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UTILIZING BIPARTISAN INFRASTRUCTURE LAW FUNDING

How this funding is helping to restore estuaries in New York and New Jersey

By JoAnne Castagna, Ed.D.

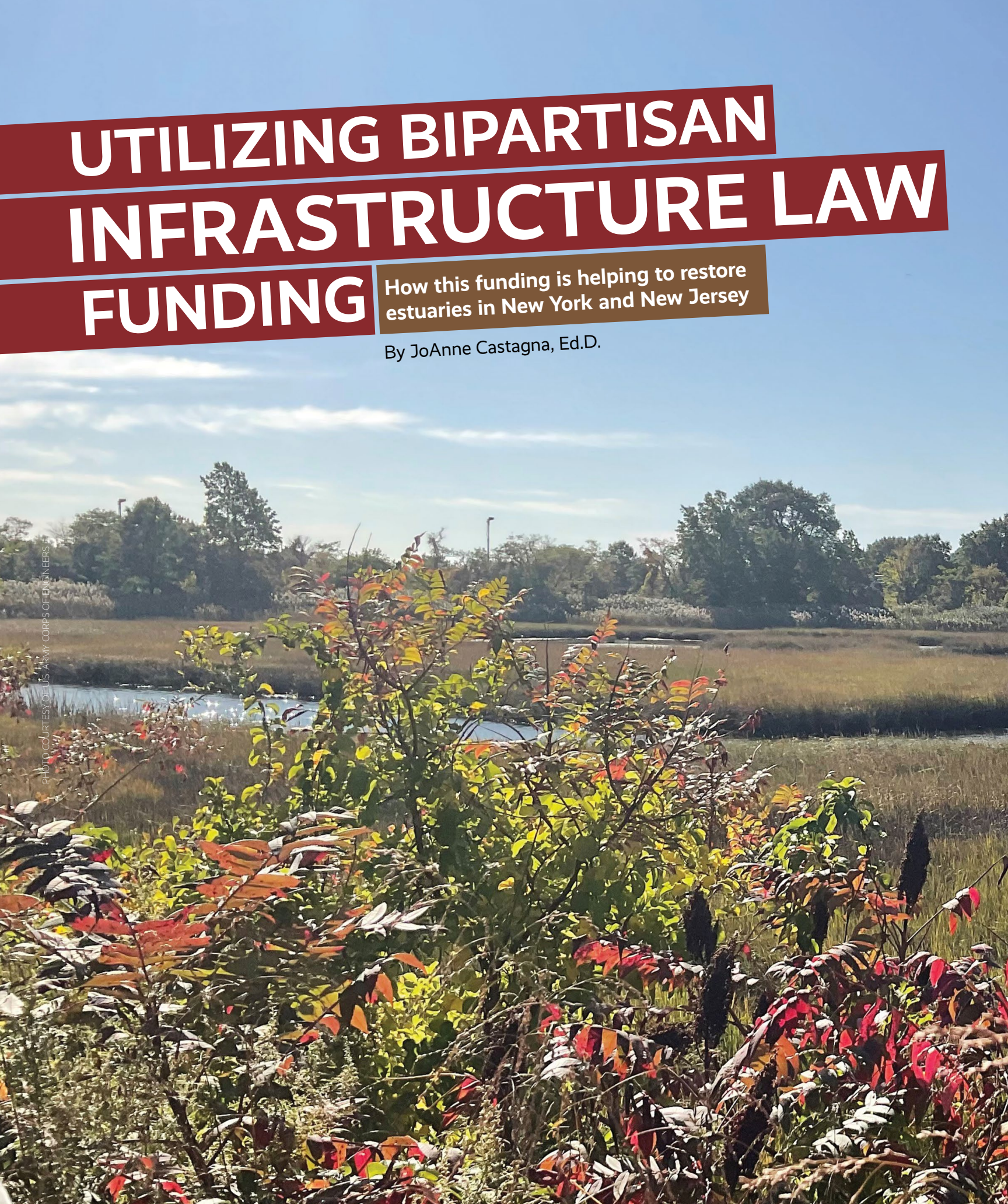

PHOTO COURTESY OF U.S. ARMY CORPS OF ENGINEERS

I have a vivid memory of me as a child while living in Brooklyn, New York, in the 1970s. I'm in the car with my family, and we're driving along the Belt Parkway when suddenly the vehicle fills up with a familiar stench that tells me we've reached Jamaica Bay.

