U.S. Army Corps of Engineers, Philadelphia District

DELAWARE
MARYLAND
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PENNSYLVANIA

Congressional Briefing Book

BUILDING STRONG

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

The approximately 500 employees of the Philadelphia District proudly serve our nation and are currently commanded by LTC Michael A. Bliss.

US Army Corps of Engineers
Philadelphia District

February 2016

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100 Penn Square East
Philadelphia, Pennsylvania
19107

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PHILDELPHIA DISTRICT

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DISCLAIMER ON USE OF CAPABILITY INFORMATION:

"The capability estimate for each study or project is the Army Corps of Engineers estimate for the most that it could obligate efficiently during the fiscal year for that study or project. However, each capability estimate is made without reference to the availability of manpower, equipment, and other resources across the Army Civil Works program, so the sum of the capability estimates exceeds the amount that the Corps actually could obligate in a single fiscal year. The Budget allocates funding among studies and projects on a performance basis in a manner that will enable the Corps to use that funding effectively. Furthermore, the overall funding level proposed in the Budget for the Army Civil Works program reflects the Administration's assessment of national priorities in view of the range of potential private and public uses of funds. Consequently, while the Corps could obligate additional funds for some studies and projects, off-setting reductions within the Army Civil Works program would be required to maintain overall budgetary objectives."

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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.

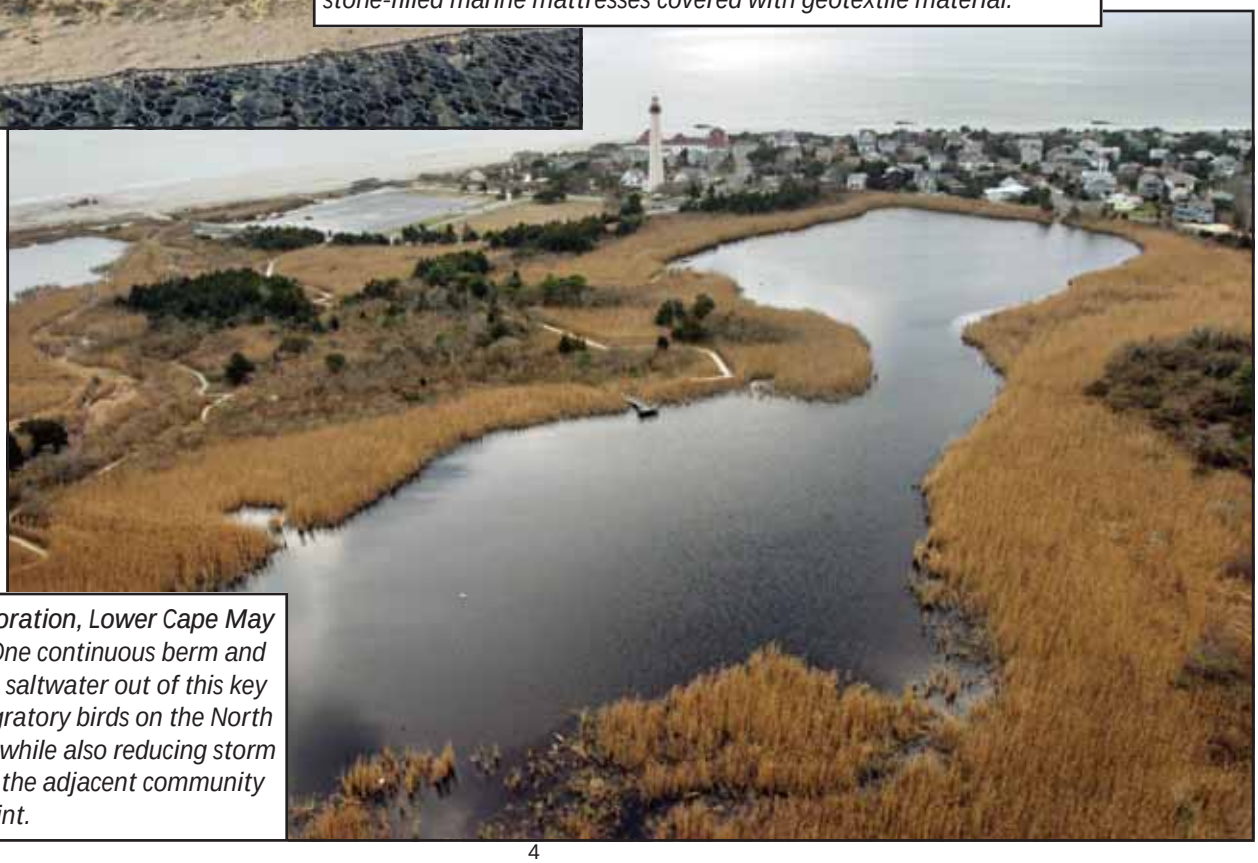
Project Gallery

Philadelphia District

Coastal Planning & Engineering

Coastal Storm Damage Reduction, Barnegat Inlet to Little Egg Inlet (Long Beach Island), NJ: post-Sandy beachfill operations at Brant Beach fully restored the berm and dune to original design dimensions.

Shoreline Protection, East Point, NJ: This 4-foot-high seawall along the Delaware Bay consists of gabion baskets (cages filled with rocks) atop stone-filled marine mattresses covered with geotextile material.



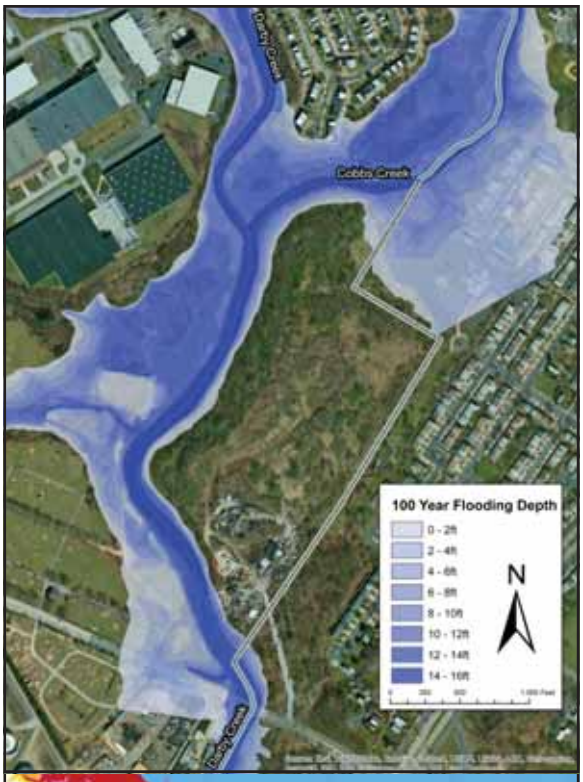
Ecosystem Restoration, Lower Cape May Meadows, NJ: One continuous berm and dune helps keep saltwater out of this key stopover for migratory birds on the North Atlantic flyway, while also reducing storm damage risk for the adjacent community of Cape May Point.

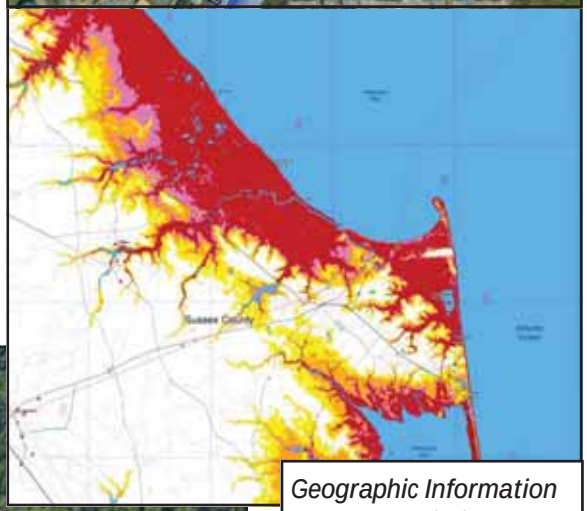
Watersheds / Flood Risk Management

Upper Delaware River Watershed, Livingston Manor, NY: Severe flooding between 2004 and 2006 led to a feasibility study identifying multiple solutions to mitigate against similar future events.

Blue Marsh Lake, Schuylkill River Basin, PA: A member of the District's own Dive Team begins a scheduled underwater safety inspection of the Blue Marsh Dam control tower.

Prompton Lake, Lackawaxen River Basin, PA: Recent major modifications included an enlarged spillway, a protective concrete wall along the dam crest, and a new visitor's center.



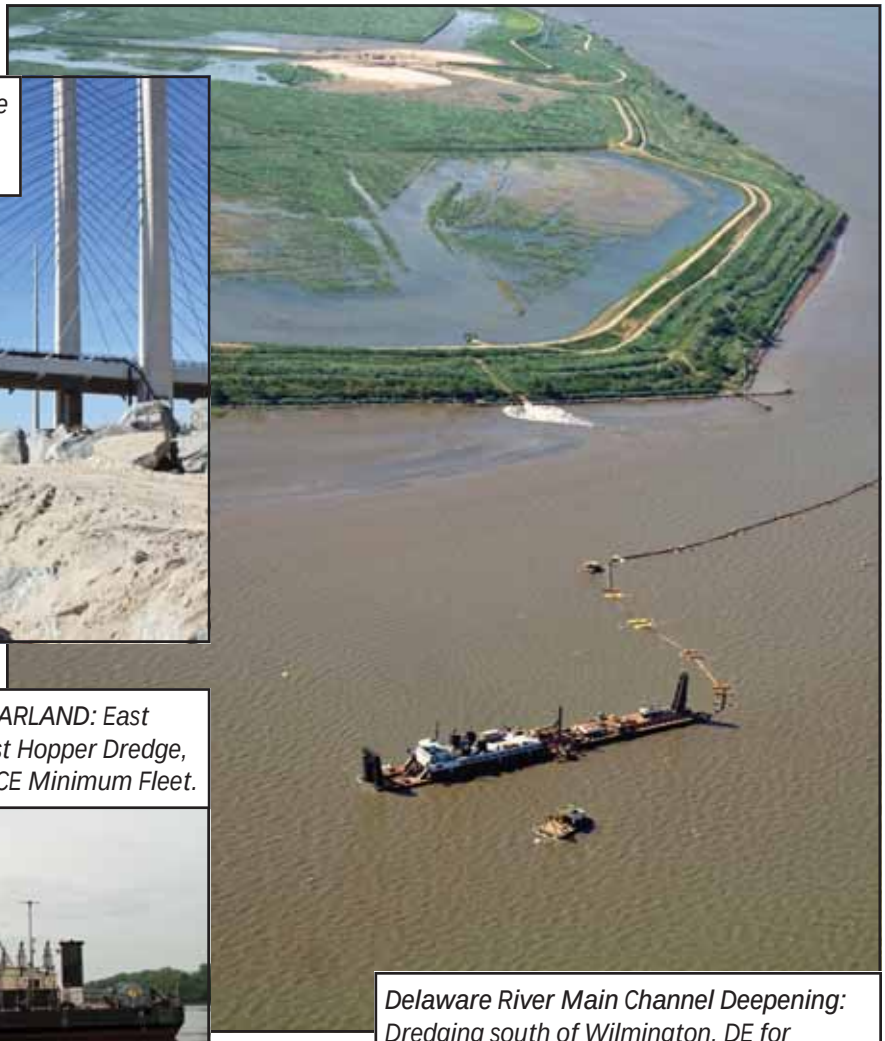


Geographic Information Systems: Both these maps — one for FEMA showing flood zones along Darby and Cobbs Creeks in Chester County, PA and the other for the State of Delaware showing hurricane inundation zones in Sussex County — were produced by the District using GIS.

Navigation: Waterways & Bridges

Bridge Keepers: *Not only does the District own and maintain five high-level highway bridges across the Chesapeake & Delaware Canal (such as the Summit Bridge, shown here during recent repainting), but its bridge inspection team is frequently called upon by other USACE districts — as well as other agencies — nationwide.*

Indian River Inlet, DE: *Post-Sandy work to reinforce the north jetty involved placing marine mattresses, filling voids and positioning capstones.*



McFARLAND: *East Coast Hopper Dredge, USACE Minimum Fleet.*

Delaware River Main Channel Deepening: *Dredging south of Wilmington, DE for pumpout across the river to Killcohook Island Confined Disposal Facility under the first deepening contract in 2010.*

Aquatic Ecosystem Restoration

Grover's Mill Pond, West Windsor, NJ: Approximately 65,000 cubic yards of nutrient laden silt-like sediment and organic matter was removed from Grover's Mill Pond by a small portable hydraulic dredge to improve habitat .

Fairmount Dam Fish Ladder, Philadelphia, PA: The District upgraded a 1970s-era structure to allow more shad and other migratory fish to swim upstream the Schuylkill River.

Cobbs Creek Watershed, Philadelphia, PA: Creation of a new channel for the Indian Creek tributary helped to reduce combined sewage overflow and improve local habitat.

Schuylkill River Park, Philadelphia, PA: Construction of this multi-use linear park added highly visible and accessible green space in the heart of the city.

Military & Interagency Support

Joint Personal Effects Depot, Dover AFB: The only facility of its kind in the Department of Defense, the JPED was constructed and equipped to ensure that the personal effects of American's fallen service members are handled in a presentable and timely manner.

Global Power Program: Managing more than $1 billion in contracts to date, the District works with the Army's 249th Engineer Battalion on projects such as this temporary 30-megawatt installation at Bagram AFB, Afghanistan.

EPA Superfund Program: For more than 30 years the District has been a USACE leader in site remediation, with multiple projects currently underway for EPA Region 2, such as the multi-phase Vineland Chemical Company cleanup in Vineland, NJ.

Groundwater Modeling System: Visualization of contaminant plumes at the former Massachusetts Military Reservation on Cape Cod.

Project Factsheets-Funding Levels-Projects in Delaware, New Jersey, New York, Pennsylvania										
Project	**Congressional Districts**	**FY15 Funds ($000)**	***FY16***			***FY17***		**Map Key**	**Page**	**State (s)**
			FY16 Capability ($000)	**President's Budget ($000)**	**FY16 Funds ($000)**	**FY17 Capability ($000)**	**President's Budget ($000)**			
GENERAL INVESTIGATIONS (GI) – FEASIBILITY STUDIES										
Delaware River Dredged Material Utilization, DE *[DNREC]*	DE-AL	0	1,000	SANDY	1,000	900	SANDY	X	22	DE
Delaware River Basin Comprehensive Interim Feasibility Study for New Jersey *[NJDEP]*	NJ-1, NJ-2, NJ-3, NJ-4, NJ-5, NJ-7, NJ-11, NJ-12	817	800	SANDY	810	338	SANDY	GI1	24	NJ
Delaware River Dredged Material Utilization, NJ *[NJDEP]*	NJ-1, NJ-2, NJ-3, NJ-4,	0	1,000	SANDY	1,000	900	SANDY	X	26	NJ
Hereford Inlet to Cape May Inlet, NJ *[NJDEP]*	NJ-2	25	400	SANDY	400	22,000	SANDY	GI3	28	NJ
New Jersey Alternative Long-Term Nourishment, RSM Study *[NJDEP]*	NJ-2, NJ-3, NJ-4, NJ-6	0	0	0	0	0	0	GI4	30	NJ
New Jersey Backbay Coastal Resilience Study, NJ	NJ-2, NJ-3, NJ-4, NJ-6, NJ-12	125	300	300	300	575	575	X	32	NJ
Warren Glen Dam Removal *[TBD]*	NJ-7	0	0	0	0	300	0	X	34	NJ
Upper Delaware River Watershed, Livingston Manor, NY *[NYSDEC]*	NY-19	0	0	0	0	100 (Under CAP)	0	GI2	36	NY

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Upper Delaware River Watershed, NY *[TBD]*	NY-19	0	0	0	0	0	0	GI2	38	NY
Delaware River Basin, Pine Knot, Schuylkill County, PA *[PADEP]*	PA-17	342	0	0	0	0	0	GI5	40	PA
Delaware River Dredged Material Utilization, PA	PA-1, PA-2, PA-6, PA-7, PA-8, PA-10, PA-11, PA-13, PA-15, PA-16, PA-17	200	0	700	100	0	0	X	42	PA
Delaware River Waterfront, Philadelphia, PA *[City of Philadelphia]*	PA-1, PA-2, PA-8, PA-13	0	0	0	0	0	0	GI8	44	PA
Schuylkill River Basin, Wissahickon Creek Watershed, Philadelphia & Montgomery Counties, PA *[City of Philadelphia-Water Department]*	PA-1, PA-2, PA-13	0	0	0	0	100 (under CAP)	0	GI3	46	PA
Delaware River Comprehensive, DE, NJ, NY & PA (Watershed Flood Management Plan) *[DRBC]*	DE-AL, NJ-1, NJ-2, NJ-3, NJ-4, NJ-5, NJ-7, NJ-11, NJ-12, NY-18, NY-19, PA-1, PA-2, PA-6, PA-7, PA-8, PA-10, PA-11, PA-13, PA-15, PA-16, PA-17	0	0	0	0	250 (under PAS)	0	GI2	48	DE, NJ, NY, PA
GENERAL INVESTIGATIONS (GI) – OTHER										
Planning Assistance to States, Section 22, Assessment of Bridges and Impacts on Flows and Flooding, Delaware County, NY (Section 22) *[Delaware County Soil & Water Conservation District]*	NY-19	0	150		0	150		GI5	50	NY

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Planning Assistance to States, Section 22, Upper Delaware River Basin (Callicoon Creek), NY *[Sullivan County, New York]*	NY-19	40	0		0	0		X	52	NY
Section 22 Planning Assistance to States, PA (Delaware River Waterfront Pier Analysis) *[DRWC]*	PA-1, PA-2, PA-13	0	100		0	100		GI12	54	PA
Section 22 Planning Assistance to States, PA (Rose Valley Creek Flood Hazard Analysis) *[Whitpain Township]*	PA-13	25	25		25 (Reprogram)	0		GI4	56	PA
CONTINUING AUTHORITIES PROGRAM (CAP)										
Bethany Beach, Pennsylvania Avenue Improvement (205), DE *[Town of Bethany Beach]*	DE-AL	-100 (SANDY)	0		0	0		C4	60	DE
Habitat Productivity of Delaware Bay, DE&NJ [DNREC]	DE-AL	50	200		200 (pending FCSA)	200		X	62	DE
Little Mill Creek, New Castle County, DE (205) *[DNREC, New Castle County]*	DE-AL	1,172	0		0	0		C3	64	DE
Restoration of Grassdale, New Castle County, DE (1135) *[DNREC]*	DE-AL	0	100		1,400 (pending PPA)	100		C2	66	DE
Assunpink Creek, Hamilton Township, Mercer County, NJ (205) *[Hamilton Township]*	NJ-4	10	100		100	200		C17	68	NJ

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Assunpink Creek, Trenton, NJ (1135) *[City of Trenton]*	NJ-4, NJ-12	3,500	100		-3,400	7,000		C1	70	NJ
Barnegat Inlet RSM, NJ (204) *[Sponsor Not Required]*	NJ-3	50	50		50	50		C2	72	NJ
Brigantine Island South End (103), NJ *[City of Brigantine and NJDEP]*	NJ-2	50 (SANDY)	200		100 (pending FCSA)	200		X	74	NJ
Cape May City, Delaware Avenue, NJ (14) *[Cape May County]*	NJ-2	50 (SANDY)	150		1,000 pending PPA (SANDY)	250		X	76	NJ
Cape May Seawall, City of Cape May, Cape May County, NJ (103) *[City of Cape May]*	NJ-2	350 (SANDY)	0		0	300		X	78	NJ
Chelsea Heights, Atlantic City, Atlantic County, NJ (205) *[NJDEP]*	NJ-2	350 (SANDY)	0		0	350		X	80	NJ
Delaware Bayshore, Downe Township, NJ (205) *[NJDEP]*	NJ-2	360 (SANDY)	0		0	300		X	82	NJ
East Point Lighthouse, Cumberland County, NJ (14) *[NJDEP]*	NJ-2	50 (SANDY)	200		1,500 (pending PPA)	200		C6	84	NJ
Massachusetts Avenue, Atlantic City, NJ (205) *[TBD]*	NJ-2	50 (SANDY)	150		150	350		X	86	NJ

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Mordecai Island Coastal Wetlands Restoration, Ocean County, NJ (1135) *[Mordecai Land Trust and NJDEP]*	NJ-2, NJ-3	0	200		200	1,000		C11	88	NJ
Musconetcong River Dam Removals, Bloomsbury, NJ (206) *[NJDEP-ONRR]*	NJ-5, NJ-7	131	200		445	1,500		C18	90	NJ
NJIWW Dredged Hole 34 Restoration, Atlantic City, NJ (204) *[NJDOT]*	NJ-2	0	0		0	0		C19	92	NJ
Pond Creek Salt Marsh Restoration, Cape May County, NJ (1135) *[NJDEP]*	NJ-2	0	100		0	1,000		C14	94	NJ
Seaside Park, Ocean City, NJ (103) *[NJDEP]*	NJ-3	-50 (SANDY)	50		0	200		C16	96	NJ
Sunset Avenue, Atlantic City, NJ (205) *[TBD]*	NJ-2	50 (SANDY)	150		255 (pending FCSA)	350		X	98	NJ
Trenton Marine Terminal, Trenton, NJ (14) *[City of Trenton/NJDEP]*	NJ-12	50	100		1,400	1,000		C5	100	NJ
Ventnor Back Bay Bulkheads NJ (205) *[TBD]*	NJ-2	50 (SANDY)	150		225	350		X	102	NJ
Schuylkill River, North Coventry Township Chester County, PA (Section 14) *[North Coventry Township]*	PA-6	0	100		1,373 (pending PPA)	1,000		C11	104	PA

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Schuylkill Watershed Restoration, PA (Section 204) *[none required]*	PA-1, PA-2, PA-6, PA-7, PA-8, PA-11, PA-13, PA-15, PA-16, PA-17	50	50		50	50		C2	106	PA
Toad Creek, Borough of Topton, Berks County, PA (Section 14) *[Borough of Topton]*	PA-6	50	150		0	150		C4	108	PA
Tookany Creek, Cheltenham Township, Montgomery County, PA (Section 205) *[Cheltenham Township]*	PA-2, PA-13	140	100		200 (pending PPA)	200		C3	110	PA
CONSTRUCTION GENERAL										
Delaware Bay Coastline, Broadkill Beach, DE *[DNREC]*	DE-AL	0	150	0	0	150	0	CG8	114	DE
Delaware Bay Coastline, Port Mahon, DE *[DNREC]*	DE-AL	0	200	0	0	200	0	CG5	118	DE
Delaware Bay Coastline, Roosevelt Inlet - Lewes Beach, DE *[DNREC]*	DE-AL	0	0	0	0	150	0	CG7	122	DE
Delaware Coast, Cape Henlopen to Fenwick Island: Bethany Beach / South Bethany, DE *[DNREC]*	DE-AL	0	6,650	0	0	150	0	CG2	126	DE
Delaware Coast, Cape Henlopen to Fenwick Island: Fenwick Island, DE *[DNREC]*	DE-AL	150	150	0	0	5,150	0	CG4	130	DE

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Delaware Coast, Cape Henlopen to Fenwick Island: Rehoboth Beach / Dewey Beach, DE *[DNREC]*	DE-AL	7,650	150	0	0	150	0	CG6	134	DE
Delaware Coast Protection, Sand Bypass Plant, Indian River Inlet, DE *[DNREC]*	DE-AL	1,590	390	0	0	390	0	CG3	138	DE
Cape May Inlet to Lower Township, NJ *[NJDEP]*	NJ-2	0	7,200	0	7,200	200	0	CG4	142	NJ
Delaware Bay Coastline, DE & NJ, Oakwood Beach, NJ *[NJDEP]*	NJ-2	0	100	0	0	100	0	CG9	146	NJ
Delaware Bay Coastline, DE & NJ, Reeds Beach and Pierces Point, NJ *[NJDEP]*	NJ-2	0	200	0	0	200	0	CG10	150	NJ
Delaware Bay Coastline, DE & NJ, Villas and Vicinity, NJ *[NJDEP]*	NJ-2	0	200	0	0	200	0	CG12	154	NJ
Great Egg Harbor and Peck Beach (Ocean City), NJ *[NJDEP]*	NJ-2	7,500	500	0	0	500	0	CG6	158	NJ
New Jersey Shore Protection, Barnegat Inlet to Little Egg Inlet, NJ *[NJDEP]*	NJ-2, NJ-3	600	600	0	0	600	0	CG2	162	NJ
New Jersey Shore Protection, Brigantine Inlet to Great Egg Harbor Inlet, Absecon Island, NJ *[NJDEP]*	NJ-2	6,000	400	0	15,600	400	0	CG1	166	NJ

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New Jersey Shore Protection, Brigantine Inlet to Great Egg Harbor Inlet, Brigantine Island, NJ *[NJDEP]*	NJ-2	80	80	0	0	80	0	CG3	170	NJ
New Jersey Shore Protection, Great Egg Harbor Inlet to Townsends Inlet, NJ *[NJDEP]*	NJ-2	0	250	0	0	250	0	CG8	174	NJ
New Jersey Shore Protection, Lower Cape May Meadows - Cape May Point, NJ *[NJDEP]*	NJ-2	0	7,400	0	7,400	400	0	CG7	178	NJ
New Jersey Shore Protection, Manasquan Inlet to Barnegat Inlet, NJ *[NJDEP]*	NJ-3, NJ-4	0	0	0	0	0	0	CG13	182	NJ
New Jersey Shore Protection, Townsends Inlet to Cape May Inlet, NJ *[NJDEP]*	NJ-2	5,280	4,000	0	0	4,300	0	CG11	186	NJ
Southeastern PA Environmental Improvements Program (Sec. 566)									190	PA
Abington Township Environmental Improvement [TBD]	PA-13	0	200	0	200	500	0	X	192	PA
Chester, Delaware and Montgomery County Streams *[PaDEP]*	PA-7, PA-16	0	200	0	0	0	0	CG2	194	PA
Cobbs Creek Fish Passage *[City of Philadelphia-Water Department]*	PA-1, PA-2	0	0	0	0	0	0	CG3	196	PA

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Cobbs Creek Watershed Habitat Restoration *[City of Philadelphia-Water Department]*	PA-1, PA-2	0	0	0	0	0	0	CG4	198	PA
Delaware River Main Channel Deepening, DE, NJ & PA *[Philadelphia Regional Port Authority]*	DE-AL, NJ-1, NJ-2, PA-1, PA-7, PA-13	97,800	55,000	0	21,875	33,125	33,125	CG1	200	DE, NJ, PA
OPERATIONS & MAINTENANCE										
Cedar Creek, Sussex County, DE	DE-AL	0	715	0	0	715	0	OM2	204	DE
Harbor of Refuge, Lewes, DE	DE-AL	0	45	0	0	45	45	OM11	206	DE
Indian River Inlet & Bay, Sussex County, DE	DE-AL	0	8300	0	0	8,300	0	OM5	208	DE
Inland Waterway from Rehoboth Bay to Delaware Bay, Sussex County, DE	DE-AL	11	3,630	0	0	3,630	0	OM3	210	DE
Mispillion River, Sussex County, DE	DE-AL	0	2,390	0	0	2,390	0	OM6	212	DE
Murderkill River, Sussex County, DE	DE-AL	0	1,075	0	0	1,075	0	OM7	214	DE

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Wilmington Harbor, New Castle County, DE	DE-AL	3,653	12,135	3845	3,845	12,135	4,355	OM8	216	DE
Absecon Inlet, Atlantic County, NJ	NJ-2	0	710	0	0	710	0	OM1	218	NJ
Barnegat Inlet, Ocean County, NJ	NJ-2, NJ-3	416 (SANDY - 1,000)	1,835	425	775	1,835	425	OM2	220	NJ
Cold Spring (Cape May) Inlet, Cape May County, NJ	NJ-2	371	1,335	375	925	1,335	375	OM4	222	NJ
Delaware River at Camden, Camden County, NJ	NJ-1	15	15	15	15	15	15	OM5	224	NJ
Manasquan River, Ocean County, NJ	NJ-3, NJ-4	601	1,295	420	655	1,295	420	OM8	226	NJ
New Jersey Intracoastal Waterway, NJ	NJ-2, NJ-3, NJ-4	963 (SANDY - 7,000)	4,920	260	260	4,920	960	OM10	228	NJ
Salem River, Salem County, NJ	NJ-2	0	3,180	0	0	3,180	0	OM11	230	NJ
Toms River, Ocean County, NJ	NJ-3, NJ-4	0	585	0	0	585	0	OM13	232	NJ

Project Factsheets-Funding Levels-Projects in Delaware, New Jersey, New York, Pennsylvania										
Project	**Congressional Districts**	**FY15 Funds ($000)**	***FY16***			***FY17***		**Map Key**	**Page**	**State (s)**
			FY16 Capability ($000)	**President's Budget ($000)**	**FY16 Funds ($000)**	**FY17 Capability ($000)**	**President's Budget ($000)**			
Beltzville Lake, Beltzville, PA	PA-11	1817	4,935	1,290	1,290	4,935	1,410	OM1	234	PA
Blue Marsh Lake, Leesport, PA	PA-17	2683	5,794	2,774	2,774	5,794	2,981	OM2	236	PA
Francis E Walter Dam, White Haven, PA	PA-11	911	4,270	905	905	4,270	1140	OM3	238	PA
General Edgar Jadwin Dam, Honesdale, PA	PA-10	297	1,005	385	385	1,005	380	OM4	240	PA
Prompton Lake, Prompton, PA	PA-10	470	1,050	585	585	1,050	655	OM5	242	PA
Schuylkill River, Philadelphia, PA	PA-1, PA-2	0	13,010	0	0	13,010	0	OM8	244	PA
Delaware River, Philadelphia to the Sea, DE, NJ & PA	DE-AL, NJ-1, NJ-2, PA-1, PA-7, PA-13	20,741	49,585	23,305	23,305	49,585	26,570	OM4	246	DE, NJ, PA
Delaware River, Philadelphia to Trenton, NJ & PA	NJ-3, NJ-4, PA-1, PA-8, PA-13	10,374	30,790	5,460	5,460	30,790	5,960	OM7	248	NJ, PA
Intracoastal Waterway, Delaware River to Chesapeake Bay, DE & MD (C&D Canal)	DE-AL, MD-1	35,182	74,121	13,429	18,729	74,121	24,581	OM1	250	DE, MD

Project Factsheets-Funding Levels-Projects in Delaware, New Jersey, New York, Pennsylvania										
Project	**Congressional Districts**	**FY15 Funds ($000)**	***FY16***			***FY17***		**Map Key**	**Page**	**State (s)**
			FY16 Capability ($000)	**President's Budget ($000)**	**FY16 Funds ($000)**	**FY17 Capability ($000)**	**President's Budget ($000)**			
U.S. Army Corps of Engineers Hopper Dredge McFarland	DE-AL, NJ-1, NJ-2, NJ-3, PA-1, PA-7, PA-8, PA-13	11,573	12,000	11,690	11,690	12,000	11,690	X	252	DE, NJ, PA

US ARMY CORPS OF ENGINEERS
Building Strong

US Army Corps of Engineers
Philadelphia District

General Investigations

General Investigation Studies
Planning Assistance to States Program
Floodplain Management Services

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

- Coastal and Deep-Draft Navigation
- Environmental Restoration or Compliance
- Flood and Storm Damage Reduction
- Flood Control
- Inland Navigation
- Navigation ($2 million)
- Other Authorized Purposes (including but not limited to Environmental Restoration or Compliance and Remote, Coastal, or Small Watershed)
- Remote, Coastal, or Small Watershed
- Shore Protection
- Small, Remote, or Subsistence Navigation

Color Code	
State	**Color**
Delaware	Red
New Jersey	Blue
New York	Black
Pennsylvania	Green
Multiple	Purple

Delaware River Dredged Material Utilization, Delaware

- **Authority:** Senate Resolution (dated 26 Oct 2005) on Beneficial Use of Dredged Material on the Delaware River, Delaware, New Jersey, and Pennsylvania and PL 113-2
- **Congressional District:** DE-ATL
- **Non-Federal Sponsor:** Delaware Department of Natural Resource and Environmental Control
- **Date of Project Agreement:** 27 February 2014
- **Target Completion Date:** April 2017
- **Total Estimated Cost:** $2M
- **Federal Funds Appropriated:**

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The U.S. Army Corps of Engineers (USACE) was authorized to conduct the Delaware River, PA, NJ and DE Dredged Material Utilization Study (Utilization Study) 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 directs 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 will explore 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 project will hold its Alternatives Milestone meeting on March 31, 2015 with Division and Higher Authority to discuss the various study alternatives to utilize dredged material for flood risk management.

Delaware River Dredged Material Utilization, Delaware

- **Project Opportunities:** 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 Dredged Material Utilization and Beneficial Use Opportunities 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.

The findings of the expedited reconnaissance study indicated that there is Federal interest in further investigations of multiple-purpose beneficial sediment reuse opportunities through a feasibility study within Delaware. The purpose of this feasibility study is to fully evaluate all reasonable solutions to the water resources problems and investigate potential opportunities identified during the reconnaissance within Delaware. Based on the preliminary screening of alternatives in the reconnaissance, there appear to be multiple potential projects within Delaware that would be consistent with Army policies regarding costs, benefits, and environmental impacts

Applying the principles of SMART Planning, the DMU feasibility study will work progressively through the six-step planning process, with five key decision points or milestones within the three year study period:

- Alternatives Milestone
- Tentatively Selected Plan Milestone
- Agency Decision Milestone
- Final Report Milestone
- Chief's Report Milestone

These milestones will provide an opportunity for the District Project Development Team to coordinate directly with the Corps Vertical Team for guidance and agreement on the path forward.
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.

Total Estimated Project Cost ($000)	**FEDERAL**	**NON-FEDERAL**	**TOTAL**		**Summarized Federal Financial Data ($000) PL 113-2 funds**	
Reconnaissance	50	0	50		Allocations thru FY12	0
Feasibility Study	2,000	0	2,000		FY 13 Allocation	50
					FY 14 Allocation	500
					FY 15 Allocation	500
					FY 16 Allocation	TBD
					FY Budget	TBD
					Balance to Complete	1,950

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

- **Authority:** U.S. House of Representatives Committee on Public Works and Transportation Resolutions on October 1, 1986
- **Congressional District:** At-large
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control
- **Date of Project Agreement: TBD**
- **Target Completion Date: TBD**
- **Total Estimated Cost:** $3M
- **Federal Funds Appropriated: $0K**

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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 authority for the DIBDBC Study (Resolution adopted by U.S. House of Representatives on October 1, 1986) 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, ecosys-

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

Project Opportunities:

•Flood risk is increasing for coastal populations and supporting infrastructure.

•Improved land use, wise use of floodplains, responsible evacuation planning, and strategic retreat are important and cost-effective actions.

• Communities should adopt combinations of solutions, including nonstructural, structural, natural and nature-based, and programmatic measures 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.

• Many opportunities exist to improve risk management, including enhancing collaboration, building new partnerships, and strengthening pre-storm planning.

• Addressing coastal risk requires collaboration among local, regional, Tribal, State and Federal entities, NGOs, academia,

• Resilience can be encouraged through the use of a CSRM framework and commitments to advance sea level and climate change science, and storm surge modeling and related themes.

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	TOTAL		Summarized Federal Financial Data ($000)	
Reconnaissance	0	0	0		FY 15 Allocation	0
Feasibility Study	1,500	1,500	3,000		FY 16 Allocation	0
					FY 17 Budget	$300K
					FY 18 Budget	TBD
					FY 19 Budget	TBD

Delaware River Basin Comprehensive Interim Feasibility Study for New Jersey

- **Authority:** United States Committee on Environment and Public Works and PL 113-2
- **Congressional Districts:** NJ-1, NJ-5, NJ-7, NJ-12
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Original Feasibility Cost Share Agreement:** 27 July 2006
- **Date of Amended Feasibility Cost Share Agreement:** 15 October 2013
- **Target Completion Date:** TBD
- **Total Estimated Study Cost:** $5.4M
- **Federal Funds Appropriated:** $3,825,791

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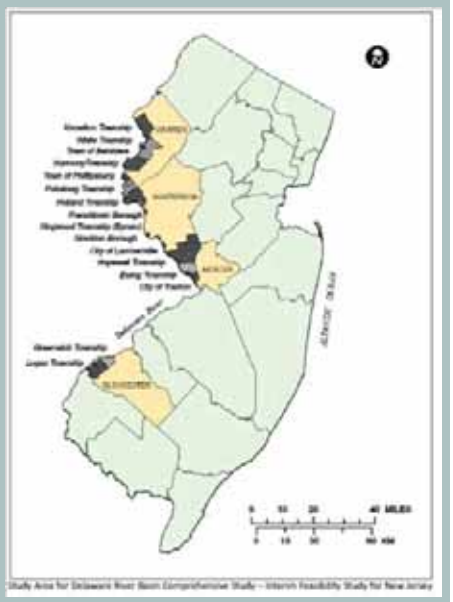
The river came out of its banks in many municipalities in Warren, Hunterdon and Mercer Counties in New Jersey, including in the capital city of Trenton.

On July 20, 2005 the United States Senate Committee on Environment and Public Works requested that the Secretary of the Army review the report of the Chief of Engineers on the Delaware River and its tributaries, Pennsylvania, New Jersey, and New York, published as House Document 179, Seventy Third Congress, Second Session.

The study identifies flooding problems on the Delaware River in New Jersey associated with major storm events in September 2004, April 2005 and June 2006, as well as flooding-related issues in Gibbstown, New Jersey; evaluates the technical, economic, environmental, and institutional feasibility of Federal participation in the implementation of flood risk management projects; and determines if there is local support for implementation of the recommended plans. The Corps initiated the reconnaissance study in February 2002, completing the effort in May 2003, with an addendum in 2006. The study assessed the Federal interest in further feasibility studies evaluating problems and opportunities. The Corps and NJ Department of Environmental Protection signed a Feasibility Cost Sharing Agreement in July 2006 and amended the agreement following the passage of PL 113-2 in October 2013. 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.

Delaware River Basin Comprehensive Interim Feasibility Study for New Jersey

- **Project Goals:** The purpose of this project is to evaluate the feasibility of Federal participation in implementing flood risk management solutions along the Delaware River in New Jersey.



Greenwich and Logan Townships: There is potential for a 20,220 LF mixed levee and floodwall (8,900 LF of floodwall and 11,320 LF of levee) to protect 842 structures in a developed area known as Gibbstown, with 21 structures receiving nonstructural treatment outside the levee/floodwall alignment (17 buyout and 4 ringwall). In this area there is an existing federally uncertified and currently non□certifiable landform and associated tide gates along the Delaware River. The landform was built in the 1600's to enable salt hay farming behind it. The area formerly used for salt hay farming lies between the landform and the developed portion of Gibbstown and currently includes a large area of wetlands, as well as two contaminated industrial sites. The larger of the industrial properties is listed as a RCRA site and the smaller industrial property is listed as a CERCLA (Superfund) site. The proposed project area for the levee/floodwall combination is on the opposite side of the wetlands and industrial properties from the existing landform and runs snugly along the edge of development in Gibbstown. Floodgate Road cuts through the wetlands from Gibbstown to the existing landform, running somewhat perpendicular to the landform and proposed levee alignment. Properties along this roadway would be treated with nonstructural flood risk management measures.

City of Lambertville: There is potential for a 516 LF levee at Alexauken Creek and 1409 LF floodwall at the D&R Canal. Alexauken Creek lies upstream towards the city's northern border and has a 15 square□mile drainage area. Nearing the confluence with the Delaware River, Alexauken Creek goes under a railroad bridge and then is carried under the D&R Canal aqueduct approximately 300 feet before it meets the Delaware.

Current Status: Tentatively Selected Plan Milestone meeting held on 4 May 2015. Concurrent reviews conducted. Public comments currently under consideration.

Total Estimated Project Cost ($000)	**FEDERAL**	**NON-FEDERAL**	**TOTAL**
Reconnaissance	450	0	450
NJ Feasibility	3,899	1,501	5,400

Summarized Federal Financial Data ($000) *		
	Regular	SANDY
Allocations thru FY12	1,724	
FY 13 Allocation	289	50
FY 14 Allocation		849
FY 15 Allocation		817
FY 16 Allocation		338
FY 17 Budget		TBD
Balance to Complete		282

Delaware River Dredged Material Utilization, New Jersey

- **Authority:** Senate Resolution (dated 26 Oct 2005) on Beneficial Use of Dredged Material on the Delaware River, Delaware, New Jersey, and Pennsylvania and PL 113-2
- **Congressional District:** NJ-1, NJ-2, NJ-3, NJ-4
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** February 27, 2014
- **Target Completion Date:** April 2017
- **Total Estimated Cost:** $2M
- **Federal Funds Appropriated:**

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The U.S. Army Corps of Engineers (USACE) was authorized to conduct the Delaware River, PA, NJ and DE Dredged Material Utilization Study (Utilization Study) 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 directs 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 will explore 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 New Jersey Department of Environmental Protection on February 27, 2014. The project held its Alternatives Milestone meeting on March 31, 2015 with Division and Higher Authority to finalize the various study alternatives evaluated in the study to utilize dredged material for flood risk management.

Delaware River Dredged Material Utilization, New Jersey

- **Project Opportunities:** 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 Dredged Material Utilization and Beneficial Use Opportunities 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 environmental restoration, protection and related purposes.

The findings of the expedited reconnaissance study indicated that there is Federal interest in further investigations of multiple-purpose beneficial sediment reuse opportunities through a feasibility study within New Jersey. The purpose of this feasibility study is to fully evaluate all reasonable solutions to the water resources problems and investigate potential opportunities identified during the reconnaissance within New Jersey. Based on the preliminary screening of alternatives in the reconnaissance, there appear to be multiple potential projects within New Jersey that would be consistent with Army policies regarding costs, benefits, and environmental impacts

Applying the principles of SMART Planning, the DMU feasibility study will work progressively through the six-step planning process, with five key decision points or milestones within the three year study period:

- Alternatives Milestone
- Tentatively Selected Plan Milestone
- Agency Decision Milestone
- Final Report Milestone
- Chief's Report Milestone

These milestones will provide an opportunity for the District Project Development Team to coordinate directly with the Corps Vertical Team for guidance and agreement on the path forward. 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.

Total Estimated Project Cost ($000)	**FEDERAL**	**NON-FEDERAL**	**TOTAL**		**Summarized Federal Financial Data ($000) 113-2 Funds**	
Reconnaissance	50	0	50		Allocations thru FY12	0
Feasibility Study	2,000	0	2,000		FY 13 Allocation	50
					FY 14 Allocation	500
					FY 15 Allocation	500
					FY 16 Allocation	TBD
					FY 17 Budget	TBD
					Balance to Complete	1,950

Hereford Inlet to Cape May Inlet, NJ

- **Authority:** House Resolution, Committee on Public Works and Transportation and PL 113-2
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Amended Feasibility Cost Share Agreement: October 28, 2013:**
- **Target Completion Date:** May 2019
- **Total Estimated Cost:** $22M, initial construction.
- **Federal Funds Appropriated:** $2,033,805 regular GI funds, plus $533,600 in Sandy Funds.
- **Non-Federal Share:** $2,033,000 regular GI funds.
- **Civil Works Review Board** 21 August 2014

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The photo to the left shows the extend of the North Wildwood Beach from July 1989. The photo to the right from 2004 of the same area demonstrates the extent of the erosion that has taken place since 1989.

The Hereford Inlet to Cape May General Investigation was undertaken by authority of The New Jersey Shore Protection Study, by resolutions adopted within the Committee on Public Works and Transportation of the U.S. House of Representatives and the Committee on Environment and Public Works of the U.S. Senate in December 1987.

The project area consists of the municipalities of North Wildwood, Wildwood, Wildwood Crest and Lower Township. These municipalities are vulnerable to storm damage all year round from a combination of hurricanes and nor'easters. The project area will be restricted to the beachfront, and tapered at the southern and northern ends at Hereford Inlet and the USFW/Coast Guard properties. The Non-Federal sponsor is the New Jersey Department of Environmental Protection (NJDEP).

The project successfully completed a Civil Works Review Board on 21 August 2014 and obtained a signed Chief's Report on 23 January 2015. Following Congressional notification, the district will begin the Planning Engineering and Design (PED) phase, sign a Project Partnership Agreement (PPA) and to begin the initial construction in FY 2018.

Hereford Inlet to Cape May Inlet, NJ

Project Goals: The purpose of this project is to reduce erosion and storm damage for the municipalities on Five Mile Island. The design includes a berm and dune extending from North Wildwood to the discontinuous dunes in Wildwood and Wildwood Crest using sediment backpassing technology. The creation of a continuous dune and berm from Hereford Inlet to Cape May Inlet will reduce risk from coastal storms.

Backpassing Technology: Provides high quality beach sand as an alternative to offshore borrow areas, reduces beach maintenance, has lower emissions than traditional dredging and will not impact cultural or environmental resources within Hereford Inlet.

The City of North Wildwood is experiencing significant erosion of its berm and dune. What was the largest beach in the state now suffers from tidal flooding and wave run-up over a formerly protective beach. The municipality of North Wildwood has lost approximately 1,000 feet of beach during the past 5-10 years.

In contrast to North Wildwood, sand accretion in Wildwood and Wildwood Crest is causing extensive maintenance problems and health hazards with their storm water management system. The excess sand clogs storm-water outfalls, creates pools of stagnant water, produces unhealthy beach conditions and causes associated interior flooding . During combined periods of heavy rain and high waves the City can not access the outfalls for excavation and rainwater becomes trapped within the pipes. The subsequent high volume discharge of impounded storm water can also cause spikes in poor water quality.

The entire island experiences storm damages and the modeling preformed during the feasibility analysis identified a plan that will reduce storm damages from coastal events across all of the municipalities involved.

Planning for resiliency, robustness and redundancy as a result of the direction provided from higher authority as a result of the impacts from Hurricane Sandy will require further analysis in the Planning Engineering and Design phase. Management measures that were screened out that can be re-evaluated include; constructing bulkheads around the piers, and the prevention of backbay flooding through green infrastructure and bulkhead reconstruction. 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.

Total Estimated Project Cost ($000)	**FEDERAL**	**NON-FEDERAL**	**TOTAL**	**Summarized Federal Financial Data ($000)**		
Reconnaissance	15	0	15		**Regular**	**Sandy**
NJ Feasibility	TBD	TBD	4,200	Thru FY12	2,033	
*TBD pending updated cost-share requirements in accordance with PL 113-2				FY 13Allocation		299
				FY 14 Allocation		234
				FY 15 Allocation		0
				FY 16 Allocation		400
				FY 17 Budget		22,000
				FY 18 Budget		

New Jersey Alternative Long-Term Nourishment RSM (Regional Sediment Management) Study

- **Authority:** U.S. House of Representatives and U.S. Senate Resolutions in December 1987
- **Congressional District:** NJ-2, NJ-3, NJ-4, NJ-6
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** 30 September 2002, new agreement pending
- **Target Completion Date:** 2017
- **Total Estimated Cost:** $3,100,000
- **Non-Federal Share:**$1,768,000

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The New Jersey Long Term Alternative Nourishment Study is authorized by House Resolution by the Committee on Public Works and Transportation dated December 10, 1987 for the New Jersey Shoreline. A revised FCSA is currently being coordinated with the NJDEP.

A major aspect of the study is to find new means of providing flood and storm damage reduction that will provide new benefits or enhance the benefits of those projects existing throughout the coastal system. It likely will also result in the identification of new projects, or new features on existing projects, to reduce flood and storm damage reduction.

Existing coastal storm damage reduction projects along the New Jersey coast were studied, designed and constructed on an individual project basis. This includes how damages avoided (benefits) were calculated. A purpose of the New Jersey Alternative Long Term Nourishment project is to improve upon the benefits obtained by managing the coastal protection projects as a system. A focus of the New Jersey Alternative Long Term Nourishment Study is to analyze the interactions between coastal processes and existing landforms and how they shape and alter the shoreline into a constantly changing feature. This includes man-induced changes such as shore protection structures, dredging, and beach nourishment.

The study will build upon the above-described analysis to refine strategies to reduce future coastal damage, such as:

New Jersey Alternative Long-Term Nourishment RSM (Regional Sediment Management) Study

- **Project Goals:** The purpose of the New Jersey Long-Term Nourishment Study is to examine a comprehensive approach identify new benefits and maximize existing benefits to the existing New Jersey Shore Coastal Protection system.

- **PL 113-2**: This project was originally identified under the Second Interim Report to Congress as eligible for funding under PL 113-2. Additional refinement of the project goals and expectations indicated the project was best implemented under the regular program.

Nourishment Prioritization: This strategy intends to prioritize projects to focus on the most vulnerable developed areas that have shown the highest erosion rates independent of individually authorized project boundaries. Current practice allows for a potential delay in scheduled nourishment due to funding limitations leaving highly eroded areas subject to severe damage. A prioritized approach allows for smaller prioritized based nourishments and thus reducing the potential for future damages at these locations.

Structural Improvements: This set of strategies involves coastal structure (either hard engineering or soft engineering) construction, adjustment or modification to improve sediment management. Improved sediment management can reduce the loss of protection from existing projects between nourishment cycles and thereby reduce the potential for future damage. As discussed in the NAP-PL's previous analysis, such improvements include potential new site-specific structural projects, or features within existing projects, at sites at Lower Cape May Meadows, Cape May City, Wildwood, Absecon Island, Ocean City, Brigantine Island, Shark River Inlet, Avalon and Stone Harbor and Ludlam Island and Peck Beach. These strategies vary from additional groin construction, groin modification, inlet thalweg relocation, bio-engineered solutions, bulkhead improvements, etc.

Borrow Area Development: The potential exists for future shortages in the availability of sediment versus the sediment needs. This may result in an inability to perform future nourishment cycles leaving the coastline susceptible to future damage. This study effort helps ensure that resources are available when needed for the sustainability of the coastal protection system, and thus reducing the potential for future damage.

Breach Contingency Plan: The study will look at the need for breach contingency plans in key areas to facilitate rapid response to potential barrier island breaches as experienced with Hurricane Sandy. Rapid breach closure using an in place contingency plan will reduce the potential for damage when the time and volume of material needed to remedy the breach are reduced.
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.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Reconnaissance	49	0	49		Allocations thru FY12	1,768
NJ Feasibility	1,768	1,104	2,872		FY 13 Allocation	100 (PL 113-2)
					FY 14 Allocation	0
					FY 15 Allocation	0
					FY 16 Allocation	0
					FY 17 Budget	0

New Jersey Back Bays Coastal Storm Risk Management Feasibility

- **Authority:** U.S. House of Representatives and U.S. Senate Resolutions in December 1987
- **Congressional District:** NJ-2, NJ-3, NJ-4, NJ-6
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement: TBD** February 2016
- **Target Completion Date:** February 2019
- **Total Estimated Cost:** $3M
- **Federal Funds Appropriated: $425K**

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The New Jersey Back Bay (NJBB) Focus Area is located behind the New Jersey barrier islands of Monmouth, Ocean, Atlantic and Cape May Counties and includes the set of interconnected water bodies and coastal lakes that are separated from the Atlantic Ocean. The authority for the NJBB Study (Resolutions adopted by U.S. House of Representatives and U.S. Senate Committees in December 1987) support NACCS outcomes, are broad in scope and application and address the development of a coastal processes database, monitoring and related actions as the basis for actions and programs to prevent the harmful effects of shoreline erosion and storm damage. The authority also recommends that site specific studies for beach erosion control and hurricane protection be undertaken in areas with a Federal project, action, or response.

The NJBB Study is being performed to align with the goals of the North Atlantic Coast Comprehensive Study (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.

New Jersey Back Bays
Coastal Storm Risk Management Feasibility

Project Opportunities:

•Flood risk is increasing for coastal populations and supporting infrastructure.

•Improved land use, wise use of floodplains, responsible evacuation planning, and strategic retreat are important and cost-effective actions.

• Communities should adopt combinations of solutions, including nonstructural, structural, natural and nature-based, and programmatic measures 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.

• Many opportunities exist to improve risk management, including enhancing collaboration, building new partnerships, and strengthening pre-storm planning.

• Addressing coastal risk requires collaboration among local, regional, Tribal, State and Federal entities, NGOs, academia,

• Resilience can be encouraged through the use of a CSRM framework and commitments to advance sea level and climate change science, and storm surge modeling and related themes.

The objective of the NJBB 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 NJBB 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	TOTAL		Summarized Federal Financial Data ($000)	
Reconnaissance	0	0	0		FY 15 Allocation	125
Feasibility Study	1,500	1,500	3,000		FY 16 Allocation	300
					FY 17 Budget	575
					FY 18 Budget	TBD
					FY 19 Budget	TBD

Warren Glen Dam Removal Feasibility Study

- **Authority:** Senate Committee on Environment and Public Works Resolution dated 20 July 2005 (Del. River and Tribs)
- **Congressional District:** NJ-7
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** August 2016
- **Target Completion Date:** August 2019
- **Total Estimated Cost:** $3M
- **Federal Funds Appropriated:** $200,000
- **Non Federal Cost Share:** $1,500,000

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Study will evaluate the removal of this dam for aquatic ecosystem restoration purposes along the Musconetcong River in Warren County, NJ. The Musconetcong River is a 45.7-mile-long tributary of the Delaware River in northwestern New Jersey in the United States. The Warren Glen structure is located approximately 5.5 miles upstream of the confluence between the Musconetcong River and the Delaware River, and stands more than 35-feet high. The Warren Glen dam is one of three remaining impediments to a natural, free flowing condition along the first 13.4 miles of the Musconetcong River. A partnership of federal and state agencies and non-profit organizations are currently conducting efforts aimed at removal of the other two dams. The first dam, Hughesville Dam located approximately 4.5 miles from the confluence with the Delaware River, is scheduled for removal in spring 2016. The second dam is the Warren Glen dam located approximately 1 miles upstream of the Hughesville Dam. The third dam, Bloomsbury Dam, is under design for removal by USACE in summer 2017 and is located approximately 2.3 miles upstream of the Warren Glen Dam. The Musconetcong River drains the rural northwestern part of New Jersey and includes 158 square miles of drainage area.

Warren Glen Dam Removal Feasibility Study

Project Goals: One of the principal goals is removing the obsolete dams that impede water flow, degrade water quality, clog the river with invasive species, and block fish passage on the Musconetcong.

The Warren Glen dam in Holland Township is the largest dam on the river. When it served a purpose, it provided hydroelectric power for the former Riegel Paper Mill. This 30-foot high monster blocks the river in the Musconetcong Gorge between Pohatcong (Warren County) and Holland Township (Hunterdon.)

The Warren Glen dam is the greatest impediment to water quality improvement on the lower Musconetcong. It will be difficult to remove due to its size, relatively remote location and the amount of sediment it holds.

other local fish populations. This project is also consistent with the 2003 "Musconetcong River National Wild and Scenic Rivers Study – River Management Plan." Opportunities include ecosystem & habitat restoration along the National Wild and Scenic River System.

