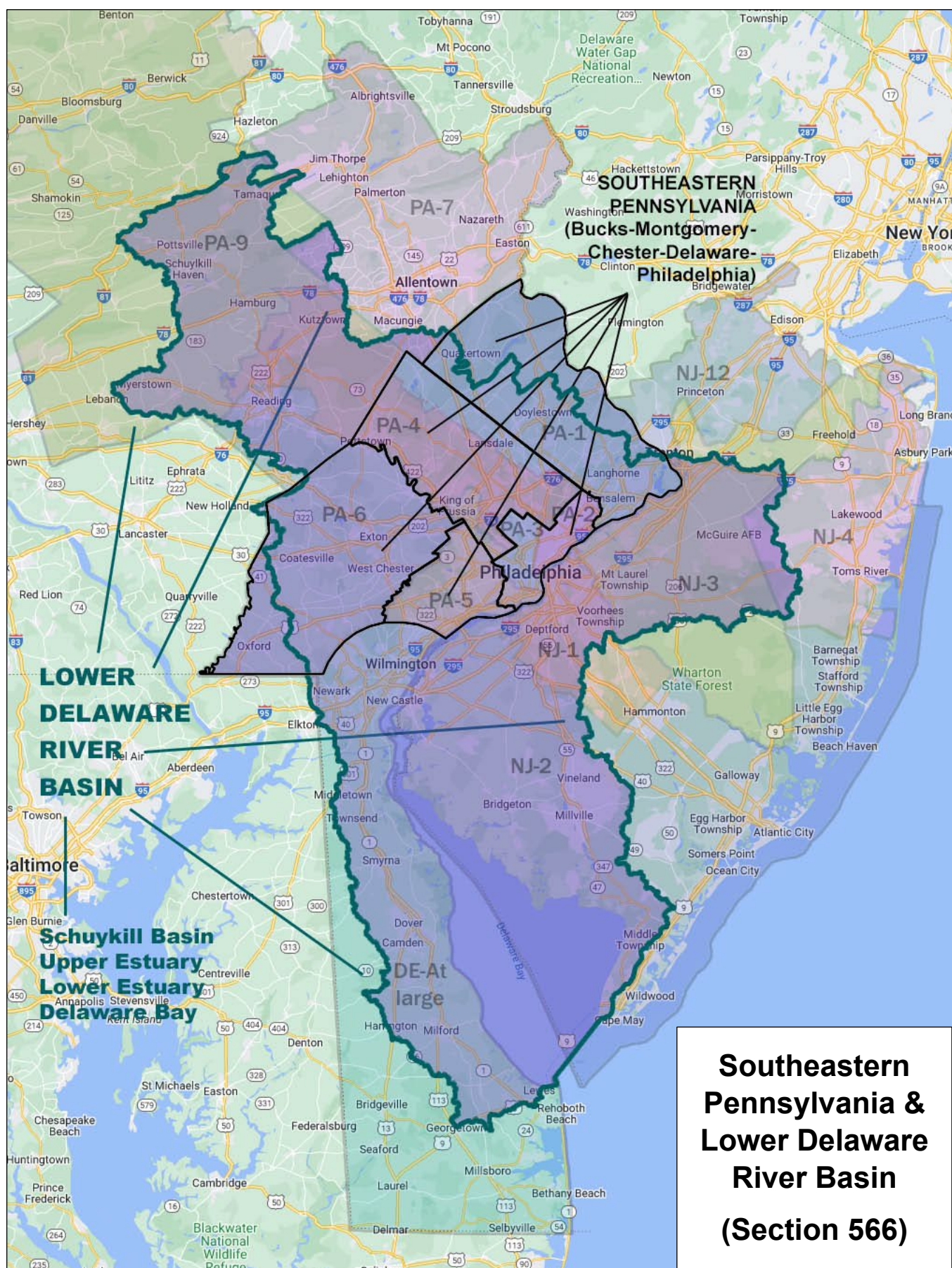


UNITED STATES SENATE

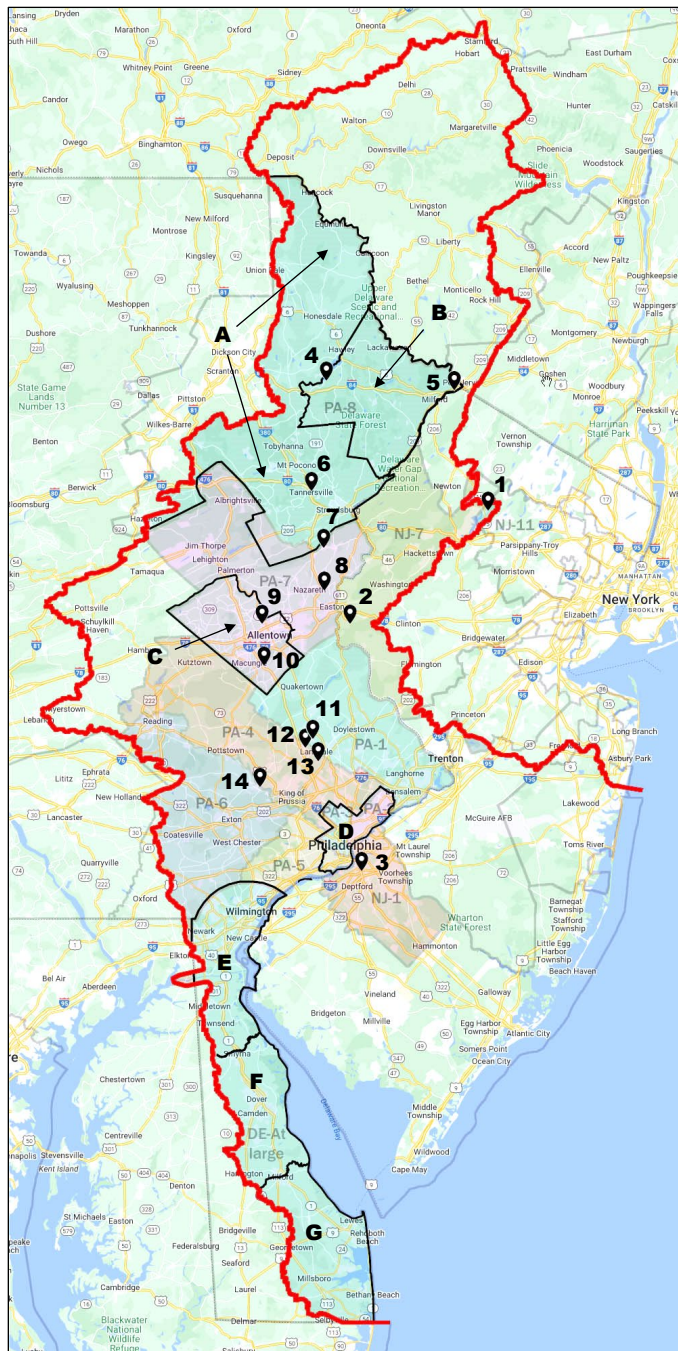
Delaware	Tom Carper	D
	Chris Coons	D
New Jersey	Bob Menendez	D
	Cory Booker	D
Pennsylvania	Bob Casey	D
	John Fetterman	D
Maryland	Chris Van Hollen	D
	Ben Cardin	D
New York	Chuck Schumer	D
	Kirsten Gillibrand	D

