

FRM BUZZ

NEWSLETTER

Reducing Flood Risk: Many Partners, One Team



Port Monmouth, NJ, Partners With USACE New York District for Coastal Storm Defense

The ABCs of Flood Risk Management for a Rural Community

The gap between A, identifying the problem, and C, funding the solution, is too great a leap for many to go it alone.

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Interagency Work, Community Efforts Mitigate Wicked Flood Risk in Rossville, Kansas

A new Silver Jacket effort seeks to mitigate the flood hazard before Rossville suffers a permanent setback.

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Port Monmouth, NJ, Partners With USACE New York District for Coastal Storm Defense

By JoAnne Castagna, USACE New York District

Hurricane Isaias stormed up the East Coast in early August, bringing heavy rain and 85 mph winds to the shores of flood-prone Port Monmouth, New Jersey. The New York District of the U.S. Army Corps of Engineers (USACE) reached out to assess how the community was faring, and how well the Port Monmouth flood risk management project was working.

Local resident Charles Rogers noted, "The system of tide gates and pump stations allowed all of the streets that normally flood under these conditions to drain properly. Port Monmouth fared well in the storm."

Middletown, New Jersey, engineer Ted Maloney observed, "It was good to see the system in action and performing as designed. This is empirical evidence that the Army Corps' floodgate and pumps worked swimmingly!"

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Port Monmouth, New Jersey Resident, Charles Rogers (Right) and Ted Maloney, Township Engineer for Middletown, New Jersey looking over the new flood gate and pump station operation at the Port Monmouth Flood Risk Management Project. Credit: USACE.



Levee at the Port Monmouth Flood Risk Management Project. Credit: USACE.

This type of responsive communication between USACE and the communities it serves is nothing new, especially with flood risk management projects. Active communication happens between and during storms. The [Port Monmouth Flood Risk Management \(FRM\) Project](#) shines as an example on the northern New Jersey coast.

Port Monmouth has been battered by flooding, blizzards and major storms for years, especially by Hurricane Sandy in 2012, which destroyed 750 homes and businesses and spawned the FRM project, scheduled for completion in 2023. “Sandy placed almost 4 feet of water in my house and 6 feet in my cellar, and we lost our heating, electric, food and personal items,” said 82-year Port Monmouth resident Rogers, who has weathered his share of storms. Over time, these storms have eroded much of the natural beachfront and dune complexes that provide coastal protection to the community.

The FRM project’s goal is to reduce the risk of flooding throughout the entire community. Coastal protective measures against storm damage may include dunes and berms, breakwaters, groins, or T-groins, all of which nourish beaches, causing sand to settle on nearby beaches. Dunes and berms depend on sand replenished by beach nourishment. Recently, tide gates were added to this menu of measures.

William Dixon, director of Coastal Engineering, New Jersey Department of Environmental Protection, said, “We have a long-standing, strong partnership with the Army Corps and work on a lot of projects with them. Partnership and collaboration are one of the reasons why New Jersey, the Army Corps, and local municipalities have been so successful in implementing so many projects, including the [very complex] Port Monmouth project.”



Pier at the Port Monmouth Flood Risk Management Project. Credit: USACE.

Work that has been completed includes:

- Building up and widening the shoreline along Sandy Hook Bay by replenishing sand and constructing a new stone groin perpendicular to the shoreline. Groins are long, thin structures extending out from shore that interrupt along-shore water flow, limit sand movement, prevent beach erosion and increase resiliency.
- Constructing a mile-and-a-half-long, 15-foot-high protective dune to provide a natural barrier to the destructive forces of wind and waves.
- Adding 195 feet to a local fishing pier for expanded recreational use by the community.

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Groin at the Port Monmouth Flood Risk Management Project. Credit: USACE.

Public outreach works in two directions and has had vital effects in building this project. Among public participation steps, New York District has conducted public meetings while developing specific elements of this project, both to inform the public and to learn about public concerns. The dune construction led residents to ask for details, and after USACE and other agency teams held public meetings they agreed to construct a walking path to improve public access. Public concerns about the tide gate and pump station structures led USACE to conduct public training and system testing, which allayed concerns about cost and maintainability. Without the early public communication piece, project leadership might never have recognized these significant issues in sufficient time to act.



The new flood gate and pump station operation at the Port Monmouth Flood Risk Management Project. Credit: USACE.

Ongoing work includes construction of:

- An almost 6,600-foot-long (or 20 football fields) concrete floodwall to reduce flooding from Pews Creek to Compton Creek. A floodwall is a vertical barrier designed to temporarily contain the waters of a river or other waterway which may rise to unusual levels during seasonal or extreme weather events.
- A 7,070-foot levee system (the length of more than 23 football fields).

Because soil in the area was not strong enough to support a levee, USACE used an environmentally friendly soil stabilization process called In-Situ Soil Stabilization, which mixed the low-lying salt and freshwater marsh with cement and water, allowing it to support a levee system.

“Typically, we would dig up the marshy soil and haul it out and truck in new soil,” said David Gentile, USACE civil engineer. “By doing this process, we eliminated the need for over 1,750 tri-

axle truck trips, carrying wet, mucky, and odorous material through residential streets, as well as saved a great deal of money.”

As part of the defense surrounding Port Monmouth, pump stations, road closures and a tide gate at Pews Creek have been established. Tide gates allow water to flow freely under normal conditions but can be closed to prevent flood waters from swamping a community.

Rogers, who appreciates the USACE work with communities, said, “During the 1944 Great Atlantic Hurricane, my father placed me on his shoulders and walked through 4 feet of water to take me to my grandmother’s house. During Hurricane Donna in 1960, the area was evacuated, and my entire family were transported by the U.S. Coast Guard via an amphibious vehicle to the firehouse to safety, and during Hurricane Sandy in 2012, my house was flooded, and we lost a lot. Without the help of the Army Corps, flood-prone areas would never receive the protection needed to keep property and residents safe.” 🏠



Road closure structure and flood wall at the Port Monmouth Flood Risk Management Project. Credit: USACE.