Project Benefits

Removal of the dam and restoring the river's free flowing condition will reconnect access for migratory fish including shad, herring, alewife, striped bass, and American eel, and improved habitat for trout, bass and other local fish populations and aquatic organisms. The Musconetcong River sustains naturally breeding populations of Eastern brook trout, the region's only native trout. The removal of Warren Glen would provide significant habitat improvements for this native species. Portions of the river have been federally designated as part of the National Wild and Scenic River System. The National Wild and Scenic River system calls on the nation to preserve select rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural or other important values in free-flowing condition. Restoration efforts have the potential to increase connectivity, improve geomorphic conditions, enhance the hydrologic character and integrate with other regional restoration plans leading to high priority, sustainable ecosystem outputs.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility Study	1,500	1,500	3,000		FY 16 Allocation	200
					FY 17 Budget	TBD
					FY 18 Budget	TBD
					FY 19 Budget	TBD
					Balance to Complete	1,300

Upper Delaware River Watershed, Livingston Manor, NY

- **Authority:** House Resolution by the Committee on Transportation and Infrastructure
- **Congressional District:** NY-19
- **Non-Federal Sponsor:** NYSDEC
- **Date of Project Agreement:** May 26, 2009
- **Report Completion Date:** FY 2016
- **Total Study Cost: $1,166,000**
- **Estimated Construction Cost:** $6 M
- **Federal Funds Appropriated:** $786,000
- **Non-Federal Share:** $583,000 (including $49k IKS)

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Downtown flooding in the Livingston Manor Hamlet, Town of Rockland, NY caused by severe flooding in 2006. The project gained momentum after this event, although the original project was a result of $15 Million in damages back in 1996.

The study is authorized by the U.S. House of Representatives, Committee on Transportation and Infrastructure Resolution No. 2495, Upper Delaware River Watershed, NY adopted May 9, 1996**.**

The recurring flooding problem in the Livingston Manor area have been documented since the late 1800's with significant events recorded in June 1969, June 1973, January 1996, November 1996, September 2004, April 2005, June 2006, and September 2012. Typical damages include inundation of residential and commercial structures, as well as erosion of roads, retaining walls, and bridge abutments. In addition, some of the storms have resulted in the loss of local bridges. From the January, 1996 storm alone, Sullivan County reported infrastructure damages of $5,500,000 and property damages of $4,400,000.

Non-federal funding was received in September 2009 which initiated the feasibility study. This information was used as the basis for an Interim Feasibility Report that was completed in May 2013. Alternatives that are being recommended include: expanding the floodway area downstream of the Main Street Bridge and stabilizing approximately 1 mile of stream upstream of downtown to the old airstrip site. A final feasibility study should be completed in FY 2016.

Upper Delaware River Watershed, Livingston Manor, NY

- **Project Goals:** The purpose of this project is to evaluate to investigate flood risk management and ecosystem restoration for the Little Beaver Kill and Willowemoc Creek in the Town of Rockland (Livingston Manor).

FY15-16 Tasks included:

- An assessment of the Little Beaver Kill from the confluence with the Willowemoc upstream to the old airport site (approximately 1 mile).
- With the recent loss of the Lazy Beagle Restaurant (corner of Main St. and Pearl St.) due to fire damage, complete a hydraulic analysis of the floodway expansion area near Main Street to include the area upstream of the Main St. Bridge, previously occupied by the building.
- Analysis of the sediment movement within the Little Beaver Kill to determine the range of size of the sediment and quantity moving through the system. This will have ramifications on the final stream design to sustain floodway expansion and reduced damages.
- Completes geotechnical and environmental sampling to refine construction designs within the project area.
- Completed 30% designs for floodway expansion and stream stabilization components.

Remaining FY16 Tasks include:

- Completion of Draft Feasibility Report.
- Agency Technical Review.
- Public Review.
- Final conversion of project by end of FY 2016f or implementation under the Continuing Authorities Program, Section 205.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility (Livingston Manor)	583	583	1,166		Allocations thru FY12	786	
					FY 13 Allocation	-50	
					FY 14 Allocation	-50	
					FY 15 Allocation	0	
					FY 16 Allocation	-103	
					Balance to Complete	0	

Upper Delaware River Watershed, NY

- **Authority:** House Resolution by the Committee on Transportation and Infrastructure
- **Congressional District:** NY-19
- **Non-Federal Sponsor:** Delaware County, NY NYSDEC (pending)
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $3,000,000
- **Federal Funds Appropriated:** $833,000 (All but $44,000 reprogrammed to other studies under this parent account)
- **Non-Federal Share:** TBD

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Authorized by the U.S. House of Representatives, Committee on Transportation and Infrastructure Resolution No. 2495, Upper Delaware River Watershed, NY adopted May 9, 1996.

Initial impetus for the study was the January 1996 storm event that caused significant flood damage throughout the area. Consecutive major floods in September 2004, April 2005 and June 2006, again caused devastation along the main stem Delaware River and its tributaries, repeatedly damaging property and disrupting tens of thousands of lives.

Several interim studies are currently in process under this parent authority including a study for Livingston Manor and a floodplain reconnection study. Delaware County, NY and the Corps are currently negotiating a project management plan and Feasibility Cost Share Agreement (FCSA) for a continuing study under this parent authority for flood risk management and ecosystem restoration along the East Branch Delaware River and its tributaries. New York State Department of Environmental Conservation is also considering participation on the study.

Upper Delaware River Watershed, NY

- **Project Goals:** The purpose of this project is to evaluate alternatives in the larger watershed beyond those already in the feasibility phase for flood risk management and ecosystem restoration.

An expedited 905(b) reconnaissance study addendum was approved. Recent flood events and corresponding field visits of problem areas in the Upper Delaware River Watershed with other agencies show the need for a comprehensive Upper Delaware River Watershed Study to evaluate alternatives in the larger watershed beyond those already in the feasibility phase (ie. Livingston Manor).

The Corps has made several field inspections over the last year and participated in multiple community meetings to better define problem areas in Delaware County, NY and identify cost share partners. Additional site visits and coordination with Delaware County and NYCDEC were conducted in FY 2015. In order to initiate a full Feasibility Study, a cost-sharing sponsor and the Corps must execute a Feasibility Cost Share Agreement (FCSA). The Corps did not identify a potential sponsor willing to participate in a feasibility study level effort for Delaware County, NY. However, several potential Continuing Authorities projects were identified during this reconnaissance investigation.

Fund Distribution ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Reconnaissance thru FY09	448	0	448		Allocations thru FY11 (Parent Feasibility Funds)	733	
FY15 Recon Update	50	0	50		FY 12 Allocation (LM)	100	
Feasibility (Livingston Manor) (100 Reprogrammed, 103 Available for reprogram)	786	583	1,166		FY 13 Allocation	-49	Reprogram
Feasibility (Floodplain Reconnection)	3	0	3		FY 14 Allocation	50	Reprogram
Comprehensive Upper Delaware River Watershed	0	0	0		FY 15 Allocation	0	
Feasibility (Upper Delaware NY)	44	0	0		FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Delaware River Basin, Pine Knot, Schuylkill County, PA

- **Authority:** House Committee on Transportation and Infrastructure Resolution
- **Congressional District:** PA-17
- **Non-Federal Sponsor:** Pennsylvania Department of Environmental Protection (PADEP)
- **Date of Feasibility Cost Share Agreement (FCSA):** December 19, 2008
- **Target Completion Date:** Pending Federal Funding
- **Total Estimated Feasibility Cost:** $2,210,000
- **Federal Funds Appropriated:** $1,105,000
- **Non-Federal Share:** 100% In-Kind Services

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Former stream channel along the West Branch Schuylkill River. The stream now flows into underground mines .

The House Committee on Transportation and Infrastructure authorized this study by House Resolution dated 22 May 2002. The Pine Knot feasibility study is evaluating potential solutions for restoring stream flow and habitat in the riparian corridor along the Schuylkill River's West Branch in the vicinity of Minersville in Schuylkill County, Pennsylvania. The study area has been subject to extensive above and below ground anthracite coal mining for several hundred years. High quality trout streams now fall into and flow through underground mine pools, fragmenting this highly valuable aquatic habitat and riparian corridor.

The Pine Knot Tunnel and Oakhill borehole have been identified as the primary source of acid mine drainage (AMD) and the largest contributing source of dissolved metals that result in significant degradation of aquatic habitat for several miles downstream of the discharge points along the West Branch Schuylkill River. This study will recommend solutions to (1) restore lost stream flow and habitat by connecting 36 miles of streams (upstream of the discharge points), and (2) develop plans to control and treat the discharge of AMD, and thereby restore the (West Branch Schuylkill River) Watershed (downstream).

Partners include the Pennsylvania Department of Environmental Protection, Schuylkill County, the Schuylkill Action Network, an umbrella organization made up of several agencies and non-profits, and the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation, which named this site as one of Pennsylvania's top priorities.

Delaware River Basin, Pine Knot, Schuylkill County, PA

Project Goal: Aquatic ecosystem restoration.

Potential Solutions: Potential solutions include rerouting streams away from mines and back to their original channels, reconnecting approximately 36 miles of stream in the upper Schuylkill River, restoring the riparian buffer, and creating wetlands. These measures will provide additional foraging and spawning habitat for local fish populations, including eastern brook trout, a regionally declining native species impacted by habitat fragmentation resulting from mining activities. The surrounding area has a reduced wild brook trout population and this project could revive the local population. Brook Trout are important species featured in the Pennsylvania Wildlife Action Plan. Solutions will also be developed to control and treat acid mine drainage.

With funding received to date, the study team:

- Developed a conceptual hydrologic model to identify the sources of stream flow and runoff losses to underlying abandoned mine pools.
- Documented existing biological and physical data within the proposed project areas and potential reference reaches.
- Created site and species-specific Habitat Suitability Index (HSI) models to evaluate project alternatives.
- Installed monitoring wells into abandoned mine pool.

Planned tasks for fiscal year 2016 include:

- Geotechnical field testing to pinpoint areas of stream loss.
- Sponsor completion of conceptual designs.
- Application of the HSI models to compare proposed project alternatives and estimate habitat gains.
- Development of Tentatively Selected Plan.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Reconnaissance	175	0	175
Feasibility	1,105	1,105	2,210

Summarized Federal Financial Data ($000)		
Allocations thru FY12	790	
FY 13 Allocation	50	Reprogram
FY 14 Allocation	100	Reprogram
FY 15 Allocation	342	
FY 16 Allocation	0	
FY 17 Budget	0	
Balance to Complete	0	

Delaware River Dredged Material Utilization, Pennsylvania

- **Authority:** Senate Resolution on Beneficial Use of Dredged Material on the Delaware River, Delaware, New Jersey, and Pennsylvania and PL 113-2
- **Congressional District:**
- **Non-Federal Sponsor:** Pennsylvania Department of Environmental Protection
- **Date of Project Agreement:** TBD
- **Target Completion Date:** 2019
- **Total Estimated Cost:** $2M
- **Federal Funds Appropriated:** $200,000

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Hazelton Area Mine Reclamation Site

The U.S. Army Corps of Engineers (USACE) was authorized to conduct the Delaware River, PA, NJ and DE Dredged Material Utilization Study (Utilization Study) 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 directs 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 CDFs. The existing network of Federal disposal areas along the Delaware River is adequate to manage the anticipated quantity of new work and maintenance dredging for the next 50 years. This study will explore innovative methods for management and reuse of dredged material in order to improve flood risk management and support ecosystem restoration.

Delaware River Dredged Material Utilization, Pennsylvania

Project Objective: The objective of this study is to examine beneficial use opportunities using maintenance dredged material from the Delaware River and its tributaries for environmental restoration, flood risk management and related purposes.

Project Purpose: The purpose of this feasibility study is to fully evaluate all reasonable solutions to the water resources problems and investigate potential opportunities identified during the reconnaissance within Pennsylvania. Based on the preliminary screening of alternatives in the reconnaissance, there appear to be multiple potential projects within Pennsylvania that would be consistent with Army policies regarding costs, benefits, and environmental impacts.

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.

The study area is located within the section of the Delaware River watershed which lies within the State of Pennsylvania (Figure 1) and also includes the Delaware River itself., extending from Trenton, NJ to Cape May Point, NJ. The study area includes land and water areas adjacent to the Federal navigation projects identified in the study authority: Delaware River, Philadelphia to the Sea NJ; and Delaware River, Philadelphia to Trenton, NJ. Tributaries to Delaware River and Bay within the study area include: Neshaminy Creek, Wissahickon Creek, Schuylkill River, and Ridley Creek.

Example Ecosystem Restoration Pennsylvania abandoned mine ecosystem restoration:

Many formerly used mining sites exist in the mountainous terrain of northeastern Pennsylvania, many of which are left exposed posing both a safety and environmental risk to local communities. The optimum plan to address these risks is would be to fill and re-grade these areas with beneficially reused dredged material to restore the ecosystem to conditions prior to mine construction. Using existing rail access, dredged materials from the Delaware River could be processed and beneficially reused at these former mining sites.

Preliminary discussions held with potential study sponsor, PADEP. Sponsor indicated inability to match Federal funding. USACE will suspend further efforts on initiating study until alternate sponsor can be identified. Existing Federal funding will be reprogrammed.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Reconnaissance	100	0	100		FY 15 Allocation	200	
Feasibility	1,000	1,000	2,100		FY 16 Allocation	0	
					FY 17 Budget	0	
					Balance to Complete	800	

Delaware River Waterfront, Philadelphia, PA

- **Authority:** Delaware River Waterfront, PA / Delaware River and its Tributaries NJ, NY, PA
- **Congressional Districts:** PA-1, PA-2, PA-8, PA-13
- **Non-Federal Sponsor:** Philadelphia Water Department, Delaware River City Corporation, Delaware River Waterfront Corporation
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $3,000,000
- **Federal Funds Appropriated:** $286,000 (Reconnaissance)
- **Non-Federal Share:** Reconnaissance Phase is 100%

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The recognizable Ben Franklin Bridge that connects Philadelphia to New Jersey. In this area, there is great potential for increased environmental restoration and recreational enhancements.

Authorized by House Resolution dated March 16, 2000, Delaware River Waterfront, Pennsylvania and Senate Resolution dated July 20, 2005, Delaware River and its Tributaries, New Jersey, New York, and Pennsylvania.

The USACE completed a 905(b), or Reconnaissance Report, for the Delaware River Waterfront area. The purpose of this reconnaissance study is to: (1) examine the tidal Delaware River Waterfront and the contributing watersheds of the Tookany/Tacony-Frankford Creek, Pennypack Creek, and Poquessing Creek of Pennsylvania for the identification of problems, needs, and potential solutions to address or improve environmental restoration and protection, comprehensive watershed and stream corridor management, flood reduction, recreation, water quality control, and other related water resource problems as indicated in the study authorization (2) determine whether Federal interest exists in proceeding to feasibility phase investigations; (3) identify a non-Federal sponsor(s) willing to cost-share the feasibility phase in accordance with an executable Feasibility Cost Share Agreement (FCSA) with the USACE; and (4) develop Feasibility Study assumptions for feasibility phase investigations.

Delaware River Waterfront, Philadelphia, PA

- **Project Goals:** The purpose of this project is to evaluate possible recommendations advisable in the interest of environmental restoration and protection, riparian habitat improvement, flood reduction, water quality control, historic preservation, and other allied purposes.

The report identified impaired areas of the watershed and potential solutions for each, including but not limited to ecosystem restoration, fish and wildlife habitat restoration, and flood damage reduction. Based on the Draft Reconnaissance Report, it was determined that the primary problems are the loss, degradation, and fragmentation of wetlands and riparian corridors, stream bank erosion, dams impeding fish passage, and water quality. Various solutions to address these problems exist, and will be considered in depth during the Feasibility Study. For example, wetland creation or enhancement, riparian buffer creation or enhancement, stream bank restoration and stabilization, dam removal, and construction of fish passages will be considered for specific locations within the watershed.

Additional funding, and a non-Federal sponsor, will be needed to continue into the Feasibility Phase of the Study. The Philadelphia Water Department (PWD), the Delaware River City Corporation and the Delaware River Waterfront Corporation (DRWC) have indicated their intent to be co-sponsors of the Feasibility Study. However, The City of Philadelphia has indicated that they will not enter into a Feasibility Cost Sharing Agreement until completion of their Airport Expansion Project and approval of a proposed mitigation bank along the waterfront. Without additional funding the Philadelphia Waterfront and contributing watersheds will continue to experience ecosystem and riparian habitat degradation and fragmentation, decline in water quality, and recurrent flooding. DRWC has indicated their desire to sponsor a portion of this study, however, concurrence from the City is required before they can legally sign the FCSA. A sponsor is needed before work can continue on this study.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Reconnaissance	286	0	286		Allocations thru FY13	286	
Feasibility	TBD	TBD	TBD		FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Schuylkill River Basin, Wissahickon Creek Watershed, Philadelphia & Montgomery Counties, PA

- **Authority:** House Resolution by the Committee on Public Works and Transportation
- **Congressional District:** PA-1, PA-2, PA-13
- **Non-Federal Sponsor:** City of Philadelphia, Water Department
- **Date of Project Agreement:** April 12, 2004
- **Target Completion Date:** FY 2016
- **Total Estimated Cost:** $2.8M
- **Federal Funds Appropriated:** $1.42M
- **Non-Federal Share:** $1.42M

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Upstream view of Cresheim Dam

The Authority for this study is House Committee on Public Works and Transportation Resolution dated March 15, 1988.

A Reconnaissance Report identified impaired areas of the watershed and potential solutions for each, including but not limited to, ecosystem restoration, fish and wildlife habitat restoration, flood damage reduction, and allied purposes. Based on this study, it was determined that the primary problems within the Wissahickon watershed included stream flow variability, poor quality aquatic habitat, aquatic habitat degradation, flooding, and overall ecosystem imbalances. Various solutions to address these problems were considered in depth during feasibility investigations. For example, riparian buffer enhancement, stream bank stabilization, natural stream channel restoration, construction of fish passages, dam removal, wetland creation and restoration, and structural flood damage reduction measures were considered for specific locations within the watershed. A Feasibility Cost Sharing Agreement was signed with the City of Philadelphia Water Department in April 2004.

The Feasibility Study investigation focuses primarily on the Philadelphia County portion of the Wissahickon Creek watershed.

Schuylkill River Basin, Wissahickon Creek Watershed, Philadelphia & Montgomery Counties, PA

- **Project Goals:** The purpose of this project is to investigate the best solution for ecosystem restoration, fish and wildlife habitat restoration, flood damage reduction, and allied purposes.

The project team has narrowed its focus on the removal of Cresheim Dam. The Cresheim Creek project site extends from several hundred feet upstream of Cresheim Dam downstream to the north side of McCallum Street for an approximate distance of 3,400 feet. Cresheim Dam is a rock structure approximately 12 feet high with a culvert that allows stream flow to pass through the middle of the dam. It is an obstruction to fish passage and has led to extensive sedimentation upstream.

The restoration goals for this project are to provide fish passage over the dam; reduce sediment inputs to the creek; increase filtration of water containing excess nutrients, chemicals, and/or sediment; improve aquatic habitat; and restore a more naturally functioning stream system. These goals would be realized by removing the dam structure and/or modifying the channel downstream of the dam.

Additional opportunities exist in Montgomery County; however, the Corps has not identified a cost share partner to proceed with additional studies. If a sponsor is identified, the Corps will need to seek approval for a new start under the SMART Planning principles.

The final Feasibility Study Report is scheduled to be completed in FY 2016. Following completion of the Feasibility Phase, the study will be converted to the Continuing Authorities Program for implementation of Cresheim Creek Dam Removal Project.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	1,422	1,422	2,844		Allocations thru FY12	1096.9	
					FY 13 Allocation	367	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	0	
					Balance to Complete	0	

Delaware River Basin Comprehensive DE, NJ, NY & PA (Watershed Flood Management Plan)

- **Authority:** United States Senate Committee on Environmental and Public Works, Delaware River and its Tributaries, New Jersey, New York and Pennsylvania
- **Congressional Districts:** DE-AL, NJ-1, NJ-2, NJ-3, NJ-4, NJ-5, NJ-7, NJ-11, NJ-12, NY-18, NY-19, PA-1, PA-2, PA-6, PA-7, PA-8, PA-10, PA-11, PA-13, PA-15, PA-16, PA-17
- **Non-Federal Sponsor:** DRBC
- **Date of Project Agreement:** May 17 2007
- **Target Completion Date:** FY 2016
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $912,000 through FY11
- **Non-Federal Share:** 100% In-Kind Services

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1st floor flooding of residential structures in New Hope, PA (June 2006).

This study is authorized by the July 20, 2005 resolution by the United States Senate Committee on Environment and Public Works, Delaware River and its Tributaries, New Jersey, New York and Pennsylvania**.**

Historical flooding in the study area has resulted in property damage and loss of life. No one measure will eliminate flooding along the Delaware River; rather a combination of measures is necessary to prepare for and recover from future flood events.

An interim feasibility study under the Delaware River Basin Comprehensive, NY, NJ, DE, & PA (Watershed Flood Management Plan) focused on flood modeling and related areas. Specific tasks included development of flood analysis models for the Delaware River, Schuylkill River, and Brandywine River. The study also included the development of flood inundation maps for selected locations within the Delaware River Basin. This product included a user's guide (Delaware River Flood Warning and Response System), which provides short-term technical advice and assistance to local emergency management officials.

The study also evaluated the impacts of increased flood storage in the Upstate New York reservoirs for a series of known flood events.

Delaware River Basin Comprehensive DE, NJ, NY & PA (Watershed Flood Management Plan)

- **Project Goals:** The purpose of this project is focused on flood modeling and related areas. Specific tasks include development of flood analysis models for the Delaware River, Schuylkill River and Brandywine River. It also includes the development of flood inundation maps for specific area along the Delaware River Basin. The current study is investigating salinity. A future study may investigate drought issues.

A new interim study began in 2012, which is investigating salinity (saltwater intrusion) in the Delaware Estuary. Specifically, the study is analyzing the relationship between freshwater inflows and salinity in the Delaware Estuary, and implications for flow management. Completion of the report documenting development and calibration of the salinity model is expected in FY 2016. Additional Federal funding is necessary to evaluate various scenarios using the calibrated salinity model.

The Corps and DRBC have had preliminary discussions on advancing the study to investigate drought management issues in the Delaware River Basin, which may be undertaken in the future if funding permits.

Upstate New York Reservoir

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Watershed Flood Management Plan Feasibility Study	912	912	1,824		Allocations thru FY13	912	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	0	
					Balance to Complete	TBD	250 Capability

Planning Assistance to States, Section 22, Assessment of Bridges and Impacts on Flows and Flooding, Delaware County, NY

- **Authority:** Section 22, Water Resources Development Act of 1974
- **Congressional Districts**: NY-19
- **Non-Federal Sponsor:** Delaware County, NY
- **Date of Project Agreement:** January 6, 2012
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $750,000
- **Federal Funds Appropriated:** $225,000
- **Non-Federal Share:** 100% In-Kind Services

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Inspection of small span bridge at Walton, NY

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. The authority allows the Corps of Engineers to provide technical assistance in the form of studies and plans, but does not allow for actual design or construction assistance.

Currently, small bridges & culverts in Delaware County, NY are in varying stages of decline with impediments to stream flow creating a potential for flooding. The goal of the project is to analyze structural integrity and potential for flooding due to flow impediments at stream crossings in Delaware County, NY. The structures to be evaluated are small bridges/ culverts with a span in the range of 5-20 feet. The resulting data would be used to: 1) produce hydraulic conveyance capacity designs for 10, 50 and 100-year storm events, 2) prioritize replacement or upgrading of infrastructure. The results of the evaluation would be made available to the local government officials.

Planning Assistance to States, Section 22, Assessment of Bridges and Impacts on Flows and Flooding, Delaware County, NY

- **Project Goals:** The purpose of this project is to analyze structural integrity and potential for flooding due to flow impediments at small stream crossings in Delaware County, NY.

To date, the Corps has completed inspections on 55 small span bridges & culverts, and finalized the inspection reports. The Corps is working with Delaware County on identifying additional bridges that require an inspection. There are approximately 300 small span bridges in the study area (Delaware County, NY). Additional Federal funding is necessary to support further bridge inspections. This effort will commence upon receipt of sufficient Federal funding.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
PAS Investigation (Initial)	375	375	750		Allocations thru FY12	150	
					FY 13 Allocation	75	
					FY 14 Allocation	0	
					FY 15 Allocation	10	
					FY 16 Allocation	TBD	
					FY17 Budget	TBD	
					Balance to Complete	TBD	

Planning Assistance to States, Section 22, Upper Delaware River Basin (Callicoon Creek), NY

- **Authority:** Section 22, Water Resources Development Act of 1974
- **Congressional Districts**: NY-19
- **Non-Federal Sponsor:** Sullivan County, New York
- **Date of Project Agreement:** February 12, 2009
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $296,000
- **Federal Funds Appropriated:** $118,000
- **Non-Federal Share:** $118,000

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Callicoon Creek Bypass Channel Location Map

Authorized under Section 22, Water Resources Development Act of 1974, as amended.

A hydrology and hydraulic modeling report of the East Branch Callicoon Creek watershed area was completed October 13, 2010. The report modeled stream segments within the watershed and determined the flood reduction benefits for seven hydrologic structural alternatives both individually and in combination. Additionally, the report determined the flood reduction benefits for two hydraulic structural alternatives.

Hydraulic modeling of the Callicoon Creek bypass channel was scoped to accommodate available FY15 Federal PAS funds ($40k). Sponsor experienced difficulty in providing matching funds of in-kind service. Federal funds ($40K) likely to be reprogrammed.

Planning Assistance to States, Section 22, Upper Delaware River Basin (Callicoon Creek), NY

- **Project Goals:** The purpose of this project is to model stream segments within the watershed and determined the flood reduction benefits for seven hydrologic structural alternatives both individually and in combination.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Callicoon Watershed Model	78	78	156		Allocations thru FY12	133.9	
Bypass Channel Model	40	40	80		FY 13 Allocation	0	
					FY 14 Allocation	0	
					FY 15 allocation	40	
					FY 16 Budget	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Section 22 Planning Assistance to States, PA (Delaware River Waterfront Pier Analysis)

- **Authority:** Section 22, Water Resources Development Act of 1974
- **Congressional Districts**: PA-1, PA-2, PA-13
- **Non-Federal Sponsor:** Delaware River Waterfront Corporation
- **Date of Project Agreement:** January 2012
- **Target Completion Date:** November 2013
- **Total Estimated Cost:** $640,000
- **Federal Funds Appropriated:** $245,000
- **Non-Federal Share:** $220,000 (In-Kind Services)

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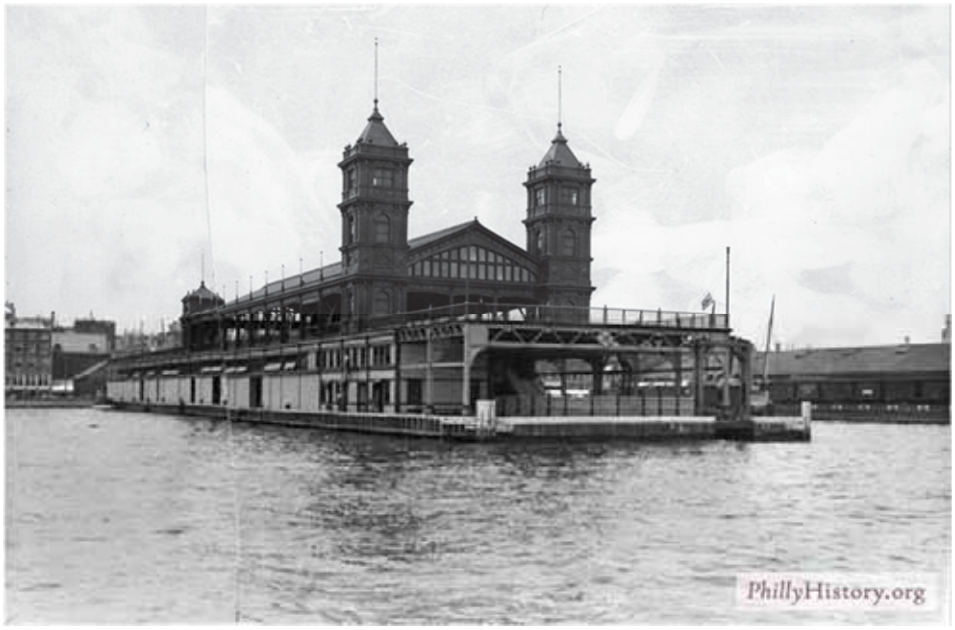


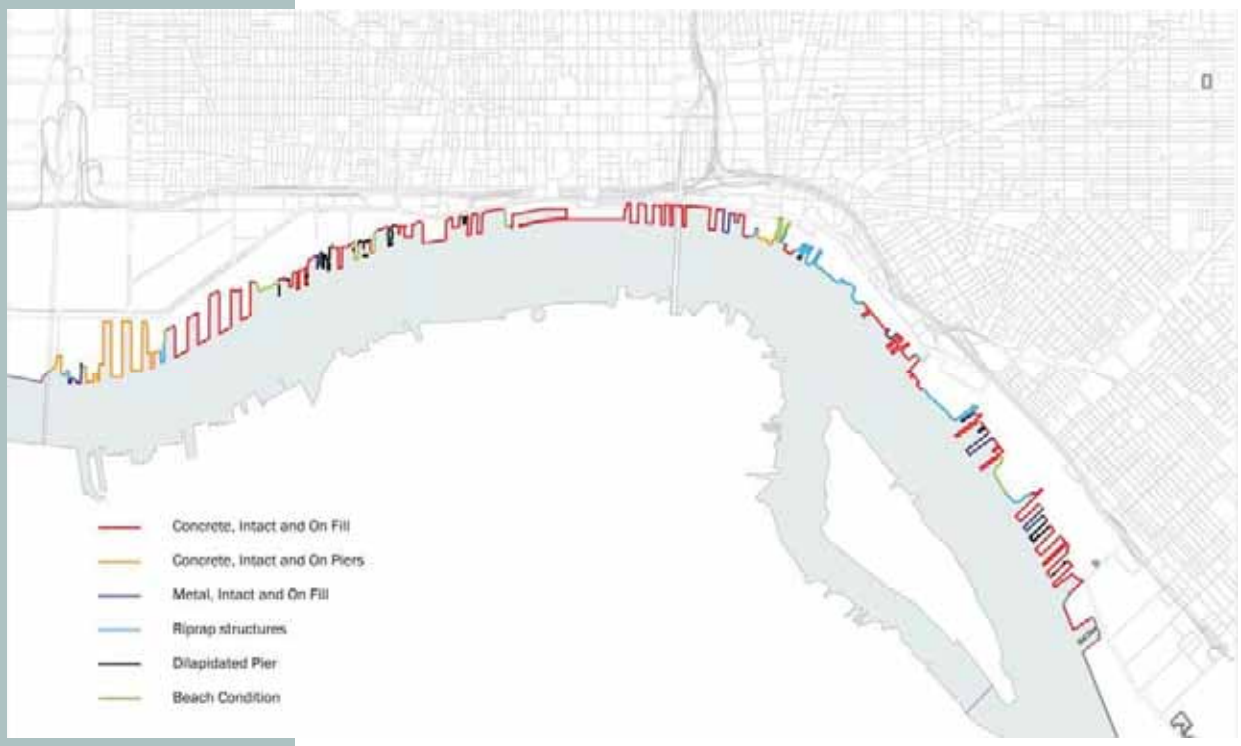
The Planning Assistance to States program authorized by Section 22 of the Water Resources Development Act of 1974, as amended, provides the Federal funding for this project. Section 22 provides authority for the U.S. Army Corps of Engineers (USACE) to assist states, local governments, and other non-Federal entities in the preparation of comprehensive plans for the development, use, and conservation of water and related land resources. The authority allows the Corps of Engineers to provide technical assistance in the form of studies and plans, but does not allow for actual design or construction assistance.

A cost share agreement was executed with the Delaware River Waterfront Corporation (DRWC) in January 2012. This project evaluated the structural integrity of Spring Garden/Festival Piers along the Delaware River Waterfront in Philadelphia, PA for possible redevelopment and ecosystem restoration potential. This project will be completed upon receipt of non-federal in kind service documentation and subsequent credit approval.

Additional Planning Assistance will commence upon receipt of Federal funds.

Section 22 Planning Assistance to States, PA (Delaware River Waterfront Pier Analysis)

- **Project Goals:** The purpose of this project is to evaluates existing piers along the Delaware River Waterfront in Philadelphia, PA for possible redevelopment and



Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
PAS Study (Phase 1)	220	220	440		Allocations thru FY12	245	
Phase 2	100	100	200		FY 13 Allocation	0	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	75	

Section 22 Planning Assistance to States, PA (Rose Valley Creek Flood Hazard Analysis)

- **Authority:** Section 22, Water Resources Development Act of 1974
- **Congressional Districts**: PA-13
- **Non-Federal Sponsor:** Whitpain Township
- **Date of Project Agreement:** 2 August 2012
- **Target Completion Date:** June 2016
- **Total Estimated Cost:** $250,000
- **Federal Funds Appropriated:** $125,000
- **Non-Federal Share:** $125,000

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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. The authority allows the Corps of Engineers to provide technical assistance in the form of studies and plans, but does not allow for actual design or construction assistance.

Rose Valley Creek is one of three tributaries to the Wissahickon Creek that begin in Upper Dublin Township and flow through Ambler Borough to its confluence with the Wissahickon Creek in Whitpain Township. The drainage area of Rose Valley Creek is the largest of the three tributary watersheds, spanning about 2 square miles, and includes portions of Lower Gwynedd, Upper Dublin, and Whitpain Townships and Ambler Borough. The effective Flood Insurance Rate Maps (FIRM) do not depict a major section of the lower reach of the stream as special flood hazard areas (SFHA) under the National Flood Insurance Program (NFIP) and many homeowners lack insurance. This section also contains an asbestos remediation site, damaged by Tropical Storm Lee along with several homes and businesses in 2011. A cost share agreement was executed with Whitpain Township in FY12.

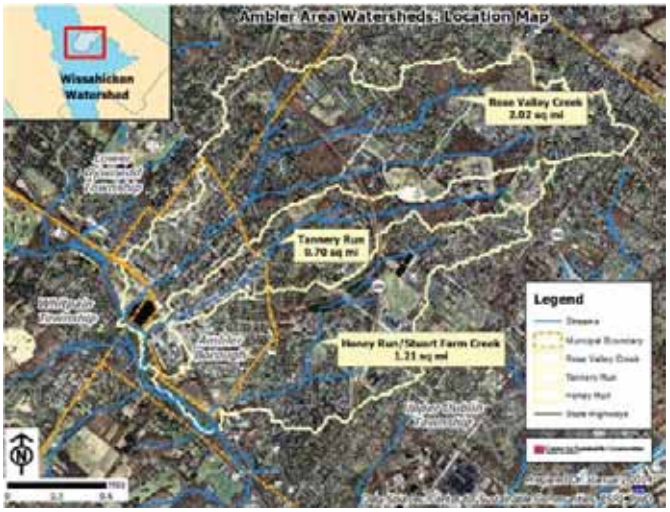
Section 22 Planning Assistance to States, PA (Rose Valley Creek Flood Hazard Analysis)

- **Project Goals:** The purpose of this project is to completes a detailed flood hazard study for the Rose Valley Creek Watershed that will include updating new Flood Insurance Rate Maps (FIRM) and the development of a flood mitigation plan.

Flooding problems have seriously hampered housing, economic development and public safety in the Borough of Ambler and the northeastern section of Whitpain Township. In these areas, the creek is channelized and buried in sections, with undersized culverts that create flooding conditions in even modest storms.

This project includes an effort to complete a detailed flood hazard study for the Rose Valley Creek Watershed that will include updating new Flood Insurance Rate Maps (FIRM) and the development of a flood mitigation plan. The project includes ten work tasks, implemented over approximately fifteen months. Temple University, through the Center for Sustainable Community Development, assisted with the project.

The Corps continues to work with the Federal Emergency Management Agency to complete a Letter of Map Revision to update the Flood Insurance Rate Maps.



Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Mitigation Plan and LOMR	125	125	210		Allocations thru FY13	80	
					FY 14 Allocation	0	
					FY 15 Allocation	9	
					FY 16 Allocation	25	
					FY 17 Budget	0	
					Balance to Complete	0	

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US ARMY CORPS OF ENGINEERS
Building Strong

US Army Corps of Engineers
Philadelphia District

Continuing Authorities Program (CAP)

Program Authority	Description	Federal Funding Limits (incl. WRRDA 2014 changes)	
		Project	Annual Program
Section 14	Flood Control Act of 1946 (PL 79-526), as amended for emergency streambank & shoreline erosion protection for public facilities & services.	$5,000,000	$20,000,000
Section 103	River & Harbor Act of 1962 (PL 87-874), as amended, amends PL 727, an act approved August 13, 1946 which authorized Federal participation in the cost of protecting the shores of publicly owned property from hurricane & storm damage.	5,000,000	30,000,000
Section 107	River & Harbor Act of 1960 (PL 90-483), as amended for navigation.	10,000,000	50,000,000
Section 111	River & Harbor Act of 1968 (PL 90-483), as amended, for mitigation of shoreline erosion damage caused by Federal navigation projects.	10,000,000	N/A
Section 145	Placement of Dredged Material on beaches, Water Resources Development Act of 1976 (PL 94-587), as amended.	N/A	N/A
Section 204	Beneficial Uses of Dredged Material, Water Resources Development Act of 1992 (PL 102-580), as amended.	10,000,000	50,000,000
Section 205	Flood Control Act of 1948 (PL 80-858), as amended, for flood control.	10,000,000	55,000,000
Section 206	Aquatic Ecosystem Restoration, Water Resources Development Act of 1996 (PL 104-303), as amended.	10,000,000	50,000,000
Section 208	Flood Control Act of 1954 (PL 83-780), as amended, originally Section 2, Flood Control Act of August 28, 1937 (PL 75-406) for snagging and clearing for flood control.	500,000	7,500,000
Section 1135	Project Modifications for Improvement of the Environment, Water Resource Development Act of 1986 (PL 99-662), as amended.	10,000,000	40,000,000

Color Code	
State	Color
Delaware	Red
New Jersey	Blue
New York	Black
Pennsylvania	Green
Multiple	Purple

Bethany Beach, Pennsylvania Avenue Improvement, DE

- **Authority:** Section 205 of the Flood Control Act of 1948 and PL 113-2
- **Congressional Districts:** DE-AL
- **Non-Federal Sponsor:** Town of Bethany Beach
- **Date of Feasibility Cost Share Agreement:** March 12, 2012
- **Target Completion Date:** Study suspended
- **Total Estimated Cost:** $430,000
- **Federal Funds Appropriated:** $301,000
- **Non-Federal Share:** $165,000

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Flooding in northern Bethany Beach during a September 2009 storm event.

The authority for this project is Section 205 of the Flood Control Act of 1948 (Public Law 80-858), as amended. Under this authority, the USACE is authorized to plan, design, and construct small flood damage reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project□related costs for feasibility studies, planning, engineering, design, and construction.

The purpose of this study is to investigate Federal interest in providing flood damage reduction for the northern half of Bethany Beach along the back bay area where flooding occurs numerous times per year during high tide events that are accompanied by heavy rainfalls. Tidal elevations in the canals prevent runoff from attenuating into the surrounding drainage area. The ground elevation of Bethany Beach is near sea level with little difference in elevation across the community. Approximately sixty percent of the community is within the 100-year floodplain.

Bethany Beach, Pennsylvania Avenue Improvement, DE

- **Project Goals:** The feasibility study is the first phase of the two-phased Corps of Engineers' planning process. The purpose of the feasibility study is to fully evaluate all reasonable solutions to the water resource problems identified in the study area. The feasibility report provides the basis for a decision on project construction.

- **Problem:** The Project Area experienced flooding for five days as a result of Hurricane Sandy. Flooding occurs multiple times per year on the northern half of the 1.2 square mile Town of Bethany Beach. The flooding is tidally related and impacts the Town through the man made canals that connect the Indian River Bay to the north and to the Little Assawoman Bay to the south.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans as needed for completion of the Feasibility Report
-

Following the initiation of the study effort, the Philadelphia District determined that some of the potential sites for flood risk management (FRM) solutions along the man made canals were located well beyond the municipal limits of the Town. The District and the non-Federal sponsor coordinated with the Delaware Department of Natural Resources and Environmental Control (DNREC) and discussed the implications of constructing FRM solutions at the proposed locations outside of the Town. DNREC expressed support for the study and indicated that they could possibly provide funding to the NFS for use in their cost sharing with USACE. 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.

KEY ISSUES

- Funding from NFS is uncertain beyond the amount which has already been provided ($55,000). Based upon further coordination with the NFS following the initial evaluation of potential alternatives it was decided to suspend the study.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Feasibility	265	165	430
Design & Implementation	TBD	TBD	TBD

Summarized Federal Financial Data ($000)	Regular	PL113-2
Allocations thru FY13	102	138
FY 14 Allocation	-25	0
FY 15 Allocation	0	-100
FY 16 Allocation	Study suspended	
Balance to Complete	Study suspended	

Habitat Productivity of Delaware Bay, DE & NJ

- **Authority:** Section 1135 of the Water Resources Development Act of 1986
- **Congressional Districts:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control
- **Date of Project Agreement:** TBD
- **Target Completion Date:** FY19
- **Total Estimated Study Cost:** $400,000
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** $150,000

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Delaware Bayshore, DE & NJ

This project is authorized under Section 1135 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, Project Modifications for Improvement of the Environment.

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.

Habitat Productivity of Delaware Bay, DE & NJ

- **Project Goals:** The purpose of this project is to provide habitat for horseshoe crabs and shorebirds in the vicinity of Mispillion Inlet.

The interrelationship of shorebirds and horseshoe crabs can be adversely affected by habitat loss, erosion, and loss of coastal wetlands through development and sea level rise. Horseshoe crab and shorebird habitat in the Bay is nationally significant but becoming scarcer, as these habitats have been adversely affected by current maintenance dredging and placement operations, and as these habitats have been adversely affected by current maintenance dredging and placement operations, and commercial harvesting operations. Horseshoe crabs remain on the bay bottom for most of their lives, feeding on benthic worms, mollusks, and crustaceans, returning to the lower bay beaches annually during spring and summer to spawn.

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 semipalated 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 and FCSA is currently under development to initiate the feasibility study.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	250	150	400		FY14 Allocation	50	
Design & Implementation	TBD	TBD	TBD		FY 15 Allocation	50	
Total	TBD	TBD	TBD		FY 16 Allocation	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	150	

Little Mill Creek, New Castle County, DE

- **Authority:** Section 205 of the Flood Control Act of 1948
- **Congressional Districts**: DE-AL
- **Non-Federal Sponsors:** State of Delaware, Department of Natural Resources and Environmental Control, New Castle County Special Services and New Castle Conservation District
- **Date of Project Agreement:** 23 June 2009
- **Target Completion Date:** November 2015
- **Total Estimated Cost:** $9.5 mil
- **Federal Funds Appropriated:** $8.1 mil
- **Non-Federal Share:** 35%

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Flood waters from Little Mill Creek overtop Maryland Avenue at the intersection with Brookside and Germay Drives in New Castle County, DE.

This project is authorized under Section 205 of the Flood Control Act of 1948, as amended.

Residents and businesses along Little Mill Creek experience flooding. Several conditions contribute to the flooding problems in the project area: decades of urbanization, short duration, high intensity storms, and long duration storms. The project area was divided into upper and lower reaches. The Upper Reach portion of the Little Mill Creek project was completed in 2008. The State of Delaware, Department of Natural Resources and Environmental Control (DNREC), the non-Federal sponsor for the project along with New Castle County and the New Castle Conservation District executed a PPA to construct the Lower Reach channel.

The lower reach extends from the AMTRAK Railroad right of way upstream to the Delaware Route 4 (Maryland Avenue) Bridge. Work on the lower reach consists of widening and deepening the channel to increase flow capacity and reduce flood damages to over fifty businesses and commercial properties along Germay, Brookside and Meco Drives. The channel was deepened 3 feet and widened to a bottom width of 30 feet for a total length of 2,170 feet. The work included removal and remediation of some minor contaminated channel and bank material.

Little Mill Creek, New Castle County, DE

- **Project Goals:** The purpose of this project is to widen and deepen the existing channel to increase flow capacity and reduce flood damages to over fifty businesses and commercial properties along Germay, Brookside and Meco Drives.

New Castle County acquired all real estate needed for construction including two parcel easements by eminent domain. Construction began in spring 2014 and was completed in November 2015.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Total Cost	7,000	2,500	9,500		Allocations thru FY12	6,774	Includes $3M used for the construction of the upper reach
					FY 13 Allocation	200	
					FY 14 Allocation	25.8	
					FY 15 Allocation	1,172	
					FY 16 Allocation	0	
					Balance to Complete	0	

Restoration of Grassdale, New Castle County, DE

- **Authority:** Section 1135 of the Water Resources Development Act of 1986
- **Congressional Districts:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $2,600,000
- **Federal Funds Appropriated:** $815,000
- **Non-Federal Share:** $650,000

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The Restoration of Grassdale Project will restore degraded tidal marsh choked by the invasive reed *Phragmites*. Highly valuable wildlife habitat will be restored by re-establishing tidal flow, stabilizing eroding embankments, and creating tidal flats, near Delaware City, Delaware.

This project is authorized under Section 1135 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, Project Modifications for Improvement of the Environment.

Hundreds of acres of marsh were excavated and channelized to create the Chesapeake and Delaware Canal in the early 20th century. The C&D Canal has been operated and maintained by the US Army Corps of Engineers, Philadelphia District, since 1919. Changes caused by operation of the canal, especially the decrease in tidal flow, created ideal conditions for a highly-invasive reed, Phragmites australis, that eliminated the valuable marsh habitat. If nothing is done, the area will remain poor habitat.

The project will restore approximately 50 acres of degraded tidal marsh habitat by re-establishing tidal flow, stabilizing eroding embankments, and creating a combination of open water areas, shallow water habitats, and mud flats. The re-establishment of tidal flow will have a detrimental impact to Phragmites. These restored habitats will serve as foraging habitat for wading birds, waterfowl and other transient species along with a myriad of fish and wildlife species that use the nearby Pea Patch Island heronry and the Delaware Bay estuary.

Restoration of Grassdale, New Castle County, DE

- **Project Goals:** The purpose of this project is to restore approximately 50 acres of degraded tidal marsh habitat by re-establishing tidal flow, stabilizing eroding embankments, and creating a combination of open water areas, shallow water habitats, and mud flats.

FY13 funds are being used to coordinate the draft Project Partnership Agreement (PPA), update the real estate estimate and cost estimate, complete a monitoring plan, update the Project Management Plan, and re-coordinate the 2002 Environmental Assessment with environmental agencies. Additional funds (both Federal and non-Federal) are needed to finalize the project design and construction specifications and award a construction contract.

The Project Partnership Agreement (PPA) must be approved and signed by the sponsor. This older project has not had a PPA signed and new regulations require that the agreement be signed before additional Federal funds are allocated. $100K is available for this project, pending execution of the PPA.

DNREC is considering the possibility of performing the real estate appraisal themselves for in-kind credit. They must provide a Scope of Work to USACE's Real Estate office for approval prior to performing the work.

A pedestrian bridge will be installed over one of the excavated channels so the public can view the restored tidal marsh and see the ecological and aesthetic benefits of the project. The project will compliment surrounding wildlife areas, such as Fort DuPont State Park, the C&D canal greenway, Lums Pond State Park, and Bethel Wildlife Management Area.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	676	0	676		Allocations thru FY13	790	
Design & Implementation	1,274	650	1,924		FY 14 Allocation	50	
Total	1,950	650	2,600		FY 15 Allocation	0	
					FY 16 Allocation	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	1,110	

Assunpink Creek, Hamilton Township, Mercer County, NJ

- **Authority:** Section 205, Flood Control Act of 1948
- **Congressional Districts:** NJ-4 and NJ-12
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** May 2014
- **Target Completion Date:** June 2017
- **Total Estimated Cost:** $600,000
- **Federal Funds Appropriated:** $350,000
- **Non-Federal Share:** $250,000

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Flood waters from the Assunpink Creek on Sweet Briar Avenue in Hamilton Township during an April 2007 storm event.

The authority for this project is Section 205 of the Flood Control Act of 1948 (Public Law 80-858), as amended. Under this authority, the USACE is authorized to plan, design, and construct small flood damage reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project□related costs for feasibility studies, planning, engineering, design, and construction.

The focus of this feasibility study is the lower reach of the Assunpink and its tributaries that are located in the City of Trenton, Hamilton Township, and Lawrence Township, New Jersey. Within the study area, flooding problems are widespread. The wide floodplains of the relatively low gradient streams are subject to chronic flooding and, on several occasions, extensive flood damage has occurred. Most recently, the study area experienced record flood levels and a great deal of property damage as a result of the heavy rains brought by Hurricane Irene in August of 2011. Flooding on the Assunpink Creek that resulted from Hurricane Irene shut down the rail lines in the City of Trenton for three days. This disrupted one of the busiest parts of the nation's passenger train system between Philadelphia and New York.

This feasibility study is examining the flooding problems along the Assunpink Creek and evaluating the Federal interest in implementing flood risk management solutions.

Assunpink Creek, Hamilton Township, Mercer County, NJ

- **Project Goals:** The purpose of this project is to examine potential solutions to reduce frequent flooding problems .

The USACE executed a Feasibility Cost Share Agreement (FCSA) with the New Jersey Department of Environmental Protection (NJDEP) in FY14. The non-Federal sponsor is responsible for 50 percent of the costs of the Assunpink Creek Flood Risk Management Feasibility Study.

The NJDEP is developing hydraulic modeling to support the technical analyses as part of their required costs share match.

Funds received in FY15 will be used to complete the feasibility study in FY17.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	350	250	600		Allocations thru FY13	150	
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	0	
					FY 15 Allocation	200	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Assunpink Creek, Trenton, NJ

- **Authority:** Section 1135 of the WRDA 1986
- **Congressional Districts:** NJ-4, NJ-12
- **Non-Federal Sponsor:** City of Trenton, New Jersey
- **Date of Project Agreement:** September 2009
- **Target Completion Date:** FY 2017
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $1.792 mil
- **Non-Federal Share:** TBD

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View of existing creek culvert looking upstream toward the historic Broad Street Bridge in downtown Trenton, NJ

This project is authorized by Section 1135 of WRDA 1986, Environmental Restoration, and encompasses demolition and removal of a 500-foot buried concrete box culvert that currently contains a section of the Assunpink Creek between Broad and Warren Streets downstream from Mill Hill Park. The culvert roof has failed on two occasions and is a public safety hazard. Day lighting of the stream will occur by completely removing the culvert roof, walls and floor, and exposing the stream to natural daylight and channel conditions. Natural channel conditions are more conducive to aquatic habitat. The new channel will improve anadromous fish migration by eliminating low-light conditions which disorient migrating fish and hinders their ability to spawn upstream.

This reach of the Assunpink Creek was the site of the second battle of Trenton during the Revolutionary War and is immediately downstream of the historic Broad Street Bridge.

Assunpink Creek, Trenton, NJ

- **Project Goals:** The purpose of this project is to demolish and remove a 500-foot buried concrete box culvert to improve anadromous fish migration by eliminating low-light conditions. It also provides educational and cultural opportunities for the community as the site is the location of the Battle of the Assunpink Creek, known also as the Second Battle of Trenton during the American Revolutionary War in January, 1777.

The construction contract was anticipated to be awarded in FY15, however based on the latest cost estimate project costs increased significantly. The USACE and the City of Trenton are working together to possibly re-scope the project with modified designs that will reduce the implementation costs to a level agreeable the City.

Construction funds received in FY15 were returned pending resolution of the current issue concerning total project costs.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	422	105	527		Allocations thru FY13	1,492	
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	200	
					FY 15 Allocation	3,500	
					FY 16 Allocation	-3,400	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Barnegat Inlet Regional Sediment Management, Ocean County, New Jersey

- **Authority:** Section 204 of the Water Resources Development Act of 1992
- **Congressional Districts:** NJ-3
- **Non-Federal Sponsor:** None required
- **Date of Project Agreement:** None required
- **Target Completion Date:** TBD
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $172,000
- **Non-Federal Share:** None required

Barnegat Inlet, New Jersey

This study is authorized under Section 204 of the Water Resources Development Act of 1992, as modified by Section 2037 of WRDA 2007. This authority allows USACE to collaborate with a State in the preparation of a comprehensive State or regional sediment management plan within the boundaries of the State. This is a 100% Federally funded study only authority.

The study will develop a regional sediment management (RSM) plan for Barnegat Inlet to identify and evaluate opportunities to beneficially use dredged material from the navigation channel for the most cost effective and hydraulically advantageous near shore placement of sandy material.

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Barnegat Inlet Regional Sediment Management Ocean County, New Jersey

- **Project Goals:** The purpose of this project is to develop a regional sediment management plan for Barnegat Inlet and to identify and evaluate opportunities to use dredged material from the Federally authorized navigation channel.

Sediment management practices have historically been used by the U.S. Army Corps of Engineers (USACE) on a project by project basis. This method of management has often resulted in unanticipated consequences since natural systems do not always coincide with project, jurisdictional, or state boundaries or other activities impacting sediment sources. Some of these consequences have included erosion or sedimentation in nearby areas, inefficient planning for dredged material management, and missed opportunities to more cost-effectively manage sediment resources. Recently, however, the USACE and other federal and state resource agencies have begun to look at sediment management from a regional perspective. This systems based approach is aimed at increasing cooperation and coordination among agencies, adaptive management across multiple projects based on shared goals, improved management through the application of best available science and engineering practices, and implementation of policies to achieve maximum long-term economic, social, and environmental benefits.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	300	0	300		Allocations thru FY13	72	
					FY 14 Allocation	50	
					FY 15 Allocation	50	
					FY 16 Allocation	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	128	

Brigantine Island South End, NJ

- **Authority:** Section 103 of the River and Harbor Act of 1962 and PL 113-2
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsors:** New Jersey Department of Environmental Protection and City of Brigantine
- **Date of Feasibility Cost Share Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Study Cost:** $500,000
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** 50%

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Residences in Brigantine behind the jetty along Absecon Inlet are prone to flood problems from Atlantic Ocean storm surges.

The authority for this feasibility study is provided by Section 103 of the River and Harbor Act of 1962, Public Law 87-874, as amended, in accordance with the policies and procedures prescribed by the Chief of Engineers. Section 103 provides authority for the Corps of Engineers to develop and construct small beach erosion and flood damage reduction projects. Each project is limited to a Federal cost of not more than $5 million, including all project related costs for feasibility studies, planning, engineering, design, and construction.

The study area is located along Absecon Inlet in the City of Brigantine, Atlantic County, New Jersey. The City of Brigantine is located on a barrier island approximately 1 mile northeast of Atlantic City, NJ. The study area includes the Inlet shoreline of the City of Brigantine along Ocean Drive West and is subject to flooding from ocean storm surges that propagate into Absecon Inlet, the tidal connection between the ocean and the back bays. When storm surge levels in the ocean are of sufficient elevation in Absecon Inlet, wind generated waves overtop the low and failing timber bulkhead along Ocean Drive West resulting in flooding of the south end of Brigantine Island.

The Corps investigated the area in 2014 in a Federal Interest Determination report, with a recommendation to proceed with a Section 103 CAP feasibility study. The NJDEP and the City of Brigantine are potential sponsors to sign a Feasibility Cost Sharing Agreement for a Section 103 CAP Study.