HOUSE OF REPRESENTATIVES

DE-At large	Lisa Blunt Rochester	D
MD-1	Andy Harris	R
NJ-1	Don Norcross	D
NJ-2	Jeff Van Drew	R
NJ-3	Andy Kim	D
NJ-4	Chris Smith	R
NJ-5	Josh Gottheimer	D
NJ-7	Tom Kean	R
NJ-11	Mikey Sherrill	D
NJ-12	Bonnie Watson Coleman	D
NY-18	Pat Ryan	D
NY-19	Marc Molinaro	R
PA-1	Brian Fitzpatrick	R
PA-2	Brendan Boyle	D
PA-3	Dwight Evans	D
PA-4	Madeleine Dean	D
PA-5	Mary Gay Scanlon	D
PA-6	Chrissy Houlahan	D
PA-7	Susan Wild	D
PA-8	Matt Cartwright	D
PA-9	Dan Meuser	R



Environmental Infrastructure Projects (Section 219)



COUNTIES

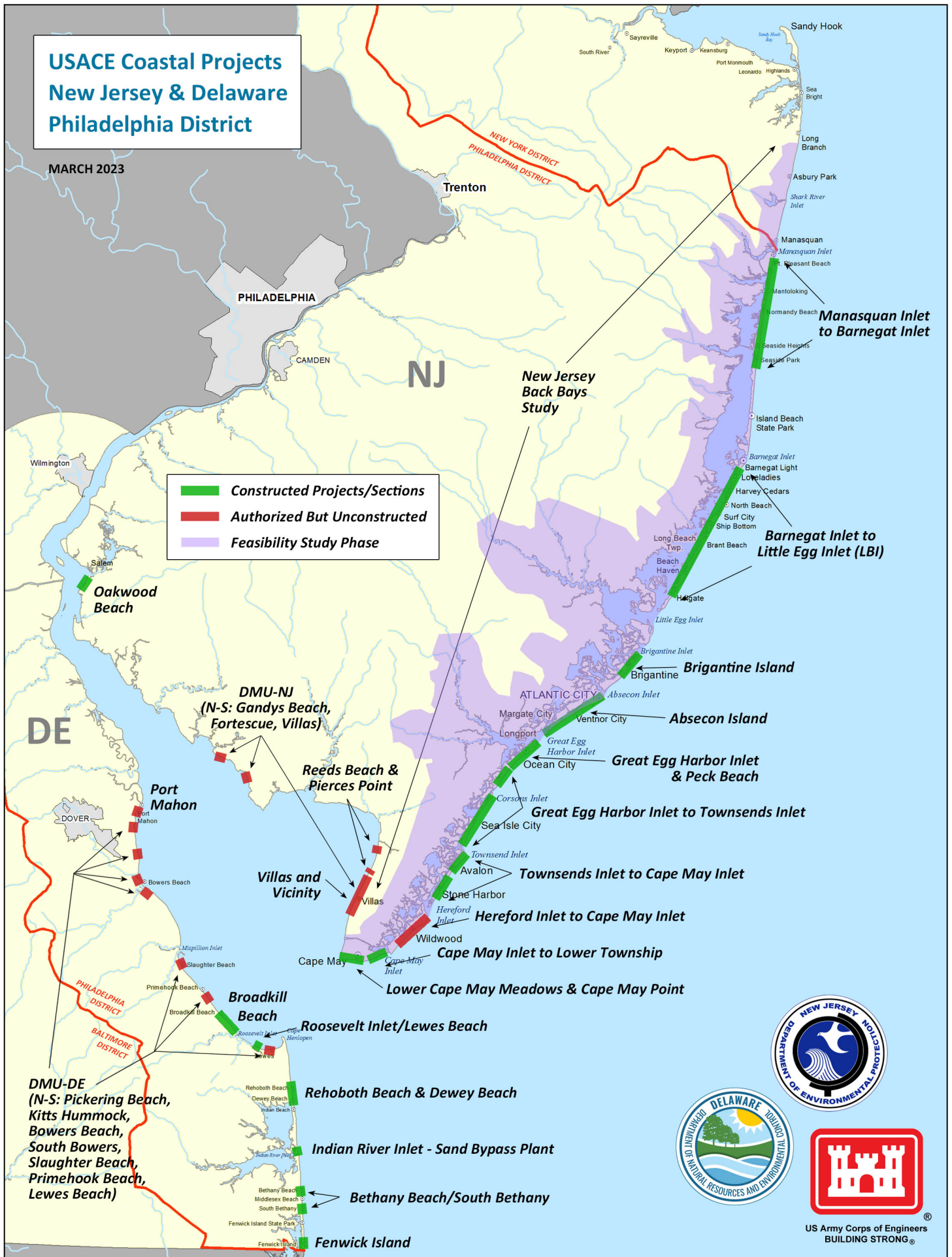
A	Northeast Pennsylvania (Pike, Wayne, Luzerne & Monroe Cos), PA
B	Pike County, PA
C	Lehigh County, PA
D	City of Philadelphia, PA
E	New Castle County, DE
F	Kent County, DE
G	Sussex County, DE