I hold my breath and look out the window. I see a mountain of raw garbage — a dump 100 feet high — with tiny bulldozers plowing through it. Hungry seagulls circle the top while contaminated soil falls into the bay.

Today, the dump and pungent smell are gone, but not the negative effects they had on the bay. The estuary is slowly improving with work being performed by my agency, the U.S. Army Corps of Engineers, New York District.

The Army Corps, with partnering agencies, is using funds from the Bipartisan Infrastructure Law (BIL) to revitalize marsh islands and shoreline habitat in the bay. It's part of a larger project to restore the degrading estuaries in New York and New Jersey.

"The Army will work with community partners to leverage these historic civil works funds for investments that strengthen national supply chains through our commercial navigation mission, help communities impacted by climate change to increase their resiliency, advance environmental justice, and invest in communities that have too often been left behind," says The Honorable Michael L. Connor, assistant secretary of the Army for Civil Works.

The Army Corps' New York District will be applying these funds to a number of projects, including the Hudson Raritan Estuary New York and New Jersey Ecosystem Restoration Project and the nearby Spring Creek North Ecosystem Restoration Project.

The U.S. Army Corps of Engineers, with partnering agencies, is using funds from the Bipartisan Infrastructure Law to revitalize marsh islands and shoreline habitat in New York's Jamaica Bay.

Hudson Raritan Estuary New York and New Jersey Ecosystem Restoration Project

The Hudson Raritan Estuary (HRE) is located within the boundaries of the Port District of New York and New Jersey and is situated within a 25-mile radius of the Statue of Liberty National Monument. It is a complex ecological system located within a highly urbanized region.

Over the years, 1,000 miles of the estuary's natural shorelines have been replaced with piers, docks and bulkheads. Restoring the estuary is important because the ecosystem provides habitat for birds, fish, shellfish and other wildlife; maintains water quality by filtering out contaminated sediments; provides recreational opportunities; boosts the region's economy; and acts as a buffer from flooding for coastal communities during destructive and powerful storms.

Lisa Baron, project manager for the U.S. Army Corps of Engineers, New York District, says, "The plan for the overall HRE program is to restore a mosaic of 621 acres of habitat at 20 individual project sites. These projects will restore estuarine and freshwater wetlands, shorelines, fish passage, oyster reefs, shallow water habitat, coastal forests and Jamaica Bay marsh islands while providing maximum ecological and societal benefits to the region."

Stony Creek Marsh Island Restoration Project, Jamaica Bay, New York

Jamaica Bay is located in portions of the boroughs of Brooklyn and Queens in New York City and is part of the Jamaica Bay Park and Wildlife Refuge, the country's first national urban park and one of the Gateway National Recreation Areas that is visited by millions of people each year.

The bay covers 26 square miles and opens to the Atlantic Ocean. The land surrounding the bay is heavily developed and includes John F. Kennedy International Airport, the Belt Parkway and several landfills.

Inside the bay, there is a marsh island complex. More than 2,000 acres of marsh islands have been lost since 1924, and 85 percent of the wetlands have been lost in the region.

In general, historic wetland loss in the region is due to human development that has included the filling-in of marshes and open water areas, hardening of shorelines, input of raw and treated sewage, sewer overflows and landfill leachate, or water containing contaminants seeping from landfills. It's been estimated that the marsh islands, if left alone, would vanish completely by 2025.

Fortunately, the Army Corps, along with partnering agencies, has restored more than 160 acres of marsh islands in Jamaica Bay through a number of successful restoration projects.

According to Baron, "Restoring these marsh islands provides significant benefits to the region. The restored marsh islands keep the sediment within the Jamaica Bay system; wetland vegetation stabilizes the island; the islands reduce waves and erosion of surrounding shorelines and adjacent islands; the wetlands improve water quality within the bay; and the marsh islands that we construct will continue to build the ecological resilience of the bay to respond to increasing sea-level rise."