Brigantine Island South End, NJ

- **Hurricane Sandy:** Hurricane Sandy heavily impacted the City of Brigantine. Response and Recovery efforts by the Community were the top priority for the non-Federal sponsor. Efforts are shifting to the long-term sustainability of the City of Brigantine.

- **Potential Solutions:** Any solution to the flooding problem must keep water out or get people and infrastructure out of the way of water (structure elevation, relocation, etc.). Solutions may be a beach that needs to be evaluated in terms of response to elevated inlet water levels, etc. or it may be structural in nature. The solution proposed in the Federal Interest Determination Report is a bulkhead and this will be evaluated in the Feasibility study. However, the most economically efficient elevation (maximum NED benefits) of a bulkhead or other barrier may not be institutionally acceptable due to esthetics. These challenges will be addressed as we move forward with the Feasibility Study.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report

The District has used damage information collected by the City and FEMA after Hurricane Sandy to examine the extent of damages and the limits of the study area. These will also be coordinated with the local sponsor, the New Jersey Department of Environmental Protection, and the City of Brigantine.

There is increased urgency to complete a Brigantine Island South End Storm Damage Reduction Feasibility Study and to implement the recommendations, in the wake of Hurricane Sandy within the Project Area. 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.

Challenges

One of the technical challenges faced with the project is formulating cost-effective storm damage mitigation alternatives that are compatible with highly developed urban shorelines. Some of the less costly alternatives for raising elevation (e.g., sand berms, geotubes, etc) may not be feasible because they require a large footprint or would interfere with existing infrastructure.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility	300	200	500		Allocations thru FY13	0
Design & Implementation			TBD		FY 14 Allocation	50 SANDY
					FY 15 Allocation	50 SANDY
					FY 16 Allocation	TBD
					FY 17 Budget	TBD
					Balance to Complete	TBD

Cape May City (Delaware Avenue), NJ

- **Authority:** Section 14 of the Flood Control Act of 1946 and PL 113-2
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** TBD
- **Date of Project Agreement:** TBD
- **Target Completion Date:** June 2016
- **Total Estimated Study Cost:** $100,000
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** Full Federal funding for Feasibility Study.

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Delaware Avenue in the City of Cape May is threatened by erosive forces from Cape May Harbor.

This project is authorized by Section 14 of the Flood Control Act of 1946, as amended. The purpose of Section 14 is to protect public works and non-profit public facilities from streambank and shoreline erosion. Federal funding for each Section 14 project is limited to $5,000,000 (as amended by Section 1030 of the Water Resources Reform and Development Act of 2014, P.L. 113-121).

The study area is located on the north side of the City along the Cape May Harbor. This area is an approximate 0.4 mile length of Delaware Avenue that continually experiences severe shoreline erosion due to tidal surge and wave action during hurricanes and major nor'easters. The erosion threatens the integrity of Delaware Avenue, a county road, which is the main route for the delivery of supplies to the U.S. Coast Guard Training Center. The erosion also threatens an underground sewer utility line that runs along the northern right-of-way of the road.

The feasibility study will determine if it is within Federal interest to construct the most environmentally suitable, least-cost protection alternative to address the shoreline erosion problems in the study area for the protection of Delaware Avenue and the sewer utility line .

Cape May City (Delaware Avenue), NJ

- **Project Goals:** The purpose of Section 14 is to protect public works and non-profit public facilities from streambank and shoreline erosion.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan) as needed for completion of the Feasibility Report

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	100	0	100		Allocations thru FY 13	0	
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	0	
					FY 15 Allocation	50	SANDY
					FY 16 Allocation	50	SANDY
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Cape May Seawall, City of Cape May, Cape May County, NJ

- **Authority:** Section 103 of the River and Harbor Act of 1962 and PL 113-2
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** City of Cape May
- **Date of Project Agreement:** May 2015
- **Target Completion Date:** July 2017
- **Total Estimated Study Cost:** $840,000
- **Federal Funds Appropriated:** $400,000
- **Non-Federal Share:** $310,000

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Existing seawall that is located between Beach Avenue and the beach on the south side of the City of Cape May.

The authority for this feasibility study is provided by Section 103 of the River and Harbor Act of 1962, Public Law 87-874, as amended, in accordance with the policies and procedures prescribed by the Chief of Engineers. Section 103 provides authority for the Corps of Engineers to develop and construct small beach erosion and flood risk management projects. Each project is limited to a Federal cost of not more than $5 million, including all project related costs for feasibility studies, planning, engineering, design, and construction.

The study area is located along the ocean coast on the south side of the City of Cape May. Flooding in this low-lying area has been historically problematic during hurricanes and nor'easters. The study area appears to be vulnerable to ocean flooding due to the existing condition of a seawall that runs parallel between the beach and Beach Avenue. The seawall is a stone and concrete construction and was built following the destruction of the beachfront and boardwalk by the Ash Wednesday Storm in March 1962. The feasibility study will examine the existing conditions and explore flood risk management solutions in the study area.

Cape May Seawall, City of Cape May, Cape May County, NJ

- **Project Goals:** The purpose of this project is to examine potential solutions for flood risk reduction.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan) as needed for completion of the Feasibility Report

Approximately 6 feet of sand that was washed over the seawall and onto the street at the corner of Wilmington Avenue and Beach Avenue during Hurricane Sandy.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	530	310	840		Allocations thru FY 13	0	
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	50	SANDY
					FY 15 Allocation	350	SANDY
					FY 16 Allocation	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Chelsea Heights, Atlantic City, Atlantic County, NJ

- **Authority:** Section 205, Flood Control Act of 1948 and PL 113 -2
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsor:** NJDEP
- **Date of Project Agreement:** May 2015
- **Target Completion Date:** July 2017
- **Total Estimated Study Cost:** $780,000
- **Federal Funds Appropriated:** $400,000
- **Non-Federal Share:** $280,000

West End Avenue on the north side of Chelsea Heights is frequently flood by the bay behind Absecon Island.

The authority for this project is Section 205 of the Flood Control Act of 1948 (Public Law 80-858), as amended. Under this authority, the USACE is authorized to plan, design, and construct small flood damage reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project related costs for feasibility studies, planning, engineering, design, and construction.

There is significant flood risk and associated damages in the study area due to development on flat, low-lying topography with exposure to tidal flooding from Absecon Island back bay. The likelihood of intense future storms, along with sea level rise, is placing this section of Atlantic City at increasing risk for more frequent flooding. Given these conditions, flood damages predicted for the 50 year planning horizon in the Chelsea Heights study area are likely to be substantial. The feasibility study will examine the existing conditions and explore flood risk management solutions in the study area.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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.

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Chelsea Heights, Atlantic City, Atlantic County, NJ

- **Project Goals:** The purpose of this project is to examine potential solutions to reduce the frequent flooding problems.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report

South Boulevard along the New Jersey Intracoastal Waterway on the south side of Chelsea Heights.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	500	280	780		Allocations thru FY13	0	
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	50	SANDY
					FY 15 Allocation	350	SANDY
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Delaware Bayshore, Downe Township, NJ

- **Authority:** Section 205, Flood Control Act of 1948 and PL 113 -2
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Feasibility Cost Share Agreement:** May 2015
- **Target Completion Date:** 2017 (feasibility phase)
- **Total Estimated Study Cost:** $740,000
- **Federal Funds Appropriated:** $410,000
- **Non-Federal Share:** $320,000

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Damages from Hurricane Sandy along the Delaware Bay at Gandys Beach in Downe Township.

The authority for this feasibility study is provided by Section 205 of the Flood Control Act of 1948 (Public Law 80-858), as amended, in accordance with the policies and procedures prescribed by the Chief of Engineers. Section 205 provides authority for the Corps of Engineers to develop and construct small flood damage reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project□related costs for feasibility studies, planning, engineering, design, and construction.

The objectives of the Feasibility Phase of the project are to:

- Prepare a Feasibility Report and alternatives analysis for the project
- Prepare an Environmental Assessment and NEPA documentation for the selected alternative
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report.

Delaware Bayshore, Downe Township, NJ

- **Hurricane Sandy:** Hurricane Sandy decimated the communities of Fortescue and Gandys Beach in Downe Township. State and Township efforts are now focused on the long-term sustainability of the Delaware bayshore area.

- **Potential Solutions:** Any solution to the storm damage mitigation problem should provide protection for people and infrastructure (structure elevation, relocation, etc.). Solutions need to be evaluated in terms of elevated water levels and may be structural in nature. The solution proposed in the approved Federal Interest Determination Report is beachfill and this will be evaluated during the Feasibility study effort. However, the most economically efficient elevation (maximum NED benefits) of a sand berm may not be institutionally acceptable due to environmental impacts. These challenges will be addressed as we move forward with the Feasibility Study.

The District used Hurricane Sandy damage information collected by the Township and FEMA to investigate the study area. The investigation was coordinated with the local sponsor, the New Jersey Department of Environmental Protection, and the Mayor of Downe Township who requested the District focus its study efforts on the developed Delaware Bay shoreline areas of Fortescue and Gandys Beach within the Township.

There is increased urgency to complete a Delaware Bayshore, Downe Township, Beach Erosion and Storm Damage Reduction Feasibility Study and to implement the recommendations, in the wake of Hurricane Sandy within the Project Area.

Challenges

One of the technical challenges faced with the project is formulating cost-effective storm damage mitigation alternatives that are compatible with the environmental values of the Delaware Bay shoreline. Some of the less costly alternatives for raising elevation (e.g., sand berms, geotubes, etc) may not be feasible because they require a large footprint or would interfere with existing infrastructure (docks, marinas, piers, etc). Structural options such as bulkheads, revetments, etc. could be cost prohibitive over entire project reaches and also have negative environmental impacts.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility	420	320	740		Allocations thru FY13	
Design & Implementation			TBD		FY 14 Allocation	50 SANDY
					FY 15 Allocation	360 SANDY
					FY 16 Allocation	0
					FY 17 Budget	TBD
					Balance to Complete	TBD

East Point Lighthouse, NJ

- **Authority:** Section 14 of the Flood Control Act of 1946 and PL 113-2
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Feasibility Cost Share Agreement:** NA
- **Target Completion Date:** FY 2017
- **Total Estimated Study Cost:** $100,000
-
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** 50%

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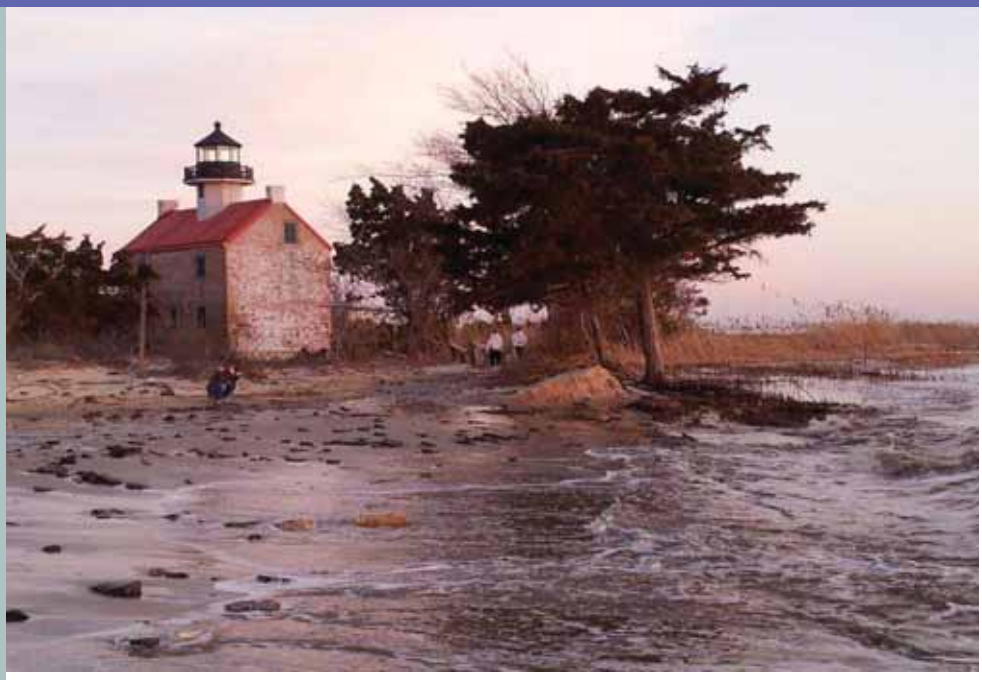

East Point Lighthouse in the background with rapidly eroding marsh in the foreground.

This project is authorized by Section 14 of the Flood Control Act of 1946, as amended.

Section 14 of the Flood Control Act of 1946, as amended, Streambank and Shoreline Erosion Protection of Public Works and Non-Profit Public Services, is designed to implement projects to protect facilities that are used to provide public services and are open to all on equal terms. These facilities must be in imminent threat of damage or failure by natural erosion processes on stream banks and shorelines, and are essential and important enough to merit Federal participation in their protection. Eligible facilities include known historic properties whose significance has been demonstrated by being listed on the National Register of Historic Places.

East Point Lighthouse, NJ

- **Project Goals:** Protect the East Point Lighthouse (listed on the National Register of Historic Places) from erosive forces

.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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.

The NJDEP Bureau of Coastal Engineering has agreed to serve as the non-Federal sponsor. The NJDEP SHPO office was able to secure a grant from NPS for $500,000 to use towards the non-Federal share.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan) as needed for completion of the Feasibility Report

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility	100	0	100		Allocations thru FY13	0
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	50 SANDY
					FY 15 Allocation	50 SANDY
					FY 16 Allocation	0
					FY 17 Budget	TBD
					Balance to Complete	TBD

Massachusetts Avenue, Atlantic City, NJ

- **Authority:** Section 205 of the River and Harbor Act of 1962 and PL 113-2
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsors:** New Jersey Department of Environmental Protection and Atlantic City
- **Date of Feasibility Cost Share Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Study Cost:** TBD
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** 50%

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The photo above shows the deteriorated condition of the Bulkhead at Massachusetts Avenue in Atlantic City.

This project is authorized by Section 205 of the River and Harbor Act of 1962 (PL 87-874), as amended (Flood Damage Reduction).

Section 205 provides authority for the Corps of Engineers to develop and construct small flood reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project related costs for feasibility studies, planning, engineering, design, and construction.

The Massachusetts Avenue flood risk management study area is located in Atlantic City, Atlantic County, New Jersey. The study area is located in the northeast corner of the city on Massachusetts Avenue between Carson and Caspian Avenues. Massachusetts Avenue is low lying residential city street that is situated between two marinas known as Snug Harbor and Gardner's Basin. The area has historically experienced flooding problems which are increasing in frequency, duration, and intensity and are caused by the combined effects of tidal events and heavy precipitation during hurricanes and major nor'easters.

Massachusetts Avenue, Atlantic City, NJ

- **Hurricane Sandy:** Hurricane Sandy impacted the community of Atlantic City in the vicinity of Massachusetts Avenue. Response and Recovery efforts by the Community was the top priority for the non-Federal sponsor. Efforts are shifting to the long-term sustainability of Atlantic City.

- **Potential Solutions:** Potential solutions to the issue include flood walls, vinyl bulkhead, wooden bulkhead, flood -proofing, flood warning and or evacuation of damage elements. These solutions will be evaluated in the feasibility phase.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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. A Feasibility Cost Share Agreement needs to be executed with a non-Federal sponsor to proceed with the feasibility study.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report

<u>Challenges</u>

One of the technical challenges faced with the project is formulating cost-effective flood protection alternatives that are compatible with highly developed backbay shorelines. Some of the less costly alternatives may not be feasible because they require a large footprint or would interfere with existing infrastructure (docks, marinas, piers, etc). Structural options such as bulkheads, revetments, etc. could be cost prohibitive over entire project reaches.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility	350	250	600		Allocations thru FY13	0
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	50 SANDY
					FY 15 Allocation	50 SANDY
					FY 16 Allocation	TBD
					FY 17 Budget	TBD
					Balance to Complete	TBD

Mordecai Island Coastal Wetlands Restoration, Ocean County, NJ

- **Authority:** Section 1135 of Water Resources Development Act of 1986
- **Congressional Districts:** NJ-2, NJ-3
- **Non-Federal Sponsor:** Mordecai Land Trust/NJDEP Bureau of Coastal Engineering
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $6,666,667
- **Federal Funds Appropriated:** $492,837
- **Non-Federal Share:** $1,666,667

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Mordecai Island is located west of Long Beach Island near Beach Haven Borough, New Jersey and is adjacent to the New Jersey Intracoastal Waterway (NJIWW), the main navigation channel of Barnegat Bay. Erosion along the coastline pictured above.

The Mordecai Island Coastal Wetlands Restoration Project, Beach Haven, NJ is authorized under Section 1135 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, Project Modifications for Improvement of the Environment. The entire coastline of Mordecai Island has suffered from erosion; however, the western edge, adjacent to the Federal New Jersey Intracoastal Waterways navigation channel, has receded at a more substantial rate on the order of 3 - 6 ft. per year. Over the past 100 years, half the island has been lost through erosion. If nothing is done to protect the island, the erosion will continue and a highly valuable habitat, including a nesting colony of state-threatened black skimmers, will be at risk. The goal of the project is to preserve and protect Mordecai Island's diverse natural bird and marine habitats by stabilizing the shoreline and reducing future erosion and limit impacts to habitat.

Several erosion protection measures were evaluated and a 90% level design for an offshore wave barrier was completed in 2009; however, the expected wave reducing efficiency (40%) of the structure and new living shorelines rules in New Jersey prompted the sponsor to request another alternative incorporating living shorelines into the solution. Various types of hybrid living shorelines solutions (rock and vegetation) to the erosion were evaluated by USACE's Engineer Research and Development Center (ERDC). The Project Partnership Agreement must be approved and signed by the co-sponsors before design work can continue.

Mordecai Island Coastal Wetlands Restoration, Ocean County, NJ

- **Project Goals:** The goal of the project is to preserve and protect Mordecai Island's diverse natural bird and marine habitats by stabilizing the shoreline and reducing future erosion and limit impacts to habitat.

FY13 funds were used to coordinate the draft Project Partnership Agreement and work on the alternative analysis and conceptual design. Additional funds (both Federal and non-Federal) are needed to complete the project design.

The Project Partnership Agreement must be approved and signed by the co-sponsors before design work can continue. This older project has not had a Project Partnership Agreement (PPA) signed and new regulations require that the agreement be signed before additional Federal funds are allocated.

Continued erosion of Mordecai Island threatens an abundant diversity of natural wildlife habitats including open marsh, salt ponds, exposed mud flats, shrub-dominated areas and shallow water eelgrass beds. These habitats provide breeding, foraging, nesting and resting areas for many species of migratory birds, including shorebirds, wading birds, raptors and waterfowl. The continual erosion along the western edge of Mordecai Island threatens this rich diversity of natural habitats.

USACE's Operations Division recently beneficially placing dredged material from a shoal in the NJIWW on the island. The larger ecosystem restoration project (led by Planning) will build on this shorter timeframe effort and Planning and Operations will continue to coordinate as design progresses.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Planning & Design Analysis	493	0	493
Design & Implementation	4,507	1,667	6,174
Total	5,000	1,667	6,667

Summarized Federal Financial Data ($000)		
Allocations thru FY13	493	
FY 14 Allocation	0	
FY 15 Allocation	0	
FY 16 Allocation	TBD	
FY 17 Budget	TBD	
Balance to Complete	4,507	

Musconetcong River Dam Removals, Bloomsbury, NJ

- **Authority:** Section 206 of the Water Resources Development Act of 1996
- **Congressional District:** NJ-7
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection, Office of Natural Resource Restoration
- **Date of Project Agreement:** May 2015
- **Target Completion Date:** September 2017
- **Total Estimated Cost:** $960,000
- **Federal Funds Appropriated:** $330,000
- **Non-Federal Share:** $336,000

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A view of the Bloomsbury Dam and the upstream impoundment area where natural river habitat conditions have been degraded due to the presence of the dam.

This project is authorized under the Water Resources Development Act of 1996, Section 206, Aquatic Restoration. Work under this authority may carry out aquatic ecosystem restoration projects that will improve the quality of the environment, are in the public interest, and are cost-effective.

This project investigates the removal of the Bloomsbury Dam in an effort to restore the connectivity of 8 miles of a Federally-designated National Wild and Scenic River. This project would restore natural river ecological functions and would re-establish the free passage of aquatic species including resident fish, amphibians, freshwater crustaceans, and macro invertebrates. It would also remove a hazardous impediment and improve kayaking and canoeing conditions on a river that has been identified by the NJDEP Office of Natural Lands Management in its New Jersey Trails Plan as a Waterways Trail.

The Corps completed the feasibility study and environmental assessment in April 2013 recommending partial dam removal.

Musconetcong River Dam Removals, Bloomsbury, NJ

- **Project Goals:** The purpose of this project is to remove the Bloomsbury Dam in an effort to restore the connectivity of 8 miles of a Federally-designated National Wild and Scenic River.

The Project Partnership Agreement was executed in May 2015 with the New Jersey Department of Environmental Protection (NJDEP). Survey and design efforts and cultural resource coordination are currently underway.

This project is part of a larger, river-wide effort to remove dams along the Musconetcong River and restore the passage of migratory fish (shad, alewife, and herring) from the Delaware River.

The Musconetcong River has been federally designated as a National Wild and Scenic River that has outstanding ecological value in free-flowing condition. Bloomsbury Dam is one of three remaining dams on the lower Musconetcong River that acts as an impediment to migratory fish from the Delaware River. A partnership of federal and state agencies and non-profit organizations is currently conducting feasibility studies for removal of the other two dams. When all three of these dams are removed, it will restore 13.3 miles of the Musconetcong River to its natural, free-flowing condition and allow migratory fish to access spawning habitat which they have not been able to reach for over 200 years.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	100	0	100		Allocations thru FY13	160	
Design & Implementation	624	336	960		FY 14 Allocation	50	
					FY 15 Allocation	131.3	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	382.7	

New Jersey Intracoastal Waterway, Dredged Hole 34 Restoration, Atlantic City, NJ

- **Authority:** Section 204 of the Water Resources Development Act of 1992
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Transportation
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $3.4M (through construction)
- **Federal Funds Appropriated:** $172,000
- **Non-Federal Share:** $1.2M (estimated through construction)

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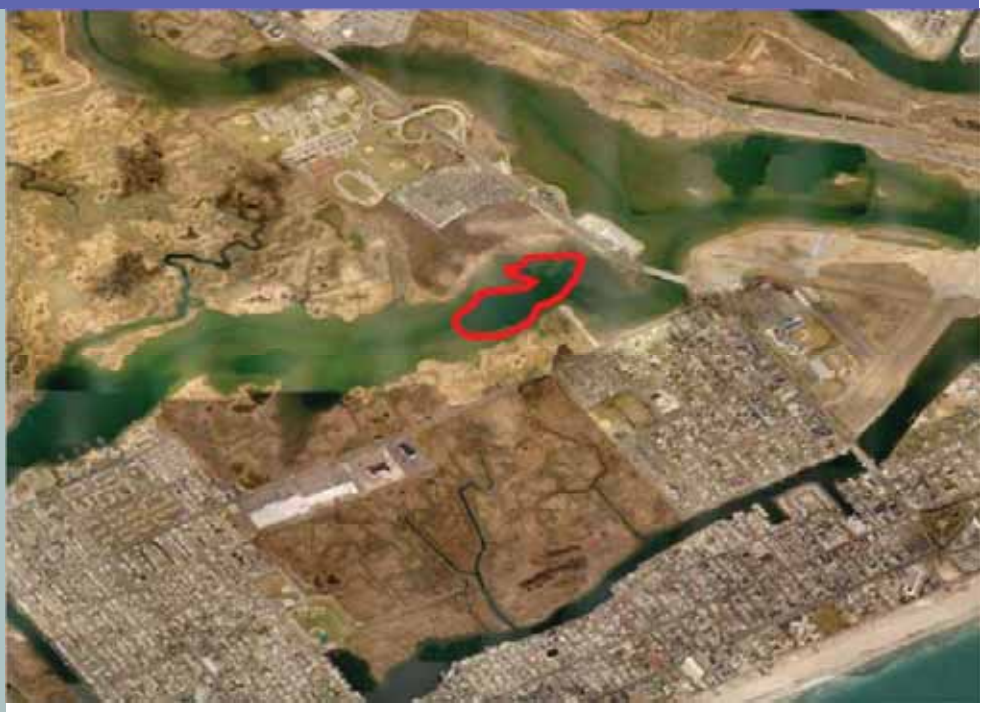


Aerial photograph depicting the project site for Dredge Hole 34 including the proposed dredged hole and dredged material locations.

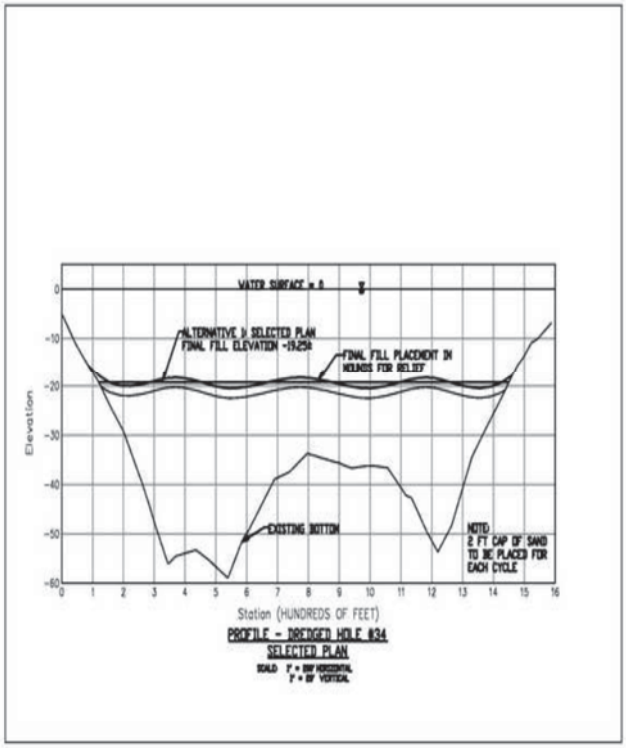
This project was authorized by Section 204, Water Resources Development Act of 1992, as amended. This authority provides for the use of dredged material from new or existing Federal projects to protect, restore, or create aquatic and ecologically related habitats, including wetlands.

This 60-foot deep, anoxic dredged hole was historically excavated in the bay area located behind Atlantic City and adjacent to the NJIWW as a source of borrow material for nearby road and bridge construction. The Dredged Hole 34 Restoration Project involves partially filling the existing dredged hole with dredged material from NJIWW maintenance dredging to within 19 feet of the water surface and restore approximately 16 acres of fisheries habitat.

New Jersey Intracoastal Waterway Dredged Hole 34 Restoration, Atlantic City, NJ

- **Project Goals:** The purpose of this project is to partially fill the existing dredged hole with dredged material from NJIWW maintenance dredging to within 19 feet of the water surface and restore approximately 16 acres of fisheries habitat.

The District is coordinating with the New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Department of Transportation (NJDOT) to develop a project management plan and identify mutual interests in continuing with this project. Carry over funds will be used to execute the PPA and initiate plans and specifications, pending agreement with NJDEP and NJDOT.



The Dredged Hole 34 Restoration Project involves partially filling the existing dredged hole with dredged material from NJIWW maintenance dredging to within 19 feet of the water surface and restore approximately 16 acres of fisheries habitat.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Feasibility	100	0	100
Design & Implementation	2,242.5	1,207.5	3,450

Summarized Federal Financial Data ($000)		
Allocations thru FY13	122	
FY 14 Allocation	50	
FY 15 Allocation	0	
FY 16 Allocation	0	
FY 17 Budget	TBD	
Balance to Complete	2,070.5	

Pond Creek Salt Marsh Restoration Project, Cape May County, NJ

- **Authority:** Section 1135 of the Water Resources Development Act of 1986
- **Congressional Districts:** NJ-2
- **Proposed Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $489,000
- **Non-Federal Share:** TBD

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This project is authorized by Section 1135 of the Water Resources Development Act of 1986, as amended.

The purpose of the Pond Creek Salt Marsh Restoration Project is to restore approximately 270 acres of estuarine intertidal emergent wetland habitat for fish and wildlife resources. This will be accomplished by reintroducing tidal flushing in the lower marsh areas of Pond Creek to eliminate and control common reed (*Phragmites australis*), an exotic and invasive species which has formed an extensive, dense stand throughout most of Pond Creek marsh. Once established, *Phragmites* often out competes native salt marsh vegetation, creating habitat less suitable for wildlife. Control of common reed will allow the reestablishment of native salt marsh vegetation [e.g., smooth cordgrass (*Spartina alterniflora*), salt hay grass (*S. patens*), and spike grass (*Distichlis spicata*)], thus increasing habitat available for a variety of fish and wildlife resources, in particular, the diamondback terrapin (*Malaclemys terrapin*), egrets, herons, shorebirds, and waterfowl.

The Pond Creek marsh (totaling 417 acres) is located along the Delaware Bay and runs north of Sunset Boulevard in Lower Township and in the Borough of West Cape May, Cape May County, New Jersey. The marsh, once a free-flowing estuarine tidal marsh before human disturbance, is part of the State of New Jersey's Higbee Beach Wildlife Management Area.

Pond Creek Salt Marsh Restoration Project, Cape May County, NJ

- **Project Goals:** The purpose of this project is to restore Pond Creek to an estuarine intertidal emergent marsh, dominated by native species such as smooth cord grass (Spartina alterniflora).

The Sponsor is currently developing a conceptual design for this project. Upon completion of these designs, the Corps will review the technical information and, if appropriate, will pursue execution of a Project Partnership Agreement to complete the design and award a contract for construction.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Planning & Design Analysis	450		450		Allocations thru FY13	439	
Construction	TBD	TBD	TBD		FY 14 Allocation	50	
Total	TBD	TBD	TBD		FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Seaside Park, Ocean County, NJ

- **Authority:** Section 103 of the River and Harbor Act of 1962 and PL 113-2
- **Congressional Districts:** NJ-3
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Feasibility Cost Share Agreement:** September 2011
- **Target Completion Date:** January 2017
- **Total Estimated Study Cost:** $500,000
- **Federal Funds Appropriated:** $300,000
- **Non-Federal Share:** $200,000

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Bayside flood problems are a common issue in Barnegat Bay and tidal bays along New Jersey and Delaware. The solution is usually more complicated than ocean-front areas due to available land area.

The authority for this feasibility study is provided by Section 103 of the River and Harbor Act of 1962, Public Law 87-874, as amended, in accordance with the policies and procedures prescribed by the Chief of Engineers. Section 103 provides authority for the Corps of Engineers to develop and construct small beach erosion and flood damage reduction projects. Each project is limited to a Federal cost of not more than $5 million, including all project□related costs for feasibility studies, planning, engineering, design, and construction.

The study area is located along Barnegat Bay in the Borough of Seaside Park , Ocean County, New Jersey. Seaside Park sits on a barrier island approximately 11 miles north of Barnegat Inlet. The study area includes the bayside shoreline of the Borough of Seaside Park west of Central Avenue and is subject to frequent nuisance flooding from ocean storm surges that propagate into Barnegat Bay via Barnegat Inlet, the dominant tidal connection between the ocean and Barnegat Bay. When storm surge levels in the ocean are of sufficient duration to propagate into Barnegat Bay, the low elevation areas of Seaside Park flood directly, and wind generates waves that pulse additional water into Seaside Park.

The Corps investigated the area in 1995 in a reconnaissance report, with a recommendation to proceed with a Section 103 CAP feasibility study. The NJDEP signed a Feasibility Cost Sharing Agreement for a Section 103 CAP Study in September 2011.

Seaside Park, Ocean County, NJ

- **Hurricane Sandy:** Hurricane Sandy decimated the community of Seaside Park. Response and Recovery efforts by the Community was the top priority for the non-Federal sponsor. Efforts are shifting to the long-term sustainability of Seaside Park.

- **Potential Solutions:** Any solution to the flooding problem must keep bay water out of Seaside Park or get people and infrastructure out of the way of water (structure elevation, relocation, etc.). Solutions on the bay side may be a small beach that needs to be evaluated in terms of response to elevated bay water levels, etc. or it may be structural in nature. The solution proposed in the 1995 Reconnaissance study of Seaside Park was a beachfill and this will be evaluated in the Feasibility study. However, the most economically efficient elevation (maximum NED benefits) of a sandfill or other barrier may not be institutionally acceptable due to esthetics. These challenges will be addressed as we move forward with the Feasibility Study.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report

The District used the damage information collected by the Borough and FEMA after Hurricane Sandy to rescope the study. The District expanded the study area to include the entire Borough of Seaside Park. The rescoping was coordinated with the local sponsor, the New Jersey Department of Environmental Protection, and the Borough of Seaside Park.

There is increased urgency to complete Seaside Park Bayside Beach Erosion and Storm Damage Reduction Feasibility Study and to implement the recommendations, in the wake of Hurricane Sandy within the Project Area. 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.

Challenges

One of the technical challenges faced with the project is formulating cost-effective flood protection alternatives that are compatible with highly developed backbay shorelines. Some of the less costly alternatives for raising elevation (e.g., sand berms, geotubes, etc) may not be feasible because they require a large footprint or would interfere with existing infrastructure (docks, marinas, piers, etc). Structural options such as bulkheads, revetments, etc. could be cost prohibitive over entire project reaches.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Feasibility	300	200	500
Design & Implementation	TBD	TBD	TBD

Summarized Federal Financial Data ($000)	Regular	PL 113-2
Allocations thru FY13	390	218
FY 14 Allocation	-208	
FY 15 Allocation	0	-50
FY 16 Allocation	0	
FY 17 Budget	TBD	
Balance to Complete	TBD	

Sunset Avenue, Atlantic City, NJ

- **Authority:** Section 205 of the River and Harbor Act of 1962 and PL 113-2
-
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsors:** New Jersey Department of Environmental Protection and Atlantic City
- **Date of Feasibility Cost Share Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Study Cost:** $600,000
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** 50%

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The area near sunset avenue in Atlantic City is protected by a low poorly constructed rubble revetment that is easily overtopped by storm surge during flood events

This project is authorized by Section 205 of the River and Harbor Act of 1962 (PL 87-874), as amended (Flood Damage Reduction).

Section 205 provides authority for the Corps of Engineers to develop and construct small flood reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project related costs for feasibility studies, planning, engineering, design, and construction.

The Sunset Avenue flood risk management study area is located in Atlantic City, Atlantic County, New Jersey. The study area is located on the southwest side of the city along the back bay and the New Jersey Intracoastal Waterway (NJIWW). The study area extends from the intersection of Sunset Avenue and Atlantis Avenue, which is adjacent to the Atlantic City Expressway and the Atlantic City Train Station, to the intersection of Sunset Avenue and Albany Avenue (State Route 322). The area has an approximate length of 1 mile and extends for approximately 15 city blocks. Sunset Avenue runs directly adjacent to the back bay for portions of the study area, and in other areas residential structures, street ends, and recreational facilities lie alongside the water. The study area is primarily composed of low lying residential city streets. The area has historically experienced flooding problems which are increasing in frequency, duration, and intensity and are caused by the combined effects of tidal events and heavy precipitation during hurricanes and major nor'easters.

Sunset Avenue, Atlantic City, NJ

- **Hurricane Sandy:** Hurricane Sandy impacted the community of Atlantic City in the vicinity of Sunset Avenue. Response and Recovery efforts by the Community was the top priority for the non-Federal sponsor. Efforts are shifting to the long-term sustainability of Atlantic City.

- **Potential Solutions:** Potential solutions to the issue include flood walls, vinyl bulkhead, wooden bulkhead, flood -proofing, flood warning and or evacuation of damage elements. These solutions will be evaluated in the feasibility phase.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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. A FCSA needs to be executed with a non-Federal sponsor to proceed with the feasibility phase.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report

<u>Challenges</u>

One of the technical challenges faced with the project is formulating cost-effective flood protection alternatives that are compatible with highly developed backbay shorelines. Some of the less costly alternatives may not be feasible because they require a large footprint or would interfere with existing infrastructure (docks, marinas, piers, etc). Structural options such as bulkheads, revetments, etc. could be cost prohibitive over entire project reaches.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility	350	250	600		Allocations thru FY 13	0
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	50 SANDY
					FY 15 Allocation	50 SANDY
					FY 16 Allocation	0
					FY 17 Budget	TBD
					Balance to Complete	TBD

Trenton Marine Terminal, City of Trenton, Mercer County, NJ

- **Authority:** Section 14 of the Flood Control Act of 1946
- **Congressional Districts:** NJ-12
- **Non-Federal Sponsor:** City of Trenton
- **Date of Project Agreement:** June 2015
- **Target Completion Date:** July 2017
- **Total Estimated Cost:** $1,328,000
- **Federal Funds Appropriated:** $300,000
- **Non-Federal Share:** $430,000

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Collapsed section of the pier at the Trenton Marine Terminal

This project is authorized by Section 14 of the Flood Control Act of 1946, as amended. The purpose of Section 14 is to protect public works and non-profit public facilities from streambank and shoreline erosion. Facilities that are eligible for protection include "known historic properties whose significance has been demonstrated by a determination of eligibility for listing on, or actual listing on, the National Register of Historic Places" (ER 1105-2-100, Appendix F, Section III, F-23, b.) Federal funding for each Section 14 project is limited to $5,000,000 (as amended by Section 1030 of the Water Resources Reform and Development Act of 2014, P.L. 113-121).

The project consists of proposed bank stabilization and protection along the left bank of the Delaware River to protect a public park that is listed on the National Register of Historic Places. The site will be investigated and geotechnical analyses performed to determine the cause and solution for the existing bank instability and propose an engineering solution. An environmental assessment will also be required prior to construction.

Trenton Marine Terminal, City of Trenton, Mercer County, NJ

- **Project Goals:** The purpose of this project is to provide bank stabilization and protection along the left bank of the river to protect a public park that is listed on the National Register of Historic Places.

The existing pier structure at the Terminal is an open wharf type, also known as a "quay" structure. It is constructed of wood piles driven below the channel bottom with a top deck that is a reinforced concrete slab and a lower deck constructed of wood sheeting on wood frame members attached to the wood piles. The area between the two decks contains backfill material and the area below the lower deck is open to water and tidal action. A concrete gravity wall is located on the waterside of the structure between the upper deck and lower deck. The Corps completed an Initial Appraisal Report (IAR) and determined there is sufficient Federal interest to pursue a project under Section 14.

A Project Partnership Agreement was executed with the City of Trenton in June 2015.

FY16 funds are being used to complete all design and environmental compliance activities necessary for construction. Environmental activities will include an Environmental Assessment that documents existing conditions and with project conditions, along with more data on potential impacts. Permits and formal coordination with resource agencies will occur as the design is being prepared and finalized. Engineering tasks will include geotechnical characterization of the project site, final project design, and a detailed cost estimate followed by award of the construction contract.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Feasibility	100	0	100
Design & Implementation	798.2	429.8	1,228

Summarized Federal Financial Data ($000)		
Allocations thru FY13	74	
FY 14 Allocation	76	
FY 15 Allocation	50	
FY 16 Allocation	100	
FY 17 Budget	TBD	
Balance to Complete	598.2	

Ventnor, Backbay Bulkheads, NJ

- **Authority:** Section 205 of the River and Harbor Act of 1962 and PL 113-2
- **Congressional Districts:** NJ-2
- **Non-Federal Sponsors:** New Jersey Department of Environmental Protection and City of Ventnor
- **Date of Feasibility Cost Share Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Study Cost:** $600,000
- **Federal Funds Appropriated:** $100,000
- **Non-Federal Share:** 50%

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This photo shows the poor condition of the bulkhead in Ventnor that leaves property and infrastructure vulnerable to storm damages.

This project is authorized by Section 205 of the River and Harbor Act of 1962 (PL 87-874), as amended (Flood Damage Reduction).

Section 205 provides authority for the Corps of Engineers to develop and construct small flood reduction projects. Each project is limited to a Federal cost of not more than $10 million, including all project related costs for feasibility studies, planning, engineering, design, and construction.

The Ventnor City flood risk management study is located in Ventnor City, Atlantic County, New Jersey. The study area is located on the back bay side of Ventnor City along a Federal navigation channel known as the New Jersey Intracoastal Waterway (NJIWW) and the Inside Thorofare. The study area extends from the municipal boundary between Ventnor City and Atlantic City at the street end of North Jackson Avenue to the street end of North Surrey Avenue. The area has an approximate length of 0.5 mile and extends for approximately 12 city blocks. It is primarily composed of low lying residential city streets. The area has historically experienced flooding problems which are increasing in frequency, duration, and intensity and are caused by the combined effects of tidal events and heavy precipitation during hurricanes and major nor'easters.

Ventnor, Backbay Bulkheads, NJ

- **Hurricane Sandy:** Hurricane Sandy impacted the community of Ventnor on the ocean and bay side. Response and Recovery efforts by the Community was the top priority for the non-Federal sponsor. Efforts are shifting to the long-term sustainability of Ventnor.

- **Potential Solutions:** Potential solutions to the issue include flood walls, vinyl bulkhead, wooden bulkhead, flood -proofing, flood warning and or evacuation of damage elements. These solutions will be evaluated in the feasibility phase.

A Federal Interest Determination was completed by the District and approved by North Atlantic Division in FY14. 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. A Feasibility Cost Share Agreement needs to be executed with a non-Federal sponsor to proceed with the feasibility phase.

The objectives of the Feasibility Phase of the project are to:

- Prepare the Feasibility Report for the project
- Prepare an Environmental Assessment and NEPA documentation for the project
- Prepare a Project Management Plan (PMP) for the Design and Implementation Phase
- Develop other supporting plans (e.g. Real Estate Plan, Value Engineering, etc.) as needed for completion of the Feasibility Report

Challenges

One of the technical challenges faced with the project is formulating cost-effective flood protection alternatives that are compatible with highly developed backbay shorelines. Some of the less costly alternatives may not be feasible because they require a large footprint or would interfere with existing infrastructure (docks, marinas, piers, etc). Structural options such as bulkheads, revetments, etc. could be cost prohibitive over entire project reaches.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)	
Feasibility	350	250	600		Allocations thru FY13	0
Design & Implementation			TBD		FY 14 Allocation	50 SANDY
					FY 15 Allocation	50 SANDY
					FY 16 Allocation	0
					FY 17 Budget	TBD
					Balance to Complete	TBD

Schuylkill River, North Coventry Township, Chester County, PA

- **Authority:** Section 14 of the Flood Control Act of 1946
- **Congressional Districts:** PA-6
- **Non-Federal Sponsor:** North Coventry Township, Chester County, PA
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $2.8 mil
- **Federal Funds Appropriated:** $226,000
- **Non-Federal Share:** $1.3 mil

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Erosion of the right bank of the Schuylkill River along River Road in North Coventry Township, PA.

This project is authorized under Section 14 of the Flood Control Act of 1946, as amended: Emergency Stream Bank Stabilization.

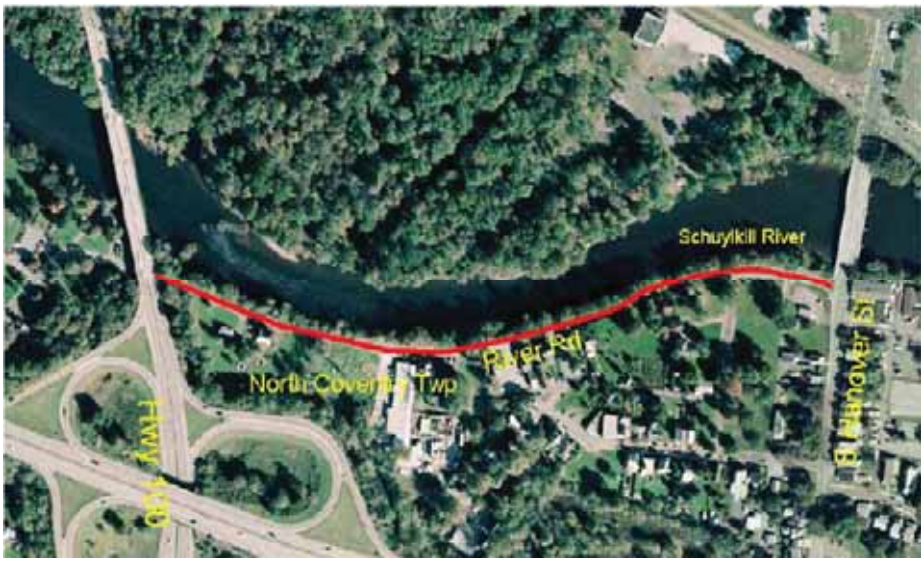
The project site is located along the right bank of the Schuylkill River parallel to River Road between the Pennsylvania State Route 100 and Hanover Street Bridges in North Coventry Township, PA. The proximity of the steep River Road embankment to the Schuylkill River at this location contributes to the continual erosion of the river bank eventually resulting in undermining the road shoulder and ultimately the road, exposing the existing utilities to failure and motorists to the potential danger of driving off the embankment. River Road also provides the only local access to the residential community of South Pottstown. Closure of this local road would force local residents to use U.S. Route 422 adding seven miles to their daily commute.

The project consists of bank stabilization of the right bank of the Schuylkill River along River Road between Laurelwood Road and the Hanover Street Bridge. The river bank would be stabilized using a combination of riprap and vegetative cover in a bio-engineering solution known as longitudinal peak stone toe protection (LPSTP) for a total length of about 960 feet. An analysis of alternatives and coordination of an environmental assessment have been completed as required prior to any construction.

Schuylkill River, North Coventry Township, Chester County, PA

- **Project Goals:** The purpose of this project is to protect motorists, pedestrians and exiting utilities by stabilizing the existing eroding stream bank and shoulder of River Road which runs along the Schuylkill River in North Coventry Township, Chester County, PA. High river flow events combined with the steep embankment conditions at the site pose a threat to public safety along the road alignment.

A Project Partnership Agreement (PPA) with the Non Federal Sponsor needs to be executed for the design and construction of the project. Upon execution of the PPA all design and environmental permit compliance activities necessary for construction will be completed. Environmental activities will include PADEP permits and coordination with the Chester County Soil Conservation District. Engineering tasks will include geotechnical characterization of the project site, final project design, and a detailed cost estimate followed by award of the construction contract.



Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	100	0	100		Allocations thru FY13	226	
Design & Implementation	1,820	980	2,800		FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	1,594	

Schuylkill Watershed Restoration, Counties of Carbon, Schuylkill, Lehigh, Berks, Lebanon, Bucks, Montgomery, Chester, Delaware, & Philadelphia, PA

- **Authority:** Section 204 of the Water Resources Development Act of 1992, as amended.
- **Congressional Districts:** PA-1, PA-2, PA-6, PA-7, PA-8, PA-11, PA-13, PA-15, PA-16, PA-17
- **Non-Federal Sponsor:** None required
- **Date of Project Agreement:** None required
- **Target Completion Date:** TBD
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $155,000
- **Non-Federal Share:** None required

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A degraded stream that has been impacted by acid mine run off from an abandoned coal mine.

This study is authorized under Section 204 of the Water Resources Development Act of 1992, as modified by Section 2037 of WRDA 2007. This authority allows USACE to collaborate with a State in the preparation of a comprehensive State or regional sediment management (RSM) plan within the boundaries of the State. RSM provides the basis for a systems wide approach to sediment management to quantify and manage sediment sources and sinks, minimize dredging requirements and more effectively utilize dredged material as a resource. As a planning and management tool, RSM is a means to identify and involve multiple stakeholders to integrate data on sources of dredged sediment, demands for sediment, and impacts on commerce and the environment to both promote the beneficial uses of dredged sediment and to streamline dredging projects. Using this approach, project managers can use RSM as a tool to decrease overall lifecycle dredging costs while utilizing dredged material in a more environmentally sensitive and cost effective manner.

This is a 100% Federally funded study-only authority.

The project will develop a regional sediment management (RSM) plan for the Schuylkill River watershed to identify and evaluate opportunities to beneficially use dredged material from existing Corps disposal sites to restore streams degraded by acid mine drainage from abandoned mines.

Schuylkill Watershed Restoration, Counties of Carbon, Schuylkill, Lehigh, Berks, Lebanon, Bucks, Montgomery, Chester, Delaware, & Philadelphia, PA

- **Project Goals:** The purpose of this project is to develop a regional sediment management (RSM) plan for the Schuylkill River watershed.

Sediment management practices have historically been used by the U.S. Army Corps of Engineers (USACE) on a project by project basis. This method of management has often resulted in unanticipated consequences since natural systems do not always coincide with project, jurisdictional, or state boundaries or other activities impacting sediment sources. Some of these consequences have included erosion or sedimentation in nearby areas, inefficient planning for dredged material management, and missed opportunities to more cost-effectively manage sediment resources. Recently, however, the USACE and other federal and state resource agencies have begun to look at sediment management from a regional perspective. This systems based approach is aimed at increasing cooperation and coordination among agencies, adaptive management across multiple projects based on shared goals, improved management through the application of best available science and engineering practices, and implementation of policies to achieve maximum long-term economic, social, and environmental benefits.

Schuylkill Watershed - A map of the Schuylkill River Watershed.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	300	0	300		Allocations thru FY13	55	
					FY 14 Allocation	50	
					FY 15 Allocation	50	
					FY 16 Allocation	TBD	
					FY 17 Budget	TBD	
					Balance to Complete	145	

Toad Creek, Borough of Topton, Berks County, PA

- **Authority:** Section 14 of the Flood Control Act of 1946
- **Congressional District:** PA-15
- **Non-Federal Sponsor:** Borough of Topton, Berks County, PA
- **Date of Project Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $150,000
- **Non-Federal Share:** TBD

Flows under State Route 1010 (Weiss Street) from Toad Creek are continually eroding Topton Borough's municipal recreation facility property.

This project is authorized under Section 14 of the Flood Control Act of 1946, as amended: Emergency Stream Bank Stabilization.

The project site is located along the banks of Toad Creek at the Topton Borough municipal facilities between Weiss Street and the Home Avenue Bridge in Berks County, PA. The project consists of stabilizing the banks of Toad Creek along Topton's municipal facilities with riprap and vegetative cover using bio-engineering processes where feasible. The project area begins at the existing outfall pipe headwall below State Route 1010 (Weiss Street), and extends approximately 200' downstream towards Home Avenue.

The project is the proposed stabilization of the banks of the creek along the Borough's municipal recreation facilities between Weiss Street and Home Avenue. The creek banks along this section are failing and need to be stabilized to protect the borough's recreational infrastructure. An engineering investigation has been performed and a recommended solution to the problem developed along with a cost estimate for construction of the erosion protection for the borough's facilities.

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Toad Creek, Borough of Topton, Berks County, PA

- **Project Goals:** The purpose of this project is bank stabilization along the Borough's municipal recreation facilities between Weiss Street and Home Avenue.

The Corps in the process of completing a Federal Interest Determination to advance this project to the next phase of project development. Because there are potentially elements of public infrastructure comprising the Borough of Topton's municipal facilities which are eligible for protection under Section 14 program criteria, and at least one viable protection measure was found to be more cost effective than the no Federal Action alternative, the Toad Creek, Topton Borough, Berks County, PA – Emergency Streambank Protection Section 14 project is potentially eligible for advancement to the Design and Implementation phase. However, the USACE must demonstrate the infrastructure is in imminent threat of failure to qualify. The District is also evaluating other potential avenues for implementation under Section 206 for ecosystem restoration.

The non-Federal sponsor is very interested in the project and has received offers of financial support for the required cost share from PADEP and the Berks County Conservancy.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	100	0	100		Allocations thru FY13	42	
Design & Implementation	TBD	TBD	TBD		FY 14 Allocation	58	
					FY 15 Allocation	50	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

Tookany Creek, Cheltenham Township, Montgomery County, PA

- **Authority:** Section 205 of the Flood Control Act of 1948
- **Congressional Districts:** PA-2, PA-13
- **Non-Federal Sponsor:** Cheltenham Township, Montgomery County, PA
- **Date of Feasibility Cost Share Agreement:** June 20, 2012
-
- **Date of Project Partnership Agreement:**
- **Target Feasibility Completion Date:** June 2016
- **Total Estimated Study Cost:** $845,000
- **Federal Funds Appropriated:** $521,900
- **Non-Federal Share:** $330,000

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Portions of the creek are channelized in concrete flumes. This might appear to help the problem in one area, but only pushes the flooding problems downstream.

This project is authorized under Section 205, Flood Control Act of 1948, as amended.

The study area comprises the Tookany Creek watershed, including, hydrologic analyses within Cheltenham and Abington Townships and Jenkintown and Rockledge Boroughs, hydraulic analyses within Cheltenham Township, environmental impacts within Cheltenham and Abington Townships and Jenkintown and Rockledge Boroughs, and economic analyses within Cheltenham Township. The formulation process involved establishing plan formulation rationale, identification and screening of alternatives, assessment and evaluation of plans responsive to identified problems and needs. The study investigates both structural and non-structural solutions to the flooding problem.

Structural measures decrease flood damage by physically limiting the flood-prone area. Non-structural measures reduce the potential for damages for structures and contents in floodplains. These measures do not significantly alter the depth or extent of flooding, but rather the negative impacts on houses and possessions.

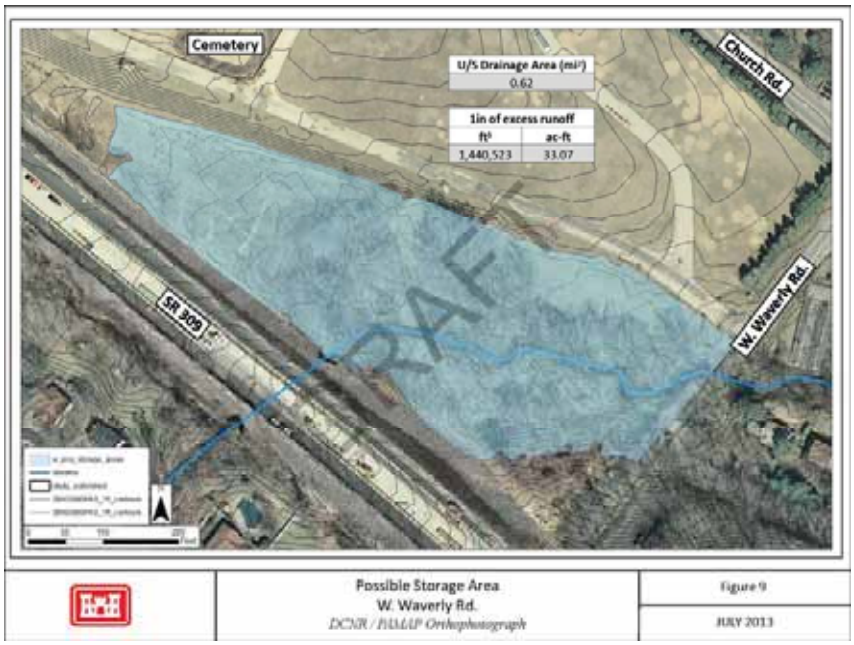
Tookany Creek, Cheltenham Township, Montgomery County, PA

- **Project Goals:** The purpose of this project is to develop a technically feasible, economically justified and environmentally acceptable solution to the flooding problems along Tookany Creek in Cheltenham Township and the surrounding areas.