MUNICIPALITIES

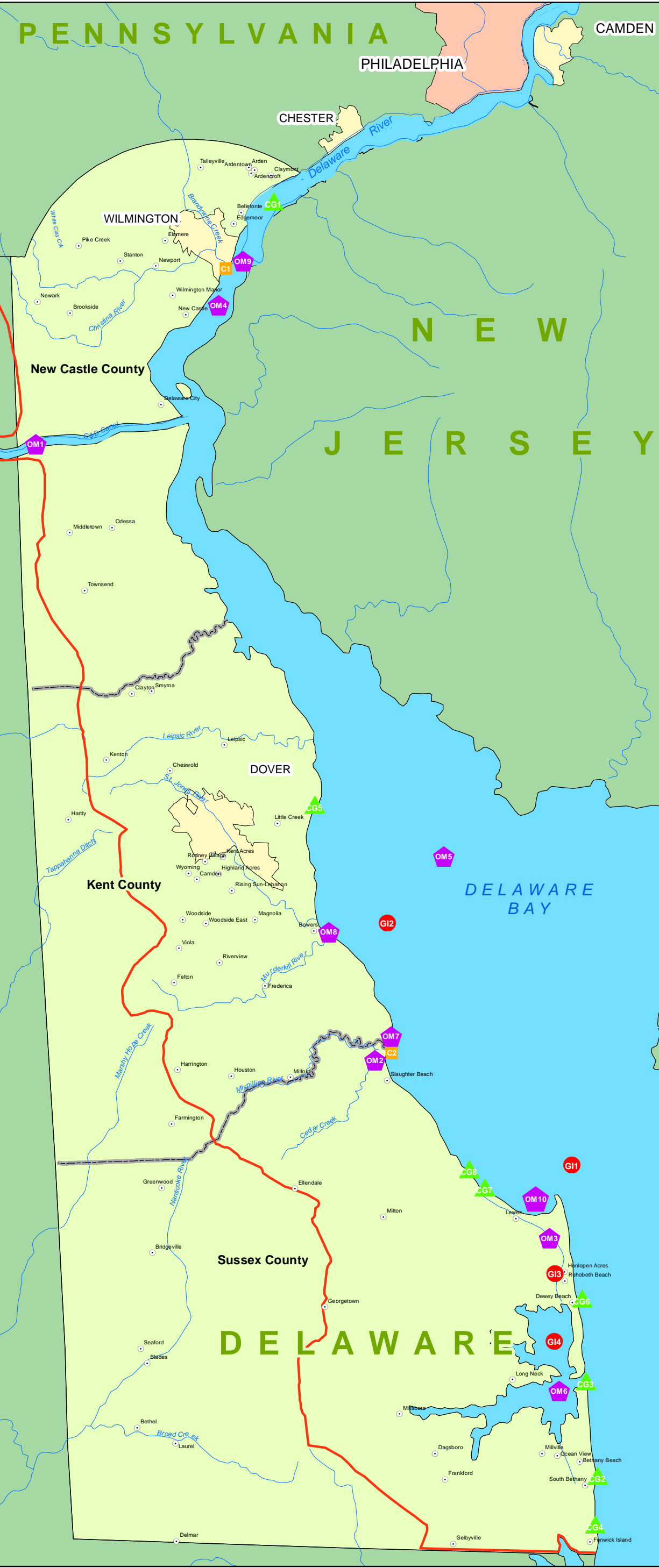
1	Jefferson Twp, NJ
2	Phillipsburg, NJ
3	Camden, NJ
4	Palmyra Twp, PA
5	Westfall Twp, PA
6	Pocono Twp, PA
7	Pen Argyl, PA
8	Stockerton Boro, Tatamy Boro, & Palmer Twp, PA
9	Whitehall & S Whitehall Twps, PA
10	Vera Cruz, PA
11	Hatfield Boro, PA
12	Towamencin Twp, PA
13	North Wales Boro, PA
14	Phoenixville Boro, PA

