

MIAMI BEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: March 18, 2020

SUBJECT: REFERRAL TO THE LAND USE AND SUSTAINABILITY COMMITTEE TO DISCUSS POTENTIAL ADDITIONAL SUPPORT FOR MIAMI BEACH RESILIENCY FROM THE ARMY CORPS OF ENGINEERS.

ANALYSIS

The Army Corps of Engineers (ACOE) is helping Miami and the Keys with resiliency. This referral would explore additional support the ACOE may be able to provide the City of Miami Beach as well as highlight any potential implications from their ongoing work with City of Miami and the Keys.

As per a WLRN News article (see attached), the Army Corps of Engineers in response to Hurricane Irma's four - to six-foot storm surge to Biscayne Bay, has a tentative plan to deter such an event from occurring again via massive flood gates and walls. In addition, ACOE is outlining a \$3 billion strategy to protect the Keys (see attached Miami Herald article).

Given that beach re-nourishment is the current work of the Corps, this item asks that the City Administration:

- Advise the Commission as to how Miami Beach might get support/included as ACOE develops these plans
- Review ACOE work for Miami/ Keys and implications for Miami Beach

Applicable Area

Citywide

Is this a "Residents Right to Know" item, pursuant to City Code Section 2-14?

No

Does this item utilize G.O. Bond Funds?

No

Legislative Tracking

Commissioner Mark Samuelian

ATTACHMENTS:

Description

- ▣ Army Corps of Engineers Assistance in Miami-Dade County
- ▣ Army Corps of Engineers Assistance in the Keys

Army Corps Has A Tentative Plan For Storm Surge In Miami-Dade: Flood Gates And Walls

By JENNY STALETOVICH · JAN 30, 2020

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Hurricane Irma sent a four- to six-foot storm surge across parts of Biscayne Bay, flooding Brickell Avenue.

MIAMI HERALD ARCHIVES

When Hurricane Irma made landfall in the Florida Keys in 2017, it sent a four- to six-foot storm surge to Biscayne Bay more than 100 miles away, flooding busy Brickell Avenue.

The U.S. Army Corps of Engineers now has a tentative plan to fix that: massive flood gates and walls that could include a two-mile stretch in the heart of downtown Miami.

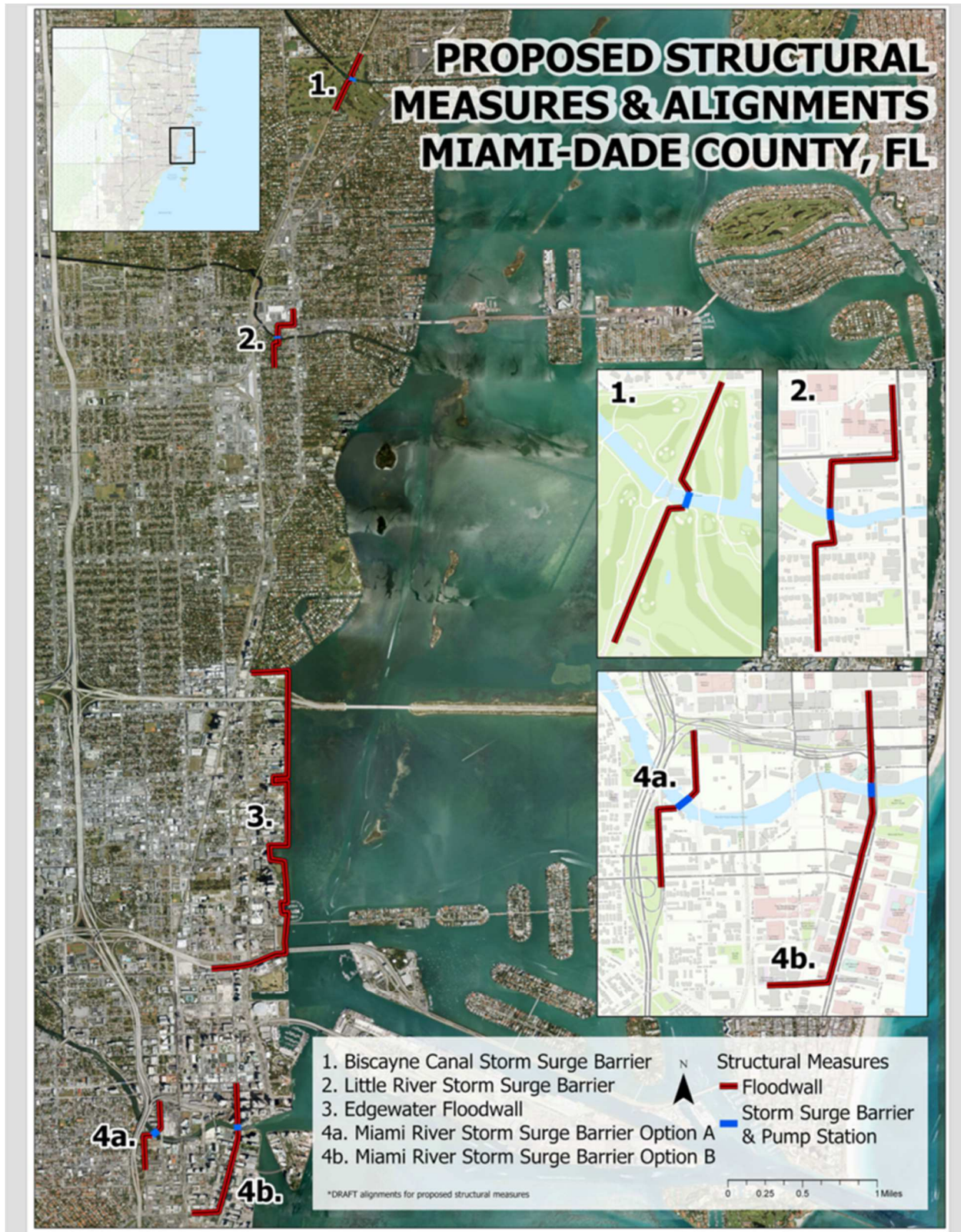
Earlier this month, Corps engineers briefed Miami-Dade officials on the progress on a \$3 million, three-year study that will determine a final plan.