The District is currently finalizing the feasibility study and anticipates a final report by June 2016. The USACE is currently responding to public comments received on the recommended plan, which included the construction of 9 detention basins.

Following approval of the report and recommendations by the Township, the Corps will pursue executing a Project Partnership Agreement (PPA) to implement construction.

A pump house along Tookany Creek in Cheltenham drains water from the leeward side of the levee into the main channel. However, during period of high flow, the water has no where to drain.



Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Feasibility	472.5	372.5	845		Allocations thru FY13	359	
Design and Implementation	TBD	TBD	TBD		FY 14 Allocation	87.9	
					FY 15 Allocation	75	
					FY 16 Allocation	0	
					FY 17 Budget	TBD	
					Balance to Complete	TBD	

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US Army Corps
of Engineers
Philadelphia District

Construction General (CG)

Construction, General (CG)

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
- Flood and Storm Damage Reduction
- Flood Control
- Hydropower
- Navigation
- Other Authorized Project Purposes (including but not limited to Environmental Restoration or Compliance, Environmental Infrastructure, and Hydropower)
- Shore Protection

Color Code	
State	**Color**
Delaware	Red
New Jersey	Blue
New York	Black
Pennsylvania	Green
Multiple	Purple

Delaware Bay Coastline, Broadkill Beach, DE

- **Authority:** Section 101 of the Water Resources Development Act of 1999
- **Congressional District:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control
- **Date of Project Agreement: TBD**
- **Target Completion Date:** 2054
- **Total Estimated Cost:** $69.9M
- **Federal Funds Appropriated:** $683,000
- **Non-Federal Share:** $130,00

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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 flood and coastal storm damage reduction 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.

Delaware Bay Coastline, Broadkill Beach, DE

- **Project Goals:** The purpose of this project provides forhurricane and coastal storm damage reduction at Broadkill Beach, dune grass, dune fencing, and suitable advance beach fill and periodic nourishment every five years.

As part of the initial construction of the Delaware River Main Channel Deepening 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 scheduled to be completed by April 2016.

The next step for the Broadkill project is to complete a Limited Reevaluation Report (LRR) indicating that initial construction is being completed as beneficial use of dredge material by the Delaware Deepening. The District is currently completing the Draft LRR. Once approved the LRR will be used to support the development of the Project Partnership Agreement (PPA). A LRR is a post authorization studies 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. A LRR documents the results of the analysis undertaken. The PPA will be necessary for future re-nourishment.

Timeline	Start	Complete	Comments
Initial Construction	Jan 2015	TBD	Completion scheduled for Apr 2016.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Initial Construction	45,500	24,374	69,874		Allocations thru FY13	683	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	0	President's Budget
					Balance to Complete	44,817	

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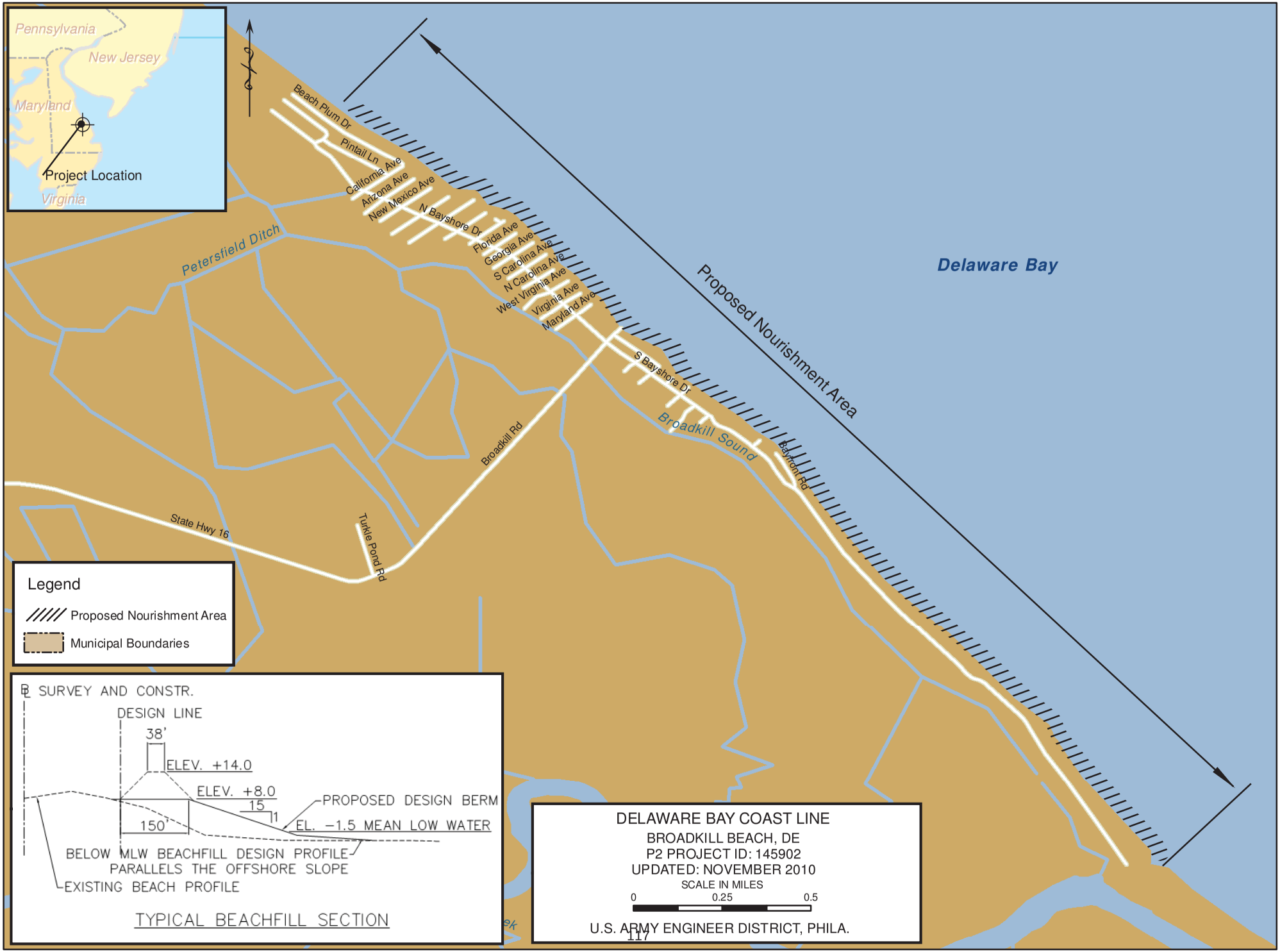
Pennsylvania
New Jersey
Maryland
Virginia
Project Location
Beach Plum Dr
Pintail Ln
California Ave
Arizona Ave
New Mexico Ave
N Bayshore Dr
Florida Ave
Georgia Ave
S Carolina Ave
N Carolina Ave
West Virginia Ave
Virginia Ave
Maryland Ave
S Bayshore Dr
Petersfield Ditch
Delaware Bay
Proposed Nourishment Area
Broadkill Rd
Broadkill Sound
Bayfront Rd
State Hwy 16
Turkle Pond Rd
Legend
Proposed Nourishment Area
Municipal Boundaries
℄ SURVEY AND CONSTR.
DESIGN LINE
38'
ELEV. +14.0
ELEV. +8.0
15
1
PROPOSED DESIGN BERM
150'
EL. −1.5 MEAN LOW WATER
BELOW MLW BEACHFILL DESIGN PROFILE
PARALLELS THE OFFSHORE SLOPE
EXISTING BEACH PROFILE
TYPICAL BEACHFILL SECTION
DELAWARE BAY COAST LINE
BROADKILL BEACH, DE
P2 PROJECT ID: 145902
UPDATED: NOVEMBER 2010
SCALE IN MILES
0
0.25
0.5
U.S. ARMY ENGINEER DISTRICT, PHILA.

Delaware Bay Coastline, 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:** Delaware Department of Natural Resources and Environmental Control.
- **Date of Project Partnership Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** 13.1M Initial Construction
- **Federal Funds Appropriated:** $1,098,000
- **Non-Federal Share:** $125,000

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Overview of Project Site — 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 flood and coastal storm damage reduction 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 $13.1 million. The PED phase was completed in FY01 with finishing detailed plans and specifications for those features recommended in the feasibility report.

Delaware Bay Coastline, Port Mahon, DE

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction and ecosystem restoration at Port Mahon, with a beach fill and periodic nourishment to provide for horseshoe 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. LRR are post authorization studies 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. A LRR documents the results of the analysis undertaken.

Initiation of construction is dependent on the establishment of adequate funding. The next steps toward initial construction once adequate funding is received is to update the LRR; develop, approve and execute the Project Partnership Agreement; acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contract. 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.

Hurricane Sandy struck the Mid-Atlantic coastline in October 2012 causing widespread damage. The Corps will need to update the LRR to adjust initial construction costs based on changed initial conditions resulting from the storm.

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)		
Construction	7,807	5,255	13,062		Allocations thru FY13	1,098	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	0	President's Budget
					Balance to Complete	6,709	

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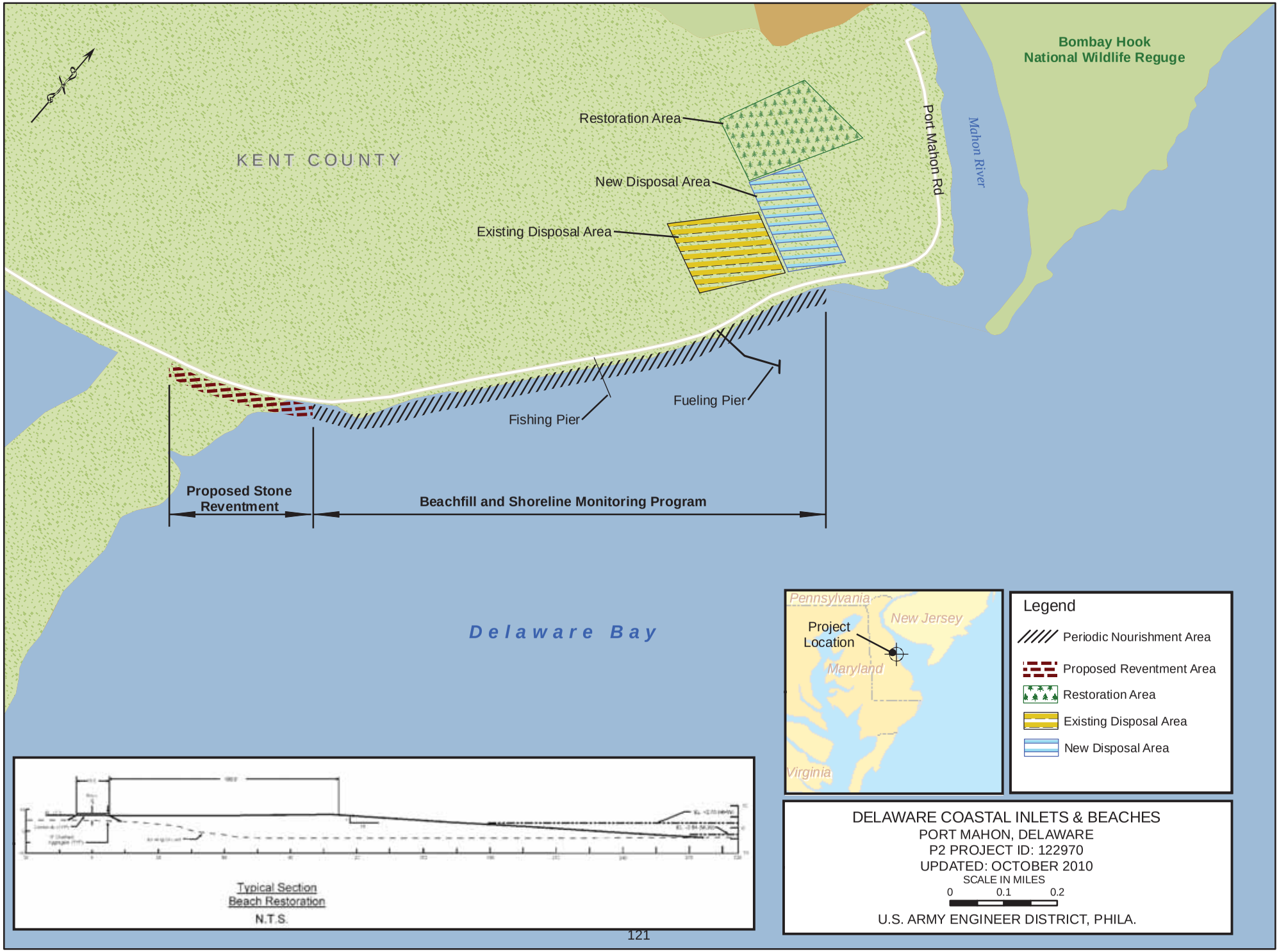
Bombay Hook
National Wildlife Reguge
KENT COUNTY
Restoration Area
New Disposal Area
Existing Disposal Area
Port Mahon Rd
Mahon River
Fishing Pier
Fueling Pier
Proposed Stone
Reventment
Beachfill and Shoreline Monitoring Program
Delaware Bay
Pennsylvania
New Jersey
Project
Location
Maryland
Virginia
Legend
Periodic Nourishment Area
Proposed Reventment Area
Restoration Area
Existing Disposal Area
New Disposal Area
Typical Section
Beach Restoration
N.T.S.
DELAWARE COASTAL INLETS & BEACHES
PORT MAHON, DELAWARE
P2 PROJECT ID: 122970
UPDATED: OCTOBER 2010
SCALE IN MILES
0 0.1 0.2
U.S. ARMY ENGINEER DISTRICT, PHILA.

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:** Delaware Department of Natural Resources and Environmental Control.
- **Date of Project Partnership Agreement:** 1 Nov 2002
- **Target Completion Date:** 2053
- **Total Estimated Cost:** $21,790,000
- **Federal Funds Appropriated:** $9,489,000
- **Non-Federal Share:** $3,256,000

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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 purposes of flood and coastal storm damage reduction 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 beachfill 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.

Delaware Bay Coastline, Roosevelt Inlet-Lewes Beach, DE

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction and navigation mitigation at Roosevelt-Lewes Beach, which includes dune grass, dune fencing, and suitable advance beach fill and periodic nourishment every six years.

A portion of the FY 11 funds were used to award a contract to complete the 2nd renourishment cycle. The Contract was awarded in September 2011 and construction was completed in Jan 2012. In FY12, $987,000 was reprogrammed to other State of Delaware projects including Rehoboth/Dewey Beaches ($739,000), Bethany/South Bethany Beaches ($150,000), Broadkill Beach ($49,000) and Fenwick Island ($49,000).

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.

FY16 project monitoring will be completed with carryover from previous fiscal years.

Timeline	Start	Complete	Comments
Initial Construction		Dec 2004	
2nd Periodic Nourishment Cycle	Nov 2011	Jan 2012	
FCCE EMERGENCY (Sandy)	Oct 2013	Nov 2013	
3rd Periodic Nourishment Cycle	FY-2019 (Sched)		Dependent on adequate funding.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	16,764	5,026	21,790		Allocations thru FY13	9,789	
					FY 14 Allocation	0	
					FY 15 Allocation	(300)	
					FY 16 Allocation	0	
					FY 17 Budget	0	President's Budget
					Balance to Complete	9,489	

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Existing Terminal Groin

Proposed Terminal Groin

Roosevelt Inlet

Delaware Bay

Pilottown Rd.

Cedar St.

Maine Ave.

Lewes Beach

Breakwater St.

Newport St.

Nebraska Ave.

Bay Ave.

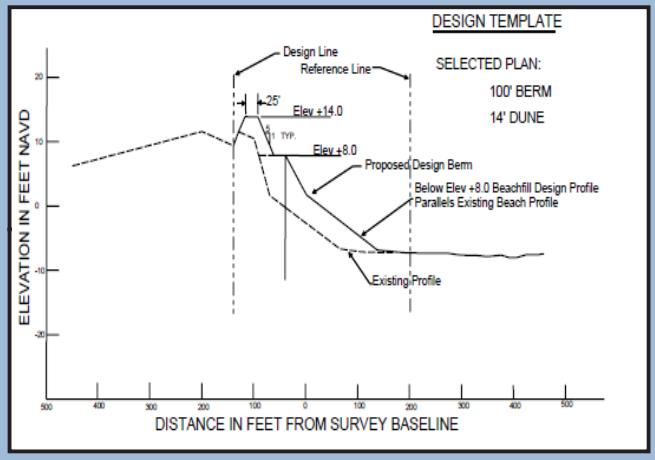
Florida Ave.

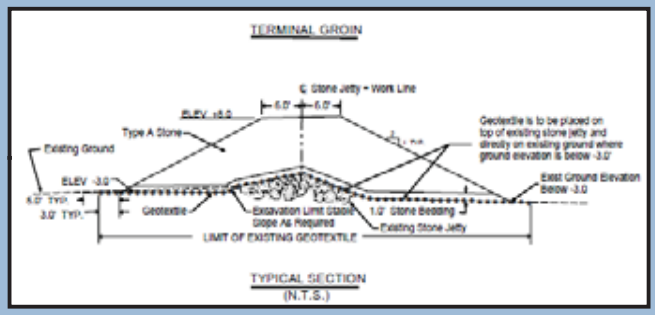
Iowa Ave.

Georgetown Ave.

Missouri Ave.

Beachfill and Shoreline Maintenance Program





Legend

Periodic Nourishment Area

Municipal Boundaries

DELEWARE BAY COASTLINE

ROOSEVELT INLET & LEWES BEACH

SUSSEX COUNTY, DE

P2 PROJECT ID: 109774

UPDATED: OCTOBER 2010

SCALE IN MILES

0 0.05 0.1

U.S. ARMY ENGINEER DISTRICT, PHILA.

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

- **Authority:** Title I, Section 101 (a)(15) of the Water Resources Development Act of 1999
- **Congressional District:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control.
- **Date of Project Agreement: 26 Jul 2006**
- **Target Completion Date:** 2057
- **Total Estimated Cost:** $157,151
- **Federal Funds Appropriated:** $25.878
- **Non-Federal Share:** $13.54M

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Beach Nourishment along beachfront (Bethany Beach/South Bethany, DE)

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 2 miles of the Atlantic Ocean coast of Delaware in Sussex County, Delaware. The plan proposed in the final feasibility report for the purpose of flood and coastal storm damage reduction consists 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 consists of providing 3.5 million cubic yards initial beach fill, with subsequent nourishment of 480,000 cubic yards every three years. 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.

Initial construction was completed in June 2008. FY11 funds were used to award a contract to complete the 2nd renourishment cycle. The contract was awarded in September 2011 with construction beginning in October 2011. Construction (Pumping) was completed in March 2011 for Bethany and October 2011 for South Bethany.

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

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction consisting 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

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.

FY16 funds are being used to complete design, P&S & award the 3rd periodic nourishment contract.

FCCE funds are being used to complete a PIR as a result of damages incurred from Oct 15 nor'easter/Hurricane Joaquin. Draft PIR recommendation is to repair project. If repairs are approved & if adequate funds are provided it is prudent to complete the repairs concurrently with the renourishment contract.

Timeline	Start	Complete	Comments
Initial Construction		Jun 2008	
Emergency Work	Jan 2009	Jun 2009	
2nd Periodic Nourishment	Oct 2011	Oct 2011	Bethany (March 11) & South Bethany (Oct 11)
FCCE EMERGENCY (Sandy)	Aug 2013	Sep 2013	
3rd Periodic Nourishment	FY16		Funds have been rec'd

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	102,100	55,051	157,151		Allocations thru FY13	25,878	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	6,650	Work Plan
					FY 17 Budget	0	President's Budget
					Balance to Complete	76,222	

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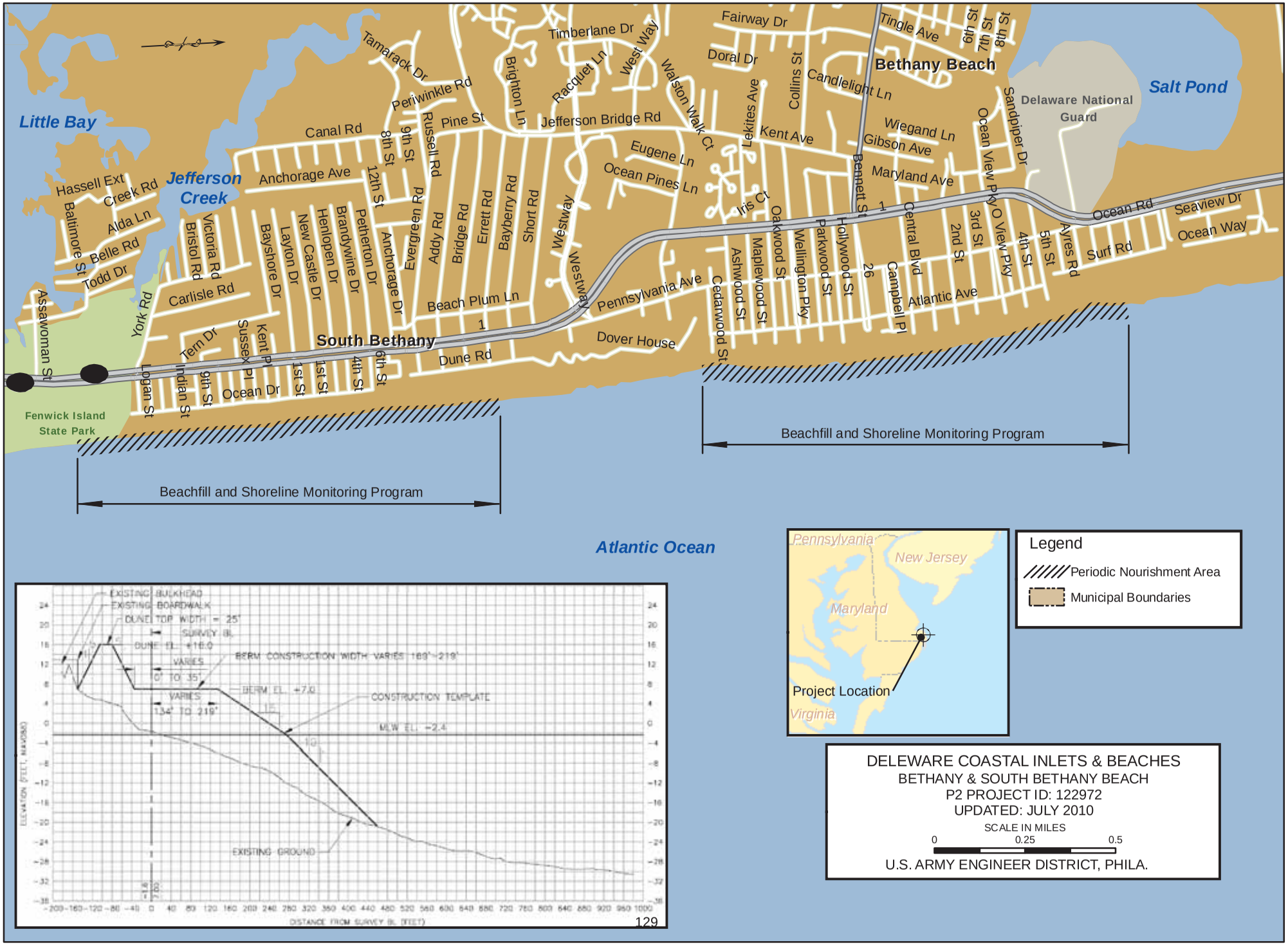

DELEWARE COASTAL INLETS & BEACHES
BETHANY & SOUTH BETHANY BEACH
P2 PROJECT ID: 122972
UPDATED: JULY 2010

SCALE IN MILES
0 0.25 0.5

U.S. ARMY ENGINEER DISTRICT, PHILA.

Delaware Coast, Cape Henlopen to Fenwick Island, DE

- **Authority:** Water Resources Development Act of 2000.
- **Congressional District:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control.
- **Date of Project Partnership Agreement:** 13 Sep 2004
- **Target Completion Date:** 2054
- **Total Estimated Cost:** $77.7M
- **Federal Funds Appropriated:** $4.427M
- **Non-Federal Share:** $2.622M

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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. Photo 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 flood and coastal storm damage reduction 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 funds have been received since FY 08. These funds have been used for project monitoring. The 2nd periodic nourishment cycle originally scheduled for FY 09 will be rescheduled for 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 renourishment cycle.

Delaware Coast, Cape Henlopen to Fenwick Island, DE

- **Project Goals:** The purpose of this project provides for hurricane and coastal storm damage reduction at Fenwick Island, with a berm and a dune, that includes dune grass, dune fencing, a beach fill, and periodic nourishment every four 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.

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

FY15 carryover funds will be used for project monitoring.

Timeline	Start	Complete	Comments
Initial Construction	Sep 2004	Nov 2005	
FCCE EMERGENCY (Sandy)	Jul 2013	Aug 2013	
2nd Periodic Nourishment	Sched FY17		Dependent on adequate funding.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Construction	39,749	37,965	77,714

Summarized Federal Financial Data ($000)		
Allocations thru FY13	4,277	
FY 14 Allocation	0	
FY 15 Allocation	150	
FY 16 Allocation	0	
FY 17 Budget	0	
Balance to Complete	35,322	

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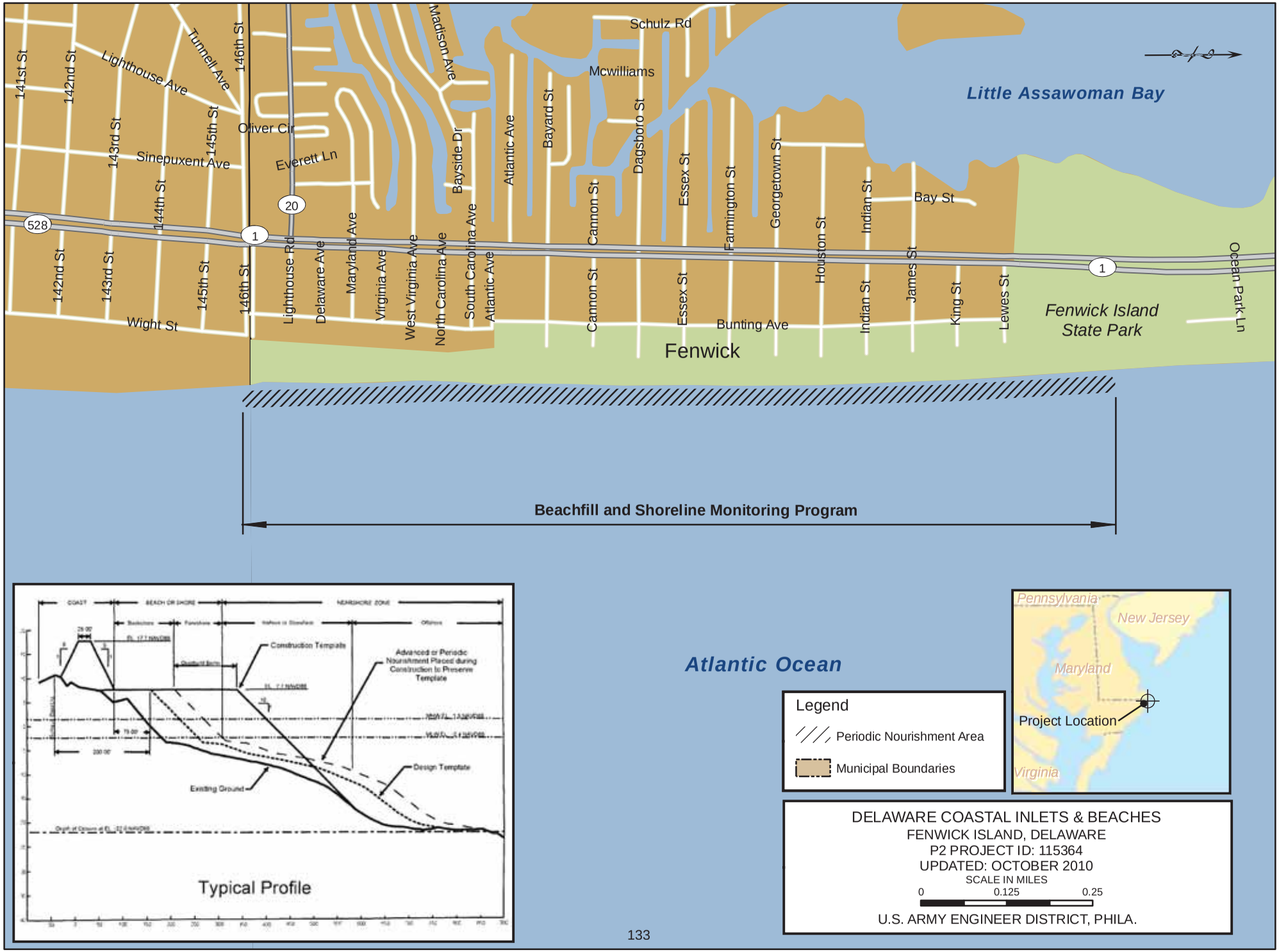
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142nd St
Lighthouse Ave
Tunnell Ave
146th St
Madison Ave
Schulz Rd
Mcwilliams
Little Assawoman Bay
143rd St
Sinepuxent Ave
145th St
Oliver Cir
Everett Ln
Bayside Dr
Atlantic Ave
Bayard St
Dagsboro St
Essex St
Farmington St
Georgetown St
Indian St
Bay St
144th St
528
20
1
Cannon St
Houston St
James St
King St
Lewes St
Ocean Park Ln
142nd St
143rd St
145th St
146th St
Lighthouse Rd
Delaware Ave
Maryland Ave
Virginia Ave
West Virginia Ave
North Carolina Ave
South Carolina Ave
Atlantic Ave
Wight St
Bunting Ave
Fenwick
Fenwick Island State Park
Beachfill and Shoreline Monitoring Program
COAST
BEACH OR SHORE
NEARSHORE ZONE
Construction Template
Advanced or Periodic Nourishment Placed during Construction to Preserve Template
Design Template
Existing Ground
Typical Profile
Atlantic Ocean
Pennsylvania
New Jersey
Maryland
Project Location
Virginia
Legend
Periodic Nourishment Area
Municipal Boundaries
DELAWARE COASTAL INLETS & BEACHES
FENWICK ISLAND, DELAWARE
P2 PROJECT ID: 115364
UPDATED: OCTOBER 2010
SCALE IN MILES
0 0.125 0.25
U.S. ARMY ENGINEER DISTRICT, PHILA.

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

- **Authority:** Section 101 (b)(6) of the Water Resources Development Act of 1996 with a modification in WRDA 2000.
- **Congressional District:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control.
- **Date of Project Partnership Agreement:** 19 Dec 2003
- **Target Completion Date:** 2054
- **Total Estimated Cost:** $92.0M
- **Federal Funds Appropriated:** $31.85M
- **Non-Federal Share:** $14.0M

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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 flood and coastal storm damage reduction 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 beachfill 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 2nd periodic nourishment cycle. Due to limited funds, only Dewey Beach received renourishment. FY11 funds were used to modify the FCCE contract to complete the 2nd 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 extension was completed in July 2013.

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

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction at Rehoboth Beach and Dewey Beach, with a berm, 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 work on 25 June 2013. Pumping was completed on 3 November 2013. Crossover, etc repairs are on-going & scheduled to be completed by 31 March 2014.

FY15 work plan funds are being used for project monitoring & to award the 3rd periodic nourishment contract in FY16.

FCCE funds are being used to complete a PIR as a result of damages incurred from Oct 15 nor'easter/Hurricane Joaquin. Draft PIR recommendation is to repair project. If repairs are approved & if adequate funds are provided it is prudent to complete the repairs concurrently with the renourishment contract.

Timeline	Start	Complete	Comments
Initial Construction		Jan 2006	
2nd Periodic Nourishment	Nov 2008	Jun 2009	Dewey Beach only
2nd Periodic Nourishment	Oct 2011	Feb 2012	
FCCE EMERGENCY (Sandy)	Jun 2013	Nov 2013	
3rd Periodic Nourishment	FY16		Funds have been rec'd

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	57,804	34,201	92,005		Allocations thru FY13	24,208	
					FY 14 Allocation	0	
					FY 15 Allocation	7,650	
					FY 16 Allocation	150	Work Plan
					FY 17 Budget	0	President's Budget
					Balance to Complete	25,946	

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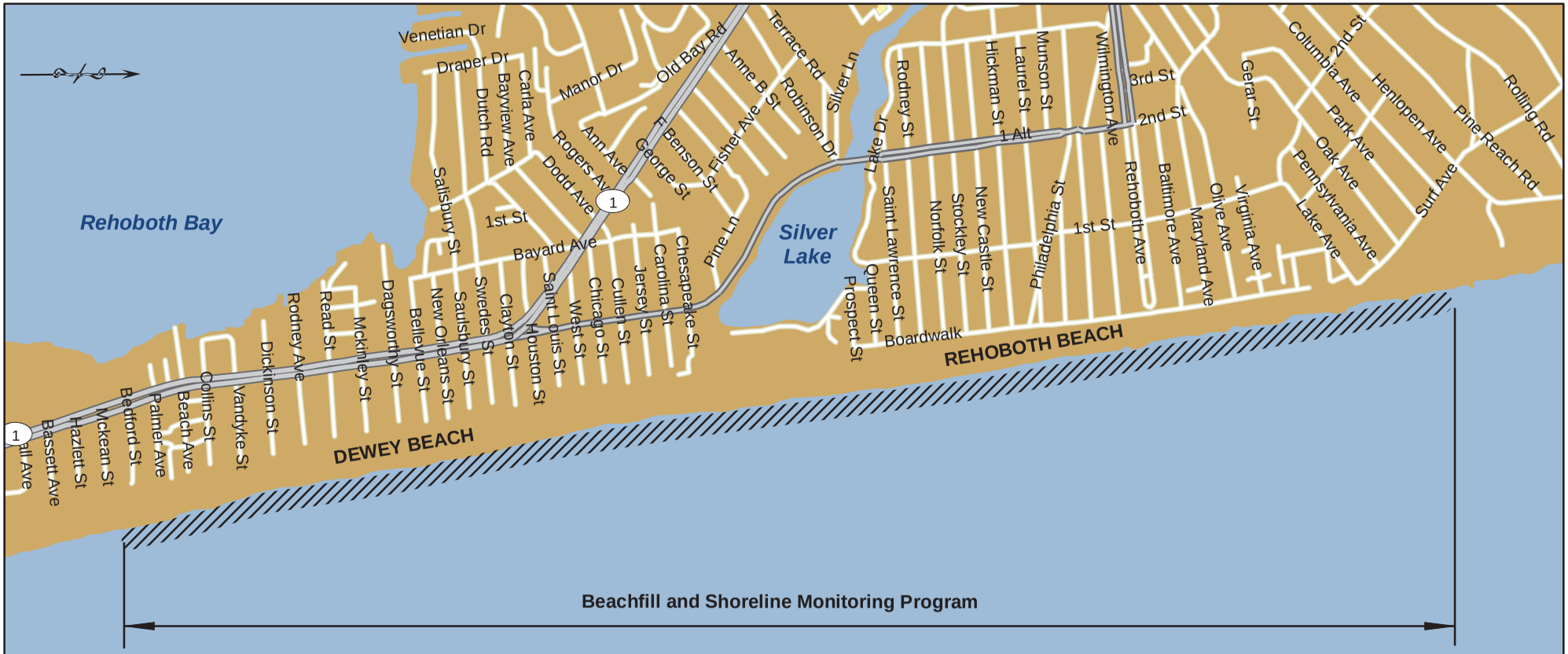

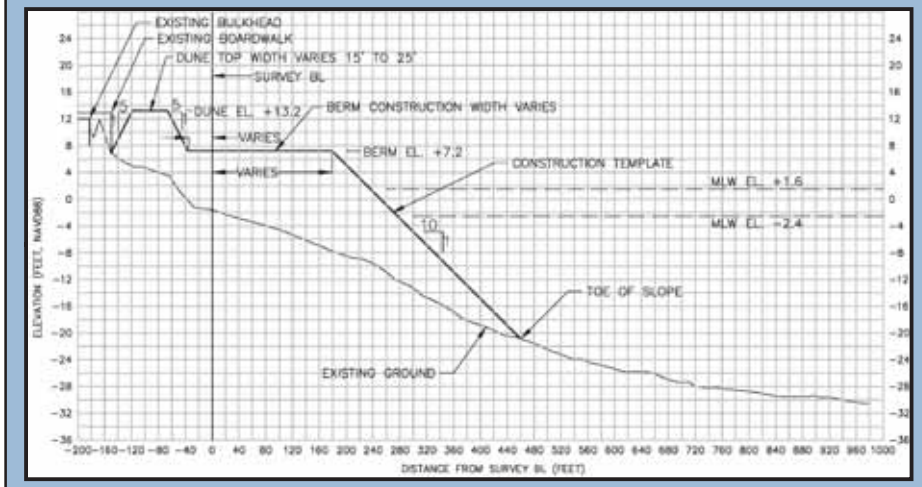

Legend

Periodic Nourishment Area

Municipal Boundaries

DELAWARE COASTAL INLETS & BEACHES
REHOBOTH BEACH & DEWEY BEACH, DELAWARE
P2 PROJECT ID: 109937
UPDATED: OCTOBER 2010
SCALE IN MILES
0 0.2 0.4
U.S. ARMY ENGINEER DISTRICT, PHILA.

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

- **Authority:** Flood Control Act, Water Resources Development Act of 1986
- **Congressional District:** DE-AL
- **Non-Federal Sponsor:** Delaware Department of Natural Resources and Environmental Control.
- **Date of Project Partnership Agreement:** 26 Oct 1988
- **Target Completion Date:** On-going construction thru 2021
- **Total Estimated Cost:** $27.7M
- **Federal Funds Appropriated:** $8.802M
-
- **Non-Federal Share:** $1.235M

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Indian River Inlet, Delaware, looking to the north showing the portable sand bypass system excavating a hole in the south fillet at the inlet. The system consists of a crane that holds an educator pump that removes sand from the beach face, two pumps to move the sand over the bridge, and a discharge line on the north side that discharges the sand onto the beach (where it looks wet in the photo).

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 consists 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. The nourishment is authorized until September 2021.

Funding of $690K was provided in FY 14. These funds were used to reimburse the State of Delaware for the Federal portion of the operation and recent repairs of the sand bypass plant. Funds were also utilized for project monitoring.

Funding of $390K was provided in FY 15. These funds will used to reimburse the State of Delaware for the Federal portion of the operation and recent repairs of the sand bypass plant. Funds will also be utilized for project monitoring.

Project also has a $1.2M capability for major replacement to the pump house. This project has a November 1984 General Design Memorandum (GDM).

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.

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.

FY15 funds are being used to award a contract for pump house renovations. Contract is scheduled for award in Feb 2015. FY16 funds will be used for project monitoring and reimbursement to the state for operation of the sand bypass plant.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	12,436	15,259	27,695		Allocations thru FY13	8,501	
					FY 14 Allocation	0	
					FY 15 Allocation	1,590	
					FY 16 Allocation	0	Work Plan
					FY 17 Budget	0	President's Budget
					Balance to Complete	2,345	

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CORPS OF ENGINEERS

U.S. ARMY

Cape May Inlet to Lower Township, NJ

- **Authority:** PL 168 of Rivers and Harbor Act of 1907 & PL 99-662 of the Water Resources Development Act of 1986
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** July 1991
- **Target Completion Date:** 2039
- **Total Estimated Cost:** $127.6M
- **Federal Funds (including USCG) Appropriated:** $54.06M
- **Non-Federal Share:** $4.155M

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Completion of initial construction and continued periodic nourishment by the Corps maintains a beach in Cape May after it was lost to erosion over the years.

LOCATION: The project is located on the Atlantic coast of New Jersey in Cape May County, extending from the southwest jetty of Cape May Inlet to 3rd Ave. in Cape May City. It includes the communities of the City of Cape May and Lower Township, and the US Coast Guard Training Center.

PROJECT DESCRIPTION: The project provides flood and coastal storm damage reduction to the above-mentioned communities and USCG Training Center. The project consists of initial beachfill (25 to 180-foot wide berm at elevation +8 feet NGVD) with periodic nourishment on a 2-year cycle, extension of 17 storm water outfalls, reconstruction of 7 groins and construction of two new groins, and a shoreline monitoring program for the project area. Construction of a 2,560-foot rubble mound weir-breakwater is deferred pending demonstration of need.

Cape May Inlet to Lower Township, NJ

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction to the communities and USCG Training center.

PROJECT STATUS: FY 11 funds were used to complete the 9th periodic nourishment cycle. This contract was awarded in September 2011 and completed in January 2012. The 10th periodic nourishment cycle originally scheduled for FY 13 will be rescheduled 2 years from the completion of the repair and restoration work currently scheduled and described below in response to Hurricane Sandy. The 2 years is based on the periodic renourishment cycle.

Between October 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May and up the Delaware Bay. FCCE - Flood Control and Coastal Emergencies 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 in April 2013 with physical construction beginning in November 2013 and completed on 18 Jan 14.

FY 16 funds are being used for design, P&S & construction contract for the 10th periodic nourishment. Contract scheduled for Sep 2016.

Timeline	Start	Complete	Comments
Initial Construction		Jul 1991	
8th Periodic Nourishment	Oct 2008	Mar 2009	Truck fill
9th Periodic Nourishment	Oct 2011	Jan 2012	
FCCE EMERGENCY (Sandy)	Nov 2013	Jan 2014	
10th Periodic Nourishment	FY16		FY16 Work Plan Funds

Total Estimated Project Cost ($000)	Corps ($000)	USCG	FEDERAL	NON-FEDERAL	TOTAL
Construction	76,538	42,510	119,048	8,501	127,549

Summarized Federal (Corps) Financial Data ($000)		
Allocations thru FY13	36,935	
FY 14 Allocation	200	
FY 15 Allocation	0	
FY 16 Allocation	7,200	
FY 17 Budget	0	President's Budget
Balance to Complete	32,203	

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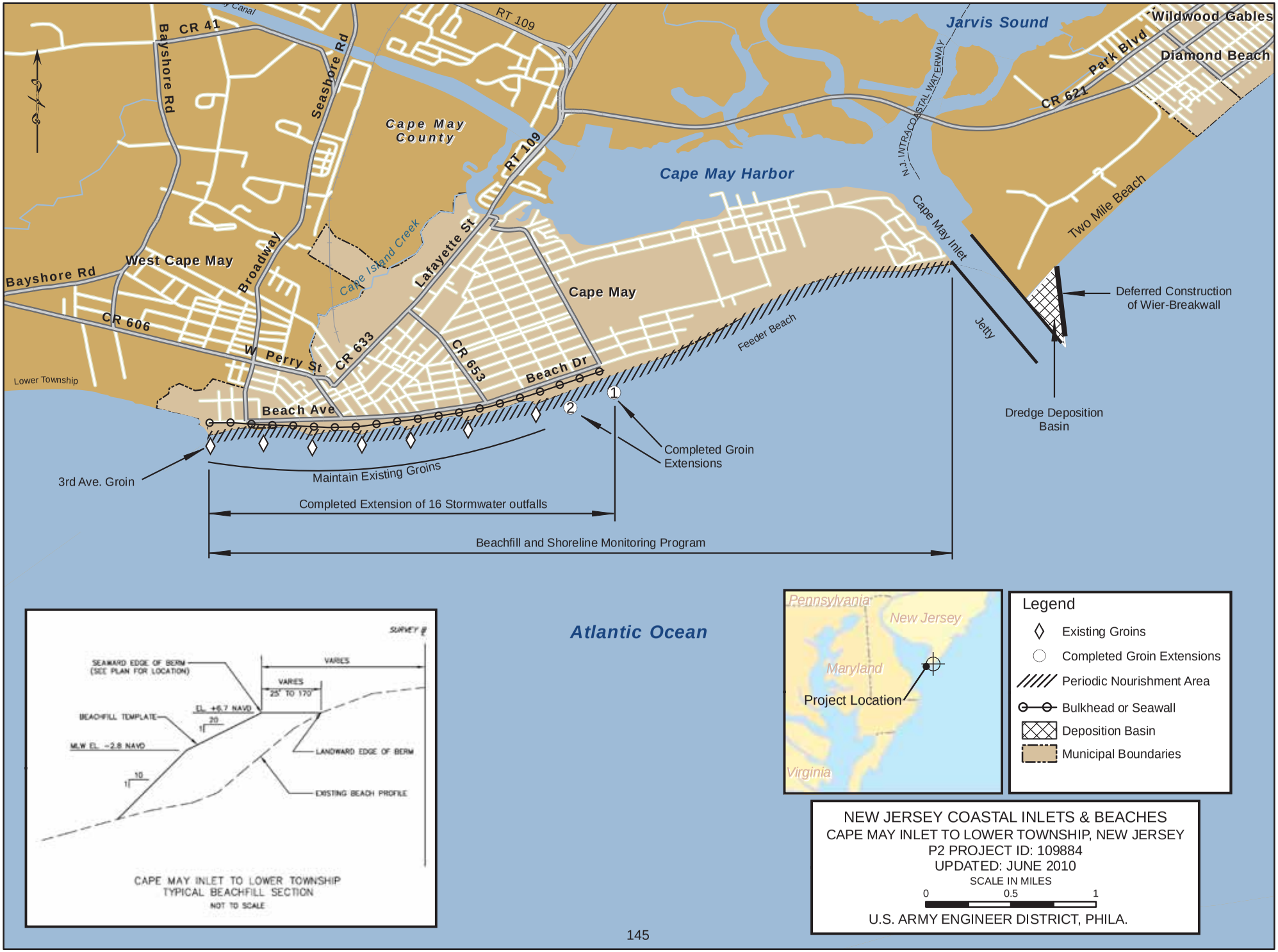

NEW JERSEY COASTAL INLETS & BEACHES
CAPE MAY INLET TO LOWER TOWNSHIP, NEW JERSEY
P2 PROJECT ID: 109884
UPDATED: JUNE 2010
SCALE IN MILES
0 0.5 1
U.S. ARMY ENGINEER DISTRICT, PHILA.

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

- **Authority:** Title I, Section 101 (b)(5) of the Water Resources Development Act of 1999
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** 6 May 14
- **Target Completion Date:** 2064
- **Total Estimated Cost:** $29.5M
- **Federal Funds Appropriated:** $11.8M (including Sandy CG Funding)
- **Non-Federal Share:** $110,682

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Oakwood Beach, NJ — Project Area

The Oakwood Beach, NJ project was authorized for construction by Title I, Section 101 (b) (5) of WRDA 1999.

The plan for flood and coastal storm damage reduction at Oakwood Beach is a 50-foot wide berm at an elevation of +6.0 feet NAVD over a project length of 9,500 lineal feet. The plan includes suitable advance beach fill and periodic nourishment every eight years to ensure the integrity of the design. The source of sand for the initial construction and periodic nourishment is the Delaware River Main channel. This project is not a component of the Delaware River Main Channel Deepening project. The estimated initial project cost is $12 million.

FY 01 funds of $222,000 were used to complete PED. FY12 funds were reprogrammed into the project to conduct project development team meetings and sponsor coordination. Between October 27 & 30, 2012, Hurricane Sandy caused damage to the Delaware coast from Lewes Beach to Fenwick Island and up the Delaware Bay. In response, the Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law 113-2 (Act).

This project was determined to be eligible for P.L. 113-2 2013 Disaster Relief Appropriations Act (Hurricane Sandy) funds as an Authorized but Unconstructed project. The term “authorized but unconstructed project” refers to previously authorized projects for which no physical construction has occurred as well as projects that contain elements where construction has not been completed.

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

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction at Oakwood Beach, which includes a suitable advance beach fill and periodic nourishment every eight years.

In FY13 & FY14 $600,000 in PL 113-2 funds were provided to begin the process towards initiation and completion of initial construction. These funds were used to complete the necessary steps towards initial construction. These steps included completing the Hurricane Sandy Limited Reevaluation Report (HSLRR); develop, approve and execute the Project Partnership Agreement (PPA); acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contract.

A LRR is a post authorization study that evaluates 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. A LRR documents the results of the analysis undertaken.

For this project a HSLRR specific to Hurricane Sandy was completed & approved which recommended moving forward with initial construction under PL 113-2. This HSLRR was used to support the development of a PPA which was executed on 6 May 14.

All the necessary real estate acquisitions were completed along with the plans and specifications for the contract. The contract to initiate and complete initial construction was then awarded in Sep 14. Pumping of sand began on 12 Nov 14 & was completed on 22 Dec 14. 354kcy of sand was placed. Outfalls & access construction were completed in May 2015. Sandy funds (PL 113-2) totaling $11.6M were used to complete initial construction at 100% Federal. Based on PL 113-2 this project requires the non-Federal sponsor to reimbursed 35% (~$4.0M) of the initial construction costs. First annual payment of $236K has been rec'd.

FY16 funds are being used for project monitoring.

Timeline	Start	Complete	Comments
Initial Construction	Nov 2014	May 2015	
2nd Periodic Nourishment	Sched for FY 23		Dependent on adequate funds

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Construction	18,443	11,049	29,492
Sandy P.L. 113-2 CG funds of $11.6M have been rec'd to complete initial construction.			

Summarized Federal Financial Data ($000) (Regular CG Funds)		
Allocations thru FY13	343	
FY 14 Allocation	0	
FY 15 Allocation	-11	Rescinded PED funds
FY 16 Allocation	0	Work Plan
FY 17 Budget	0	President's Budget
Balance to Complete	6,511	Accounts for Sandy CG funds

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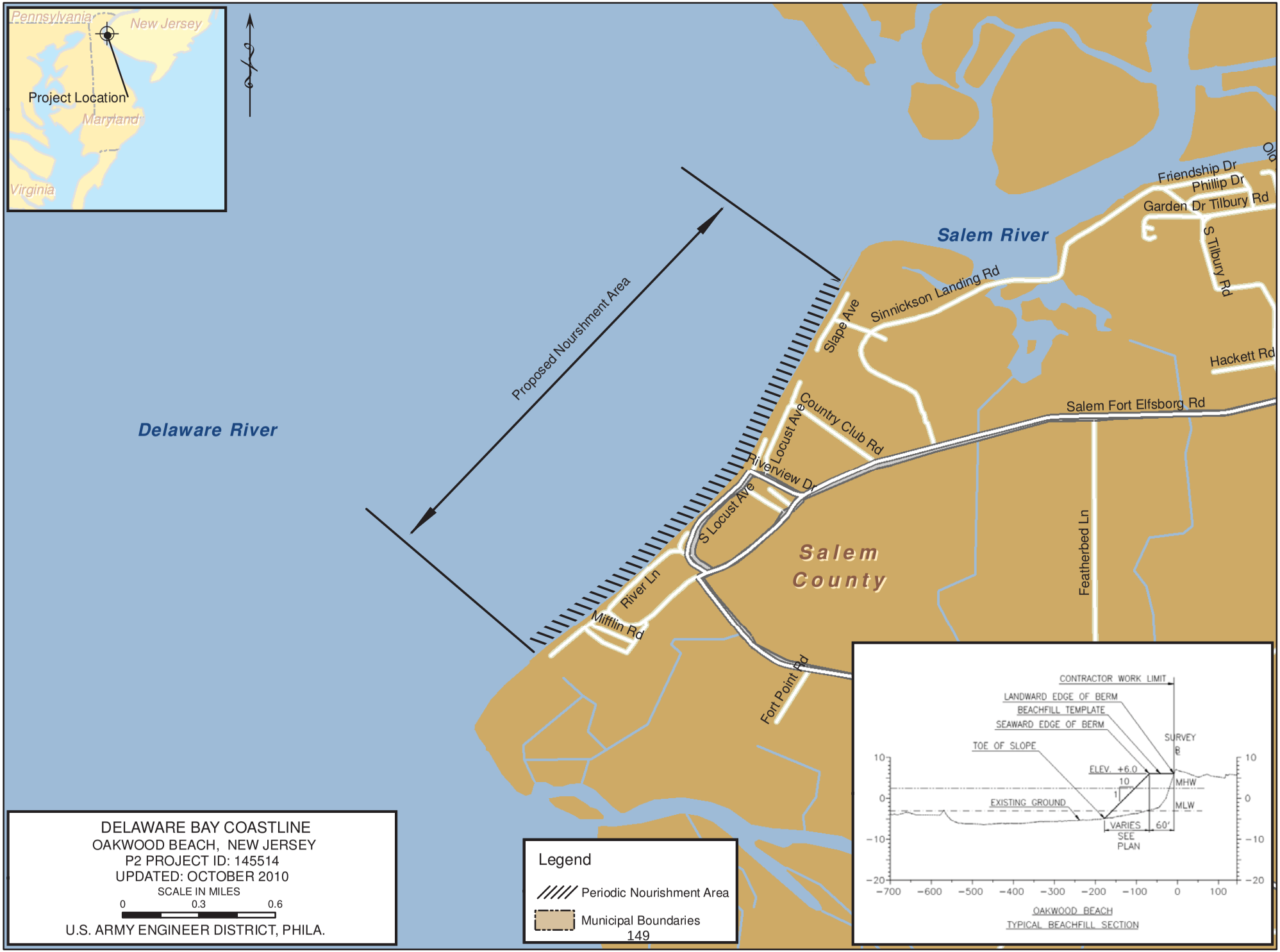
CORPS OF ENGINEERS

U.S. ARMY



Delaware Bay Coastline, DE & NJ, Reeds Beach and Pierces Point, NJ

- **Authority:** Title I, Section 101 (b)(6) of the Water Resources Development Act of 1999.
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $9.924M
- **Federal Funds Appropriated:** $1,039,000
- **Non-Federal Share:** $108K

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Delaware Bay Coastline between Reeds Beach and Pierces Point

The Reeds Beach and Pierces Point project was authorized for construction by Title I, Section 101 (b) (6) of WRDA 1999.

The plan for the purpose of ecosystem restoration at Reeds Beach and Pierces Point is an 80-foot wide berm at an elevation of +5.5 feet NAVD over a project length of 6,800 feet. The plan entails a one-time placement of sand for horseshoe crab and shorebird habitat.

With the FY 2006 funds, the Corps completed a Limited Reevaluation Report (LRR) in July 2006. Limited re-evaluation reports (LRR) are post authorization studies 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. A LRR documents the results of the analysis undertaken. The LRR for this project updated costs and demonstrated continued project viability.
contract.

Delaware Bay Coastline, DE & NJ, Reeds Beach and Pierces Point, NJ

- **Project Goals:** The purpose of this project is to provide ecosystem restoration at Reeds Beach and Pierces Point, with a one-time placement of sand for horse-shoe crab and shorebird habitat.

FY 2006 funds were also used to develop a Draft Project Partnership Agreement. This project has not received funding since FY 06. The initiation of initial construction is dependent on the establishment of an adequate funding stream. The next steps toward initial construction once adequate funding is received is to update the 2006 LRR; approve and execute the Project Partnership Agreement; acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contract.

In order to proceed, the Corps requires additional funding to support initial construction. The current initial construction costs need to be reviewed based on impacts from Hurricane Sandy to account for changed initial conditions based on the damages caused by the storm.