Now with BIL funds, the Army Corps, in collaboration with the New York City Department of Environmental Protection, is planning on restoring five additional marsh islands, including one that sits in the heart of the bay — Stony Creek Marsh Island.

Sixty-two acres of the island will be restored. To perform this work, approximately 150,000 cubic yards of sand will be beneficially used from the dredging of the Jamaica Bay Federal Navigation Channel or Ambrose Channel and placed on the island. The material will be graded and contoured to appropriate elevations suitable for a marsh and then planted with native vegetation.

When completed, the island will have 26 acres of low marsh, 22.5

This aerial photo shows the Upper Bay and Hudson River in New York City in 2018.

PHOTO COURTESY OF U.S. ARMY CORPS OF ENGINEERS

This image depicts marsh loss throughout the years in Jamaica Bay, New York.

PHOTO COURTESY OF NATIONAL PARK SERVICE

acres of high marsh, 3.5 acres of scrub-shrub wetland, 8.7 acres of shallow marine habitat, and 1.4 acres of tidal channels or narrow inlets. This will create a healthy marsh for one of the most biodiverse regions in the northeastern United States.

Spring Creek North Ecosystem Restoration Project

In 1900, the area surrounding Spring Creek Park was salt marsh. In the 1950s and 1960s, the land was filled in to build a neighborhood. These alterations severed the creek's connection to Jamaica Bay, forcing the creek to reforge its path to the bay through the marsh, degrading the land.

The land was further harmed by the dumping of municipal waste and the construction of sanitary sewer trunk lines that disrupted the alignment of creeks in the area.

Now with BIL funding, the Army Corps, in collaboration with the New York City Department of Parks and Recreation and the New York City Department of Environmental Protection, will restore approximately 44.2 acres of degraded habitat. Areas of existing degraded wetland will be restored using a thin layer sand placement technique, and historic wetlands that were lost and converted to uplands due to fill placement decades ago will be restored by performing excavation.

The existing degraded wetlands will be restored first by removing invasive plant species, followed by placement of a thin layer of sand on the marsh platform. Following sand placement, the land will be contoured to optimal levels for a healthy marsh and planted with native vegetation. Placing a thin layer of sand will increase the elevation of the wetland, improving hydrologic conditions and wetland function while keeping up with sea-level rise.

The historic wetlands that were lost will be restored by excavating up to eight feet of fill to one foot below final grade. The area will then be covered with one foot of clean cover material, followed by planting native vegetation.

The restored marshland will improve water and sediment quality, increase the marshes' resiliency against sea-level rise, and provide a healthy and functional habitat for a wide variety of wildlife.

The work also will help to protect the community from rising sea levels and storms. According to Clara Holmes, plant ecologist for New York City Parks, Division of Environment and Planning, "The neighborhoods surrounding the restoration area faced significant flooding during Superstorm Sandy in 2012 — not just because of the amount of rainfall the storm brought, but also because of the storm surge that pushed a significant amount of water up the creeks. This project will add more than 18 acres of salt marsh to the Spring Creek area, which will allow the marsh to better absorb stormwater and buffer future storm surges."

Holmes adds that this project also will restore public access to a beloved community park that has been off limits for decades. She says, "Excavated soil from the project will be beneficially reused onsite to start the process of creating a public park. This includes creating an area adjacent to the wetland that will provide viewpoints of the marsh that were previously not available and constructing accessible walking trails for the public."

Today, when I drive past Jamaica Bay, I'm stunned by the change that's occurring in the area. The landfills were restored and are now a 400-acre, 130-foot-high state park. Instead of toxic soil leaking into the bay, there is a healthy mix of trees, shrubs and wildflowers growing along the park's walking paths and grounds.

As restoration work moves forward on the HRE New York and New Jersey Ecosystem Restoration Project and the Spring Creek North Ecosystem Restoration Project, the views of the bay are sure to take the breath away of future generations — in a good way.

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