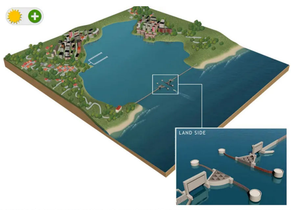
Climate

Protecting New Jersey's back bays from climate change-fueled storms could cost $16 billion, federal report finds

Federal and state officials estimate it will cost $16 billion to install barriers, gates and other devices just to protect New Jersey's numerous miles of back bays along the Atlantic Coast.



An example of a barrier contained in a U.S. Army Corps of Engineers report that could be used to protect New Jersey's back bays.
U.S. Army Corps of Engineers

by Frank Kummer
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In years to come, vacationers driving to the Jersey Shore might have something new to gawk at: giant, elaborate barriers complete with movable vertical gates, stretching across some of the state's most iconic back bays.

Federal and state officials have drawn up plans to install the barriers and other structures needed to protect New Jersey's many miles of back bays along the Atlantic Coast, and up to 18,500 homes and businesses might have to be elevated, all to cope with storm surges associated with climate change, the plans say.

The estimated cost: $16 billion.

Details were released Thursday in a 561-page environmental impact statement from the U.S. Army Corps of Engineers Philadelphia District and the state Department of Environmental Protection. The proposal to protect the coastal region is a continuation of plans the Army Corps first laid out in 2019 to deal with increased flooding in the back bays, interconnected water bodies located behind the state's barrier islands throughout Monmouth, Ocean, Burlington, Atlantic, and Cape May Counties.

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In addition to construction, it will cost nearly $200 million a year to operate and maintain the structures, said DEP Commissioner Shawn M. LaTourette. He noted that the flood protection is designed to deal with storm surges associated with sea-level rise. Nor do the plans, originally requested after Superstorm Sandy in 2012, address the ocean front.

"To better protect New Jersey's residents, communities, and economy, we must plan and prepare today for the climate change risks of tomorrow," LaTourette said. "The Back Bays study integrates years of research and presents options for protecting areas of the Jersey shore from severe storms and flooding — risks that threaten New Jersey today and that will worsen as our planet warms."

Officials point to the Intergovernmental Panel on Climate Change report released last week that highlights the impact of climate change and the need to plan now.

New Jersey has issued its own report on climate change that projects sea rise could exceed 1.4 feet by 2050 from a base year of 2020, and that annual precipitation will increase by 4% to 11%. The report says to expect more intense rainstorms, like those that have already increased localized flooding, coastal flooding, and "sunny day" flooding from regular high tides without rain. By 2100, the state report projects, sea level could increase 6 feet or more from 2020.

Money for the project would likely come from a mix of federal, state, and local sources. The plan ultimately needs congressional authorization since it involves the Army Corps.

Officials acknowledge the plans could affect recreational, fishing, and commercial vessels, as well as residents' water views. A study on the impact to wildlife is planned.

The back bays include areas of the Shark River, Manasquan River, Barnegat Bay, Great Bay, Reeds Bay, Absecon Bay, Great Egg Harbor Bay, Ludlam Bay, and the sounds between Sea Isle City and Cape May Point.

Rendering of how a storm surge barrier at Manasquan Inlet would work.
U.S. Army Corps of Engineers

In all, the affected area comprises nearly 3,400 miles of coastal waterway shorelines that include homes, businesses, and infrastructure estimated to total more than $72 billion in value. If nothing is done, the report says, the state faces annual losses of $1.8 billion through average annual flooding.

Some of the structures called for are elaborate, such as storm surge barriers proposed across Manasquan Inlet, Barnegat Inlet, and Great Egg Harbor Inlet. The Army Corps likens them to the Seabrook Floodgate Complex built in the wake of Hurricane Katrina at Lake Pontchartrain in Louisiana at a cost of $165 million.

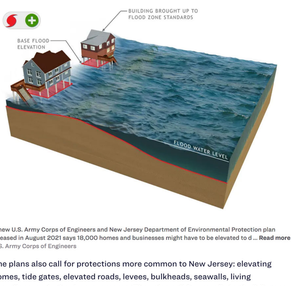
Diagram of how a storm surge barrier at Great Egg Harbor inlet might work.
U.S. Army Corps of Engineers

Storm surge barriers are a series of movable gates that stay open under normal conditions to allow navigation and tidal flow, according to the report. But they would be closed, most likely by the DEP, during storm surges.

The Army Corps also is proposing cross-bay barriers along Absecon Boulevard (Route 30) in Atlantic County and along 52nd Street in Ocean City, Cape May County.

Cross-bay barriers would be built across the interior of bays and are similar to storm surge barriers. However, they tend to be longer and often built with dynamic navigable gates next to existing roads, bridges, and causeways.

Some of the structures would rise 20 feet above the average water level.



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The plans also call for protections more common to New Jersey: elevating homes, tide gates, elevated roads, levees, bulkheads, seawalls, living shorelines, and other improvements. They also call for retrofitting buildings to withstand floods, updating emergency evacuation plans, and modernizing early warning systems.

As many as 18,800 buildings are vulnerable to surges, and could need to be elevated, the report states, noting communities along Shark River, Long Beach Island, Tuckerton, Egg Harbor, Brigantine, Absecon, and Strathmere to Cape May Point.

"The potential solutions to back bay flooding are complex," said Lt. Col. Ramon Brigantti, the Army Corps' Philadelphia district commander. "But there is a clear need to consider and evaluate all options and that's what the New Jersey Back Bays Study aims to do."

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Frank Kummer
I cover regional environmental issues, including climate change, from the Poconos to Philly and it suburbs, through to the New Jersey Shore.