Horseshoe Crabs

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)		
Construction	5,762	4,162	9,924		Allocations thru FY13	1,039	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	0	President's Budget
					Balance to Complete	4,723	

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CORPS OF ENGINEERS

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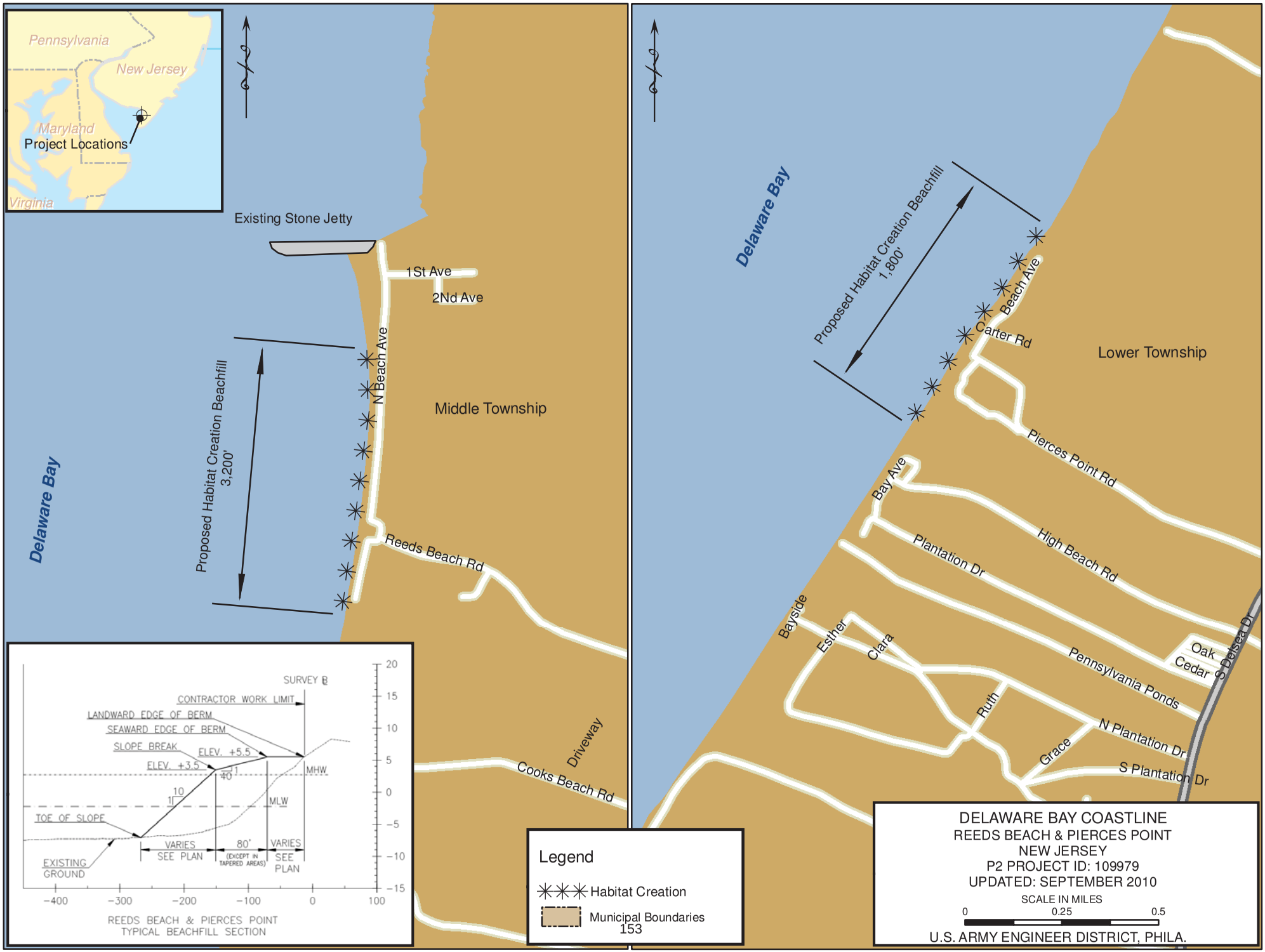

Delaware Bay Coastline, DE & NJ, Villas and Vicinity, NJ

- **Authority:** Title I, Section 101 (a)(14) of the Water Resources Development Act. Of 1999.
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** TBD
- **Target Completion Date:** TBD
- **Total Estimated Cost:** $15.9M
- **Federal Funds Appropriated:** $1,277,000
- **Non-Federal Share:** $255,000

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Delaware Bay in the vicinity of the Villas.

Authorized under Title I, Section 101 (a) (14) of WRDA 1999.

The plan for the purpose of ecosystem restoration at Villas and Vicinity is an 80-foot wide berm over a project length of 29,000 feet. The plan entails a one-time placement of sand for horseshoe crab and shorebird habitat.

FY04 funds were added to initiate construction. FY06 funds were used to continue the Limited Reevaluation Report (LRR). LRR are post authorization studies 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. A LRR documents the results of the analysis undertaken. For this project the LRR updated costs and demonstrated a continued project viability.

This project has not received funding since FY 06. The initiation of initial construction is dependent on the establishment of an adequate funding stream. The next steps toward initial construction once adequate funding is received is to complete the LRR; develop, approve and execute the Project Partnership Agreement; acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contract.

Delaware Bay Coastline, DE & NJ, Villas and Vicinity, NJ

- **Project Goals:** The purpose of this project provides ecosystem restoration at Villas and the Vicinity, with a one-time placement of sand for horse-shoe crab and shorebird habitat.

Hurricane Sandy struck the Mid-Atlantic coastline in October 2012 causing widespread damage. The Corps will need to update the LRR to adjust initial construction costs based on changed initial conditions resulting from the storm.

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)		
Construction	10,170	5,734	15,904		Allocations thru FY13	1,277	
					FY 14 Allocation	0	
					FY 15 Allocation	0	
					FY 16 Allocation	0	
					FY 17 Budget	0	President's Budget
					Balance to Complete	8,856	

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CORPS OF ENGINEERS

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Legend

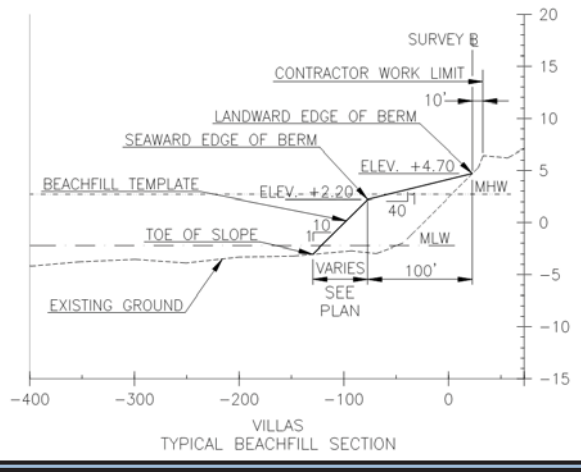
Habitat Creation

Municipal Boundaries

Delaware Bay

Proposed Habitat Creation

Pierces Point Rd
High Beach Rd
Plantation Dr
Bay Ave
Esther
Ruth
Grace
S Delsea Dr
George Ave
Holly Dr
Smoke Rd
Green Creek
Lower Township
Lomurno Ln
Millman Blvd
Burleigh Rd
State Hwy 47
Fishing Creek
Villas, NJ
Victory Dr
Nummytown Rd
E Drumbed Rd
Fulling Mill Rd
Oak
Birch Rd
Village Rd
Bayshore Rd
States Ave
Star Ave
157
Cape May
County Airport



DELAWARE BAY COASTLINE
VILLAS & VICINITY, NEW JERSEY
P2 PROJECT ID: 109984
UPDATED: SEPTEMBER 2010
SCALE IN MILES
0 0.5 1
U.S. ARMY ENGINEER DISTRICT, PHILA.

Great Egg Harbor and Peck Beach (Ocean City), NJ

- **Authority: Committee** Resolution on Dec 15, 1970 under the provisions of Section 201 of P.L. 89-298 &r Section 831(1) of the WRDA of 1986, P.L. 99-662
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 18 September 1991
- **Target Completion Date:** 2041
- **Total Estimated Cost:** $431.3M
- **Federal Funds Appropriated:** $73.1M
- **Non-Federal Share:** $39.3M

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Shortly after the completion of initial construction, the City of Ocean City planted beach grass and installed sand fence to encourage dune growth. Years later, as shown above, continued periodic nourishment by the Corps has allowed the same area to expand into a substantial dune field.

Authorized by the Committee Resolution on December 15, 1970 under the provisions of Section 201 of P.L. 89-298. Project reauthorized with provisions for construction of separable elements under Section 831(1) of the Water Resources Development Act of 1986, P.L. 99-662.

The project consists of providing initial beach fill, with subsequent periodic nourishment, with a minimum berm width of 100 feet at an elevation of +8.0 National Geodetic Vertical Datum (NGVD). The beach fill extends from Surf Road southwest to 34th Street with a 1,000-foot taper south of 34th Street. This plan required the initial placement of approximately 6.2 million cubic yards of material and subsequent periodic nourishment of approximately 1.1 million cubic yards every 3 years. The material for the initial construction and periodic nourishment is being taken from the ebb shoal area located approximately 5,000 feet offshore of the Great Egg Harbor Inlet. This periodic dredging of the ebb shoal area will help alleviate the navigation difficulties in the inlet. Additionally, the initial construction of the project required the extension of 38 storm drain pipes.

Great Egg Harbor and Peck Beach (Ocean City), NJ

- **Project Goals:** For the purpose of hurricane and storm damage reduction, this project provides a beach fill with periodic nourishment, and a berm along Surf Road southwest to 34th Street in great Egg Harbor and Peck Beach.

Between October 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May 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 funds to repair the project to pre-storm conditions. The PIR was approved, funding provided and the previously awarded renourishment contract was modified to complete the repairs and renourishment concurrently. Physical construction was completed in May 2013. The repairs and renouirshment brought the project back to the design template.

FY15 funds were used to complete 7th renourishment cycle. FY16 funds will be used for project monitoring.

Phase	Quantity	Costs	Complete	Comments
Initial Construction (Ph I)	2,618,000	$10,952	Oct 1992	
Initial Construction (Ph II)	2,727,000	$14,572	Mar 1993	
Storm Rehab	846,000	$2,915	Jul 1993	
1st Periodic Nourishment (Ph I)	606,000	$3,218	Dec 1994	
1st Periodic Nourishment (Ph II)	1,411,000	$5,750	Aug 1995	
2nd Periodic	800,000	$4,945	Oct 1997	
3rd Periodic	1,351,000	$6,943	Dec 2000	
4th Periodic	1,600,000	$8,314	Feb 2004	
5th Periodic	1,400,000	$13,824	Mar 2010	Base contract info
6th Periodic	1,000,000		May 2013	
FCCE EMERGENCY (Sandy)	800,000		May 2013	
7th Periodic	1,000,000		Dec 2015	
8th Periodic	TBD		Sched for FY18	

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	280,340	150,958	431,298		Allocations thru FY13	65,067	
					FY 14 Allocation	500	
					FY 15 Allocation	7,500	
					FY 16 Allocation	0	Work Plan
					FY 17 Budget		President's Budget
					Balance to Complete	206,773	

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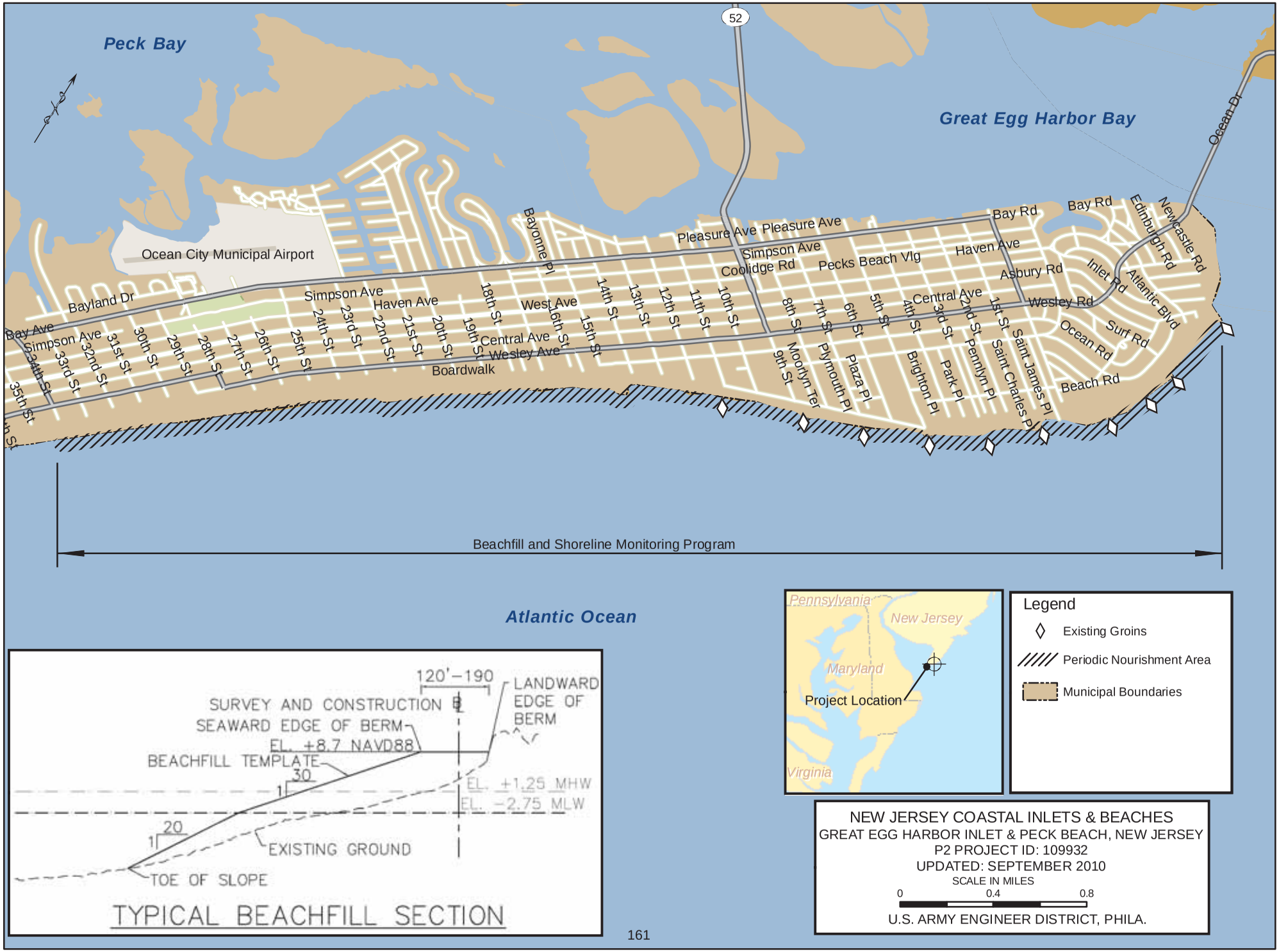
Peck Bay
Great Egg Harbor Bay
Atlantic Ocean
52
Ocean City Municipal Airport
Bayland Dr
Bay Ave
Simpson Ave
Haven Ave
Pleasure Ave
Coolidge Rd
Pecks Beach Vlg
Bay Rd
Asbury Rd
Wesley Rd
Central Ave
West Ave
Wesley Ave
Boardwalk
Bayonne Pl
Ocean Dr
Edinburgh Rd
Newcastle Rd
Inlet Rd
Atlantic Blvd
Surf Rd
Ocean Rd
Beach Rd
Saint James Pl
Saint Charles Pl
Pennlyn Pl
Park Pl
Brighton Pl
Plaza Pl
Plymouth Pl
Moorlyn Ter
Beachfill and Shoreline Monitoring Program
Pennsylvania
New Jersey
Maryland
Virginia
Project Location
Legend
Existing Groins
Periodic Nourishment Area
Municipal Boundaries
120'–190
LANDWARD EDGE OF BERM
SURVEY AND CONSTRUCTION
SEAWARD EDGE OF BERM
EL. +8.7 NAVD88
BEACHFILL TEMPLATE
30
1
EL. +1.25 MHW
EL. -2.75 MLW
20
1
EXISTING GROUND
TOE OF SLOPE
TYPICAL BEACHFILL SECTION
NEW JERSEY COASTAL INLETS & BEACHES
GREAT EGG HARBOR INLET & PECK BEACH, NEW JERSEY
P2 PROJECT ID: 109932
UPDATED: SEPTEMBER 2010
SCALE IN MILES
0 0.4 0.8
U.S. ARMY ENGINEER DISTRICT, PHILA.

New Jersey Shore Protection, Barnegat Inlet to Little Egg Inlet, NJ

- **Authority:** Section 101 (a)(1) of the Water Resources Development Act of 2000
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 17 Aug 2005 (PCA)/20 Jul 2014 PPA
- **Target Completion Date:** 2055
- **Total Estimated Cost:** $513.2M
- **Federal Funds Appropriated:** $191.95M (Includes Sandy CG Funds)
- **Non-Federal Share:** $21.398M

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Left: Harvey Cedars Beach fill Initial Construction Right: Harvey Cedars Completed Dune Section

Authorized under the WRDA 2000, Section 101(a) (1).

The project will provide hurricane and coastal storm damage reduction with a beachfill and dune along the oceanfront of Long Beach Island.

FY 06 funds were used to award a contract in Sep 2006 for project construction in Surf City and a portion of Ship Bottom. FY07 funds were used to complete this portion of the project. FY08 and FY09 funds were used to prepare for and award an initial construction contract at Harvey Cedars. This contract was awarded in Sep 2009 and completed in June 2010. Additionally Supplemental funds totaling $15.7M were received in FY08. These funds were used for Munitions and Explosives of Concern (MEC) Phase III response in Surf City and are not considered project costs. MEC Phase III response was successfully completed in May 2009. FY10 funds were used for project monitoring. FY11 funds were used to award a contract in Sep 2011 to complete the Brant Beach portion of the project. Construction was completed in Jun 2012.

Between Oct 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May and up the Delaware Bay. In response, the Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law 113-2 (Act).

The legislation provides supplemental appropriations to address damages caused by Hurricane Sandy and to reduce future flood risk in ways that will support the long-term sustainability of the coastal ecosystem and communities, and reduce the economic costs and risks associated with large-scale flood and storm events.

As a result of the storm FCCE funds under Public Law 84-99 were used to complete a Project Information Report (PIR) & PIR Addendum for the completed portions of the project. The results of the PIR & Addendum determined that the project was eligible for FCCE funding to repair & restore the project to pre-storm conditions & design template. PL 113-2 funds were used to award a contract for the repairs and restoration Apr 2013. Repairs & restoration began in Apr 2013 with pumping complete in Aug 2013.

New Jersey Shore Protection, Barnegat Inlet to Little Egg Inlet, NJ

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction with a beach fill and dune along the oceanfront of Long Beach Island.

This project is also considered an on-going Authorized but Unconstructed project under P.L. 113-2 Disaster Relief Appropriations Act (Hurricane Sandy). The term "authorized but unconstructed project" refers to previously authorized projects for which no physical construction has occurred as well as projects that contain elements where construction has not been completed. Therefore, the remaining initial construction portions of the project may be eligible to be completed at 100% Federal with no sponsor payback.

In FY13, FY14 & FY15 $1.3M has been received to complete the necessary steps to construct initial construction to include completion of Limited Reevaluation Report (LRR), approve and execute a new Project Partnership Agreement (PPA); acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contracts. For this project a HSLRR specific to Hurricane Sandy was completed & approved which recommended moving forward with initial construction under PL 113-2. This HSLRR was used to support the development of a PPA which was executed on 20 Jul 14.

The contract to initiate and complete initial construction was awarded on 5 Dec 14. Physical construction began in Spring 2015 & is to be completed in the Summer of 2016. Sandy funds (PL 113-2) totaling $149.3M has been rec'd to complete initial construction. Based on PL 113-2 initial construction will be at 100% Federal with no sponsor payback. Construction is on-going but two areas are suspended due to legal challenges to the real estate acquisition.

FCCE funds are being used to complete a PIR as a result of damages incurred from Oct 15 nor'easter/Hurricane Joaquin. Draft PIR recommendation is to repair project. Once approved FCCE repair funds will be requested. If funding is rec'd PDT will begin design, P&S & acquisition process.

TIMELINE	Start	Complete	Comments
Initial Construction	Month/Year	Month/Year	Surf City
Initial Construction	Sep 2009	Spring 2010	Harvey Cedars
MEC Phase III Response	Jan 2009	May 2009	Surf City
Emergency Rehab (FCCE)	Jun 2011	Dec 2011	Surf City
Initial Construction	Mar 2012	Jun 12	Brant Beach
FCCE Emergency (Sandy)	Apr 2013	Aug 2013	
Initial Construction Completion	Apr 2015		Completion Sched for Summer 2016
2nd Nourishment Cycle	FY20		Dependent on adequate funds

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Construction	382,644	130,523	513,167
Sandy P.L. 113-2 CG funds of $149.3M have been rec'd to complete initial construction.			

Summarized Federal Financial Data ($000) (Regular CG Funds)		
Allocations thru FY13	42,052	
FY 14 Allocation	0	
FY 15 Allocation	600	
FY 16 Allocation	0	Work Plan
FY 17 Budget	0	President's Budget
Balance to Complete	190,092	Accounts for Sandy CG Funds

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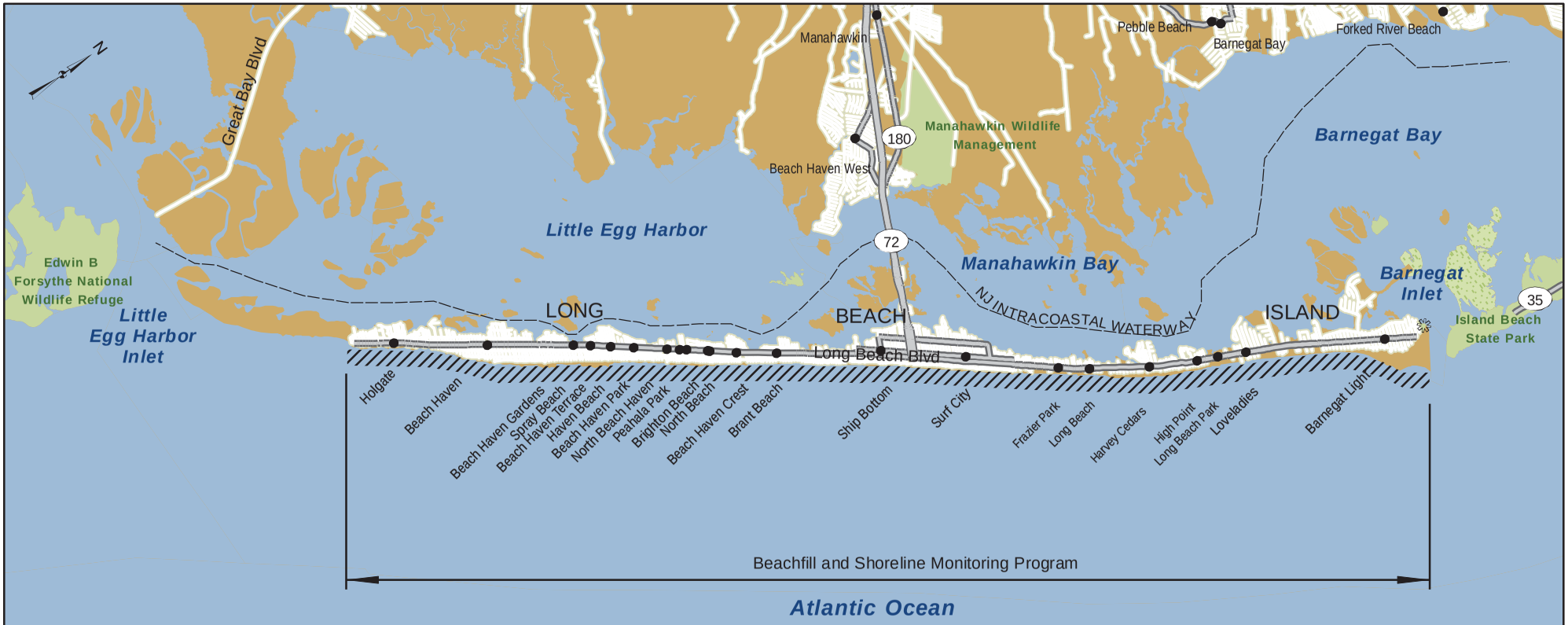

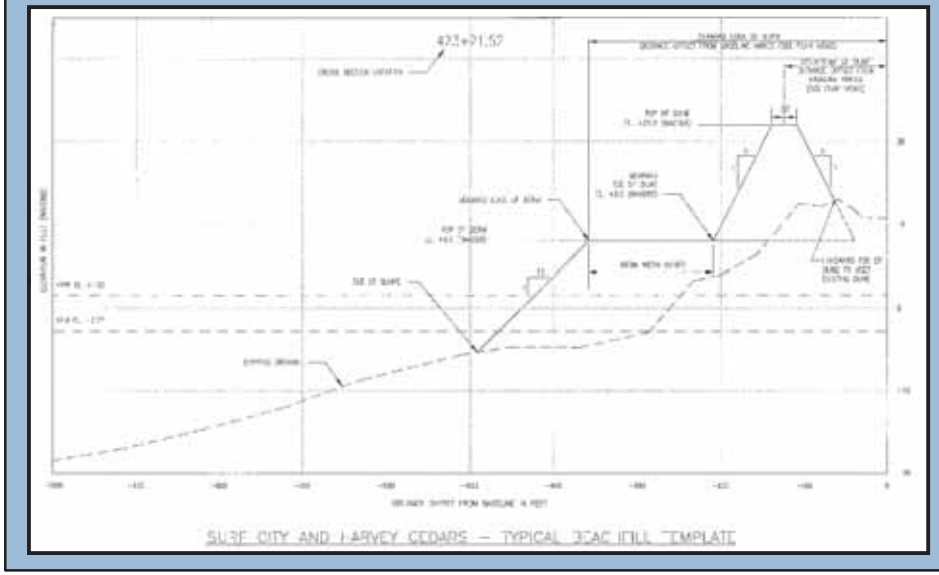

Legend
- Periodic Nourishment Area
- Municipal Boundaries

NEW JERSEY COASTAL INLETS & BEACHES
BARNEGAT INLET TO LITTLE EGG HARBOR INLET, NEW JERSEY
P2 PROJECT ID: 109982
UPDATED: OCTOBER 2010
SCALE IN MILES
0 1 2
U.S. ARMY ENGINEER DISTRICT, PHILA.

New Jersey Shore Protection, Brigantine Inlet to Great Egg Harbor Inlet, Absecon Island, NJ

- **Authority:** Water Resources Development Act of 1996
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Agreement:** 31 Jul 2003 (PCA) & 23 Jun 14 (PPA)
- **Target Completion Date:** 2053
- **Total Estimated Cost:** $550.0M
- **Federal Funds Appropriated:** $132.8M (Includes Sandy CG funds)
- **Non-Federal Share:** $23.8035M

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Absecon Island - Completed Handicap Dune Crossing.

This project was authorized under the Water Resources Development Act (WRDA) of 1996.

The project provides flood and coastal storm damage reduction along Absecon Island. The selected plan includes beach fill, with a 200-foot-wide berm and a dune to elevation +14.75 feet for Atlantic City and a 100-foot wide berm and a dune to elevation 12.75 for Ventnor, Margate and Longport. The plan also includes 0.3 miles of bulkhead construction along the Absecon Inlet frontage of Atlantic City.

Initial construction of the beachfill in Atlantic City and Ventnor City was completed in Jun 2004. The second nourishment cycle was scheduled for FY07 but did not receive funding. Funding provided in FY08, FY09 and FY10 were inadequate to initiate the second nourishment cycle. FY11 funds were used to award a contract to complete the 2nd renourishment cycle. The contract was awarded in Sep 2011with construction completed in Jun 2012. FY12 funds were used for project monitoring and completion of the Plans & Specifications for the construction of the initial section of the Atlantic City bulkhead. This contract was originally advertised on 28 Aug 2012. However, based on contractor questions and necessary design changes in light of Hurricane Sandy in Oct 2012 the advertisement was delayed.

Between Oct 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May and up the Delaware Bay. In response, the Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law 113-2 (Act).

As a result of the storm FCCE funds under Public Law 84-99 were used to complete a Project Information Report (PIR) & PIR Addendum for the completed portions of the project. The results of the PIR & Addendum determined that the project was eligible for FCCE funding to repair & restore the project to pre-storm conditions & design template. PL 113-2 funds were used to award a contract for the repairs and restoration Apr 2013. Repairs & restoration began in Jul 2013 with pumping complete on 12 Dec 2013.

New Jersey Shore Protection, Brigantine Inlet to Great Egg Harbor Inlet, Absecon Island, NJ

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction along Absecon Island, beach fills with berm. and dunes.

This project is also considered an on-going Authorized but Unconstructed project under P.L. 113-2 Disaster Relief Appropriations Act (Hurricane Sandy). The term "authorized but unconstructed project" refers to previously authorized projects for which no physical construction has occurred as well as projects that contain elements where construction has not been completed. Therefore, the remaining initial construction portions of the project may be eligible to be completed at 100% Federal with no sponsor payback. These components include Atlantic City Bulkhead and beachfills at Margate & Longport.

In FY13, FY14 & FY15 $950K has been received to complete the necessary steps to construct initial construction to include completion of Limited Reevaluation Report (LRR), approve and execute a new Project Partnership Agreement (PPA); acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contracts. For this project a HSLRR specific to Hurricane Sandy was completed & approved which recommended moving forward with initial construction under PL 113-2. This HSLRR was used to support the development of a PPA which was executed on 23 Jun 14.

All the necessary real estate acquisitions were completed along with the plans and specifications for the Beachfill (Margate & Longport) & bulkhead contracts. However, real estate acquisition has been challenged in court by City of Margate. Beachfill contract was to be awarded in Nov 14 but was subsequently canceled due to legal challenges. Once real estate is resolved schedule will be determined. Bulkhead contract was to be awarded in Nov 15. Construction began in Aug 15. Sandy funds (PL 113-2) totaling $72.95M have been rec'd to complete initial construction. Based on PL 113-2 initial construction will be at 100% Federal with no sponsor payback.

FY15 work plan funds are being used for project monitoring & to award the 2nd periodic nourishment contract for Atlantic City & Ventnor in FY16.

FCCE funds are being used to complete a PIR as a result of damages incurred from Oct 15 nor'easter/Hurricane Joaquin. Draft PIR recommendation is to repair project. If repairs are approved & if adequate funds are provided it is prudent to complete the repairs concurrently with the renourishment contract.

Timeline	Start	Complete	Comments
Initial Construction		Jun 2004	
2nd Periodic Nourishment Cycle	Mar 2012	Jun 2012	
FCCE EMERGENCY (Sandy)	Jul 2013	Dec 2013	Outfalls to be completed in Dec 13
3rd Periodic Nourishment Cycle	FY16		Atlantic City & Ventnor—Funds have been rec'd

Total Estimated Project Cost ($000)	Federal	Non-Federal	Total		Summarized Federal Financial Data ($000) Regular CG Funding		
Construction	383,341	166,646	549,987		Allocations thru FY13	38,203	
Sandy funds (PL 113-2) totaling $72.95M have been rec'd					FY 14 Allocation	0	
					FY 15 Allocation	6,000	
					FY 16 Allocation	15,600	Work Plan
					FY 17 Budget	0	President's Budget
					Balance to Complete	250,588	Accounts for Sandy CG funds

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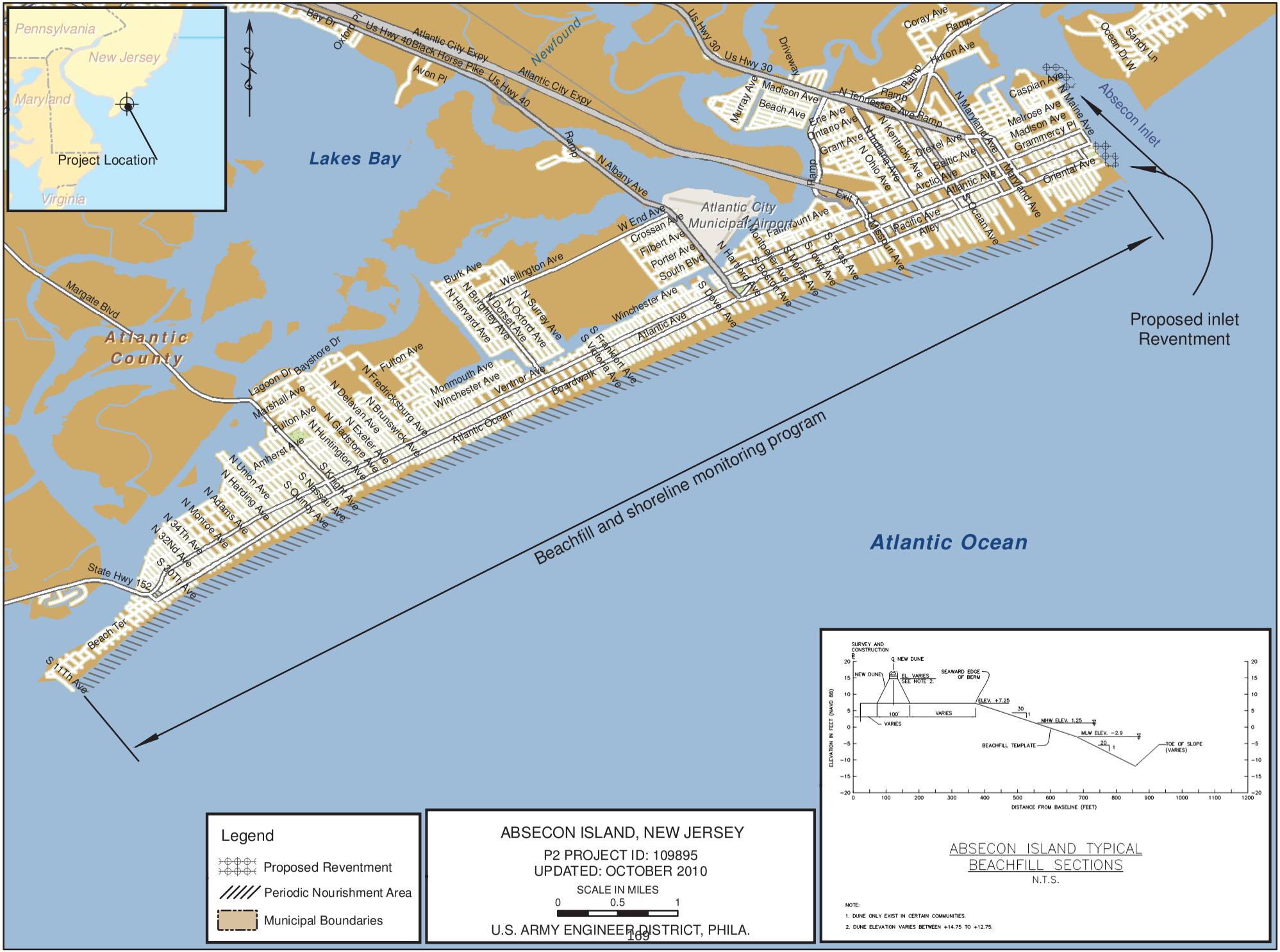
Pennsylvania
New Jersey
Maryland
Virginia
Project Location
Lakes Bay
Newfound
Absecon Inlet
Atlantic City Municipal Airport
Atlantic County
Atlantic Ocean
Proposed inlet Reventment
Beachfill and shoreline monitoring program
Bay Dr
Oxford Ave
Us Hwy 40 Black Horse Pike
Us Hwy 40
Atlantic City Expy
Avon Pl
Us Hwy 30
Driveway
Coray Ave
Ramp
Huron Ave
Ocean Dr W
Sandy Ln
Madison Ave
Beach Ave
Murray Ave
N Tennessee Ave
Ramp
Caspian Ave
N Maine Ave
Melrose Ave
Madison Ave
Grammercy Pl
Erie Ave
Ontario Ave
Grant Ave
N Kentucky Ave
N Indiana Ave
N Ohio Ave
Drexel Ave
Baltic Ave
Arctic Ave
Atlantic Ave
Ocean Ave
Maryland Ave
Oriental Ave
N Albany Ave
Exit 1
W End Ave
Crossan Ave
Filbert Ave
Porter Ave
South Blvd
Palmetto Ave
Montpelier Ave
S Boston Ave
S Texas Ave
S Iowa Ave
S Morris Ave
Mississippi Ave
Pacific Ave
Alley
N Harford Ave
S Dover Ave
Margate Blvd
Burk Ave
Wellington Ave
N Burlington Ave
N Harvard Ave
N Dorset Ave
N Oxford Ave
N Surrey Ave
Winchester Ave
Lagoon Dr
Bayshore Dr
Marshall Ave
Fulton Ave
N Fredricksburg Ave
Monmouth Ave
Winchester Ave
Vernon Ave
Victoria Ave
Frankfort Ave
Boardwalk
N Delavan Ave
N Brunswick Ave
N Exeter Ave
N Gladstone Ave
N Huntington Ave
Amherst Ave
N Union Ave
N Harding Ave
N Adams Ave
N Monroe Ave
N 34Th Ave
N 32Nd Ave
S 30Th Ave
State Hwy 152
S Knight Ave
S Nassau Ave
S Quincy Ave
Beach Ter
S 11Th Ave
Legend
Proposed Reventment
Periodic Nourishment Area
Municipal Boundaries
ABSECON ISLAND, NEW JERSEY
P2 PROJECT ID: 109895
UPDATED: OCTOBER 2010
SCALE IN MILES
0 0.5 1
U.S. ARMY ENGINEER DISTRICT, PHILA.
SURVEY AND CONSTRUCTION
℄ NEW DUNE
NEW DUNE
EL. VARIES SEE NOTE 2.
SEAWARD EDGE OF BERM
ELEV. +7.25
100'
VARIES
VARIES
30
1
MHW ELEV. 1.25
MLW ELEV. -2.9
20
1
BEACHFILL TEMPLATE
TOE OF SLOPE (VARIES)
ELEVATION IN FEET (NAVD 88)
DISTANCE FROM BASELINE (FEET)
ABSECON ISLAND TYPICAL BEACHFILL SECTIONS
N.T.S.
NOTE:
1. DUNE ONLY EXIST IN CERTAIN COMMUNITIES.
2. DUNE ELEVATION VARIES BETWEEN +14.75 TO +12.75.

New Jersey Shore Protection, Brigantine Inlet to Great Egg Harbor Inlet, Brigantine Island, NJ

- **Authority:** Water Resources Development Act of 1999
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 10 September 2004
- **Target Completion Date:** 2054
- **Total Estimated Cost:** $49.8M
- **Federal Funds Appropriated:** $7.650M
- **Non-Federal Share:** $4.033M

Left: Initial Storm Damage Reduction Beach Construction - Brigantine Island.
Right: Aerial Photo of the Completed Storm Damage Reduction Beach fill – Brigantine Island.

This project is authorized by the Water Resources Development Act (WRDA) of 1999.

The project provides flood and coastal storm damage reduction along Brigantine Island, utilizing sand from an offshore borrow source. The project will consist of berm and dune restoration along approximately 1.8 miles of coastline fronting the northern third of the city. The
initial project construction cost is estimated at approximately $4.5 million.

FY 04, 05, & 06 funds were used to complete initial construction. The beachfill portion of the project was completed in February 2006. Dune grass, sand fencing and crossovers were also completed. FY11 funds were used for project monitoring. FY12 funds were used to award a contract to complete the 2nd renourishment cycle. The contract was awarded in September 2012 and completed in February 2013.

Between October 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May 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. PIR was approved, funding provided and the previously awarded renourishment contract was modified to complete the repairs and renourishment concurrently. Pumping began in January 2013 and completed in February 2013.

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New Jersey Shore Protection, Brigantine Inlet to Great Egg Harbor Inlet, Brigantine Island, NJ

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction along Brigantine Island, consisting of a berm and dune restoration.

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. This Addendum was approved. The previously awarded renourishment contract was modified to complete the restoration. The pumping of sand was completed in June 2013 and the project was complete in July 2013.

FY16 funds will be used for project monitoring.

FCCE funds are being used to complete a PIR as a result of damages incurred from Oct 15 nor'easter/Hurricane Joaquin. Draft PIR recommendation is to repair project. Once approved FCCE repair funds will be requested. If funding is rec'd PDT will begin design, P&S & acquisition process.

TIMELINE	Start	Complete	Comments
Initial Construction		Feb 2006	
FCCE Emergency Rehab	Sep 2011	Dec 2011	
2nd Periodic Nourishment Cycle	Jan 2013	Feb 2013	Sand pumping
FCCE EMERGENCY (Sandy)	Jan 2013	Jul 2013	
3rd Periodic Nourishment Cycle	Sched FY19		Dependent on adequate funding

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	32,393	17,442	49,835		Allocations thru FY13	7,570	
					FY 14 Allocation	0	
					FY 15 Allocation	80	
					FY 16 Allocation	0	Work Plan
					FY 17 Budget	0	President's Budget
					Balance to Complete	24,743	

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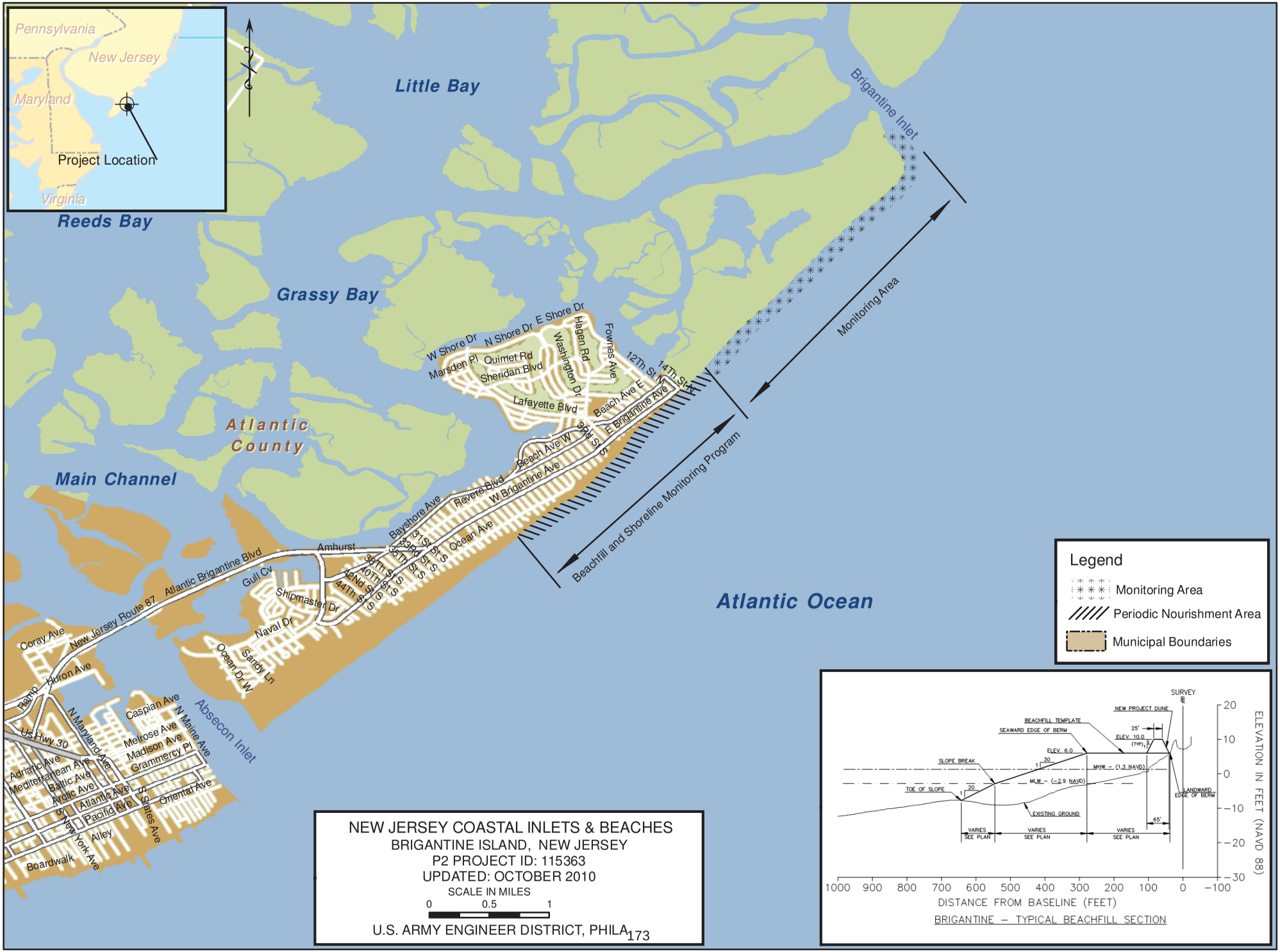

NEW JERSEY COASTAL INLETS & BEACHES
BRIGANTINE ISLAND, NEW JERSEY
P2 PROJECT ID: 115363
UPDATED: OCTOBER 2010
SCALE IN MILES
0 0.5 1
U.S. ARMY ENGINEER DISTRICT, PHILA

New Jersey Shore Protection, Great Egg Harbor Inlet to Townsends Inlet, NJ

- **Authority:** Section 1001 (30) Water Resources Development Act of 2007
- **Congressional District**: NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 23 Jun 14
- **Target Completion Date:** 2064
- **Total Estimated Cost:** $402.6M
- **Federal Funds Appropriated:** $83.65M (Includes Sandy CG funds)
- **Non-Federal Share:** $348K

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Preconstruction & during construction

This project is authorized under Section 1001 (30) of the Water Resources Development Act of 2007.

The study investigated flood and coastal storm damage effects with a view toward reducing impacts from coastal erosion and storms. The recommended plan calls for construction of a beach fill with a berm and dune along the study area oceanfront utilizing sand from an offshore borrow source and periodic nourishment for a period of 50 years.

PED was completed in FY05. Chief of Engineer's Report was signed on 24 October 2006. The project was authorized in the 2007 Water Resources Development Act. The Record of Decision was signed on 18 October 2011.

Between October 27 & 30, 2012, Hurricane Sandy significantly damaged the New Jersey coast from Sandy Hook to Cape May and up the Delaware Bay. In response, the Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law 113-2 (Act).

This project was determined to be eligible for P.L. 113-2 2013 Disaster Relief Appropriations Act (Hurricane Sandy) funds as an Authorized but Unconstructed (ABU) project. The term "authorized but unconstructed project" refers to previously authorized projects for which no physical construction has occurred as well as projects that contain elements where construction has not been completed. Additionally this project is considered an ongoing ABU project under P.L. 113-2. Therefore, the remaining initial construction portions of the project are eligible to completed at 100% Federal with no sponsor payback.

New Jersey Shore Protection, Great Egg Harbor Inlet to Townsends Inlet, NJ

- **Project Goals:** The purpose of this project investigated hurricane and coastal storm damage effects with a view toward reducing impacts from coastal erosion and storms.

In FY13, FY14 & FY15 $70.6M has been received to complete the necessary steps to construct initial construction to include completion of Limited Reevaluation Report (LRR), approve and execute a new Project Partnership Agreement; acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contracts.

A LRR is a post authorization study that evaluates 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. A LRR documents the results of the analysis undertaken.

For this project a HSLRR specific to Hurricane Sandy was completed & approved which recommended moving forward with initial construction under PL 113-2. This HSLRR was used to support the development of a PPA which was executed on 23 Jun 14.

All the necessary real estate acquisitions were completed along with the plans and specifications for the contract. The contract to initiate and complete initial construction was awarded on 10 November 2014. Physical construction began in Apr 15 with completion sched for Apr 16. Sandy funds (PL 113-2) totaling $82.3M have been received to complete initial construction. Based on PL 113-2 initial construction will be at 100% Federal with no sponsor payback.

FY16 Work Plan funds are being used for monitoring.

Timeline	Start	Complete	Comments
Initial Construction	Jan 2015		Completion sched for Mar 16

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Initial Construction	242,241	160,398	402,638
Sandy P.L. 113-2 CG funds of $82.3M have been rec'd to complete initial construction.			

Summarized Federal Financial Data ($000) (Regular CG Funds)		
Allocations thru FY13	1,942	
FY 14 Allocation	0	
FY 15 Allocation	-603	Reprogrammed
FY 16 Budget	0	Work Plan
FY 17 Budget	0	President's Budget
Balance to Complete	158,602	Accounts for Sandy CG Funds Rec'd.

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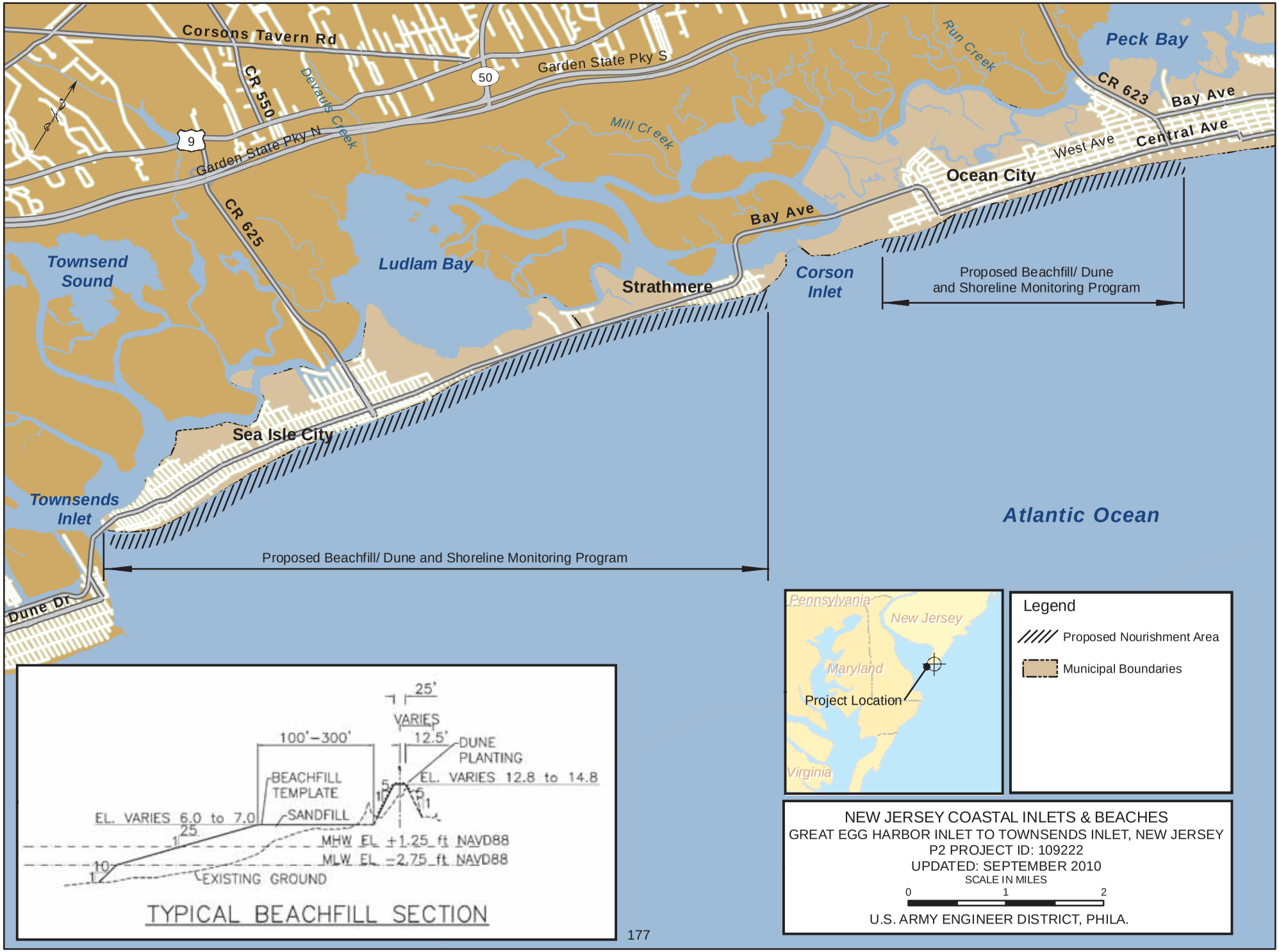
Corsons Tavern Rd
CR 550
Devaul's Creek
50
Garden State Pky S
Garden State Pky N
9
Mill Creek
Run Creek
Peck Bay
CR 623
Bay Ave
Central Ave
West Ave
Ocean City
Bay Ave
CR 625
Townsend Sound
Ludlam Bay
Strathmere
Corson Inlet
Proposed Beachfill/ Dune and Shoreline Monitoring Program
Sea Isle City
Townsends Inlet
Atlantic Ocean
Proposed Beachfill/ Dune and Shoreline Monitoring Program
Dune Dr
25'
VARIES
12.5'
DUNE PLANTING
EL. VARIES 12.8 to 14.8
100'–300'
BEACHFILL TEMPLATE
SANDFILL
EL. VARIES 6.0 to 7.0
MHW EL +1.25 ft NAVD88
MLW EL -2.75 ft NAVD88
EXISTING GROUND
TYPICAL BEACHFILL SECTION
Pennsylvania
New Jersey
Maryland
Virginia
Project Location
Legend
Proposed Nourishment Area
Municipal Boundaries
NEW JERSEY COASTAL INLETS & BEACHES
GREAT EGG HARBOR INLET TO TOWNSENDS INLET, NEW JERSEY
P2 PROJECT ID: 109222
UPDATED: SEPTEMBER 2010
SCALE IN MILES
0 1 2
U.S. ARMY ENGINEER DISTRICT, PHILA.

New Jersey Shore Protection, Lower Cape May Meadows-Cape May Point, NJ

- **Authority:** Title I, Section 101 (a)(25) of the Water Resources Development Act of 1999
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 28 July 2003
- **Target Completion Date:** 2054
- **Total Estimated Cost:** $84.5M
- **Federal Funds Appropriated:** $43.0M
- **Non-Federal Share:** $9.7M

Left: Beach and wetlands that were lost to long-term erosion have been restored, and the dune line has been reconstructed seaward.
Right: Beach is restored in the Borough of Cape May Point

The Lower Cape May Meadows – Cape May Point project was authorized for construction by Title I, Section 101 (a) (25) of WRDA 1999.

Lower Cape May Meadows Project for the purposes of ecosystem restoration, hurricane and coastal storm damage reduction and navigation mitigation is approximately 350 acres in area containing Cape May Point State Park and the Nature Conservancy's Cape May Migratory Bird Refuge. The Meadows consists of important coastal freshwater wetlands, which are vital resting areas for shorebirds and birds of prey during their seasonal migration along the Atlantic flyway. The project restores and protects fish and wildlife habitat and provides flood and storm damage reduction throughout the entire study area. This project was completed on 15 June 2007.

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New Jersey Shore Protection, Lower Cape May Meadows-Cape May Point, NJ

- **Project Goals:** The purpose of this project provides ecosystem restoration, hurricane and coastal storm damage reduction and navigation mitigation in an area containing Cape May Point State Park and the Nature Conservancy's Cape May

FY 08 funds were used to award a contract to initiate the 2nd periodic nourishment cycle. This contract was completed in March 2009. FY 11 funds in the amount of $8,920,000 were used for project monitoring and to continue the 2nd periodic nourishment cycle. The contract to continue the 2nd periodic nourishment cycle was awarded on 5 November 2010. Physical construction began in December 2010 and was completed in February 2011. FY12 funds were used to award a contract to complete the 2nd renourishment cycle. The contract was awarded in September 2012. Physical construction began in November 2012 with sand pumping completed in January 2013. Other project features will be completed by May 2013.