USACE Coastal Projects New Jersey & Delaware Philadelphia District

MARCH 2023



US Army Corps of Engineers
BUILDING STRONG®



Legend

- CONSTRUCTION GENERAL
- CAP
- GENERAL INVESTIGATIONS
- OPERATIONS & MAINTENANCE
- Philadelphia District
- Rivers / Streams
- County Lines

Map Document:
(D:\district\MXD\side_coe_projects_w_congress_names_w_table_3_23_23.mxd)
Last Updated 3/23/2023

DELAWARE PROJECTS - PHILADELPHIA DISTRICT

GENERAL INVESTIGATIONS

Delaware Inland Bays & Delaware Coast Storm Risk Management	GI 1
Delaware River Dredged Material Utilization, DE	GI 2
Lakes Management Plan for Silver Lake and Lake Comegys, DE (Sec 22 - PAS)	GI 3
Delaware Inland Bays Watershed Rapid Assessment, DE (Sec 22 - PAS)	GI 4

CONTINUING AUTHORITIES PROGRAM (CAP)

Wilmington Harbor, Christina River Navigation Project Wilmington, DE (Section 107)	C 1
Mispillion River Inlet, Sussex Co., DE (Section 111)	C 2

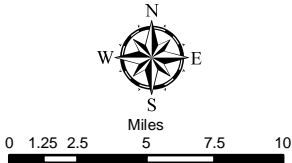
CONSTRUCTION GENERAL

Delaware River Main Channel Deepening, PA, NJ & DE	CG 1
Delaware Coast, Cape Henlopen to Fenwick Island: Bethany Beach - South Bethany	CG 2
Delaware Coast Protection, Sand Bypass Plant, Indian River Inlet	CG 3
Delaware Coast, Cape Henlopen to Fenwick Island: Fenwick Island	CG 4
Delaware Bay Coastline, Port Mehon	CG 5
Delaware Coast, Cape Henlopen to Fenwick Island: Rehoboth Beach - Dewey Beach	CG 6
Delaware Bay Coastline, Roosevelt Inlet - Lewes Beach	CG 7
Delaware Bay Coastline, Broadkill Beach	CG 8

OPERATION AND MAINTENANCE

Intracoastal Waterway, Delaware River to Chesapeake Bay (C&D Canal)	OM 1
Cedar Creek, Sussex County	OM 2
Inland Waterway from Rehoboth Bay to Delaware Bay, Sussex County	OM 3
Delaware River, Philadelphia to the Sea	OM 4
Lower Delaware River DMMP (MULTIPLE STATES)	OM 5
Indian River Inlet & Bay, Sussex County	OM 6
Mispillion River, Sussex County	OM 7
Murderkill River, Sussex County	OM 8
Wilmington Harbor, New Castle County	OM 9
Harbor of Refuge, Lewes	OM 10

Delaware Projects Within Philadelphia District



US Army Corps of Engineers
Philadelphia District