While still in its early stages — a more detailed draft plan is due in the spring — the flood gates and walls extending into neighborhoods and across roads presented at a fall public meeting remain among the list of options. And that's drawing the scrutiny of local officials.

"We don't have any experience in Miami-Dade or in Florida with the kinds of barriers that are being described," Miami-Dade resiliency chief Jim Murley said. "They exist in New Orleans. They exist in Norfolk, places in New England."

It's a different story in South Florida, he said.

"When you put that down on the flat landscape of very urban South Florida, it raises all sorts of questions about evacuation, about where the wall is placed from the shoreline landward," he said.



Flood gates and walls are part of a plan to better protect Miami-Dade County from hurricane storm surge.

CREDIT U.S. ARMY CORPS OF ENGINEERS

Corps officials say that while the fortress-like walls are in the plan, placement and design details are far from final. At this point, project manager Holly Carpenter said the Corps is focusing only on general flood plains.

“On a block-by-block basis, the flood walls and surge barriers may change throughout the study and even more so as we get into the pre-construction, engineering and design phase,” she said, which would follow this feasibility study.

The structures roughed out in the tentative plan include a flood wall stretching more than two miles from PortMiami to the Julia Tuttle Causeway. Flood gates are being considered for the Miami River, Little River and Biscayne Canal, which would be attached to walls reaching into neighborhoods. They could also include pumps.

The plan is also taking a close look at seven neighborhoods where the Corps identified property vulnerable to repeat flooding.

“In other parts of the country, they're typically being done on much smaller geographic areas,” Murley said. “The size of the county meant that they couldn't do 100 percent.”

In those areas, single-story houses and other structures could be elevated. The government might also try to buy out property owners.

The agency plans to roll out the draft plan in April or May, when it will also unveil an environmental study looking at impacts. Once it obtains comments from the public, local officials, environmental groups and others, Carpenter said engineers will revise the plan and send it on for approval to the Corps' Chief of Engineers by 2021. From there, the plan goes to Congress for approval.

The lengthy process, similar to projects constructed in the ongoing Everglades restoration effort, could take years. And Carpenter warned that even if approved, only about 10 percent of the design work will be complete because of budgeting.

“At this point in the study, we're looking to see if those alternatives are economically justified,” she said.

If approved, the Corps and county would divide the cost, with the Corps picking up 65 percent. The county could also reject options, Murley said.

“Being able to fund everything we'd like to do so is certainly attractive to us,” he said.

While the plan so far focuses largely on built features, scientists and resiliency experts say improving natural barriers like wetlands and mangroves might ultimately be more beneficial. Both help clean water and stabilize fragile coastlines. So far, mangrove restoration is being considered only for a short stretch of shoreline north of Cutler Bay and south of the Deering Estate.

“We've made it real clear to the Corps that it's going to take a lot of discussion and input from our perspective. I think they heard us loud and clear on that,” Murley said. “We're certainly not going to take a position on these barriers until we have a lot better information.”

Surviving hurricanes, sea rise in Keys may mean \$3 billion in home buyouts, elevations

[BY ALEX HARRIS](#)

FEBRUARY 26, 2020 06:00 AM

Residents survey damage on Big Pine Key following Hurricane Irma

Danielle VanHoven arrives at her father's devastated home in Big Pine Key on Sunday, Sept. 17, 2017. Residents were allowed to return to their homes a week after Hurricane Irma struck the Florida Keys. BY AL DIAZ

A bird's eye look at the Florida Keys is all it takes to understand that little stands between the chain of islands and the sea.