Between October 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May 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 recent renourishment brought the project back to design template. Therefore it was not eligible for PL 84-99 funding.

FY 16 funds are being used for design, P&S & construction contract for the 3rd periodic nourishment. Contract scheduled for Sep 2016.

TIMELINE	Start	Complete	Comments
Initial Construction		Jun 2007	Beach fill
Initial Construction		Jun 2007	Environmental Restoration
Continue 2nd Periodic Nourishment Cycle	Dec 2010	Feb 2011	
Complete 2nd Periodic Nourishment Cycle	Nov 2012	Jan 2013	Pumping complete.
Complete 3rd Periodic Nourishment Cycle	FY16		Funds have been rec'd.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	67,077	17,406	84,483		Allocations thru FY13	35,161	
					FY 14 Allocation	400	
					FY 15 Allocation	0	
					FY 16 Allocation	7,400	
					FY 17 Budget	0	President's Budget
					Balance to Complete	24,116	

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TYPICAL BEACHFILL SECTION
LOWER CAPE MAY MEADOWS AND CAPE MAY POINT
NOT TO SCALE

LOWER CAPE MAY MEADOWS - CAPE MAY POINT
NEW JERSEY
P2 PROJECT ID: 109941
UPDATED: SEPTEMBER 2010
SCALE IN MILES
0 0.3 0.6
U.S. ARMY ENGINEER DISTRICT, PHILA.

Legend
Existing Groins
Periodic Nourishment Area
Municipal Boundaries

New Jersey Shore Protection, Manasquan Inlet to Barnegat Inlet, NJ

- **Authority:** Section 1001 (32) of the Water Resources Development Act of 2007
- **Congressional District:** NJ-3, NJ-4
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 18 Jul 14
- **Target Completion Date:** 2065
- **Total Estimated Cost:** $513.9
- **Federal Funds Appropriated:** $3.55M (Includes Sandy CG funds)
- **Non-Federal Share:** $255K

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Mantoloking New Jersey without-project conditions. (Before Hurricane Sandy)

This project was authorized by Section 1001 (32) of the Water Resources Development Act of 2007.

The study investigated flood and coastal storm damage effects with a view toward reducing impacts from coastal erosion and storms. The recommended plan calls for construction of a beach fill with a berm and dune along the study area oceanfront utilizing sand from an offshore borrow source and periodic nourishment for a period of 50 years. Initial fill requirements would be about 10 million cubic yards, with periodic nourishment at 4-year intervals with about 1 million cubic yards placed.

The Chief of Engineers Report was completed in December 2003. This project was authorized in the 2007 Water Resources Development Act (WRDA).

Between October 27 & 30, 2012, Hurricane Sandy significantly damaged the New Jersey coast from Sandy Hook to Cape May and up the Delaware Bay. This project was hit especially hard with a breach in Mantoloking and significant damage to Seaside Heights, Mantoloking, Ortley Beach, Lavallette and Seaside Park. Significant damage also occurred to piers, boardwalks, amusements, residential and commercial properties. In response, the Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law 113-2 (Act).

The legislation provides supplemental appropriations to address damages caused by Hurricane Sandy and to reduce future flood risk in ways that will support the long-term sustainability of the coastal ecosystem and communities, and reduce the economic costs and risks associated with large-scale flood and storm events.

New Jersey Shore Protection, Manasquan Inlet to Barnegat Inlet, NJ

- **Project Goals:** The purpose of this project investigated hurricane and coastal storm damage reduction, and recommendation of a beach fill. With a berm and dune and a periodic nourishment for a period of 50 years.

This project was determined to be eligible for P.L. 113-2 2013 Disaster Relief Appropriations Act (Hurricane Sandy) funds as an Authorized but Unconstructed project. The term "authorized but unconstructed project" refers to previously authorized projects for which no physical construction has occurred as well as projects that contain elements where construction has not been completed.

In FY13 & FY14 $1,750,000 in PL 113-2 funds were provided to begin the process towards initiation and completion of initial construction. These funds are being used to complete the necessary steps towards initial construction. These steps include completion of the Limited Reevaluation Report (LRR); develop, approve and execute the Project Partnership Agreement; acquire the necessary real estate; complete plans and specifications; and advertise and award the construction contract.

A LRR is a post authorization study that evaluates 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. A LRR documents the results of the analysis undertaken.

For this project a HSLRR specific to Hurricane Sandy was completed & approved which recommended moving forward with initial construction under PL 113-2. This HSLRR was used to support the development of a PPA which was executed on 18 July 2014.

The sponsor is currently acquiring the necessary real estate as the plans & specifications for the construction contract are being completed. This has been complicated as there have been legal challenges. Pending resolution of real estate advertisement of the construction contract is currently scheduled for Spring 2015 but is subject to change. PL 113-2 CG funds will be utilized to complete initial construction at 100% Federal. Initial construction is currently estimated at $167M. Based on PL 113-2 this project requires the non-Federal sponsor to reimbursed 35% (~$58M) of the initial construction cost.

Timeline	Start	Complete	Comments
Initial Construction	TBD		Initiation sched for Spring 2015

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000) (Regular CG Funds)		
Construction	280,740	233,130	513,870		Allocations thru FY13	855	
Sandy P.L. 113-2 CG funds of $2.75M have been rec'd towards initial construction.					FY 14 Allocation	0	
					FY 15 Allocation	-50	Rescinded
					FY 16 Work Plan	0	
					FY 17 Budget	0	President's Budget
					Balance to Complete	277,185	Accounts for Sandy CG funds

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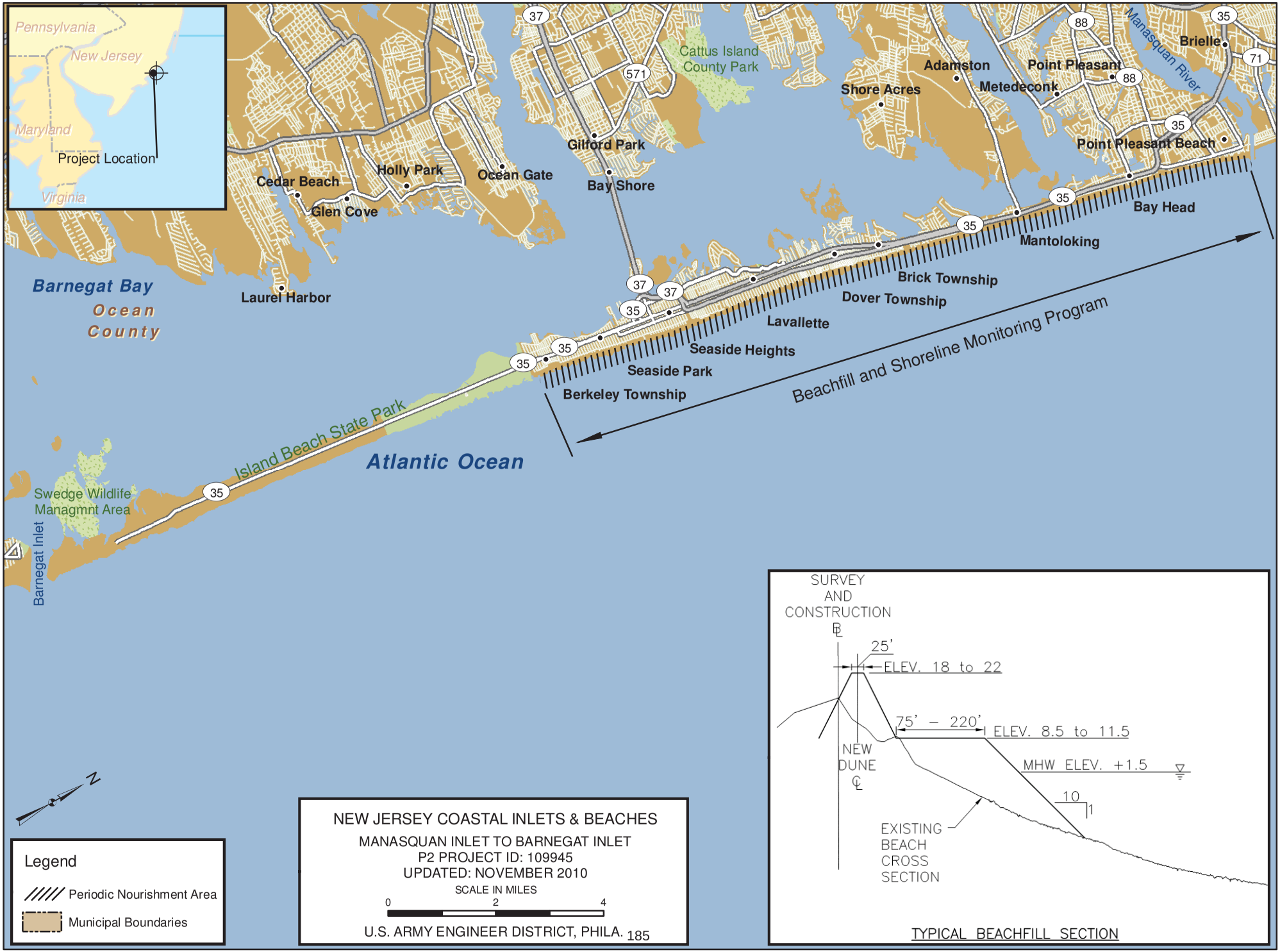
CORPS OF ENGINEERS

U.S. ARMY



New Jersey Shore Protection, Townsends Inlet to Cape May Inlet, NJ

- **Authority:** Section 101 (a)(26) of the Water Resources Development Act of 1999.
- **Congressional District:** NJ-2
- **Non-Federal Sponsor:** New Jersey Department of Environmental Protection
- **Date of Project Partnership Agreement:** 8 March 2002
- **Target Completion Date:** 2052
- **Total Estimated Cost:** $268.7M
- **Federal Funds Appropriated:** $65.8M
- **Non-Federal Share:** $36.3M

Left: Avalon Seawall During construction. Right: Avalon Seawall Completed Section

Authorized under the WRDA 1999, Section 101(a)(26).

The recommended plan for flood and coastal storm damage reduction includes: (1) 4.3 miles of beach fill with a berm width of 150-feet and a dune crest at +14.75 feet NAVD, with periodic nourishment at 3 year intervals; (2) 2.2 miles of seawall construction along the Townsends Inlet frontage of Avalon and the Hereford Inlet frontage of North Wildwood; (3) ecosystem restoration of approximately 116 acres of natural barrier island habitat at Stone Harbor Point including beach fill and dune construction. The restoration includes the planting of approximately 56 acres of bayberry and red cedar roosting habitat.

The initial beachfill construction within Avalon and Stone Harbor was completed in FY03. Initial construction contracts were awarded for both the Avalon and North Wildwood seawalls in FY04. Construction of both the Avalon (September 2006) and Hereford (June 2009) Seawalls are complete. These seawalls were completed utilizing FY 05, 06, 07 and 08 funds. The 2nd nourishment cycle was scheduled for FY07. However, renourishment did not proceed due to inadequate funding. FY11 funds were also inadequate to proceed with initiation of the 2nd nourishment cycle. A small portion of the funds were used for project monitoring. Additionally in FY09 $1.5M in Emergency Supplemental funds were used to initiate and complete a truck-fill operation in Avalon.

As a result of Hurricane Irene in Aug 2011$40,000 in FCCE funds were provided to complete a Project Information Report under Public Law 84-99. The PIR completed in Mar 2012 determined that the project met the requirements of PL84 -99 and was eligible for FCCE funding. A contract to repair the project was awarded in Sep 2012. Physical construction began in Dec 2012 and completed in Jul 2013.

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New Jersey Shore Protection, Townsends Inlet to Cape May Inlet, NJ

- **Project Goals:** The purpose of this project provides hurricane and coastal storm damage reduction, including a beach fill with a berm and dune, with a periodic nourishment at three year intervals.

Between October 27 & 30, 2012, Hurricane Sandy caused significant damage to the New Jersey coast from Sandy Hook to Cape May and up the Delaware Bay. FCCE under PL 84-99 were again used to complete a PIR Addendum to the Hurricane Irene PIR. The results of the PIR determined that the project was eligible for FCCE funding to repair the project to pre-storm conditions. Therefore, the previously awarded Hurricane Irene repair contract was modified to complete the repairs for Hurricanes Irene & Sandy concurrently. Additionally, in response to P.L. 113-2 a second 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. This Addendum was approved. The contract was further modified to complete the restorations. Pumping of sand was completed in Jul 2013. Repairs to Hereford Seawall were completed in Apr 2014.

FY15 work plan funds are being used for project monitoring & to award the 2nd periodic nourishment contract in FY16.

FCCE funds are being used to complete a PIR as a result of damages incurred from Oct 15 nor'easter/Hurricane Joaquin. Draft PIR recommendation is to repair project. If repairs are approved & if adequate funds are provided it is prudent to complete the repairs concurrently with the renourishment contract.

Timeline	Start	Complete	Comments
Initial Construction		Jul 2002	Beach fill
Initial Construction		Jun 2009	Avalon & Hereford Seawalls
FCCE Emergency Rehab (Nor'Ida Nov 09)	Apr 2011	Dec 2011	Pumping completed in Jun 2011
FCCE EMERGENCY Rehab (Hurricane Irene & Sandy)	Dec 2012	Apr 2014	Pumping completed in Jul 2013. Hereford Seawall completed Apr 2014
2nd Periodic Nourishment Cycle	2016		Funding has been rec'd

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Construction	173,691	95,058	268,749

Summarized Federal Financial Data ($000)		
Allocations thru FY13	60,552	
FY 14 Allocation	0	
FY 15 Allocation	5,280	
FY 16 Budget	0	
FY 17 Budget	0	Presidents Budget
Balance to Complete	107,859	

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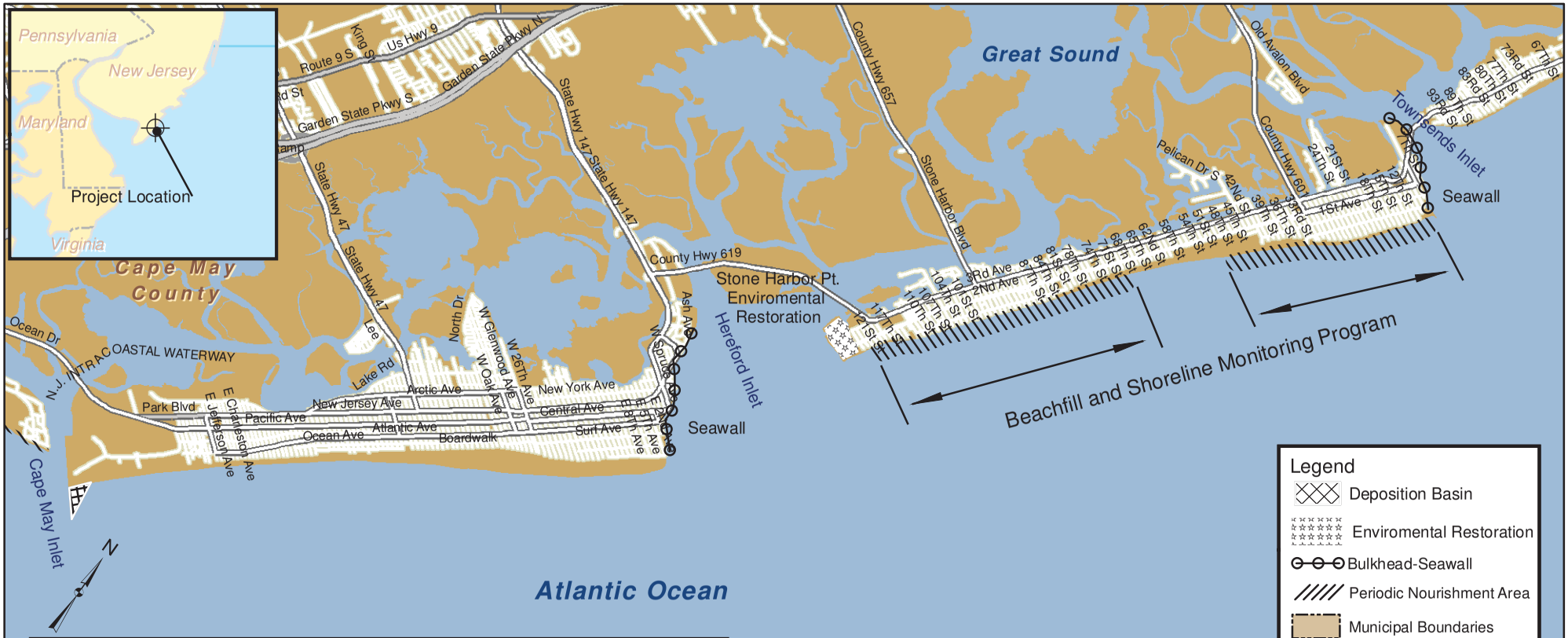
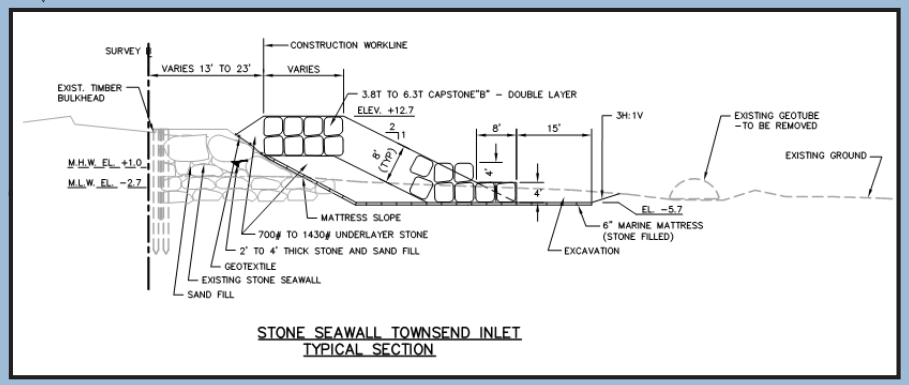
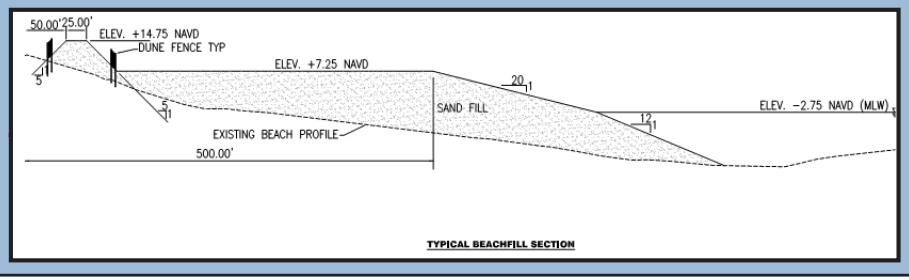
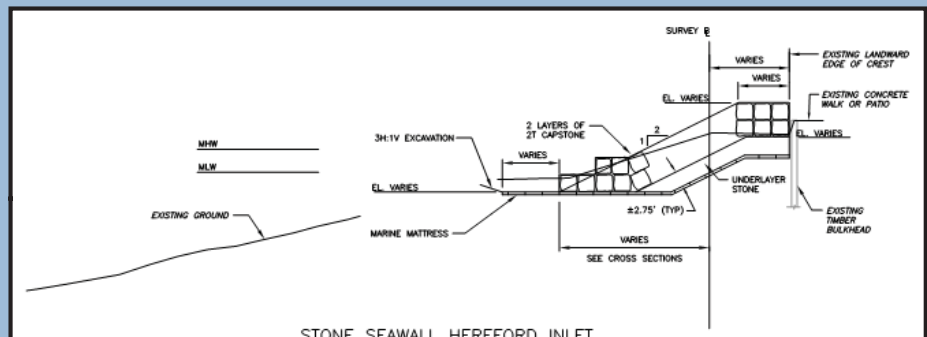




STONE SEAWALL TOWNSEND INLET
TYPICAL SECTION



TYPICAL BEACHFILL SECTION



STONE SEAWALL HEREFORD INLET
TYPICAL SECTION

TOWNSENDS INLET TO CAPE MAY INLET. NJ

P2 PROJECT ID: 109787
UPDATED: OCTOBER 2010

SCALE IN MILES
0 1.5 3

U.S. ARMY ENGINEER DISTRICT, PHILA.

Southeastern PA Environmental Improvements Program Section 566 WRDA 1996

- **Authority:** Section 566 of the Water Resources Development Act of 1996.
- **Congressional District:** PA-1, PA-2, PA-6, PA-7, PA-8, PA-13, PA-15, PA-16
- **Non-Federal Sponsor:** see individual projects for specific project locations.
- **Federal Funds Appropriated (To Date):** $12M (Authorized to $25M)
- **Non-Federal Share:** 25%
- **Jurisdictions**
  - **Bucks County**
  - **Chester County**
  - **Delaware County**
  - **Montgomery County**
  - **Philadelphia County**

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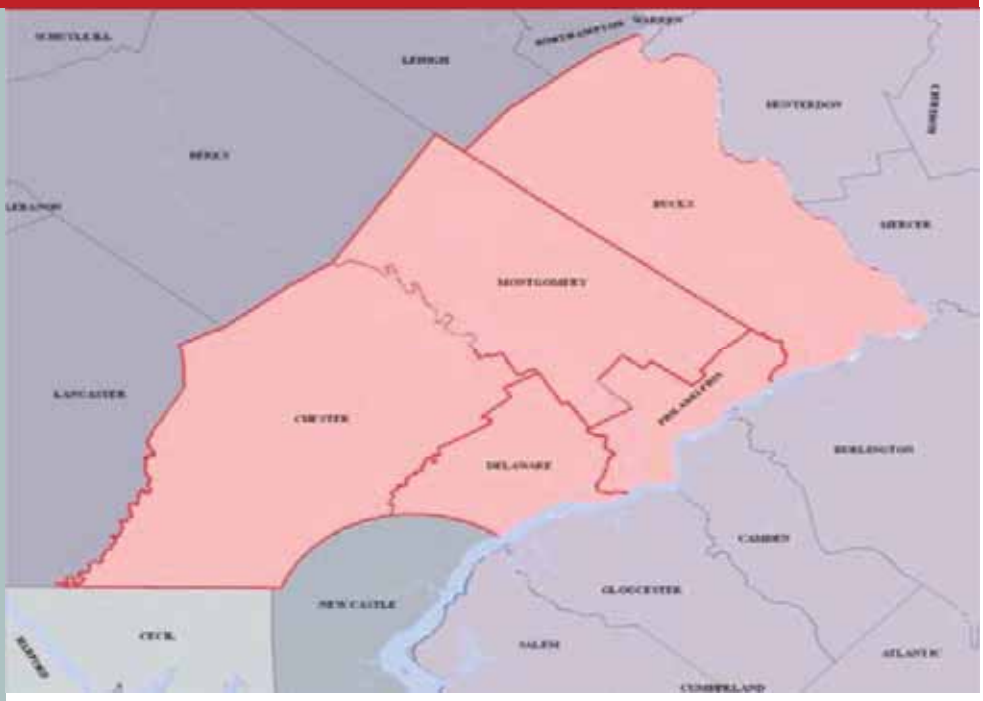

Authorized under Section 566 of the Water Resources Development Act (WRDA) of 1996, as amended.

Funding for this authority is provided to the Corps through a line item for Environmental Infrastructure and distributed to specific projects through the annual Work Plan. The Southeastern Pennsylvania Environmental Improvement Program, authorized by Section 566 of WRDA 1996, as amended, provides design and construction assistance to non-Federal interests for carrying out water related environmental infrastructure, and resource protection and development projects in southeastern Pennsylvania, including projects for wastewater treatment and related facilities, water supply and related facilities, and surface water resource protection and development. Section 552 of WRDA 1999 amended the authority to include environmental restoration as an authorized project purpose under this program.

The process consists of three phases:

(1) Project Approval
(2) Project Design, and
(3) Project Construction

All phases are costs-shared with a non-Federal sponsor with the sponsor providing 25% of the total project costs.

Southeastern PA Environmental Improvements Program, Bucks, Chester, Delaware, Montgomery & Philadelphia Counties, PA

- **Project Goals:** The purpose of these projects are to provide design and construction assistance to non-Federal interests for carrying out water related environmental infrastructure, ecosystem restoration and resource protection and development projects in southeastern Pennsylvania.

Project	Sponsor	Status	Program Funding							
			FY06	FY08	FY09	FY10	FY12	FY14	FY16	FY17
Abington Township Environmental Improvement	Abington Township	Project Approval	0	0	0	0	0	0	200	TBD
Chester, Delaware and Montgomery County Watershed	PADEP	Design Phase			120 399*	0	0	0	0	TBD
Cobbs Creek Fish Passage Restoration	PWD	Design Phase	28		80*	0	0	1,500	0	TBD
Cobbs Creek Habitat Restoration	PWD	Construction	10		239 254*	0	2,300	0	0	TBD
Hatfield Borough Sewer Improvements	Hatfield Borough	Close Out		236		0	0	0	0	TBD
Mill Creek Diversion	PWD	Close Out	522			0	0	0	0	TBD
Roosevelt Boulevard Dam Removal	PWD	Project Approval	0	0	0	0	0	0	0	TBD
Sandyford Run	PWD	Inactive	0	0	0	242	0	0	0	TBD
Tacony Creek Ecological Improvements	PWD	Close Out	18	492	478 1,832*	388	0	0	0	TBD
Whitpain Township	TBD	Project Approval		49		0	0	0	0	TBD
Factsheet Included		**Total Funding**	594	777	837 2,567*	630	2,300	1,500	200	TBD

Zero funding received in FY07, FY11, FY13 and FY 15
**Stimulus Funds Received in addition to normal FY09 funding*

Abington Township Environmental Infrastructure Improvement

- **Authority:** Section 566 of the Water Resources Development Act of 1996.
- **Congressional District:** PA-13
- **Non-Federal Sponsor:** Abington Township, Montgomery County PA
- **Date of Design Agreement:** **FY2016**
- **Date of Construction Agreement:** TBD
- **Target Completion Date:** FY2018
- **Total Estimated Cost:** TBD
- **Federal Funds Appropriated:** $200,000
- **Non-Federal Share:** 25%

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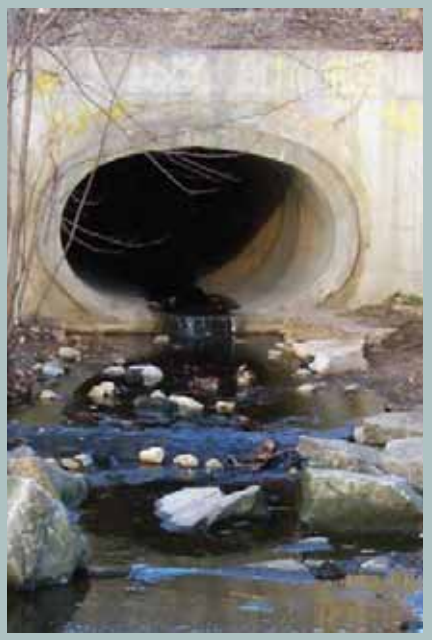
Under authority of Section 566 of the Water Resources Development Act of 1996, as amended, the U.S. Army Corps of Engineers (Corps) will provided design and construction assistance to Abington Township, Montgomery County to address environmental infrastructure improvement opportunities throughout the community. To the maximum extent possible, the Corps will utilize existing information provided by the community for initiatives already under development.

Initial efforts on the project involve executing the design and construction agreement with the community outlining the cost share requirements, developing the project management plan, initiating designs and completing an environmental assessment.

Abington Environmental Infrastructure Improvement

- **Project Goals:** The purpose of this to provide design and construction assistance for carrying out water related environmental infrastructure and resource protection, including projects for waste water treatment, water supply and surface water resource protection.



Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Init. Appraisal Report	10	0	0		Allocations thru FY15	0	
Design Agreement	12	4	16		FY 16 Allocation	200	
Final Design	400	133	533		FY 17 Budget	TBD	
Construction	TBD	TBD	TBD		FY 18 Budget	TBD	
					Balance to Complete	TBD	

Chester, Delaware & Montgomery County Streams

- **Authority:** Section 566 of the Water Resources Development Act of 1996.
- **Congressional District:** PA-7, PA-16
- **Non-Federal Sponsor:** Pennsylvania Department of Environmental Protection (PADEP)
- **Date of Project Agreement:** 17 August 2010
- **Target Completion Date:** TBD
- **Total Estimated Cost:** TBD
- **Federal Funds Expended:** $501,000
- **Non-Federal Share:** 25%

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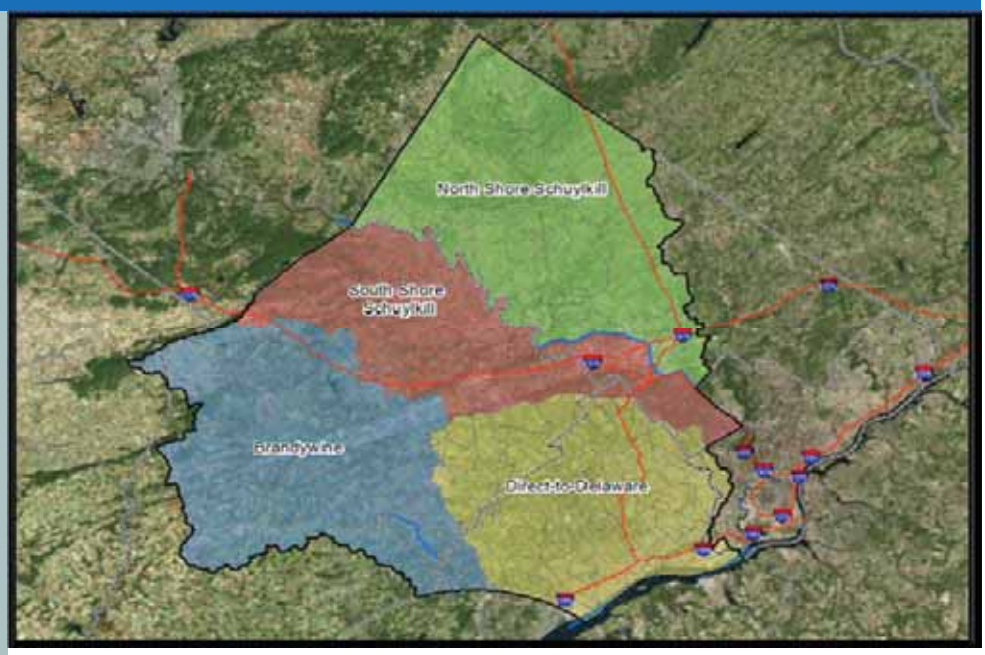


Project area for the development of the decision support tool and project alternatives. The project area is divided into 4 sub-basins based on similar characteristics.

Many Chester, Delaware and Montgomery County streams are in need of assistance to restore their environmental conditions including habitat and water quality. The objective of this effort is to develop preliminary designs for multiple environmental improvement projects that address watershed problems in Chester, Delaware and Montgomery Counties, Pennsylvania. The approach follows an Integrated Water Resource Management principle to ensure project designs address system-wide problems and issues and result in a comprehensive watershed solution.

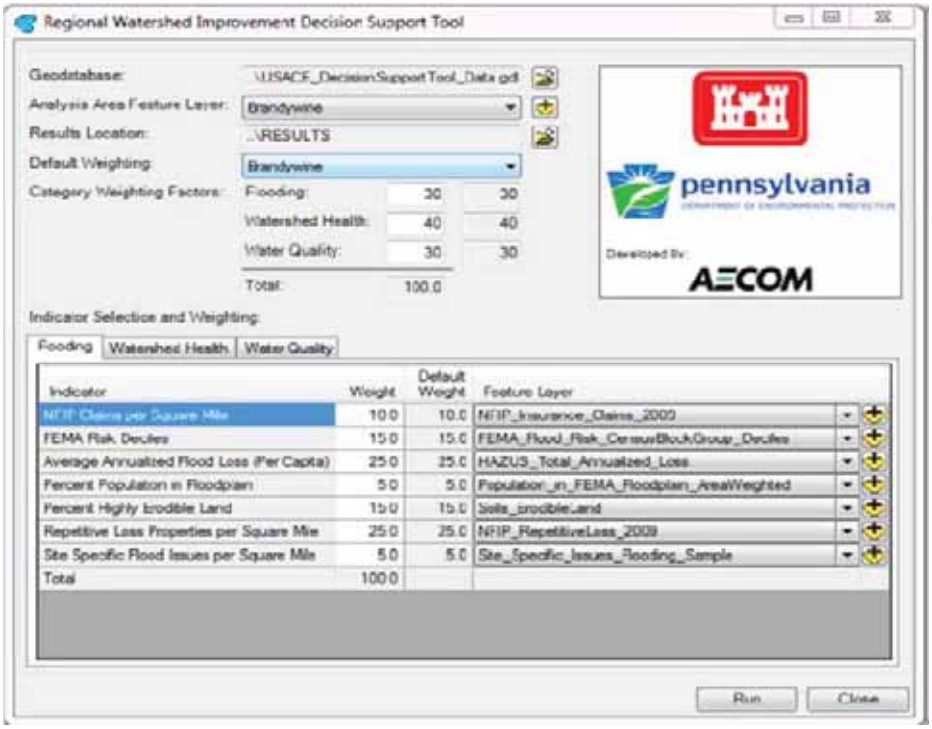
This project involves evaluating a wide range of parameters including but not limited to sedimentation, erosion, aquatic habitat, ecosystem restoration and improvement, point and non-point source pollution and flood damage reduction. The final product will contain prioritized preliminary designs (30% designs), including preliminary project costs, and a detailed implementation report for a holistic solution to the degradation of the environmental systems within Chester, Delaware and Montgomery Counties.

Efforts to date include the development of a GIS based decision support tool (DST) to assist in prioritizing needs throughout the watershed. The DST is customizable based on user input and is currently available for use by local communities.

Chester, Delaware & Montgomery County Streams

- **Project Goals:** The purpose of this project is to develop preliminary designs for multiple environmental improvement projects that address watershed problems in Chester, Delaware and Montgomery Counties, Pennsylvania.

Available funding from the non-Federal sponsor will not support the project moving into additional phases including plan formulation and project design.



Screenshot from the Decision Support Tool. This tool runs in ESRI ArcGIS and combines hundreds of calculations into a simple to use format for the novice and advanced GIS users.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Initial assessment and Fact-sheet	9	3	12		Allocations thru FY15	519	
Design Agreement	21	7	28		FY 16 Allocation	0	
Decision Support Tool	471	157	628		FY 17 Budget	TBD	
Plans & Specifications *	TBD	TBD	TBD		FY 18 Budget	TBD	
Construction	TBD	TBD	TBD				
					Balance to Complete	TBD	
					*$12K transferred to other Section 566 projects		

Cobbs Creek Fish Passage

- **Authority:** Section 566 of the Water Resources Development Act of 1996.
- **Congressional District:** PA-1, PA-2
- **Non-Federal Sponsor:** Philadelphia Water Department
- **Date of Design Agreement:** 6 August 2009
- **Date of Construction Agreement:** TBD
- **Target Completion Date:** FY2017
- **Total Estimated Cost:** $575,000 (design) & $2M (construction)
- **Federal Funds Appropriated:** $2,000,000
- **Non-Federal Share:** 25%

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The Woodland Avenue Dam is the first impediment along Cobbs Creek preventing fish passage. Stored sediment behind the dam must be controlled during removal to prevent adverse upstream impacts.

In August 2009, PWD and the Corps partnered to investigate, select, design and construct the best alternative to reestablish fish passage along Cobbs Creek at the Woodland Dam. The Woodland Dam, also known as Old Swedes Mill, is a low concrete structure managed by the Philadelphia.

Through the Corps' planning process and following the National Environmental Policy Act (NEPA) the project team began to determine the feasibility of the following fish passage alternatives:

- No Action
- Dam Removal (Full)
- Dam Removal (Partial)
- Fish Ladder
-

The Woodland Dam is located just upstream of the Woodland Avenue Bridge across Cobbs Creek. The potential limits of disturbance from the project extend from the bridge upstream approximately 1,050 feet. Portions of the project area extend in Delaware County, Pennsylvania. The Woodland Dam is located approximately 5.4 miles downstream of the confluence of Cobbs Creek and Indian Creek. The dam is also the first impediment to fish passage along Cobbs Creek.

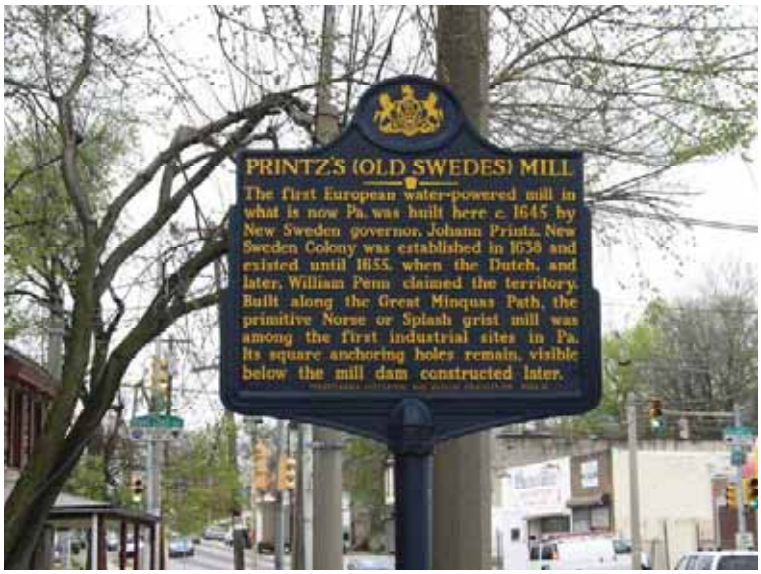
Modification or removal of the small dam would restore fish passage and improve the aquatic habit along this stream.

Cobbs Creek Fish Passage

- **Project Goals:** The purpose of this project is to investigate, select, and construct the best alternative to reestablish fish passage on Cobbs Creek.

The Corps is currently revising final Plans and Specifications and undergoing internal qualify reviews. The project will include full removal of the dam plus stream restoration for approximately 1,000 feet upstream of the dam necessary to stabilize the channel.

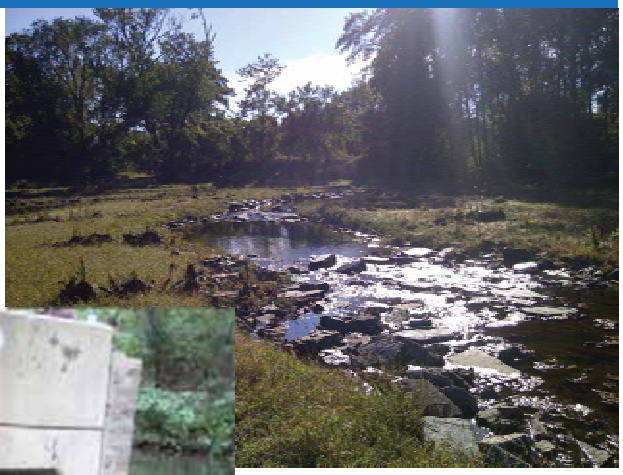
The Corps is pursuing a construction agreement with PWD to build the project in FY2016. Federal funding is sufficient to complete this effort.



Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Initial assessment and Fact-sheet	9	3	12		Allocations thru FY13	498	
Design Agreement	18	6	24		FY 14 Allocation	1,500	
Decision Support Tool	100	33	133		FY 15 Allocation	0	
Plans & Specifications	300	100	400		FY 16 Allocation	0	
Construction	1,500	500	2,000		FY 17 Budget	TBD	
					Balance to Complete	0	

Cobbs Creek Watershed Habitat Restoration

- **Authority:** Section 566 of the Water Resources Development Act of 1996.
- **Congressional District:** PA-1, PA-2
- **Non-Federal Sponsor:** Philadelphia Water Department
- **Date of Project Agreement:** 19 January 2010
- **Completion Date:** May 2015
- **Total Estimated Cost:** $4.1M
- **Federal Funds Appropriated:** $3.6M
- **Non-Federal Share:** 25%



The project will reduce the combined sewer overflow volume from this location by approximately 58% and the annual number of occurrences from 24 to 3.

During storm events, the flow within combined sewer typically surpass their normal capacity causing excess flow to discharge directly into adjacent waterways. This was the case at Morris Park near the confluence of the West and East Branches of Indian Creek. The urbanization of this watershed consequently increased storm flows and contributed to sedimentation and debris accumulation within the sewer system leading to frequent flooding of the area during minor storm events. The West Branch of Indian Creek entered the combined sewer system upstream of City owned tennis courts in Morris Park, between Brockton and Ruskin Roads. The project included the design and construction a new stream channel to remove the West Branch from the combined system thereby reducing sewer overflow events, decreasing flooding of the park by providing an alternate route for the water, and restoring the stream to a more natural state.

Additionally, the project involved modifying the existing infrastructure to create additional combined sewage overflow storage within the existing structure. This re-use of existing infrastructure is not only a cost effective measure, but will also reduce the volume of discharges by an estimated 58%.

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Cobbs Creek Watershed Habitat Restoration

- **Project Goals:** The purpose of this project provides design and construction a new stream channel to the East Branch of Indian Creek that bypasses the sewer system. This will remove the flow of the West Branch of Indian Creek from the combined sewer thereby reducing sewer overflow events, decreasing flooding of the park by providing an alternate route for the water, and restoring the stream to a more natural state.

Construction began in December 2012 and is expected to be complete in May 2016. The majority of construction was completed in 2014 with the remaining elements to be completed in the spring of 2016 following the expiration of warranty elements within the existing culvert.

Temple University Libraries, Urban Archives

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL
Init. Appraisal Report	10	0	0
Design Agreement	12	4	16
Final Design	400	133	533
Construction	2,325	775	3,100

Summarized Federal Financial Data ($000)		
Allocations thru FY12	2,803	
FY 13 Allocation	0	
FY 14 Allocation	0	
FY 15 Allocation	0	
FY 16 Allocation	0	
Balance to Complete	0	
*$700K transferred into the project from other Section 566 to support construction.		

Delaware River Main Channel Deepening, DE, NJ, & PA

- **Authority:** WRDA 1992, WRDA 1999 & WRDA 2000.
- **Congressional District:** DE-AL, NJ-1, NJ-2, PA-1, PA-7, PA -13
- **Non-Federal Sponsor:** Philadelphia Regional Port Authority (PRPA)
- **Date of Project Partnership Agreement:** 23 June 2008
- **Target Completion Date:** 2017
- **Total Estimated Cost:** $364.3M
- **Federal Funds Appropriated:** $231.168M (incl FY16 funds of $21.875M)
- **Non-Federal Share:** $91.455M (does not incl FY16 match)

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The project will deepen the existing Delaware River Federal Navigation Channel from 40 to 45 feet from Philadelphia Harbor, Pa., and Beckett Street Terminal, Camden, N.J., to the mouth of the Delaware Bay.

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 includes: 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 has 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 June 23, 2008.

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.

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; and relocation and addition of aids to navigation.

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 Jul 21, 2011, and the contract was awarded on Oct 6, 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). Bids for the contract were opened on Jul 10, 2012, and the contract was awarded on Jul 31, 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 Oct 18, 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 Jan 28, 2014. Construction began in Jul 2014 and was complete in Jan 2015.

The sixth project construction contract awarded was to deepen Reach AA (Station 20+300 to Station 32+900). The contract was awarded on May 30, 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 Broad-kill Beach. The contract was awarded on Jun 6, 2014 using FY14 funds and later supplemented with FY15 CRA funds of $35M. Dredging began in Apr 2015 is scheduled to be completed in Mar 2015.

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 is scheduled to be completed in Mar 2017.

The final two contracts are the Upper Reach E and Upper Reach B. The FY16 Work Plan funds will be used to complete the design, P&S & award the contract for Upper Reach E. The contract is scheduled for award in Sep 2016. FY17 budgeted funds will be used to complete the design, P&S & award the Upper Reach E contract.

Total Estimated Project Cost ($000)	FEDERAL	NON-FEDERAL	TOTAL		Summarized Federal Financial Data ($000)		
Construction	264,293	124,725	389,018		Allocations thru FY15	209,293	
					FY 16	21,875	Work Plan
					FY 17 Budget	$33,125	Presidents Budget
					Balance to Complete	0	

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Philadelphia District

Operations and Maintenance

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
- Inland Waterway Maintenance
- Navigation Maintenance
- Other Authorized Project Purposes
- Small, Remote, or Subsistence Navigation Maintenance

Color Code	
State	**Color**
Delaware	Red
New Jersey	Blue
New York	Black
Pennsylvania	Green
Multiple	Purple

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.

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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 in the past that poor channel conditions could delay the response of oil spill emergency clean-up and containment contractors during lower tide stages. An Environmental Assessment of the channel with a negative declaration was completed on 22 September 1981. The Corps will perform a new channel condition survey in the spring of FY 2016.

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 12 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 13 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 17 Budget	0	$715 Capability

Harbor of Refuge, Lewes, DE

- **Authority:** HD 52 112, 70 15, 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.

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Harbor of Refuge, Lewes, DE

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

FY17 funding to be used ($45,000) to monitor and inspect the historic 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.

	Summarized Federal Financial Data ($000)		
	FY 12 Allocation	0	Impacted by Low Use Navigation budget cuts
	FY 13 Allocation	0	Impacted by Low Use Navigation budget cuts
	FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
	FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
	FY 16 Allocation	0	$45 Capability
	FY 17 Budget	45	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 project area showing Indian River Inlet.

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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.

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.

PL 113-2 Supplemental Funds (Sandy) received for this O&M navigation project total $1,300,000. These funds were used to repair 300 linear feet of the north jetty including removal of the damaged walkway and sand tightening of this portion of the structure. This work was completed in December 2013. Additionally, the Indian River Inlet flood shoal was utilized as a borrow source for the post-Sandy shore protection project constructed to the north of the navigation project. Project Condition Surveys will be conducted in FY16.

Indian River Inlet jetties are in poor condition with over 350 linear feet of loss from the seaward end of the north jetty since 1960. Continued monitoring and management of the inlet channel, jetties and scour holes is critical to protect the surrounding infrastructure and Federal investments in the area. Also, severe shoaling in the Massey's Ditch portion of the project is of significant concern.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 13 Allocation	0	$1,300,000 PL 113-2 Supplemental Funds (Sandy)
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 17 Budget	0	$8,300k Capability

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

- **Authority:** HD 823, 77 344. R&H Comm. Doc. 51, 74 56.
- **Congressional District**: DE-AL

Roosevelt Inlet at Lewes, Delaware

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, and extension of the jetties; a channel 10 feet deep and 100 feet wide to the South Street Bridge at Lewes; a channel 6 feet deep and 50 feet wide to Rehoboth Bay entrance. It also provides for a channel 6 feet deep and 100 feet wide from Roosevelt Inlet to Broadkill River, and a highway bridge and railroad bridge at Rehoboth Beach.

A new channel condition survey will be performed in FY 2016. FY 2016 funding capability exists to perform maintenance dredging of the Entrance Inlet Channel and repair and stabilize bank erosion along the L and R Canal in the vicinity of Rehoboth Ave Route 1A Bridge Crossing.

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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 South Street Bridge at Lewes, and a channel 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. Failure to maintain the waterway on a 3-year cycle would result in the channel being unavailable to the primary users 50% of the time.

The local commercial fleet consists of approximately 65 Charter boats and 15 Head boats. The University of Delaware maintains four 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, emergency response activities, and operates a 47 foot buoy tender. 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 12 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 13 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	$3,630 Capability
FY 17 Budget	0	$3,630 Capability

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.

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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.

Channel condition surveys will be performed in the spring of FY 2016.

FY 2016 & FY 2017 funding capabilities exist to perform maintenance dredging of the project entrance channel and minimal operation and maintenance caretaker tasks and response to public inquires.

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 further shoaling in the channel could delay the response of oil spill emergency clean-up and containment contractors during lower tide stages.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 13Allocation	0	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	$2,390 Capability
FY 17 Budget	0	$2,390 Capability

Murderkill River, Sussex County, DE

- **Authority:** HD 21, 62 1058. SD 71 106.
- **Congressional District:** DE-AL

Entrance channel of Muderkill 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.

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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 will be accomplished in FY 16 along with the issuance of an updated channel statement to navigation users. FY 16 funding capability exists for minimal operation and maintenance caretaker tasks, and response to public inquires.

Approximately ten commercial fishing and crabbing vessels are based at Murderkill River. During peak seasons, there are additional commercial vessels operating out of the inlet, peaking at more than 100. A large number of tourists are attracted to the charter fishing opportunities.

Deteriorating shoaling conditions would negatively impact the use of this project as a safe harbor in the event of dangerous weather conditions. The U.S. Coast Guard, which operates an auxiliary station at Murderkill River, would be unable to respond to emergency situations at lower tide stages due to draft restrictions.

Failure to perform continued maintenance would result in damage to commercial vessels, and severely impact the economy of the local communities, since a majority of the local residents have occupations which are waterway-related (commercial/charter fisherman).

Summarized Federal Financial Data ($000)		
FY 12 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 13 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	$1,075 Capability
FY 17 Budget	0	$1,075 Capability

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 Districts:** DE-AL

The project extends from the confluence of the Delaware River and the Christina River upstream, a length of about 9.9 miles. It is located 65 miles from the Atlantic Ocean. The photo shows 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 19,000 jobs, $439 million in business revenue impact, and $37 million in regional annual tax revenue. The Port is owned and operated by the Diamond State Port Corporation, a corporation of the State of Delaware.

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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.

In FY 2015, a $2,298,049 maintenance dredging contract of both the 38-foot and 35-foot project channels was completed between 08 August and 02 September 2015. In addition, a leased equipment contract supported by Army Corps hired labor was performed to ditch, dry and drain the Wilmington North disposal area.

The following work will be accomplished in FY 2016: 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 and both technical and environmental support services will be funded.

The annual maintenance-dredging contract for both the 35-foot and 38-foot project channels and turning basin will be advertised on 14 April 2016. Bids will be received on 17 May 2016. Contract will be awarded 07 June 2016. Notice to Proceed is scheduled for issuance on or about 21 June 2016. Actual dredging should commence by 1 July 2016. Typically routine maintenance dredging operations are completed within 30-days with an average of 375,000 cubic yards of shoaling removed from the federal project. $2,500,000 has been budgeted for the dredging activity.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	3,250	
FY 13 Allocation	3,828	$4,000 PL 113-2 Emergency Supplemental Funding
FY 14 Allocation	5,351	
FY 15 Allocation	3,690	
FY 16 Allocation	3,845	$10,815 Capability
FY 17 Budget	4,355	$12,135 Capability

Absecon Inlet, Atlantic County, NJ

- **Authority:** HD 375, 504
- **Congressional District:** NJ-2

Project area showing Absecon Inlet, located between Brigantine and the northern end of Atlantic City.

Approved by HD 375, 67th Congress and HD 504, 79th Congress.

The project provides for an inlet entrance 20 feet deep at mean low water and 400 feet wide, an entrance channel 15 feet deep and 200 feet wide from the inlet channel into Clam Creek, and a turning basin 15 feet within Clam Creek. The total length of the section included in the project is about 1.5 miles.

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Absecon Inlet, Atlantic County, NJ

- **Project Goals:** The purpose of this project provides for an inlet entrance 20 feet deep at mean low water and 400 feet wide, an entrance channel 115 feet deep and 200 feet wide from the inlet channel into Clam Creek, and a turning basin 15 feet within Clam Creek.

In FY16, the Corps will conduct Project Condition Surveys and coordinate project status with the public, local stakeholders and US Coast Guard.

This project provides a safe navigation channel for commercial, recreational and USCG use, with a direct fish value of over $22M annually. A shoaling problem in the ocean entrance portion of the channel was identified by local users in June 2012. A portion of this shoal was removed in July 2012 by the Government Dredge Currituck, however, shoaling was exacerbated by Superstorm Sandy. Post-Sandy supplemental funds were received and the entrance channel shoal was dredged as a borrow source for the adjacent Absecon Island Federal shore protection project. Future beach fill operations should continue to utilize the entrance channel as a borrow source. A severe shoal exists at the entrance to the Clam Creek portion of the channel; sediment analyses were conducted in 2010, but no placement area or funding is available. For the last five years, the project has been affected by Low Use Navigation budget cuts.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 13 Allocation	0	PL 113-2 Supplemental Funds (Sandy) received in the amount of $750,000.
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 17 Budget	0	$710k Capability

Barnegat Inlet, Ocean County, NJ

- **Authority:** HD 73-19, HD 74-85, HD 79-358
- **Congressional District:** NJ-2, NJ-3

Project area showing Barnegat Inlet between Island Beach State Park and Barnegat Light.

Adopted as HD 73-19 in 1935 and modified as HD 74-85 in 1937 and HD 79-358 in 1946.

Project provides for a channel 8 ft deep through the inlet and 10 ft deep through the outer bar, a channel of suitable hydraulic characteristics extending in a northwesterly direction from the inlet gorge to Oyster Creek channel and through the latter channel to deep water in the bay, and the maintenance of a channel 8 ft deep and 200 ft wide to connect Barnegat Light Harbor with the main inlet channel. Project has two rubble-mound jetties. The project length is about 4.5 miles as described above. It was originally completed in 1940, but the Supplemental Appropriation Act of 1985 contained language stating that the existing project had not worked as projected and, in fact, created a hazard to navigation. As a result, the following administratively approved modifications were constructed in 1991 as design deficiency measures: a new south jetty 4,270 feet in length along an alignment generally parallel to the existing north jetty, a navigation channel 300 feet wide to a depth of 10 feet below mean low water from the outer bar in the Atlantic Ocean to the north end of the existing sand dike in Barnegat Bay, jetty sport fishing facilities on the new jetty.

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Barnegat Inlet, Ocean County, NJ

- **Project Goals:** The purpose of this project provides for a channel through the inlet and through the outer bar, a channel of suitable hydraulic characteristics extending in a northwesterly direction from the gorge in the inlet to Oyster Creek channel and through the latter channel to deep water in the bay, and the maintenance of a channel to connect Barnegat Light Harbor with the main inlet channel. The project also provides for protecting the inlet channel with two converging stone jetties.

FY15 O&M funds were used to dredge the inlet channel and perform surveys. Funding provided is only sufficient to keep channel open and is not adequate to remove shoal or maintain channel to authorized depth. FY16 funds will be used for channel surveys and dredging with the Currituck or Murden.

PL 113-2 Supplemental Funds (Sandy) received: $9,000,000
Post-Sandy funds were used to dredge shoaling that occurred in Oyster Creek and repair post-Sandy damages by reconstructing a failed portion of the north jetty (work completed in Nov 2014).

The project requires dredging to provide a safe, reliable navigation channel for one of the most dangerous inlets on the east coast. The project is critical to a large fishing fleet consisting of full-time commercial, charter and recreational vessels that contribute to the economic value of the nation and an annual direct fish value of over $25.6 M/year. The US Coast Guard designates this site as a “Surf Station” due to the hazardous inlet and requires a safe channel to fulfill their Homeland Security mission and critical life safety, search and rescue operations. Material dredged from inlet is beneficially used by placing it back into the near shore in support of the Federal beach fill along Long Beach Island.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	343	Dredge Inlet & perform channel surveys
FY 13 Allocation	370	Dredge Inlet, Vibracore and surveys. PL 113-2 Supplemental Funds (Sandy) received in the amount of $9,000,000
FY 14 Allocation	766	Dredge Inlet & perform channel surveys
FY 15 Allocation	420	Dredge Inlet & perform channel surveys
FY 16 Allocation	425	Dredge Inlet & perform channel surveys
FY 17 Budget	425	Dredge Inlet & perform channel surveys

Cold Spring (Cape May) Inlet, Cape May County, NJ

Authority: Existing project, adopted in 1907 and modified in 1945.

Congressional District: NJ-2

Project area showing Cold Spring Inlet and Cape May Harbor.

This project provides for an entrance channel 25 feet deep and 400 feet wide, protected by two parallel stone jetties, and extending from the 25-foot depth curve in the ocean to a line 500 feet landward of a line joining the inner ends of the jetties; thence 20 feet deep and 300 feet wide to deep water in Cape May Harbor. The total length of the section included in the project is about 2 1/4 miles.

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Cold Spring (Cape May) Inlet, Cape May County, NJ

- **Project Goals:** The purpose of this project is to provide a safe navigation channel for commercial, recreational and US Coast Guard

The inlet and portions of the harbor channel were surveyed and dredged in FY2015 using the Government Dredges Currituck and Murden. Similar work is scheduled to be performed in FY2016.

PL 113-2 Supplemental Funds (Sandy) received for this O&M navigation project total $400,000. These funds were used to dredge the Cape May Harbor channel and remove shoaling that occurred as a result of Hurricane Sandy (completed in September 2013).

Project provides a safe navigation channel for commercial, recreational and US Coast Guard use for the largest Fishery Landing in NJ (13th largest in the US), contributing $59 M/yr in direct fish value and over $300M in economic value. Project services the only USCG enlisted training base in the country. USCG Station, Cape May is also located on the waterway and needs a reliable channel for their Homeland Security mission and critical life safety, search and rescue operations. Material dredged is beneficially used in the near-shore in support of the adjacent Federal beach fill.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	353	Dredge Inlet and perform surveys
FY 13 Allocation	444	Dredge Inlet and surveys. PL 113-2 Supplemental Funds (Sandy) received in the amount of $400,000.
FY 14 Allocation	371	Dredge Inlet and perform surveys
FY 15 Allocation	375	Dredge Inlet and perform surveys
FY 16 Allocation	375	Dredge Inlet and perform surveys
FY 17 Budget	375	Dredge Inlet and perform surveys

Delaware River at Camden, Camden County, NJ

- **Authority:** Section (3a) of the Water Resources Development Act
- **Congressional District:** NJ-1

Beckett St. Terminal—Camden, NJ

The existing project which is a modification to the Delaware River from Philadelphia to the Sea project was adopted as House Document No. 63 1120 in 1919 and modified by House Document No. 70-111 in 1930 and House Document No. 77-353 in 1945. Section (3a) of the Water Resources Development Act of 1988 authorized the modification of the existing Delaware River in the vicinity of Camden, New Jersey project. The project document referenced in the authorizing legislation is House Document 100-167 (Delaware River, Philadelphia to Wilmington, Pennsylvania and Delaware). Federal participation in the latest modification work (to 40') within Beckett Street Terminal was accomplished as a result of the project sponsor furnishing assurances of compliance with Section 221 of the Flood Control Act of 1970 (Public Law 91-611) and, entering into a Local Cooperation Agreement as per the Water Resources Development Act of 1986 (PL99-662).

The Port of Camden has all of the necessary infrastructure for efficient cargo transportation: rail links, major highways, access to trucking services, and a network of warehouses. The Port handles industrial and commercial cargo, as well as perishables. The Port is known for its handling of breakbulk cargoes, especially wood and steel products.

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Delaware River at Camden, Camden County, NJ

- **Project Goals:** The purpose of this project provides for modification of the existing Delaware River project in the vicinity of Camden, New Jersey.

The funds in FY17 will be used to perform condition surveys. Project is at the authorized depths.

Port activity in the vicinity of Camden, NJ.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	14	Channel Surveys
FY 13 Allocation	13	Channel Surveys
FY 14 Allocation	15	Channel Surveys
FY 15 Allocation	15	Channel Surveys
FY 16 Allocation	15	Channel Surveys
FY 17 Budget	15	Channel Surveys

Manasquan River, Ocean County, NJ

- **Authority:**
- **Congressional Districts:** NJ-3, NJ-4

Project area showing Manasquan Inlet, Pt. Pleasant Beach and Wills Hole Thorofare.

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This project provides for a channel 14 feet deep and 250 feet wide, protected by jetties and bulkheads, from the Atlantic Ocean to the inshore end of the north jetty; thence 12 feet deep and 300 feet wide to within 300 feet of the New York and Long Branch RR Bridge. The channel is approximately 1.5 miles long.

Manasquan River, Ocean County, NJ

- **Project Goals:** The purpose of this project provides for a navigation channel protected by jetties and bulkheads, from the Atlantic Ocean to the inshore of the north jetty.

PL 113-2 Supplemental Funds (Sandy) received for this O&M navigation project total $900,000. These funds were used to dredge the Manasquan Inlet channel to remove shoaling that occurred as a result of Hurricane Sandy (completed in January and July 2013 by the Government Dredge Currituck.) Funds were also used to dredge shoaling that occurred in the Wills Hole Thorofare channel (work completed by contract in December 2013.) The deteriorated landward end of the north jetty was repaired as part of the new revetment constructed by the state and county.

FY 15 funds were used to perform channel surveys and dredge the inlet using the Government Dredge Currituck. Critical second increment of funds allowed for dredging to adequately clear the channel shoaling. FY 16 funds will be used to perform channel surveys and maintain the inlet and portions of Wills Hole Thorofare with the Currituck or Murden.

The project provides a safe, reliable navigation channel for commercial, recreational and US Coast Guard use with an annual direct fish value of approximately $26M/year. During the summer months, over 500 vessels pass through the channel per day. USCG Station, Manasquan requires a safe channel to fulfill their Homeland Security mission and critical life safety, search and rescue operations. Material dredged from the inlet is beneficially used by placing it back in the system in support of the shore protection project to the north.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	294	Dredge Inlet and perform channel surveys
FY 13 Allocation	269	Dredge Inlet channel and surveys. PL 113-2 Supplemental Funds (Sandy) received in the amount of $900,000.
FY 14 Allocation	312	Dredge Inlet and perform channel surveys
FY 15 Allocation	605	Additional Work Plan Funding ($235) was provided to enable critical 2nd increment of maintenance dredging of the Inlet.
FY 16 Allocation	420	Dredge Inlet and perform channel surveys
FY 17 Budget	420	Dredge Inlet and perform channel surveys

New Jersey Intracoastal Waterway, NJ

- **Authority:** HD 76 133.
- **Congressional Authority:** NJ-2, NJ-3, NJ-4

Project location of the Cape May Canal and disposal areas as part of the NJIWW project.

This sea-level inland waterway, extends along the New Jersey Coast from the Atlantic Ocean at Manasquan Inlet, about 26 miles south of Sandy Hook, NJ to the Delaware Bay about 3 miles north of Cape May Point. The waterway extends through the inlet and up Manasquan River about 2 miles and thence through Point Pleasant Canal about 2 miles to the head of Barnegat Bay. It then passes through a series of bays, lagoons and thoroughfares along the New Jersey coast to Cape May Harbor and thence across Cape May County to Delaware Bay (Cape May Canal). This project is maintained to a depth of 6 feet Mean Low Water (MLW), except in the southern portion in the vicinity of the Cape May Canal where it is maintained to a depth of up to 12 feet MLW. Project length is 117 miles.

This project provides a safe, reliable, and operational navigation channel for the East Coast's largest and 5th most valuable commercial fishing fleet in the U.S. (Cape May/Wildwood) and nine U.S. Coast Guard Stations including Cape May training base. The USCG requires a reliable channel to fulfill their Homeland Security requirements, and conduct search & rescue operations. The Delaware River and Bay Authority operates a ferry service between Cape May, NJ and Lewes, DE and the ferries dock in the Cape May Canal. Almost 1.5 million passengers and $17.2 million in revenues are dependent on maintenance dredging to keep the four vessels operating. Discontinuance of this ferry service would result in vehicle detours of 183 miles. The South Jersey economy is heavily dependent on recreational and commercial fishing and tourism, and these industries rely on the maintained channels of the NJIWW.

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New Jersey Intracoastal Waterway, NJ

- **Project Goals:** The purpose of this project provides for a sea-level island waterway, extending along the New Jersey Coast from the Atlantic Ocean at Manasquan Inlet to the Delaware Bay. It extends through the inlet and up the Manasquan River , then passes through a series of bays, lagoons and thoroughfares along the New Jersey coast.

Project location of the Point Pleasant Canal as part of the NJIWW project.

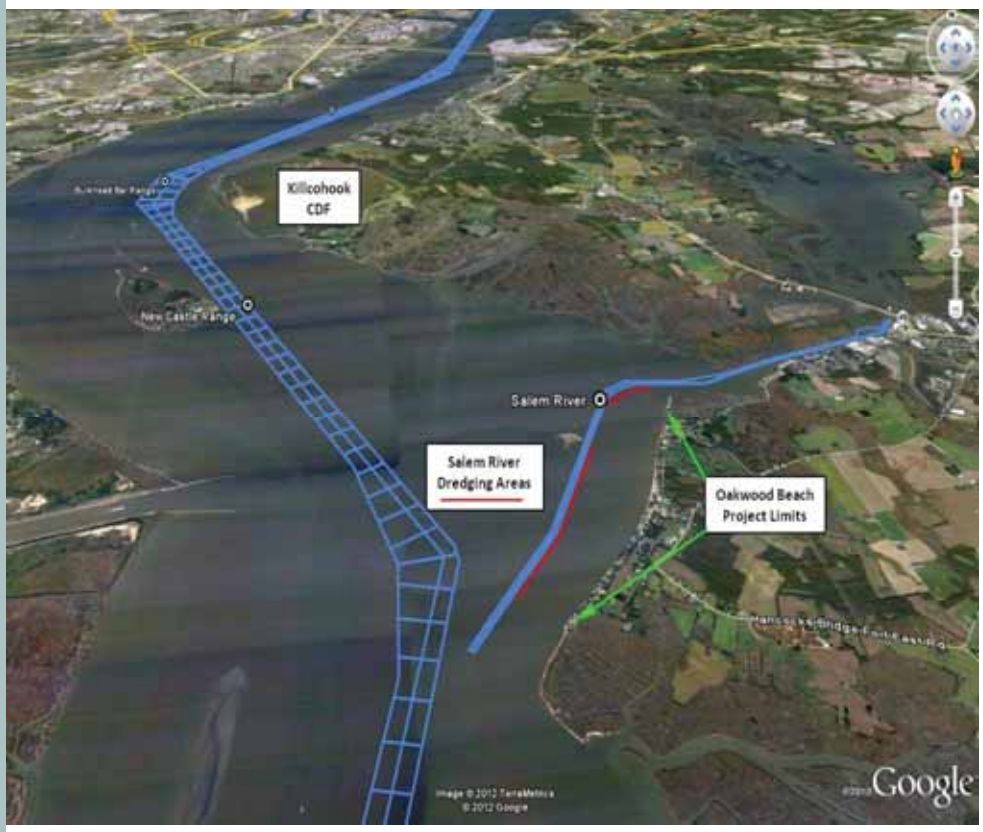
This O&M navigation project received over $13M in PL 113-2 Supplemental Funds (Sandy) . These funds are being used to restore safe navigation by dredging critical post-storm shoals that occurred along the entire waterway including the Cape May ferry channel ($4M), repair damaged areas of the east bulkhead along the Point Pleasant Canal ($8M) and repair the damaged Lovelandtown bridge abutment located on the Point Pleasant Canal.

Post-Sandy dredging and placement activities have developed beneficial use alternatives to help restore the coastal system and bolster system resilience. Dredged material from the NJIWW was used to support the impacted shorelines near Mantoloking and Long Beach Island and to build critical habitat and restore marsh on NJDFW lands in Middle Township. Additional NJIWW dredging and placement projects for Mordecai Island and near Avalon were completed in November 2015 and February 2016 respectively. These projects removed critical post-Sandy shoals in the NJIWW and beneficially use the dredged material to help restore the adjacent marsh.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	257	Channel Exams; manage waterway.
FY 13 Allocation	0	Impacted by Low Use Navigation budget cuts. PL 113-2 Supplemental Funds (Sandy) was received in the amount of $12,750,000.
FY 14 Allocation	957	Dredged Cape May Ferry Area channel; Conducted channel condition surveys, Real Estate and coordination with stakeholders and agencies
FY 15 Allocation	960	Additional Work Plan Funding ($700) was provided to dredge Cape May Ferry Area channel
FY 16 Allocation	260	Conduct channel exams and manage waterway
FY 17 Budget	960	Dredge Cape May Ferry Area channel; perform channel condition surveys, Real Estate and coordination with stakeholders and agencies

Salem River, Salem County, NJ

- **Authority:** HD 68 110.
- **Congressional District:** NJ-2



Salem River Project Area

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The existing project was adopted in 1925 (HD 68-110).

It provides for an entrance channel 16' deep and 150' wide in the Delaware River across Salem Cove to the mouth thence 16' deep and 100' wide to the fixed highway bridge in Salem. It also provides for a cutoff between the mouth and Salem. The project length is approximately 5 miles.

Salem River, Salem County, NJ

- **Project Goals:** The purpose of this project provides for an entrance channel in the Delaware River across Salem Cove to the fixed highway bridge in Salem.

Port of Salem

The Port of Salem is a shallow-draft port located in the vicinity of the Salem River Cut-Off on the Salem River in Salem, New Jersey. The Port is located approximately 2 miles east of the Delaware River, and 54 miles from the Atlantic Ocean. The Port became a foreign trade zone in 1987. Commodities include bulk cargo (construction aggregate), break bulk cargo, containers (clothing, agricultural produce). Port activity also has at times involved literage.

Summarized Federal Financial Data ($000)		
FY12 Allocation	4,300	Emergency Supplemental Funding for Maintenance Dredging
FY 13 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 15 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 17 Budget	0	$3,180 Capability

Toms River, Ocean County, NJ

- **Authority:**
- **Congressional Districts:** NJ-3, NJ-4

Aerial view of project area—Toms River, NJ

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This project provides for a channel 12 feet deep and 100 feet wide, from the New Jersey Intracoastal Waterway channel at Barnegat Bay to the highway bridge over South Fork at Toms River, including a turning basin. The project also provides for channel 5 feet deep for the full width of the North Fork to the highway bridge. The channel is approximately 4.5 miles long.

Toms River, Ocean County, NJ

- **Project Goals:** The purpose of this project provides for a navigation channel from the New Jersey Intracoastal Waterway channel at Barnegat Bay to the highway bridge over South Fork.

PL 112-77 Emergency Supplemental Funding (Irene) in the amount of $650,000 was received to dredge the channel following shoaling that occurred from Hurricane Irene. That work was conducted in October through December 2012 by the Government Plant Snell and work efforts were impacted by Hurricane Sandy which occurred in late October 2012. The portion of the channel dredged is near the River Lady and has an authorized depth of 5 ft MLW.

PL 113-2 Supplemental Funds (Sandy) in the amount of $250,000 was received and used to dredge the channel and remove additional shoaling that occurred as a result of Hurricane Sandy. This work was completed in January 2014.

A safe navigation channel is critical to the operations of several commercial businesses in Toms River including the River Lady Riverboat Tours. Material dredged from the channel in 2012 and 2014 was sand and was placed in a confined disposal area on property owned by the Toms River Municipal Authority.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	650 (Irene)	PL 112-77 Emergency Supplemental Funding (Irene) in the amount of $650,000.
FY 13 Allocation	250 (Sandy)	PL 113-2 Supplemental Funds (Sandy) received in the amount of $250,000.
FY 14 Allocation	0	
FY 15 Allocation	0	
FY 16 Allocation	0	
FY 17 Budget	0	$585 Capability

Beltzville Lake, Beltzville, PA

- **Authority:** HD 87 522
- **Congressional District:** PA-11

The project consists of an earth and rock filled dam; a spillway around the north end of the dam; and gate controlled outlet works discharging through a conduit on rock along the right abutment.

The project was adopted as HD 87 522 in 1962.

The dam is located on Pohopoco Creek 4 1/2 miles from its confluence with the Lehigh River and 4 miles east of Lehighton, Pennsylvania. The project was completed in 1971. Annual funding is used for routine operations and maintenance of the dam and related structures, including project buildings, grounds and equipment; also water control data collection, evaluation data gathering and analysis, water quality analysis, real estate and dam safety efforts.

The Beltzville Lake Project is an integral part of the Lehigh River Flood Control Program. This project, in addition to aiding in flood control along the Pohopoco Creek and the Lehigh River, operates for water supply, water quality control, low flood augmentation in the Lehigh River and Lower Delaware River and salinity repulsion in the Delaware River Estuary. Authorized purposes of this project are flood control, water supply, and low flow augmentation. Secondary purposes are recreation and water quality control.

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Beltzville Lake, Beltzville, PA

- **Project Goals:** The purpose of this project provides for multiple purpose development for water supply, flood control and recreation. It consists of a dam, spillway around the north end of the dam, and a gate controlled outlet.

FY15 work included awarding contracts for the tower elevator modernization, stilling basin slab repair and modification of the solar panels. FY16 work will include an interim dam inspection, repair of the stilling basin slab, inspection and rehabilitation of the bulkheads, continuation of the elevator modernization and construction of the solar panels.

Project has prevented cumulative damages of over $34M between 1972 and 2015.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	1,444	Required dam safety inspections and positional survey; sustainability funds used for electrical upgrades in operations building.
FY 13 Allocation	1,409	Conduct dam safety exercise; seepage investigation; conduct required periodic dam inspection and potential failure modes analysis, construct storage facility, design solar power system.
FY 14 Allocation	1,238	O&M of the dam and facilities, dam safety efforts, required water control and water quality analyses, coordinate solar power project, coordinated with stakeholders
FY 15 Allocation	1,835	O&M of the dam and facilities, dam safety efforts, required water control and water quality analyses, coordinate solar power project, coordinated with stakeholders
FY 16 Allocation	1,290	O&M of the dam and facilities, dam safety efforts, required water control and water quality analyses, coordinate solar power project, coordinated with stakeholders
FY 17 Budget	1,410	$4,935 Capability

Blue Marsh Lake, Leesport, PA

- **Authority:** HD 87 522
- **Congressional District:** PA-17

Project site showing Blue Marsh Lake.

The Blue Marsh Lake project was adopted as HD 87 522 in the Flood Control Act of 1962. It consists of an earth and rock fill dam; a spillway south of the dam and gate controlled outlet works discharging through a conduit on rock along the right abutment. The dam site is located on Tulpehocken Creek about 1.5 miles upstream from its confluence with Plum Creek and about six miles northwest of Reading, PA.

Project construction was completed in 1980. Annual funding is used for routine operations and maintenance of the dam and related structures, including project buildings, grounds and equipment, management of public-use areas such as access roads, parking lots, picnic areas and an overlook area; also evaluation data gathering and analysis, real estate actions, dam safety efforts; recreation and environmental stewardship actions.

This project is an integral part of the Schuylkill River Flood Control Program. In addition to aiding in flood control along the Tulpehocken Creek and the Schuylkill River, the project will operate for water supply, water quality control and low flow augmentation in the Schuylkill River and salinity repulsion in the Delaware River Estuary. Authorized purposes are flood control, water supply and low flow augmentation. Secondary purposes are recreation and water quality control.

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Blue Marsh Lake, Leesport, PA

- **Project Goals:** The purpose of this project provides for multiple purpose development for water supply, flood control, and recreation. It consists of an earth and rock fill dam; a spillway south of the dam and gate controlled outlet works discharging through a conduit on rock along the right abutment.

The Corps initiated Bernville levee accreditation required by FEMA, completed the required maintenance actions and submitted report to FEMA in December 2013.

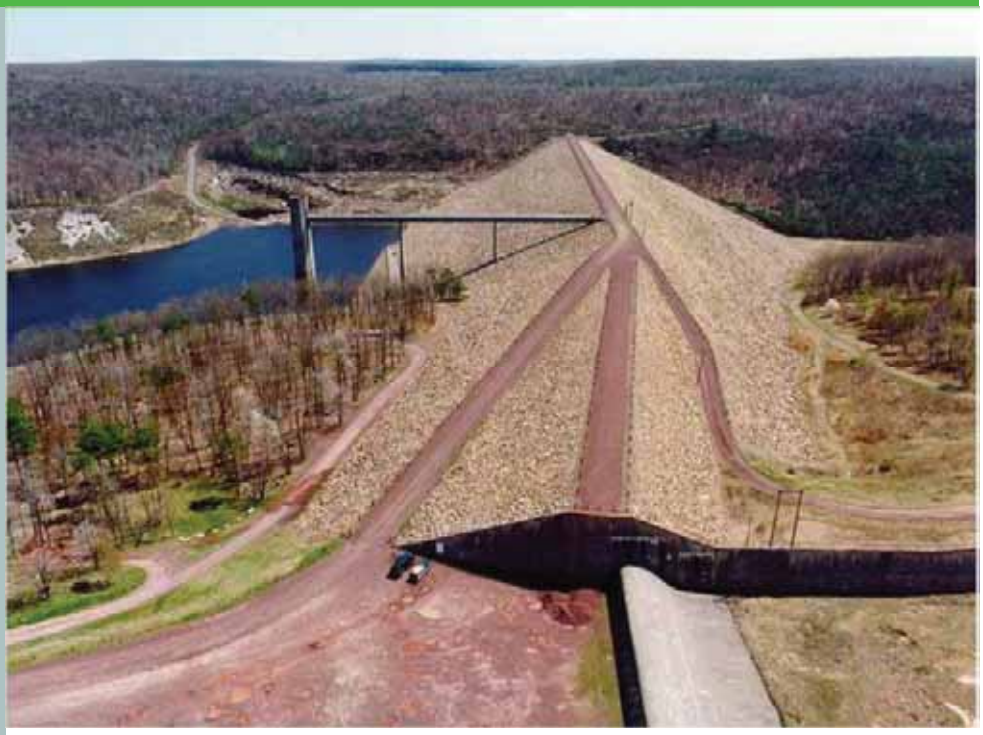
Additionally, the Corps received $52k of sustainability funding in FY14 to construct a geothermal heat system. Required Periodic Assessment including a Potential Failure Modes Analysis and tabletop exercise was conducted in FY14. Coordination is ongoing with Delaware River Basin Commission and Western Berks Water Authority for potential non-Federal water supply usage.

Project has prevented cumulative damages of over $89M between 1978 and 2015. The recreation program at the project attracts almost 900,000 visitors a year, with an economic benefit to the local community of $9.44 million in visitor spending. The stewardship program at the project provides an environmental benefit by protecting 6,162 acres of land and 1,150 acres of water. Blue Marsh Lake was selected as USACE Recreation Project of the Year for FY13.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	2,834	
FY 13 Allocation	2,524	Required dam safety efforts & positional survey; Intermediate dam inspection, roof repairs, conduct Bernville levee accreditation required by FEMA
FY 14 Allocation	2,851	Conducted O&M of the dam and facilities, dam safety efforts and required water control and quality analyses. Implemented recreation program. Completed Bernville levee accreditation, conducted required periodic assessment, designed geothermal heat pump and water quality stem repair.
FY 15 Allocation	2,710	Conduct O&M of the dam and facilities, dam safety efforts and required water control and water quality analyses. Additional Work Plan Funding ($40) was provided. Completed water quality stem repair & Periodic Assessment.
FY 16 Allocation	2,774	Conduct O&M of the dam and facilities, dam safety efforts and required water control and water quality analyses.
FY 17 Budget	2,981	$5,794 Capability

Francis E Walter Dam, White Haven, PA

- **Authority:** HD 79 587, 87 522
- **Congressional District:** PA-11



The existing project, initially constructed in 1961, provides for multipurpose development for water supply, recreation and flood control. The project is located on the Lehigh River, five miles above White Haven, Pa.

The existing project, adopted as HD 79-587 in 1946, and modified by HD 87-522 in 1962.

The project provides for multi-purpose development for water supply, recreation and flood control. The existing dam, completed under the 1946 Flood Control Act as a single purpose flood control project, is located on the Lehigh River, five miles above White Haven, Pa. The project is also authorized to provide for recreational benefits.

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Francis E Walter Dam, White Haven, PA

- **Project Goals:** The purpose of this project provides for improvements including altering the spillway, increasing the height of the dam, extending the outlet tunnel, constructing new dikes and raising the height of existing dikes.

This project has prevented over $205M in cumulative damages between 1961 and 2015. A Screening for Dam Safety Portfolio Risk Assessment (SPRA) was conducted in 2006 resulting in a Dam Safety Action Classification (DSAC) rating of III for this project. As a result of the DSAC III rating, an Interim Risk Reduction Measures Plan (IRRMP) was prepared in 2011. A Periodic Assessment and Potential Failure Modes Analysis was conducted in FY12. Ultimately, rating was re-evaluated and changed to DSAC IV in 2013.

Whitewater and fishing industries utilize dam releases and there is significant interest from the public, stakeholders and elected officials in these programs. Project lake operations continue to have a positive impact on the regional economy as well as producing environmental benefits.

Stakeholders have expressed interest in optimizing project operation and storage at the reservoir. In FY 15, the Corps completed an Initial Appraisal Report (IAR) to determine if site conditions have significantly changed in the basin that would warrant the Corps to conduct a re-allocation study.

	Summarized Federal Financial Data ($000)		
	FY 12 Allocation	1,192	Required dam safety inspections, periodic dam inspection, PFMA , periodic positional survey and update of the water control manual; timber management initiative; IRRM measures.
	FY 13 Allocation	1032	Finalize PA/PI Report for DSAC re-evaluation in January 2013. Initiate IAR.
	FY 14 Allocation	944	O&M of the dam and facility, dam safety efforts and required water control and water quality analyses and required intermediate inspection. Initiated timber management program. Continued IAR. Held whitewater/fisheries stakeholder meetings.
	FY 15 Allocation	916	O&M of the dam and facility, dam safety efforts and required water control and water quality analyses, timber management, coordinated flow/recreation plan and completed emergency electrical repairs in tower.
	FY 16 Allocation	905	O&M of the dam and facility, dam safety efforts and required water control and water quality analyses, coordinate flow/recreation plan, paint tower bridge, complete electrical upgrades.
	FY 17 Budget	1,140	$4,270 Capability

General Edgar Jadwin Dam, Honesdale, PA

- **Authority:**
- **Congressional District:** PA-10
- **Federal Funds Appropriated:** $2,580,000

Project area showing General Jadwin Dam and Dyberry Creek.

The existing project, adopted in 1948, consists of a single purpose flood control reservoir formed by a dam on Dyberry Creek, located approximately three miles above the confluence of Dyberry Creek with Lacka-

Dyberry Creek at base of General Jadwin Dam.

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General Edgar Jadwin Dam, Honesdale, PA

- **Project Goals:** The purpose of this project provides for routine operation & maintenance of the dam and related structures, water control data collection & analysis, real estate, continuing evaluation data gathering & analysis, and dam safety efforts.

In FY16, the Corps will perform routine operations and maintenance activities for the project and grounds, dam safety actions and oversight, water control and other data collection and analyses, and real estate actions as required. A Periodic Inspection and Emergency Exercise will be conducted.

This project has prevented over $32M in cumulative damages between 1960 and 2015. A Screening for Dam Safety Portfolio Risk Assessment (SPRA) was conducted in 2009 resulting in a Dam Safety Action Classification (DSAC) rating of II for this project. As a result of the DSAC II rating, a required Interim Risk Reduction Measures Plan (IRRMP) was finalized and approved in FY12. Due to this dam safety rating, the Risk Management Center funded an Issue Evaluation Study in the form of a Semi-Quantitative Risk Assessment for the project in 2015.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	392	IRRMP finalized, inspect intake/outlet works.
FY 13 Allocation	285	Periodic positional survey; Intermediate dam inspection.
FY 14 Allocation	317	O&M of the dam, dam safety efforts and required water control analysis. Prepared draft update of water control manual.
FY 15 Allocation	300	O&M of the dam, dam safety efforts and required water control analysis, repaired overlook parking area
FY 16 Allocation	385	O&M of the dam, dam safety efforts and water control analyses, conduct required periodic inspection and emergency exercise
FY 17 Budget	380	$1,005 Capability

Prompton Lake, Prompton, PA

- **Authority:** HD 80 113, 87 522.
- **Congressional District:** PA-10

The existing Prompton Dam is located on the Lackawaxen River four miles above Honesdale, Pa., and 30 miles above its confluence with the Delaware River.

The existing project was adopted as HD 80-113 in 1948, and modified by HD 87- 522 in 1962. This multi-purpose project (flood control and recreation) is located on the Lackawaxen River four miles above Honesdale, Pa., and 30 miles above its confluence with the Delaware River. Original project construction was completed in 1960.

This project serves to protect various surrounding communities from flooding. It is part of an integrated reservoir flood control system in conjunction with General Edgar Jadwin Reservoir, it provides flood control protection in varying degrees to the Boroughs of Prompton, Honesdale and Hawley and to smaller communities along the Lackawaxen River. Flood control is the only authorized purpose for this project. A secondary purpose is recreation, as the project resources currently provide opportunities for fishing, boating, and limited picnicking.

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Prompton Lake, Prompton, PA

- **Project Goals:** The purpose of this project provides for multiple-purpose development for flood control, water supply and recreation, located on the Lackawaxen River.

Annual funds are used for routine operations and maintenance of the dam and related structures that include the buildings, grounds & equipment, and management of public-use areas such as access roads, parking lots. Other specific work includes water control, water quality monitoring, real estate, continuing evaluation gathering, and dam safety efforts. A required periodic inspection and assessment as well as an emergency exercise will be conducted in FY 2016.

The project has prevented cumulative damages of over $25M between 1961 and 2015. FY06 Construction General (CG) Funds were used for construction of Phase I of modifications to the dam. These modifications were done to protect the structure and downstream communities from the effects of the estimated Probable Maximum Flood (based on revised criterion since initial construction). Phase I work in the spillway and outlet works was completed in July 2007 and the construction of a crest wall across the top of dam was completed in the spring of 2008. Phase II modifications to the project using CG ARRA funds were completed in June 2012 and included a new operations building, spillway modifications and completion of a new access road and bridge over the spillway.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	610	Intake/Outlet Inspections
FY 13 Allocation	438	SPRA/DSAC Re-evaluation; Periodic Positional Survey; Intermediate Dam Inspection.
FY 14 Allocation	470	O&M of the dam , dam safety efforts and required water control and water quality analyses conducted.
FY 15 Allocation	475	O&M of the dam , dam safety efforts and required water control and water quality analyses.
FY 16 Allocation	585	O&M of the dam , dam safety efforts and required water control and water quality analyses, conduct periodic inspection and assessment and emergency exercise.
FY 17 Budget	655	$1,050 Capability

Schuylkill River, Philadelphia, PA

- **Authority:** HD 1270, 699. R&H Comm. Doc. 40.
- **Congressional District:** PA-1, PA-2.

Aerial view of project area (Lower Schuylkill River in vicinity of Delaware River).

The project was authorized 8 August 1917 (HD 1270, 64th Congress, 1st Session) and modified 3 July 1930 (R&H Committee Document 40, 71st Congress, 2nd Session) and 24 July 1946 (HD 699, 79th Congress, 2nd Session).

The project provides for a channel 6.5 miles long with depths of 22', 26', and 33' and widths of 200', 300', and 400'. Funds enable maintenance dredging within the 33-foot segment of the channel. Material is pumped directly to an upland disposal are by a cutter-head pipeline dredge.

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Schuylkill River, Philadelphia, PA

- **Project Goals:** The purpose of this project provides for a channel 6.5 miles long in the Schuylkill River.

Refineries and chemical plants along Lower Schuylkill River between Routes 291 & 95

The Lower Schuylkill River provides navigation access to multiple refineries and chemical plants. The commodities include oil, gasoline and other chemical products.

PL 112-77 Emergency Supplemental Funding in the amount of $5,000,000 (Irene) was provided to perform critical dredging in the lower reach channel.

Summarized Federal Financial Data ($000)		
FY 12 Allocations	250	PL 112-77 Emergency Supplemental Funding (Irene) in the amount of $5,000,000.
FY 13 Allocation	89	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 14 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 16 Allocation	0	Impacted by Low Use Navigation budget cuts
FY 17 Budget	0	$13,010 Capability

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-1, PA-7, PA -13

Packer Avenue 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 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.

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

- **Project Goals:** The purpose of this project provides for a 96.5 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)		
FY12 Allocation	20,989	
FY 13 Allocation	21,413	PL 113-2 Supplemental Funds (Sandy) received in the amount of $9,000,000
FY 14 Allocation	19,548	
FY 15 Allocation	20,945	Additional Work Plan Funding ($500) was provided for CDF maintenance
FY 16 Allocation	23,305	$46,320 Capability
FY 17 Budget	26,570	$49,585 Capability

Delaware River, Philadelphia to Trenton, NJ & PA

- **Authority:** HD 679, 358. R&H Comm. Doc 3, 11, 66, 90.
- **Congressional District:** NJ-3, NJ-4, PA-1, PA-8, PA-13.

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.

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Delaware River, Philadelphia to Trenton, NJ & PA

- **Project Goals:** The 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 including turning basins, and bank protection in the Delaware River.

FY 2015 O&M funding accomplished periodic channel examinations, environmental support services, 30 Dredge McFarland training days to remove spot shoals along the lower reach of the 40-foot channel. In addition, a $5,245,624 contract for maintenance dredging of the Lower Reach of the Delaware River 40-foot channel by bucket dredge was awarded on 24 September 2015. Actual dredging operations commenced on 5 December 2015 and are ongoing with completion scheduled for 15 February 2016.

FY 2016 maintenance activities planned are channel exams, 30 Dredge McFarland training days along the lower reach of the 40-foot channel and environmental support services and leased equipment disposal area work. A maintenance dredging contract for the Fairless Turning Basin will be ready to advertise 16 May 2016. The Notice to Proceed for this work should occur on or about 21 July 2016.

The 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. Serious shoals continue to grow within the reaches of the channel earmarked for disposal in New Jersey. Many of the shipping terminal operators and the Delaware River Pilots have expressed strong concerns over the State of New Jersey lack of interest in meeting project responsibilities. The unavailability of sufficient disposal capacity is jeopardizing the Army Corps' ability to maintain a safe and economical shipping channel.

Summarized Federal Financial Data ($000)		
FY 12 Allocation	1,095.0	
FY 13 Allocation	818.0	PL 113-2 Supplemental Funds (Sandy) of $6,300,000 received for project.
FY 14 Allocation	4,688.0	
FY 15 Allocation	10,430	Additional Work Plan funding ($5,020) was provided to perform maintenance dredging of the lower reach channel.
FY 16 Allocation	5,460	$15,370 Capability
FY 17 Budget	5,960	$30,790 Capability

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

- **Authority:** HD 201. R&H Comm. Doc. 11, 18, 24. PL 310. SD 123
- **Congressional Districts:** DE-AL, MD-1

Senator Roth Bridge (SR-1).
Philadelphia District will assume maintenance responsibility from DEL DOT in the near future.

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 waterway, a channel 35 feet deep and 450 feet wide, extending from Reedy Point on the Delaware River about 41 miles below Philadelphia, PA through a land-cut westward to Elk River thence following Elk River and the upper Chesapeake Bay to deep water near Pooles Island, including five high-level fixed highway bridges, a vertical lift railroad bridge, a bascule drawbridge, 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 (8' x 50' x 2 miles) and basin.

The Chesapeake and Delaware Canal (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.

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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, four high-level fixed highway bridges, a vertical lift railroad bridge, a bascule drawbridge, 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

Large Vessel Passing Through C&D Canal

FY15 funds will be used for minimal routine operation and maintenance of the project, including dispatching, channel exams, and to meet operational safety requirements for five high height highway bridges. Funding will also be used to maintain buildings, grounds, utilities, canal banks & dredge material containment facilities, routine operations of bridges, maintenance dredging of critical shoals within the 46 mile the navigation channel; periodic inspection of Chesapeake City, St. George's, Delaware City, and SR-1 Bridges, Repair Cable Stays on SR-1 Bridge, Repair Steel and Replace Bearings on Reedy Point Bridge (final phase), and Installation of an Impervious Barrier at Pearce Creek Confined Disposal Facility (CDF).

Summarized Federal Financial Data ($000)		
FY 12 Allocation	18,282	
FY 13 Allocation	17,430	
FY 14 Allocation	18,729	
FY 15 Allocation	35,405	Additional Work Plan Funding ($13,050) was provided for Del City Bridge replacement, Pearce Creek CDF Liner installation, and Ches. City Bridge Railing Replacement
FY 16 Allocation	13,429	
FY 17 Budget	24,581	74,121 Capability

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 -7, PA-8, PA-13

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.

About: 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.

How it Works: 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.

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U.S. Army Corps of Engineers Hopper Dredge McFarland

Status: The Hopper Dredge McFARLAND performed 140 days of "active" dredging work along the East and Gulf Coasts moving in excess of 2 million cubic yards of dredged material in FY 2009. The Dredge McFARLAND was fully funded annually through FY 2009 using O&M funding for which the vessel worked. In FY 2010, her first year in Ready Reserve, the McFARLAND completed her scheduled training exercises in the Delaware River and on two separate occasions, the dredge was activated by USACE Headquarters for a total of 96 days of dredging on the Mississippi River's Southwest Pass. The vessel completed her 70 days of training in FY2011 in the Delaware River. The vessel was not called out of ready reserve in FY2011 but did complete a 6 month major shipyard overhaul scheduled around her training exercise schedule. In FY 2012 the vessel completed her 70 scheduled training days in the Delaware River and was activated for a 30-day assignment for Wilmington District at Morehead City, NC. The dredge completed her 70 training days in the Delaware River in FY 2013 and was activated for a 24-day assignment for Wilmington District at Morehead City, NC. The dredge completed her 70 training days in the Delaware River in FY 2014. Currently in FY15, the Dredge McFarland was called out to New Orleans District to dredge emergency shoaling in Southwest Pass for a total of 62 days. The Dredge will also dredge a total of 70 days in the Delaware River for FY15.

What It Can Do: 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:

- High-powered pumps, large single open-hopper design amidships, and hopper distribution system with retention capability for efficient handling of fine materials
- It can dredge year-round in any environment, working around the clock while on assignment.
- 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.

Crew: The *McFarland* is operated by a civilian crew of about 45. 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 Bureau of Shipping.

Dredging is accomplished by a drag arm on each side of the ship with a drag head a 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.

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Major Appropriation Accounts

General Investigations (GI)

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 and Storm Damage Reduction
- Flood Control
- Inland Navigation
- Navigation ($2 million)
- Other Authorized Purposes (including but not limited to Environmental Restoration or Compliance and Remote, Coastal, or Small Watershed)
- Remote, Coastal, or Small Watershed
- Shore Protection
- Small, Remote, or Subsistence Navigation

Construction, General (CG)

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
- Flood and Storm Damage Reduction
- Flood Control
- Hydropower
- Navigation
- Other Authorized Project Purposes (including but not limited to Environmental Restoration or Compliance, Environmental Infrastructure, and Hydropower)
- Shore Protection

Operations & Maintenance, General (O&M, G)

Operation 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
- Inland Waterway Maintenance
- Navigation Maintenance
- Other Authorized Project Purposes
- Small, Remote, or Subsistence Navigation Maintenance

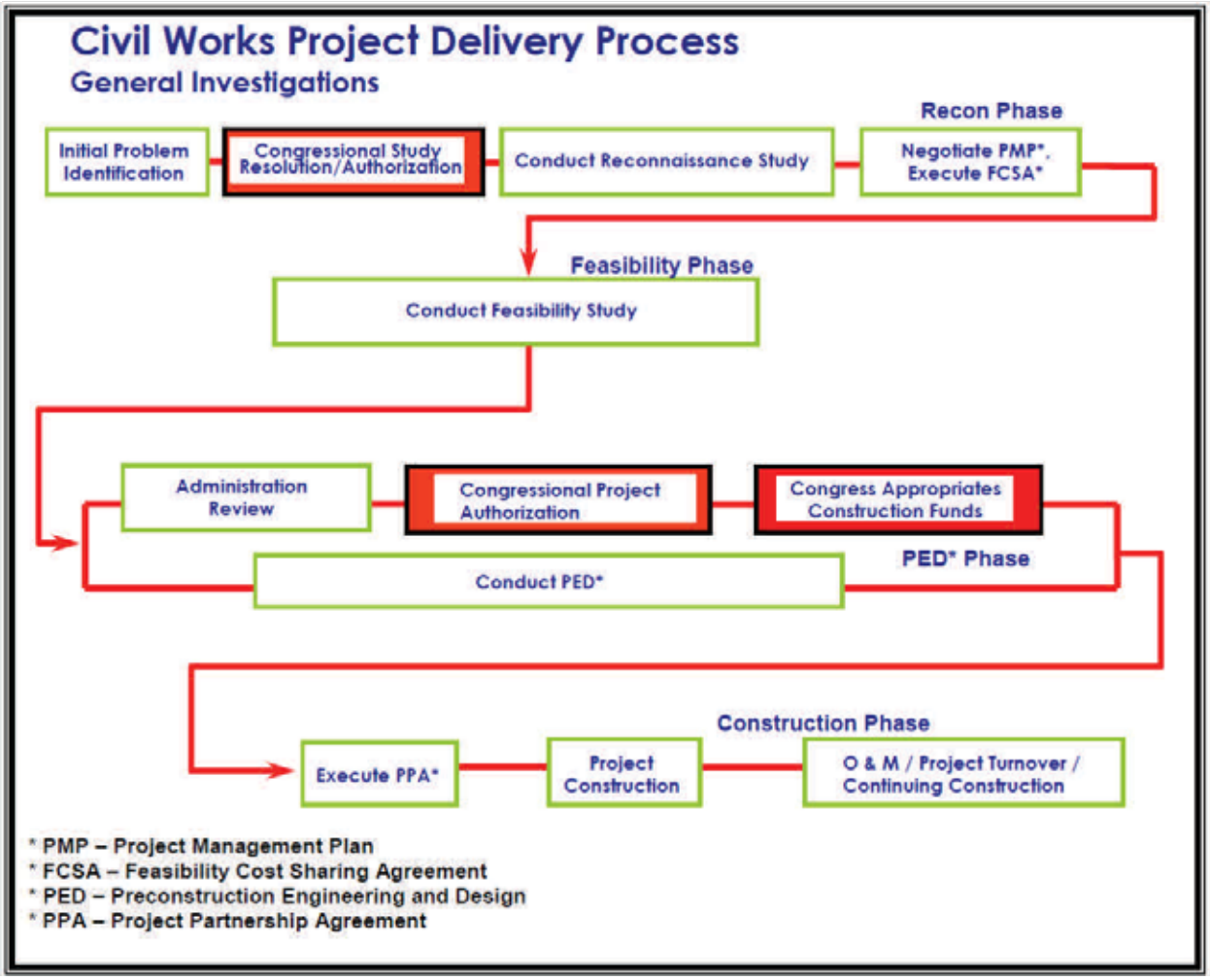
Flood Control & Coastal Emergencies (FCCE)

USACE also has authority under PL 84-99, Flood Control and Coastal Emergencies (FCCE) (33 U.S.C. 701n) (69 Stat. 186) for emergency management activities. Under PL 84-99, the Chief of Engineers, acting for the Secretary of the Army, is authorized to undertake activities including disaster preparedness, Advance Measures, emergency operations (Flood Response and Post Flood Response), rehabilitation of flood control works threatened or destroyed by flood, protection or repair of federally authorized shore protective works threatened or damaged by coastal storm, and provisions of emergency water due to drought or contaminated source.

General Investigations

General Investigation
New Start Project

Reconnaissance Phase	Feasibility Phase	Preconstruction Engineering & Design (PED)	Construction
• Full Fed cost of $100K-$200K • Identifies Project Study Plan and cost share responsibilities of Sponsor • 9 to 12 months	• Cost share with Sponsor 50/50 • Avg. cost $1 to $3 million • Non-Federal share can be in-kind • 3 to 5 years	• Cost share with Sponsor, % varies • 1 to 2 years	• Cost share with Sponsor, % varies • Time varies



Continuing Authorities Program (CAP)

Program Authority	Description	Federal Funding Limits (incl. WRRDA 2014 changes)	
		Project	Annual Program
Section 14	Flood Control Act of 1946 (PL 79-526), as amended for emergency streambank & shoreline erosion protection for public facilities & services.	$5,000,000	$20,000,000
Section 103	River & Harbor Act of 1962 (PL 87-874), as amended, amends PL 727, an act approved August 13, 1946 which authorized Federal participation in the cost of protecting the shores of publicly owned property from hurricane & storm damage.	5,000,000	30,000,000
Section 107	River & Harbor Act of 1960 (PL 90-483), as amended for navigation.	10,000,000	50,000,000
Section 111	River & Harbor Act of 1968 (PL 90-483), as amended, for mitigation of shoreline erosion damage caused by Federal navigation projects.	10,000,000	N/A
Section 145	Placement of Dredged Material on beaches, Water Resources Development Act of 1976 (PL 94-587), as amended.	N/A	N/A
Section 204	Beneficial Uses of Dredged Material, Water Resources Development Act of 1992 (PL 102-580), as amended.	10,000,000	50,000,000
Section 205	Flood Control Act of 1948 (PL 80-858), as amended, for flood control.	10,000,000	55,000,000
Section 206	Aquatic Ecosystem Restoration, Water Resources Development Act of 1996 (PL 104-303), as amended.	10,000,000	50,000,000
Section 208	Flood Control Act of 1954 (PL 83-780), as amended, originally Section 2, Flood Control Act of August 28, 1937 (PL 75-406) for snagging and clearing for flood control.	500,000	7,500,000
Section 1135	Project Modifications for Improvement of the Environment, Water Resource Development Act of 1986 (PL 99-662), as amended.	10,000,000	40,000,000

Planning Assistance to States Program
General Investigation Appropriation

US Army Corps of Engineers
Philadelphia District

Planning Assistance to States/Tribes Program

Section 22 of the 1974 Water Resources Development Act, as amended

50/50 Cost share with:

- Limited to $2,000,000 per State per year, based on availability of annual appropriations
- Sponsor's share can be all in-kind services

Planning assistance to help States and Indian Tribes deal with their water resource problems. Eligible sponsors can be States, local governments, other non-Federal entities or federally recognized Native American Indian Tribes.

Examples

- Flood damage reduction
- Water resource development
- Water conservation and water quality
- Hydropower
- Erosion
- Scopes vary from environmental investigations on individual reservoirs to comprehensive studies to establish state or tribal water budgets.

Floodplain Management Services
General Investigation Appropriation

US Army Corps of Engineers
Philadelphia District

Floodplain Management Services

Authority Stems from Section 206 of the 1960 Flood Control Act (P.L. 86-645)

The objective is to foster public understanding of the options for dealing with flood hazards and to promote prudent use and management of the Nation's floodplains.

Types of Assistance

- General Technical Services: Development or interpretation of site specific flood hazard data.

- General Planning Assistance: "Special Studies" on all aspects of floodplain management planning.

Most Common Types of Special Studies:

- Floodplain delineation/flood hazard evaluation studies
- Dam break analysis studies
- Hurricane evacuation studies (HES)
- Flood warning/preparedness studies
- Regulatory floodway studies
- Comprehensive floodplain management studies
- Flood damage reduction studies
- Urbanization impact studies
- Stormwater management studies
- Floodproofing studies
- Inventory of flood prone structures

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SPONSORS' GUIDE TO PROJECT DOCUMENTS
Corps Models, Outlines and Forms Used In Project Development

INTRODUCTION

A variety of different types of documents are prepared during the development of a Corps project, and you, the sponsor, will be involved in many of them. Some documents are reports about work that was done, some are agreements concerning responsibilities, and some serve other important purposes. Since most of these documents are required for every project, standardized models and outlines are used to make preparing them easier and ensure that all Corps offices are using similar documents. Where a certain document may have a somewhat different format and content for each project, examples of previous documents are available.

TYPES OF DOCUMENTS

The types of standardized documents that you will encounter are generally characterized as follows:

- *Models* - These are standardized fill-in-the -blanks formats for documents where much of the information Is the same for all projects. Some models are short forms, while others are more lengthy text. Model documents are available for the certificate of lobbying, disclosure of lobbying activities, escrow agreement, feasibility cost sharing agreement (FCSA), Project Partnership Agreement (PPA), project executive summary, and statement of financial capability.

- *Outlines* - These are standardized checklists of the information to be included in various project reports. Outlines are available for the chart of accounts cost estimate, design memorandum (DM), environmental impact statement (EIS), Feasibility report, financing plan, and reconnaissance report.

- *Examples* - Some documents are needed for every project, but their content and possibly their format differs from project to project. These documents include the study authority, project construction authority, budget authority, environmental assessment (EA), initial project management plan (IPMP), justification sheet, letter of credit, letter of intent, and project management plan (PMP).

Your Project Manager can provide you with examples of these documents, as well as examples of blank and complete models (such as a Project Partnership)
and report outlines (such as a feasibility report).

DESCRIPTION OF DOCUMENTS

The following is a list of some of the generally standardized reports, agreements and other documents that you are likely to be involved with over the life of a project. This list presents the documents in the general chronological order in which they would be used. Not all of these documents are used in all cases, and the order of when they are needed may vary for any given study or project.

- Authority (Study)
- Justification Sheet
- Authority (Budget)

- Reconnaissance Report Certificate of Lobbying
- Disclosure of Lobbying Activities
- Escrow Agreement
- Letter of Credit
- Letter of Intent
- Chart of Accounts
- Initial Project Management Plan
- Feasibility Cost Sharing Agreement
- Project Executive Summary
- Feasibility Report
- Environmental Impact Statement (or Environmental Assessment)
- Project Master Plan
- Authority (Project Construction)
- Design Memorandum
- Financing Plan
- Statement of Financial Capability
- Project Partnership Agreement

The following is an alphabetical listing and explanation of the generalized standardized reports, agreements and other documents listed above.

Authority - This is either a resolution of a committee of the U.S. Congress, or a Federal public law, which gives us approval to: conduct a study (study authority), construct a project (project construction authority), or spend Federal funds on an authorized study or project (budget authority). and is usually only a line, a sentence, or a paragraph in length. Your Project Manager can provide an example of each type of authority.

Certificate of Lobbying - This is your statement concerning lobbying of Congressional and other Federal officials. The certificate must accompany a feasibility cost sharing agreement and a Project Cooperation Agreement. A one-page model certificate is in Appendix Q of the "Planning Guidance Notebook' (Corps regulation number ER 1105-2-100).

Chart of Accounts - This is a list of detailed accounting categories for preparing study and project cost estimates. The accounts outline and cost estimate checklist are in Corps circular number EC 1110-2-538, including revisions provided by letter of 29 September 1989 to all Corps finance and accounting officers (subject: Life Cycle Project Management (LCPM) Chart of Accounts).

Design Memorandum (DM) - This report presents the results of detailed engineering studies needed to prepare a project's plans and specifications for construction. The format for a design memorandum is in Appendix C to Corps circular number EC 1110-2-265.

Disclosure of Lobbying Activities - This is a form (Standard Form LLL), completed by you, concerning lobbying of Congressional and other Federal officials. In certain circumstances it must accompany a certificate of lobbying (see above). A copy of the form is In Appendix Q of the “Planning Guidance Notebook”.

Environmental Assessment (EA) - This report presents the results of the evaluation of environmental effects of the project and its alternatives. In certain circumstances, an environmental assessment may be adequate and an environmental impact statement (see below) may not be required. A finding of no significant impact (FONSI) must also be prepared for each environmental assessment. Your Project Manager can provide an example environmental assessment and finding of no significant impact.

Environmental Impact Statement (EIS) - This report presents the results of the evaluation of environmental effects of the project and its alternatives. Outlines for statements that are combined or integrated

with feasibility reports are in Appendix F of the "Planning Guidance Notebook". An outline for statements prepared for other reports or in other circumstances is in the Council on Environmental Quality's regulation titled "Regulations for Implementing the Procedural- Provisions of the National Environmental Policy Act" (40 CFR 1502.10). A record of decision (ROD) must also be prepared for each environmental impact statement Your Project Manager can provide an example record of decision.

Escrow Agreement - This is a written agreement among you, your financial Institution, and the Department of the Army in which the parties agree that your funds are to be deposited in an interest bearing account at the financial institution' and the Corps can withdraw those funds as needed for the study or project A four-page model escrow agreement is in Appendix H to Corps regulation number ER 1165-2-131.

Feasibility Cost Sharing Agreement (FCSA) - This is a written agreement between you and the Department of the Army, represented by the local District Engineer, to share the cost of a feasibility phase study. A seven page model agreement is in Appendix E of the 'Planning Guidance Notebook. The model is for both specifically authorized studies and studies under the Continuing Authorities Program.

Feasibility Report - This report presents the results of the formulation, evaluation and selection of project plans conducted during the feasibility phase of project planning. A report outline is in Table 23 of the "Planning Guidance Notebook". The outline is for both feasibility reports for specifically authorized studies and detailed project reports (DPR) under the Continuing Authorities Program.

Financial Plan - This report describes the sources and uses of your project funds as support for the statement of financial capability (see below). A plan outline is in paragraph 6-197 of the 'Planning Guidance Notebook.'

Initial Project Management Plan (IPMP) - Ills is a management document that describes the tasks, costs, and responsibilities, both yours and ours, required to conduct the feasibility phase of a study. It is appended to the FCSA (see above). Your Project Manager can provide an example plan.

Justification Sheet - This is a brief description of how funds are to be used for a study or project in an upcoming fiscal year. It is submitted to the Congress in support of a President's budget request for the upcoming fiscal year. Your Project Manager can provide an example justification sheet.

Letter of Credit - This is a letter from your financial Institution that guarantees to the Federal government that the funds are available to meet required cash outlays. Your Project Manager can provide an example letter.

Letter of Intent - This is a letter from you to the local District Engineer stating that you are ready, willing and able to execute the feasibility cost sharing agreement. Your Project Manager can provide an example letter.

Project Partnership Agreement (PPA) - This is a written agreement between you and the Department of the Army that describes our financial and other responsibilities for construction, operation and maintenance of a project Model agreements are available for:

- Specifically authorized structural flood control projects - Nineteen-page model in

Appendix A to Corps regulation number ER 1165-2-131.

- Specifically authorized harbor projects - Twenty-page model in Appendix D to Corps regulation number ER 1165-2-131.

- Flood control projects under the Continuing Authorities Program ('Section 205 projects') - Twenty-four-page model, distributed by Corps Headquarters letter of 23 April 1990.

- Snagging and clearing for flood control projects under the Continuing Authorities Program ("Section 208 projects") - Twenty-four-page model, distributed by Corps Headquarters letter of 23 April 1990.

- Emergency streambank or shoreline erosion projects under the Continuing Authorities Program ("Section 14 projects) - Twenty-page model, distributed by Corps Headquarters letter of 21 May 1990.