A new federal study all but confirms that there are few big, structural options to keep the Keys safe from the stronger hurricanes and rising seas that climate change is expected to bring. The answer, it suggests, is a combination of elevation and retreat.

In a [presentation shown to Monroe County Commissioners](#) last week, the Army Corps of Engineers outlined a \$3 billion strategy to protect the Keys. The only new construction measure considered is adding additional rocks on either side of U.S. 1 in six key spots. The rest of the plan is a combination of elevating homes, businesses and essential buildings and “retreat” in the form of government-funded buyouts.

“It is less traditional than our usual coastal studies,” said Susan Layton, the Corps chief of planning and policy for the Norfolk District and lead for the Monroe County project. “You really cannot keep the water back, so really a lot more of this project is how do we react to the water and live with the water to make the Keys a viable place to live and make that lifestyle available for as many years as possible.”

In Miami-Dade, the federal engineering team is proposing dramatic construction fixes, including [10- to 13-foot walls along the coast](#), surge barriers at the mouths of rivers and thousands of home elevations and buyouts.

The Keys plan would skip the massive walls and instead pay to floodproof or even elevate all the “critical infrastructure” in the Keys, which includes hospitals, fire and police stations and water treatment facilities.

It’s unclear precisely how many private homes and businesses could face the prospect of elevation or buyouts. Army Corps officials offered estimates during an unrecorded webinar with Monroe County officials in January, but they were not included in last week’s presentation and Corps and county officials declined to disclose them.

“We don’t have numbers that we have enough confidence in to release,” said Layton.

Those numbers will include the 62 Keys properties already in line to sell their homes to the state after damage from 2017’s Hurricane Irma. The state has considered reopening the pot of money after considerable interest in the Keys. The homes are expected to be sold and demolished in about a year, although homeowners are allowed to back out of the process at any time.

An Army Corps of Engineers map depicting the six spots along U.S. 1 that could undergo shoreline stabilization to protect the island chain from hurricanes. *ARMY CORPS OF ENGINEERS*

But unlike the state buyout program, which will purchase homes sporadically around the Keys, the Corps plans to buy out a concentrated area to avoid “checkerboarding” of city services and flood protection.

“Part of our analysis is making sure they’re grouped appropriately and you’re not buying them here or there,” she said.

However, those buyouts could come with a catch.

If the county wants to tap into federal funds for buyouts, Army Corps policy mandates that homeowners targeted for buyouts will either have to voluntarily sell their property or Monroe would have to agree to seize and buy properties through eminent domain, an always controversial choice in a state with a Republican political leadership that has consistently opposed condemnations. Layton said that has been Corps policy since 2016 but acknowledges it’s a “sensitive topic.”

“We don’t ever go straight to condemnation. We always start with negotiating and coordinating with homeowners and looking for willing sellers,” she said. “It’s a lot of process before you would ever get to that point.”

Monroe officials appeared anxious about the possibility of using eminent domain. They asked the Corps to meet with all the cities in the region and get their feedback.

“What really disturbed me in the briefing was the concept of mandatory acquisition and eminent domain. I don’t know if we want to have the conversation now, if that’s a nonstarter for us,” said Monroe County Mayor Heather Carruthers.

Monroe County’s Chief Resilience Officer Rhonda Haag said county staff drafted a letter to the Corps asking to make the buyouts voluntary but it hasn’t been sent yet.

The only Corps project that’s been funded since the 2016 policy change is a \$13 million study of Mill Creek, Tenn. There, [the Corps identified 89 homes for buyouts](#).

An Army Corps of Engineers map depicting the hospitals, police stations and water treatment facilities that could be elevated or floodproofed to protect the island chain from hurricanes. *ARMY CORPS OF ENGINEERS*

The plan also didn’t examine the potential costs of elevating roads, not even U.S. 1. That decision would be made by Florida’s Department of Transportation.

At a December climate conference, the Keys debuted its initial estimates for raising roads high enough to stay dry in the face of rising seas. It was staggering — about \$60 million a mile. That price was high enough that officials admitted they can’t afford to raise every road, so they may need to turn to buyouts or creative solutions like using boats to commute.

Haag called this Army Corps project, combined with the county’s road raising strategy a “one, two punch” for the Keys in helping the region fight back against the effects of sea level rise.

The Army Corps will return to Monroe Commissioners in May for their feedback and to publish an official draft plan. That plan is open for public comment and won't be finalized until September 2021.

After that, it's up to Congress to approve and fund the plan.

"It could be a very long process. It's just the way the federal bureaucracy works," Haag said. "If we don't keep moving and we don't get in line then we wouldn't see federal funding for the plan and the projects associated with it."



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Alex Harris covers climate change for the Miami Herald, including how South Florida communities are adapting to the warming world. She attended the University of Florida.