Project Executive Summary - This is a form, completed monthly by your Corps Project Manager, which summarizes the status of a project's cost estimate, schedule and other important issues. A copy of the form is in Appendix E of Corps regulation number ER 5-2.1, which also describes other life cycle project management (LCPM) periodic reporting forms.

Project Management Plan (PMP) - This Is a continually- evolving collection of management documents that describe how a project will be designed and constructed, including a description of the project scope, cost estimate budget, and schedule. Your Project Manager can provide an example plan.

Reconnaissance Report - This report presents the results of the preliminary project analyses conducted during the reconnaissance (first) phase of planning. A report outline is in Table 2-2 of the "Planning Guidance Notebook".

Statement of Financial Capability - This is your description of your capability to meet your project financial obligations In accordance with the project funding schedule. Your Project Manager can provide an example statement. A model bond consultant's letter in support of a statement is in paragraph 6-187 of the "Planning Guidance Notebook".

NEED MORE INFORMATION?

Your Project Manager can provide copies of the models, outlines and examples described above, and answer any questions about their preparation and use. In addition, the following publications explain much of the Corps guidance about these documents:

- "Annual Program and Budget Request for Civil Works Activities, Corps of Engineers, Fiscal Year 19XX" (Corps circular number EC 11-2-XXX issued annually) - Provides guidance on the justification sheet.

- "Civil Works Project Cost Estimating - Chart of Accounts' (Corps circular number EC 1110-2538, dated 28 February 1989) - Provides guidance on the chart of accounts format for cost estimates.

- "Engineering and Design for Civil Works Projects' (Corps circular number EC 1110-2-265, dated I September 1989) - Provides guidance on the design memorandum.

- "Life Cycle Project Management System" (Corps regulation number ER 5-2-1, advance draft dated 31 July 1989) - Provides guidance on the project management plan, and the

project executive summary and other periodic reports for project management.

- "Project Partnership Agreements for New Start Construction Project (Corps regulation number ER 1165-2-131, dated 15 April 1989) - Provides guidance on the escrow agreement an Project Partnership Agreement

- “Planning Guidance" (Corps regulation number ER 1105-02-100, dated IS September 1990-, also called the "Planning Guidance Notebook', or PGN) - Provides guidance on the certificate of lobbying, disclosure of lobbying activities, environmental impact statement, feasibility cost sharing agreement, feasibility report, financing plan, initial project management plan, letter of intent, reconnaissance report, and statement of financial capability.

- “Procedures for Implementing NEPA' (Corps regulation number ER 200-2-2, dated 4 March 1988) - Provides guidance on the environmental assessment, finding of no significant impact, environmental Impact statement, and record of decision.

- “Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (Federal regulations numbered 40 CFR 100-1508, dated November 29, 1978, issued by the Council on Environmental Quality) - Provides guidance on the environmental assessment, finding of no significant impact, environmental impact statement, and record of decision.

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

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

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

DMP – Decision Management Plan
DOD – Department of Defense
DOE – Department of Energy
DOI – Department of Interior
DOJ – Department of Justice
DOT –Department of Transportation
DQC - District Quality Control
DP – Decision Point
DPM – Deputy for Project Management
DPR – Detailed Project Report
DSAP – Dam Safety Assurance Program
DX - Directory of Expertise
E&D – Engineering and Design
E&PW – Energy and 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
EFT – Electronic Funds Transfer
EGM – Economics Guidance Memorandum
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 and Accounting
FWL – Fish and Wildlife
FWS – Fish and Wildlife Service
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 Equivalent
FUDS – Formerly Used Defense Site
FUSRAP – Formerly Utilized Sites Remedial Action Program
FY – Fiscal Year
FYI – For Your Information
FYSA- For Your Situational Awareness
G&A – General and 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 and Hydraulics
HAC – Hydropower Analysis Center
HAZMAT – Hazardous Materials
HD – House Document
HEC – Hydrologic Engineering Center
HEP – Habitat Evaluation Procedures
HES – Habitat Evaluation System
HHS – Health and Human Services
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 Wastes
HU – Habitat Unit
HUD – Housing and Urban Development

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

I - Investigations
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 (now ATR)
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 and Dam
LCC –Life Cycle Cost
LER – Lands, Easements, and Rights-of-Way
LERR – Lands, Easements, Rights-of-Way, and Relocations
LERRD – Lands, Easements, Rights-of-Way, Relocations, and Disposal
LOI – Letter of Intent
LPP – Locally Preferred Plan/ Local Protection Project
LRB – Buffalo District
LRC – Chicago District
LRD – Great Lakes & Ohio River Division (Cincinnati, OH)
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 and Industrial
M&IE – Meals and Incidental Expenses
MACOM – Major Army Command
MARAD – Maritime Administration
MCACES – 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 and Tributaries
MRC – Mississippi River Commission
MSC – Major Subordinate Command
MVD – Mississippi Valley Division (Vicksburg, MS)
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 (New York, NY)
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 – National Economic Development
NER – National Ecosystem Restoration
NEPA –National 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 Oceanographic and Atmospheric Administration
NPS – National Park Service
NRHP –National Register of Historic Places
NTE –Not to Exceed
NTP – Notice to Proceed
NWD – Northwestern Division (Portland, OR)
NWK – Kansas City District

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

NWO – Omaha District
NWP – Portland District
NWS – Seattle District/ National Weather Service
NWW – Walla Walla District
O&M – Operations and Maintenance
OBE – Overcome by Events
OC – Office of Counsel
OEO – Outside Eligible Organization
OMB – Office of Management and Budget
OMRR&R – Operations, Maintenance, Repair, Replacement and 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 and Design
P&G – Principles and Guidelines
P&S – Principles and Standards/ Plans and Specifications
PA – Planning Associate/ Per Annum
PAB – Planning Advisory Board
PAC – Post-authorization Change
PACR – Post-authorization Change Report
PAS – Planning Assistance to States
PCoP – Planning Community of Practice
PCS – Permanent Change of Station
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 (Honolulu, HI)
POH – Honolulu District
POTUS – President of the United States
POV – Privately-owned Vehicle/ Point of View
PPA – Project Partnership Agreement
PPE – Pay Period Ending
PR&C – Purchase Request and Commitment
PRB – Project Review Board
PRIP – Plant Replacement and Improvement Program
PROSPECT – Proponent Sponsored Engineer Corps Training
PRP – Potential Responsible Party
PTL – Planning Technical Lead
Q's & A's – Questions and Answers
QA/QC – Quality Assurance / Quality Control
QM – Quality Manual
QMP –Quality Management Plan
QMR – Quality Management Representative
QMS – Quality Management System
RA – Risk Analysis/ Risk Assessment/Remedial Action
R&D – Research and Development
R&H – River and Harbor
R&U – Risk and Uncertainty
RBRCR – Remaining Benefits, Remaining Costs Ratio
REC - Recreation
RED – Regional Economic Development
REP – Real Estate Plan
RIT – Regional Integration Team
RITA – Relocation Income Tax Adjustment
RFP - Request for Proposal
RP – Review Plan/ Resource Provider
RMB – Regional Management Board
RMC – Risk Management Center
RMO – Review Management Organization/Resource Management Office
RMP – Risk Management Plan
ROD – Record of Decision
ROW – Right of Way
RR – Risk Register
RTS – Regional Technical Specialist
S&A – State and Agency/Supervision and Administration
S&I – Supervision and Inspection
S&S – Savings and Slippage
SAC – Charleston District/ Senate Appropriations Committee
SAD – South Atlantic Division (Atlanta, GA)
SADBU – Small and Disadvantaged Business Utilization
SAJ – Jacksonville District
SAM – Mobile District
SAME – Society of American Military Engineers
SAR – Safety Assurance Review

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

SAS – Savannah District
SAW – Wilmington District
SBH – Small Boat Harbor
SCD – Service Computation Date
SCORP – State Comprehensive Recreation Plan
SCOTUS – Supreme Court of the United States
SCS – Soil Conservation Service
SD – Senate Document
SEPWC – Senate Environment and Public Works Committee
SES – Senior Executive Service
SFO – Support for Others
SHPO – State Historic Preservation Office
SITREP – Situation Report
SMART – Specific Measurable Attainable Risk-Informed Timely
SME – Subject Matter Expert
SMSA – Standard Metropolitan Statistical Area
SOP – Standard Operating Procedure
SOS – Scope of Services/Scope of Studies
SOW – Scope of Work
SPA - Albuquerque District
SPD – South Pacific Division (San Francisco, CA)
SPF – Standard Project Flood
SPK – Sacramento District
SPL – Los Angeles District
SPN – San Francisco District
SR – Senate Resolution
SWD – Southwestern Division (Dallas, TX)
SWF – Fort Worth District
SWG – Galveston District/ Senior Working Group
SWL – Little Rock District
SWT – Tulsa District
T&A – Time and Attendance
T&ES – Threatened and Endangered Species
T&I – Transportation and Infrastructure (House)
TAD – Transatlantic Division
TAPES – Total Army Performance Evaluation System
TBA – To be Announced
TBD – To be Determined
TCM – Travel Cost Method
TDY – Temporary Duty
TMDL -Total Maximum Daily Load
TRC – Technical Review Conference
TSP – Tentatively Selected Plan/ Thrift Savings Plan
TQSE – Temporary Quarters Subsistence Expenses
UDV – Unit Day Value
USACE – U. S. Army Corps of Engineers
USC – United States Code
USCG – United States Coast Guard
USEPA – United States Environmental Protection Agency
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
VE – Value Engineering
VT – Vertical Team
VTC – Video Teleconference
WMP – Watershed Management Plan
WBS – Work Breakdown Structure
WCSC - Waterborne Commerce Statistics Center
WFO –Work for Others
WQ – Water Quality
WRC – Water Resources Council
WRDA – Water Resources Development Act
WS – Water Supply
WTA – Willingness to Accept
WTP – Willingness to Pay

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StrongPoint

US ARMY CORPS OF ENGINEERS January 23, 2015 BUILDING STRONG®

USACE Completes North Atlantic Coast Comprehensive Study

"We must be prepared for tomorrow's storm while we rebuild our coastlines, infrastructure, and communities … Equipping the Army Corps with tools to improve our infrastructure in the long-term will go a long way towards fortifying our shorelines to withstand future disasters."

—U.S. Sen. Kirsten Gillibrand (D-NY)

In late January, the Assistant Secretary of the Army for Civil Works will submit to Congress a report that addresses flood risk to vulnerable coastal populations, property, ecosystems, and infrastructure in the Northeast. This report, authorized by Congress following Hurricane Sandy, and prepared by USACE is the result of the USACE North Atlantic Coast Comprehensive Study, which involved collaboration with key stakeholders including federal, state, regional, local governments, and Tribal Officials, as well as NGOs and academia.

Managing coastal flood risk

Managing coastal flood risk is complex. There are economic, social, and environmental factors to consider, layers of governments involved, and dozens of ways to reduce risk, from using manmade features like levees and seawalls to using natural features like salt marshes and maritime forests. Because every location is different, there is no recipe for a 'best' solution. Most important is a common methodology that public and private interests can follow together to assess risk and identify solutions. This methodology, included in the study, is the Coastal Storm Risk Management Framework.

Comprehensive Study findings

The study's nine-step Coastal Storm Risk Management Framework can be customized for any coastal watershed. It is supported by several technical products and planning tools that are included in the report. The study identified institutional and other barriers to managing coastal storm risk and highlighted that coastal flood risk management is a shared responsibility and that many communities along the Northeast coast remain vulnerable to future storms. In particular, the study listed nine high-risk areas that warrant additional analysis: Rhode Island Coastline; Connecticut Coastline; New York-New Jersey Harbor and Tributaries; Nassau County Back Bays, NY; New Jersey Back Bays; Delaware Inland Bays and Delaware Bay Coast; City of Baltimore; Washington, DC; City of Norfolk.

Key Messages

- SHARED RESPONSIBILITY, SHARED TOOLS: Hurricane Sandy illustrated that coastal storms are intensifying and that sea-level change and climate change will only heighten the vulnerability of coastal communities. Because coastal storm risk management is a shared responsibility, we believe there should be shared tools used by all decision makers to assess risk and identify solutions. This report provides those tools.
- TOUGH CHOICES: Managing coastal flood risk is complex. Coastal storms are intensifying and sea-level and climate change heighten the vulnerability of coastal communities, which face tough choices as they prepare for changing conditions while striving to preserve community values and economic vitality. To help them, this study identifies opportunities to increase coastal resilience and reduce vulnerability.
- VULNERABILITIES REMAIN: Many communities along the Northeast remain very vulnerable to coastal floods. No matter what strategies are taken, there will always be residual risk. The study identified nine high-risk areas that have no ongoing USACE cost-shared studies that warrant additional analysis.

Facts & Figures

- The North Atlantic Comprehensive Study (NACCS) is a $19 million study to develop a risk reduction framework for the 31,200 miles of coastline within the North Atlantic Division affected by Hurricane Sandy. The ASA(CW) will submit the report to Congress in January 2015.
- The study was conducted by the Corps with collaboration from experts in coastal planning, engineering and science from more than 90 governmental, academic, and non-governmental entities.
- Nine high risk areas with no ongoing USACE cost-shared studies were identified by the NACCS as warranting additional analysis. They are: Rhode Island Coastline; Connecticut Coastline; New York-New Jersey Harbor and Tributaries; Nassau County Back Bays, NY; New Jersey Back Bays; Delaware Inland Bays and Delaware Bay Coast; City of Baltimore; Washington, DC; City of Norfolk.
- More on the USACE North Atlantic Coast Comprehensive Study can be found at http://www.nad.usace.army.mil/CompStudy


Superstorm Sandy Recovery
USACE Coastal Projects
Philadelphia District
New Jersey & Delaware
February 2016
NEW YORK DISTRICT
PHILADELPHIA DISTRICT
Trenton
PHILADELPHIA
CAMDEN
NJ
DE
DOVER
Wilmington
Sandy Hook
Long Branch
Asbury Park
Manasquan
Island Beach State Park
Barnegat Light
Harvey Cedars
North Beach
Surf City
Long Beach Twp
Beach Haven
Little Egg Inlet
Brigantine
ATLANTIC CITY
Margate City
Ventnor City
Longport
Ocean City
Sea Isle City
Avalon
Stone Harbor
Villas
Wildwood
Cape May
PHILADELPHIA DISTRICT
BALTIMORE DISTRICT
Previously constructed/restored
Initial construction complete
Initial construction in progress
Contract not yet awarded, pending real estate acquisition
Awaiting authorization, ready for engineering/design phase
Manasquan Inlet to Barnegat Inlet
Barnegat Inlet to Little Egg Inlet (LBI)
Brigantine Island
Absecon Island
Great Egg Harbor Inlet & Peck Beach
Great Egg Harbor Inlet to Townsends Inlet
Townsends Inlet to Cape May Inlet
Hereford Inlet to Cape May Inlet
Cape May Inlet to Lower Township
Lower Cape May Meadows - Cape May Point
Oakwood Beach
Broadkill Beach
Roosevelt Inlet/ Lewes Beach
Rehoboth Beach & Dewey Beach
Indian River Inlet - Sand Bypass Plant
Bethany Beach/South Bethany
Fenwick Island
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
US Army Corps of Engineers
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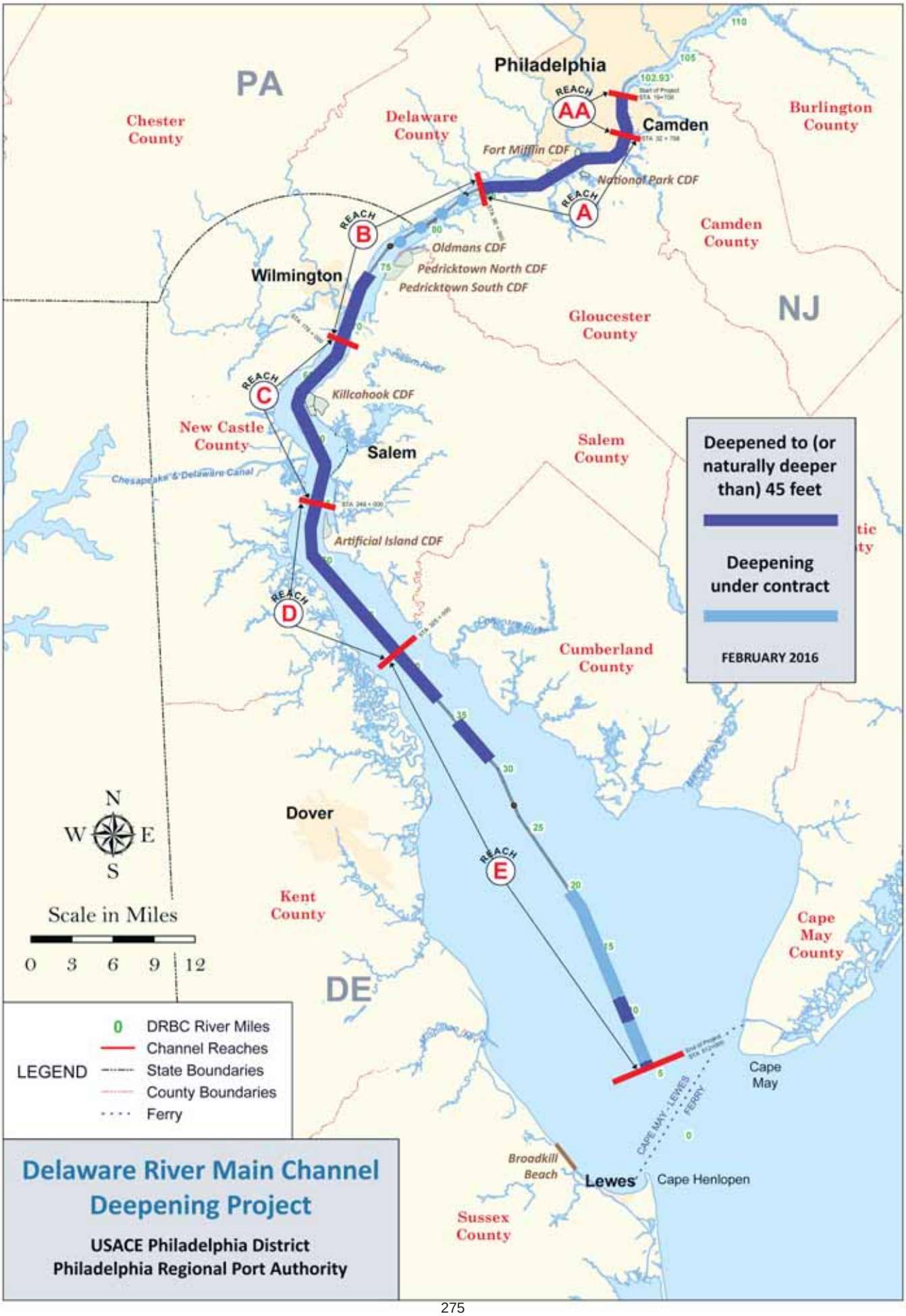
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Camden
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Salem
Lewes
Cape May
Cape Henlopen
Chester County
Delaware County
Burlington County
Camden County
Gloucester County
New Castle County
Salem County
Kent County
Cumberland County
Cape May County
Sussex County
REACH AA
REACH A
REACH B
REACH C
REACH D
REACH E
Fort Mifflin CDF
National Park CDF
Oldmans CDF
Pedricktown North CDF
Pedricktown South CDF
Killcohook CDF
Artificial Island CDF
Chesapeake & Delaware Canal
Broadkill Beach
CAPE MAY - LEWES FERRY
Deepened to (or naturally deeper than) 45 feet
Deepening under contract
FEBRUARY 2016
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LEGEND
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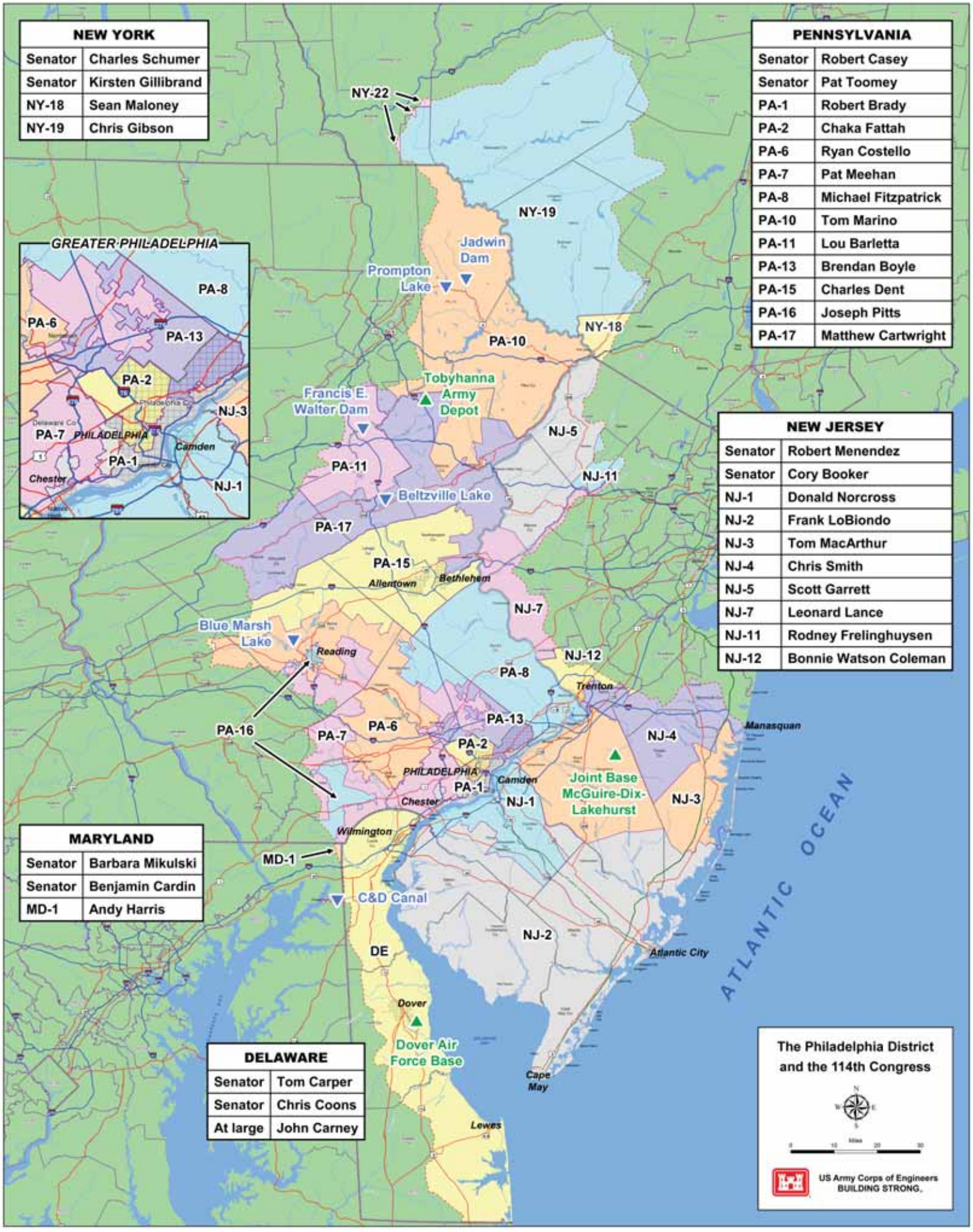
Channel Reaches
State Boundaries
County Boundaries
Ferry
Delaware River Main Channel Deepening Project
USACE Philadelphia District
Philadelphia Regional Port Authority


NEW YORK
Senator Charles Schumer
Senator Kirsten Gillibrand
NY-18 Sean Maloney
NY-19 Chris Gibson
PENNSYLVANIA
Senator Robert Casey
Senator Pat Toomey
PA-1 Robert Brady
PA-2 Chaka Fattah
PA-6 Ryan Costello
PA-7 Pat Meehan
PA-8 Michael Fitzpatrick
PA-10 Tom Marino
PA-11 Lou Barletta
PA-13 Brendan Boyle
PA-15 Charles Dent
PA-16 Joseph Pitts
PA-17 Matthew Cartwright
NEW JERSEY
Senator Robert Menendez
Senator Cory Booker
NJ-1 Donald Norcross
NJ-2 Frank LoBiondo
NJ-3 Tom MacArthur
NJ-4 Chris Smith
NJ-5 Scott Garrett
NJ-7 Leonard Lance
NJ-11 Rodney Frelinghuysen
NJ-12 Bonnie Watson Coleman
MARYLAND
Senator Barbara Mikulski
Senator Benjamin Cardin
MD-1 Andy Harris
DELAWARE
Senator Tom Carper
Senator Chris Coons
At large John Carney
GREATER PHILADELPHIA
NY-22
NY-19
NY-18
PA-10
PA-8
PA-6
PA-13
PA-2
NJ-3
PA-7
PHILADELPHIA
Camden
PA-1
NJ-1
Chester
Jadwin Dam
Prompton Lake
Tobyhanna Army Depot
Francis E. Walter Dam
NJ-5
PA-11
NJ-11
Beltzville Lake
PA-17
PA-15
Allentown
Bethlehem
NJ-7
Blue Marsh Lake
Reading
NJ-12
PA-16
PA-6
PA-7
PA-13
PA-2
NJ-4
Trenton
Manasquan
Joint Base McGuire-Dix-Lakehurst
NJ-3
Wilmington
MD-1
C&D Canal
NJ-2
DE
Atlantic City
Dover
Dover Air Force Base
Cape May
Lewes
ATLANTIC OCEAN
The Philadelphia District and the 114th Congress
US Army Corps of Engineers
BUILDING STRONG.

DELAWARE PROJECTS - PHILADELPHIA DISTRICT

GENERAL INVESTIGATIONS

Christina River Watershed	GI 1
Delaware River Comprehensive Wl MP	GI 2
Delaware Planning Assistance To States, (Sec 22)	GI 4
Delaware River Dredged Material Utilization: PA, DE & NJ	GI 5

CONTINUING AUTHORITIES PROGRAM (CAP)

Restoration of Grassdale (1135)	C 2
Little Mill Creek (205)	C 3
Pennsylvania Ave Improvement, Bethany Beach (205)	C4

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 Mahon	CG 5
Docksvarts 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

Inland 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
Indian River Inlet & Bay, Sussex County	OM 5
Mispillion River, Sussex County	OM 6
Murderkill River, Sussex County	OM 7
Wilmington Harbor, New Castle County	OM 8
C & D Canal Trail	OM 9
Delaware Estuary Regional Sediment Management (RSM)	OM 10
Harbor of Refuge, Lewes	OM 11

Legend

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

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Delaware Projects Within Philadelphia District

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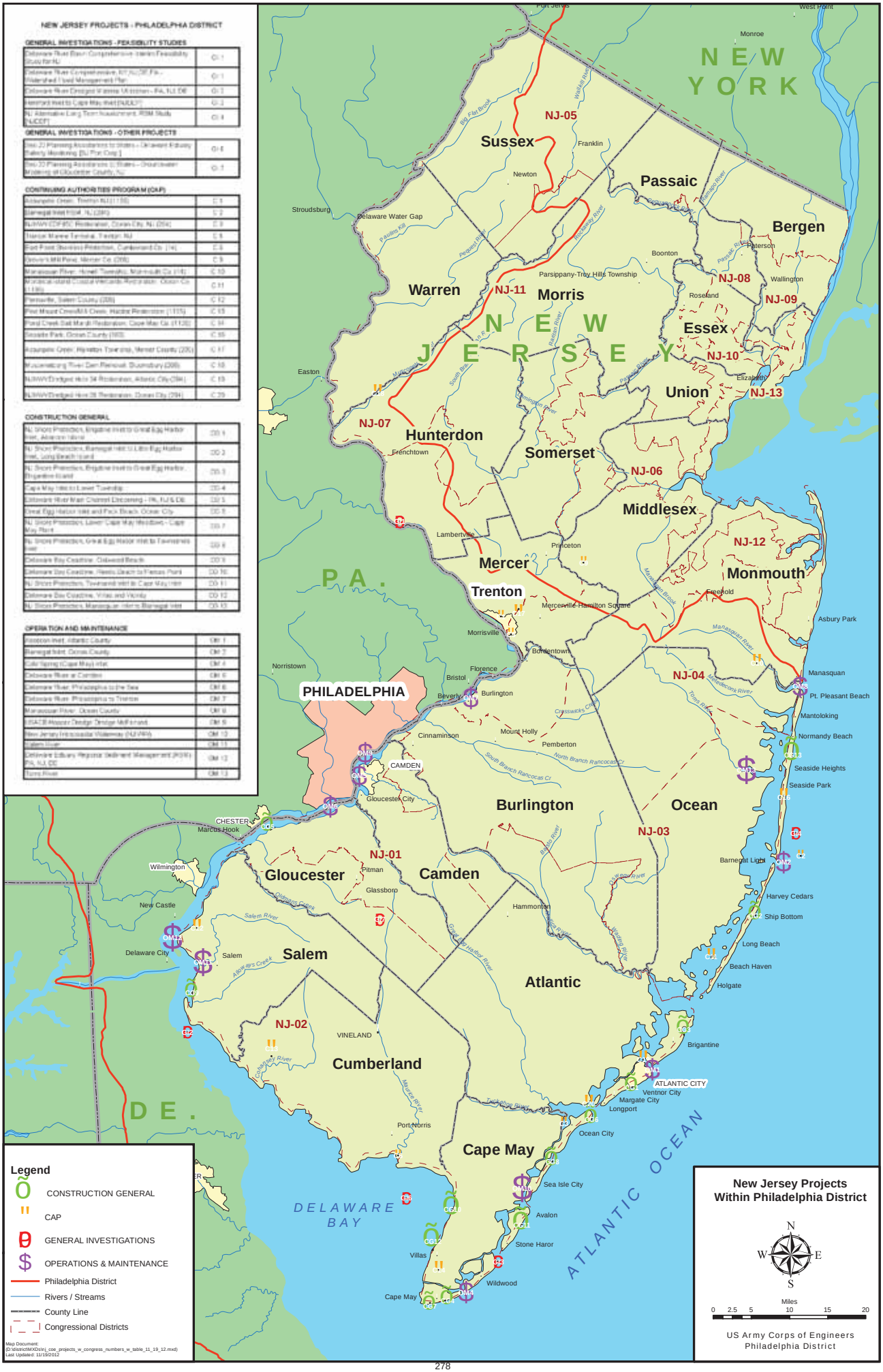
US Army Corps of Engineers
Philadelphia District


NEW JERSEY PROJECTS - PHILADELPHIA DISTRICT
GENERAL INVESTIGATIONS - FEASIBILITY STUDIES
GENERAL INVESTIGATIONS - OTHER PROJECTS
CONTINUING AUTHORITIES PROGRAM (CAP)
CONSTRUCTION GENERAL
OPERATION AND MAINTENANCE
NEW YORK
PA.
DE.
NEW JERSEY
PHILADELPHIA
CAMDEN
ATLANTIC CITY
Sussex
Warren
Morris
Passaic
Bergen
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Somerset
Middlesex
Mercer
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Ocean
Burlington
Gloucester
Camden
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Atlantic
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DELAWARE BAY
ATLANTIC OCEAN
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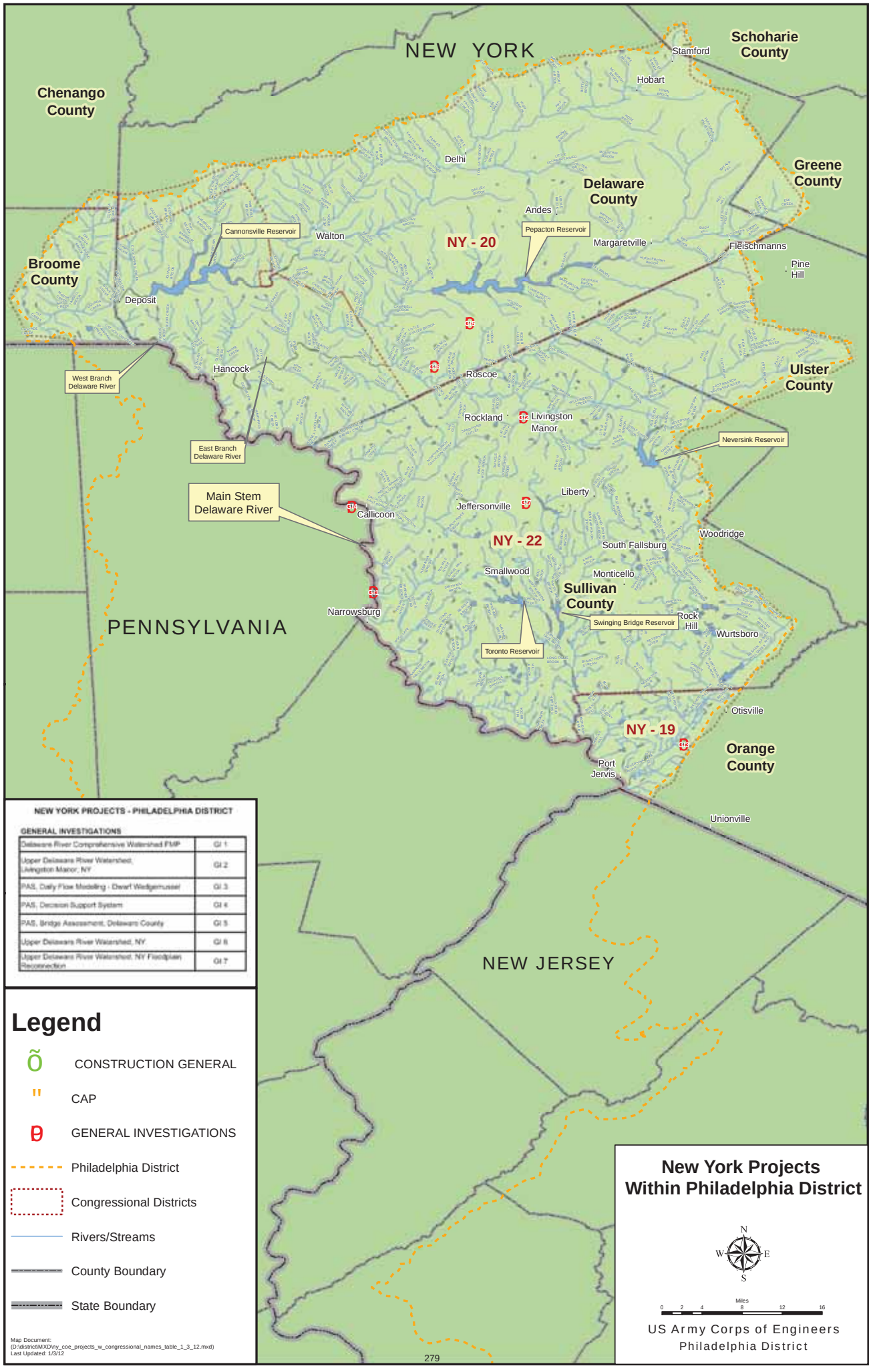
OPERATIONS & MAINTENANCE
Philadelphia District
Rivers / Streams
County Line
Congressional Districts
New Jersey Projects Within Philadelphia District
Miles
US Army Corps of Engineers
Philadelphia District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Ulster County
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Stamford
Hobart
Delhi
Andes
Walton
Margaretville
Fleischmanns
Pine Hill
Deposit
Hancock
Roscoe
Rockland
Livingston Manor
Liberty
Jeffersonville
Callicoon
Narrowsburg
Smallwood
Monticello
South Fallsburg
Woodridge
Rock Hill
Wurtsboro
Otisville
Port Jervis
Unionville
Cannonsville Reservoir
Pepacton Reservoir
Neversink Reservoir
Swinging Bridge Reservoir
Toronto Reservoir
West Branch Delaware River
East Branch Delaware River
Main Stem Delaware River
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NY - 22
NY - 19
NEW YORK PROJECTS - PHILADELPHIA DISTRICT
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Delaware River Comprehensive Watershed FMP GI 1
Upper Delaware River Watershed, Livingston Manor, NY GI 2
PAS, Daily Flow Modeling - Dwarf Wedgemussel GI 3
PAS, Decision Support System GI 4
PAS, Bridge Assessment, Delaware County GI 5
Upper Delaware River Watershed, NY GI 6
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GENERAL INVESTIGATIONS
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Rivers/Streams
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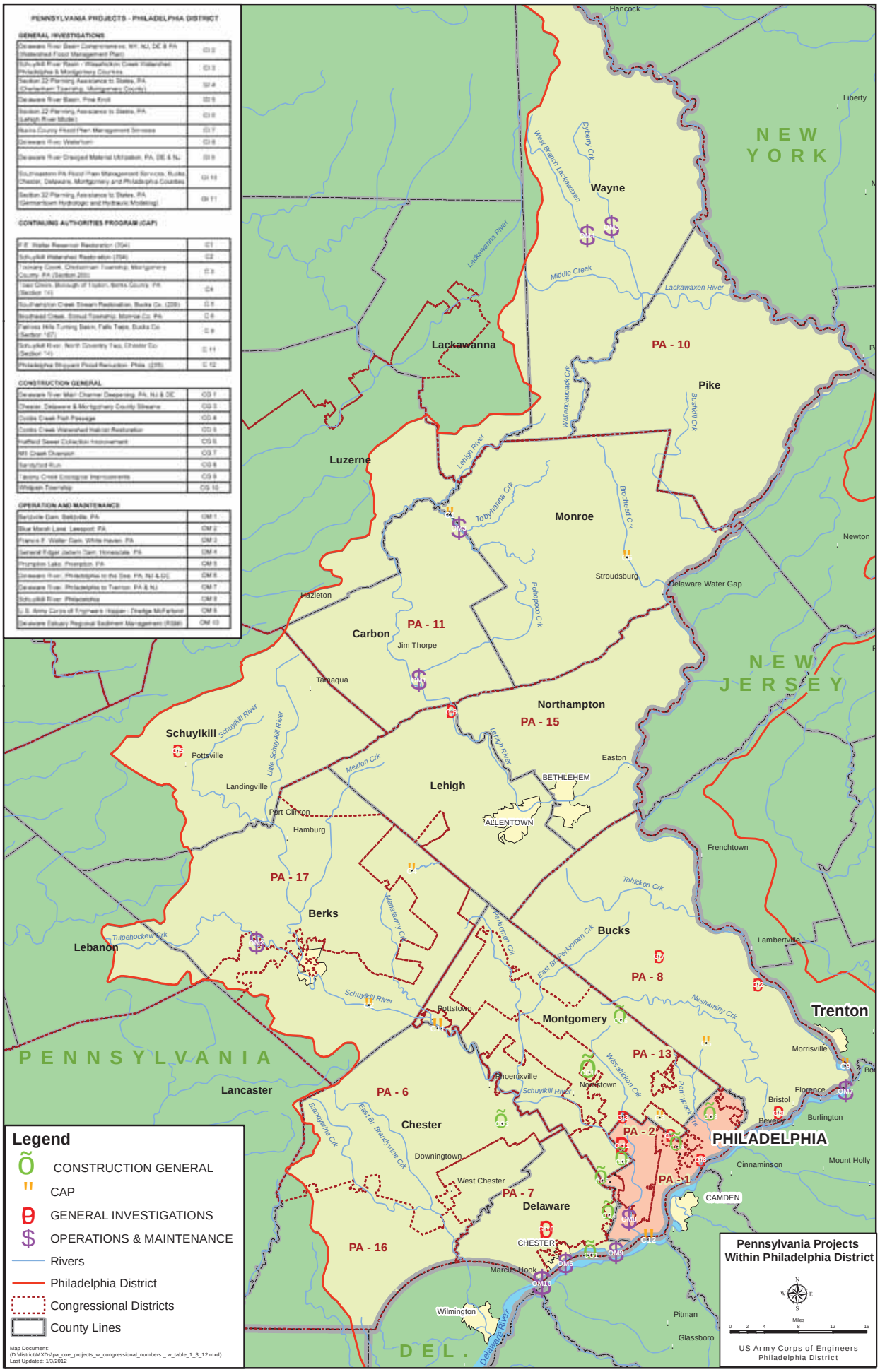
Philadelphia District


PENNSYLVANIA PROJECTS - PHILADELPHIA DISTRICT
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US Army Corps of Engineers
Philadelphia District
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Liberty
Wayne
Lackawanna
Luzerne
Pike
Monroe
Carbon
Jim Thorpe
Tamaqua
Hazleton
Stroudsburg
Delaware Water Gap
Newton
Northampton
Schuylkill
Pottsville
Landingville
Port Clinton
Hamburg
Lehigh
BETHLEHEM
ALLENTOWN
Easton
Frenchtown
Berks
Lebanon
Bucks
Lambertville
Trenton
Montgomery
Pottstown
Phoenixville
Norristown
Lancaster
Chester
Downingtown
West Chester
Delaware
CHESTER
Marcus Hook
Wilmington
Morrisville
Bristol
Florence
Burlington
Beverly
PHILADELPHIA
Cinnaminson
Mount Holly
CAMDEN
Pitman
Glassboro
PA - 1
PA - 2
PA - 6
PA - 7
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PA - 10
PA - 11
PA - 13
PA - 15
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PA - 17
Lackawaxen River
Middle Creek
Dyberry Crk
West Branch Lackawaxen
Lackawanna River
Wallenpaupack Crk
Bushkill Crk
Lehigh River
Tobyhanna Crk
Brodhead Crk
Pohopoco Crk
Schuylkill River
Little Schuylkill River
Maiden Crk
Manatawny Crk
Tulpehocken Crk
Tohickon Crk
Neshaminy Crk
Perkiomen Crk
East Br Perkiomen Crk
Wissahickon Crk
Pennypack Crk
Brandywine Crk
East Br Brandywine Crk
Delaware River

Congressional Districts

Delaware

District Number	Representative
DE-AL	John Carney

Maryland

District Number	
MD-1	Andrew Harris

New Jersey

District Number	Representative
NJ-1	Donald Norcross
NJ-2	Frank Lobiondo
NJ-3	Tom MacArthur
NJ-4	Christopher Smith
NJ-5	Scott Garrett
NJ-6	Frank Pallone Jr.
NJ-7	Leonard Lance
NJ-11	Rodney Frelinghuysen
NJ-12	Bonnie Watson Coleman

New York

District Number	Representative
NY-18	Sean Maloney
NY-19	Christopher Gibson
NY-22	Richard Hanna

Pennsylvania

District Number	Representative
PA-1	Robert Brady
PA-2	Chaka Fattah
PA-6	Ryan Costello
PA-7	Patrick Meehan
PA-8	Michael Fitzpatrick
PA-10	Tom Marino
PA-11	Lou Barletta
PA-13	Brendan Boyle
PA-15	Charles Dent
PA-16	Joseph Pitts
PA-17	Matthew Cartwright

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Representative	District	Project Name	Page
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Boyle	PA-13	Delaware River Comprehensive, DE, NJ, NY & PA (Watershed Flood Management Plan) *[DRBC]*	48
Boyle	PA-13	Delaware River Dredged Material Utilization, PA	42
Boyle	PA-13	Delaware River Main Channel Deepening, DE, NJ & PA *[Philadelphia Regional Port Authority]*	200
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Boyle	PA-13	Delaware River, Philadelphia to the Sea, DE, NJ & PA	246
Boyle	PA-13	Delaware River, Philadelphia to Trenton, NJ & PA	248
Boyle	PA-13	Schuylkill River Basin, Wissahickon Creek Watershed, Philadelphia & Montgomery Counties, PA *[City of Philadelphia-Water Department]*	46
Boyle	PA-13	Schuylkill Watershed Restoration, PA (Section 204) *[none required]*	106
Boyle	PA-13	Section 22 Planning Assistance to States, PA (Delaware River Waterfront Pier Analysis) *[DRWC]*	54
Boyle	PA-13	Section 22 Planning Assistance to States, PA (Rose Valley Creek Flood Hazard Analysis) *[Whitpain Township]*	56
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Brady	PA-1	Cobbs Creek Watershed Habitat Restoration *[City of Philadelphia-Water Department]*	198
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Brady	PA-1	Delaware River Dredged Material Utilization, PA	42
Brady	PA-1	Delaware River Main Channel Deepening, DE, NJ & PA *[Philadelphia Regional Port Authority]*	200
Brady	PA-1	Delaware River Waterfront, Philadelphia, PA *[City of Philadelphia]*	44
Brady	PA-1	Delaware River, Philadelphia to the Sea, DE, NJ & PA	246
Brady	PA-1	Delaware River, Philadelphia to Trenton, NJ & PA	248
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Brady	PA-1	Schuylkill Watershed Restoration, PA (Section 204) *[none required]*	106
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Representative	District	Project Name	Page
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Coleman	NJ-12	Delaware River Comprehensive, DE, NJ, NY & PA (Watershed Flood Management Plan) *[DRBC]*	48
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Costello	PA-6	Schuylkill River, North Coventry Township Chester County, PA (Section 14) *[North Coventry Township]*	104
Costello	PA-6	Schuylkill Watershed Restoration, PA (Section 204) *[none required]*	106
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Dent	PA-15	Delaware River Comprehensive, DE, NJ, NY & PA (Watershed Flood Management Plan) *[DRBC]*	48
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Fattah	PA-2	Cobbs Creek Watershed Habitat Restoration *[City of Philadelphia-Water Department]*	198
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Fattah	PA-2	Delaware River Dredged Material Utilization, PA	42
Fattah	PA-2	Delaware River Waterfront, Philadelphia, PA *[City of Philadelphia]*	44
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Frelinghuysen	NJ-11	Delaware River Comprehensive, DE, NJ, NY & PA (Watershed Flood Management Plan) *[DRBC]*	48
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Garrett	NJ-5	Delaware River Comprehensive, DE, NJ, NY & PA (Watershed Flood Management Plan) *[DRBC]*	48
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Potential Projects in Delaware, New Jersey, New York, Pennsylvania

Project	Congressional Districts	Description	FY15 Funds ($000)	FY16 Funds ($000)	FY17 Budget ($000)
GENERAL INVESTIGATION					
Delaware Coastal Long-Term Nourishment, DE	DE-AL	This potential study would investigate improvment of coastal management along the Delaware coast in three ways: a) Reduce long-term periodic nourishment requirements and costs; b) Reduce sand resource requirements and c) Minimize environmental impacts. A non-Federal sponsor is needed for a Feasibility Study.	0	0	0
Barnegat Bay Ecosystem Restoration, NJ	NJ-2, NJ-3	This potential study will identify and evaluate ecosystem restoration opportunities in Barnegat Bay, a 75 sq mile environmentally sensitive and nationally significant estuary in Ocean County, NJ that was highly impacted by Hurricane Sandy. A non-Federal sponsor is needed for a Feasibility Study.	0	0	0
F.E. Walter Re-evaluation Feasibility Study, PA	PA-11	This potential study will evaluate the current services provided by F.E. Walter Reservoir, including past and present operational plans; evaluate the existing demands for services from interested stakeholders, including flood control, water supply (taking into account authorized purposes first), water quality (including fisheries), and recreation; evaluate non-Federal hydropower opportunities; evaluate future demands for services; and evaluate existing infrastructure to support the current and future demand for services. The feasibility report would analyze whether proposed changes are sound from an engineering standpoint, environmentally acceptable, and economically justified. A non-Federal sponsor is needed for a Feasibility Study.	0	0	0
Delaware Bay Watershed Study, DE and NJ	NJ-2, DE-AL	This potential study will identify problems, needs, and opportunities and recommend solutions for: vulnerable and degraded water resources infrastructure, ecosystem restoration, applications of green infrastructure and living shorelines, recommend wise use of the floodplains to enhance coastal resiliency, erosion and wetland loss in the midst of sea level rise, and coastal storm damage risk reduction measures. A non-Federal sponsor is needed for this watershed study.	0	0	0
Delaware Estuary Environmental Restoration, DE, NJ, and PA	NJ-1, NJ-2, DE-AL, PA-1, PA-2, PA-7	This potential feasibility study will investigate opportunities for ecosystem and habitat restoration, oyster revitalization, shoreline erosion control, protection of public works, groundwater, beneficial use of dredged material and watershed management. A non-Federal sponsor is needed for a Feasibility Study.	0	0	0
Lower Delaware Watershed Study, DE, NJ, and PA	NJ-1, NJ-2, DE-AL, PA-1, PA-2, PA-7	This potential study would identify problems, needs, and opportunities and recommend solutions to: reduce the negative impacts of urbanization on the quality of the Lower Delaware River Watershed while reclaiming and restoring impacted riverfronts and economically revitalizing depressed areas, improve degraded water resources infrastructure, restore the watershed's ecosystem, utilize green infrastructure and living shorelines methods, and recommend the wise use of floodplains. The Lower Delaware Watershed Study effort will contribute to the Greater Philadelphia Area/Delaware River Watershed Urban Waters Federal Partnership.	0	0	0

Potential Projects in Delaware, New Jersey, New York, Pennsylvania					
Project	**Congressional Districts**	**Description**	**FY15 Funds ($000)**	**FY16 Funds ($000)**	**FY17 Budget ($000)**
Warren Glen Dam Removal	NJ-7	Study will evaluate the removal of this dam for aquatic ecosystem restoration purposes along the Musconetcong River in Warren County, NJ. The Musconetcong River is a 45.7-mile-long tributary of the Delaware River in northwestern New Jersey in the United States. The Warren Glen structure is located approximately 5.5 miles upstream of the confluence between the Musconetcong River and the Delaware River, and stands more than 35-feet high. The Warren Glen dam is one of three remaining impediments to a natural, free flowing condition along the first 13.4 miles of the Musconetcong River.	0	0	0
Adams Hollow Creek and Otter Creek Flood Modeling, Bristol Borough, PA (Sec 22)	PA-8	Bristol Borough sent a letter to USACE requesting assistance modeling and assessing flood mitigation alternatives along Adams Hollow Creek and Otter Creek in Bristol Borough, Bucks County, PA under Section 22. The Borough applied for a PADCED grant to help pay for their portion of the study.	0	0	0
Delaware River Canal Stability Assessment, PA, Planning Assistance to States (Sec 22)	PA-8, PA-15, PA-17	PADCNR sent a letter requesting USACE assistance in assessing the stability of the river walls along the canal. A scope of work has been completed that is agreeable to both parties and a cost sharing agreement is being drafted.	0	20	0
CONTINUING AUTHORITIES PROGRAM (CAP)					
Delaware Bayshore, DE (Sec 205)	DE-AL	This project received funds from the Disaster Relief Appropriations Act of 2013, Public Law 113-2 and will evaluate storm damage reduction and shore protection in Delaware. The District is working with local officials and DNREC to collect information needed for a Federal Interest Determination.	50	0	0
Delaware Estuary RSM, DE (SECTION 204)	DE-AL	This potential project will investigate opportunities for beneficial use of dredged material in Delaware. Preliminary meetings have been held with the potential cost-sharing sponsor, DNREC. Funds are needed to conduct a Federal Interest Determination.	0	0	0
Armacost Park Restoration, Avalon, NJ (Sec 206)	NJ-2	The Borough of Avalon sent a letter requesting assistance from the U.S Army Corps of Engineer's under Section 206 of the Continuing Authorities Program (CAP) to restore tidal flow to 4 acres of invasive Phragmites-dominated marsh in Armacost Park, located west of Dune Drive between 71st and 74th Streets in Avalon, New Jersey.	0	0	0
Cumberland County, NJ Bulkheads (Sec 103)	NJ-2	This project received funds from the Disaster Relief Appropriations Act of 2013, Public Law 113-2. The District is working with local interests to gather information needed for the Federal Interest Determination.	50	0	0
Cumberland County, NJ Shore Protection (Sec 103)	NJ-2	This project received funds from the Disaster Relief Appropriations Act of 2013, Public Law 113-2. The District is working with local interests in Greenwich Township to gather information needed for the Federal Interest Determination.	50	0	0

Potential Projects in Delaware, New Jersey, New York, Pennsylvania					
Project	**Congressional Districts**	**Description**	**FY15 Funds ($000)**	**FY16 Funds ($000)**	**FY17 Budget ($000)**
Delaware Bayshore, NJ (Commercial and Maurice River Twps) (Sec 205)	NJ-2	This project received funds from the Disaster Relief Appropriations Act of 2013, Public Law 113-2 and will evaluate flood risk management for Heislerville and Delmont in Maurice River Township and storm damage reduction and shore protection at Port Norris, Shellpile and Bivalve in Commercial Township. A Federal Interest Determination is being prepared by the District.	50	0	0
Gloucester City Seawall, NJ (Sec 14)	NJ-1	Gloucester City sent a letter requesting USACE assistance in repairing a degraded seawall. This project received funds to complete an IAR under Section 14.	50	TBD	TBD
Maurice River Twp (Rte 47), NJ (Sec 14)	NJ-2	This project received funds from the Disaster Relief Appropriations Act of 2013, Public Law 113-2 and will evaluate shoreline erosion and protection of public works (roads) in Maurice River Township. A Federal Interest Determination is being prepared by the District.	50	0	0
Delaware River Canal, PA (Sec 14)	PA-8, PA-15, PA-17	PADCNR sent a letter requesting USACE assistance in repairing parts of the canal and the river walls that are in danger of failing. This is a historic structure. This project has been added to the list of potential projects as a potential Section 14.	0	0	0
Schuylkill River Boathouse Row, PA	PA-1	This potential study will identify long term solutions to sedimentation around Peters Island and boat house row. The authority for this study is still being determined. A non-Federal sponsor is needed.	0	0	0
Tredyffrin Township Flood Risk Management, PA (Sec 205)	PA-6	This potential study would evaluate solutions for flooding associated with Trout Creek in Tredyffrin Township. A study was completed in 1975, but the change in conditions and additional damages warrants a re-evaluation of the problem. Federal funding is needed to conduct a Federal Interest Determination.	0	0	0
Delaware Bay Habitat Restoration, DE and NJ (Section 206)	DE-AL and NJ-2	This potential study would evaluate solutions for habitat restoration in the Delaware Bay and Estuary, including oyster habitat restoration. DNREC sent a letter of interest and NJDEP has expressed interest in co-sponsorship.	0	0	0
Other					
Delaware River Channel Realignment, PA and NJ	PA-1, NJ-1	This potential study will investigate dredging an area adjacent to the authorized channel under the highest part of the Ben Franklin Bridge that is more desirable for commercial navigation. The areat is not 40' deep and has never been dredged. The authority for this study is still being determined. A non-Federal sponsor is needed.	0	0	0

Potential Projects in Delaware, New Jersey, New York, Pennsylvania					
Project	**Congressional Districts**	**Description**	**FY15 Funds ($000)**	**FY16 Funds ($000)**	**FY17 Budget ($000)**
Delaware River Watershed Study, DE, NJ, NY, PA	DE-AL, NJ-1, NJ-2, NJ-3, NJ-4, NJ-5, NJ-7, NJ-11, NJ-12, NY-18, NY-19, PA-1, PA-2, PA-6, PA-7, PA-8, PA-10, PA-11, PA-13, PA-15, PA-16, PA-17	This potential multipurpose watershed-wide study will address water supply, low flow augmentation, drought management, salinity control, and water quality issues throughout the watershed and at all Philadelphia District reservoirs. The District will work with the Delaware River Basin Commission (DRBC) and other stakeholders to implement this future study. This study could be completed using existing authority under Section 729 of WRDA 1986, as amended, that allows USACE to conduct cost-shared watershed planning.	0	0	0