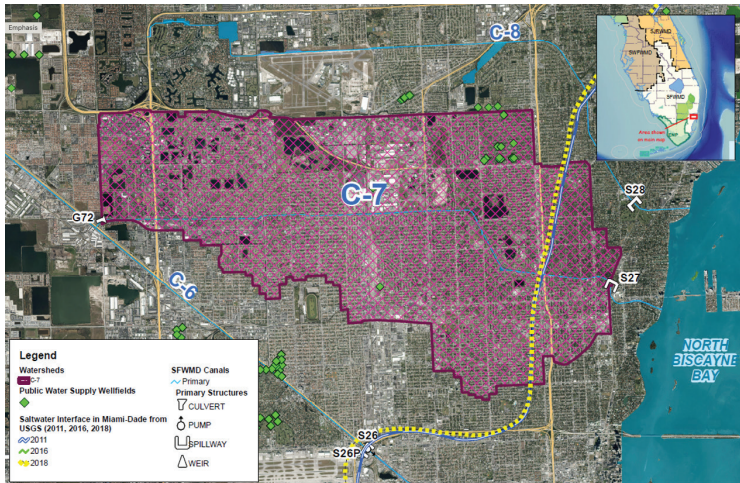




# Building Flood Resiliency at Critical Basins in South Florida: C-7 Basin



The South Florida Water Management District (District) is advancing flood risk reduction measures for the C-7 Basin, a region of about 250,000 people and 32 square miles, in the northeastern portion of Miami-Dade County.

The area drained by the C-7 Canal is fully developed with mostly residential and commercial uses. The C-7 Canal is the primary flood control feature which receives and conveys basin flood waters by gravity through the S-27 Coastal Structure to sea.

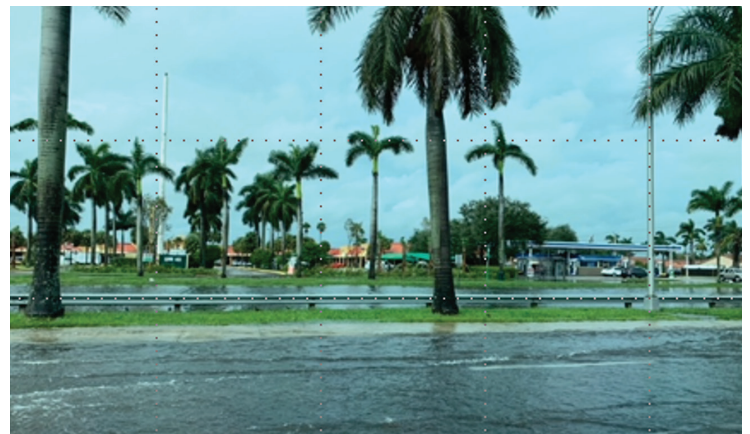
Recent storm events, including Tropical Storm Eta as well as high tide events exacerbated by sea level rise, limited the ability of these flood control features to drain stormwater.

The serious flooding events that occurred at the C-7 Basin, resulted from extreme rainfall events which impeded the S-27 Coastal Structure to discharge these volumes.

The proposed projects at the C-7 Basin include local and regional flood mitigation measures to reduce the flood risk during times when the flow gates at the S-27 Coastal Structure are impeded or closed during higher tide events.

In an effort to provide flood control now and into the future, full replacement of the S-27 Coastal Structure is needed. This will contain a corrosion resistant spillway, with elevated gates that will be compatible with current engineering as well as building codes and standards. It will also have a new 1,500 cfs forward pump station so flood waters can be effectively conveyed.

These upgrades will restore and maintain discharge capacity while ensuring resilient flood protection and operational control. A significant benefit is the protection of water supply sources (including the Biscayne Aquifer – a sole source aquifer) in the Basin, by retrofitting the structure to prevent sea water overtopping at the gates resulting in saltwater intrusion.

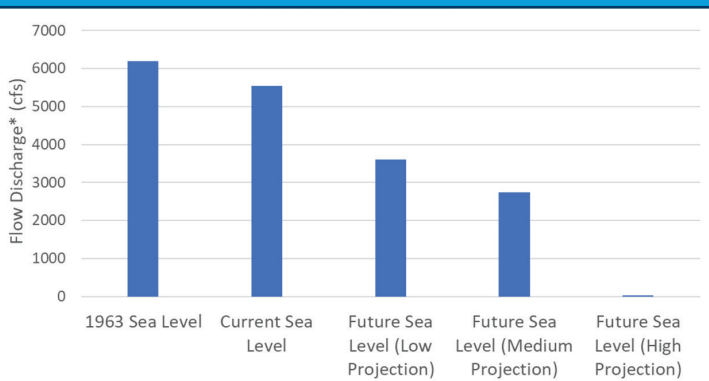


Hialeah Gardens, November 2020.

As part of this project, the District is proposing the implementation of innovative regional flood mitigation measures:

- Full replacement of the S-27 spillway structure with a corrosion resistant, robust new spillway featuring elevated gates and ensuring compatibility with current building codes and standards.
- Installation of a new 1,500 cfs forward pump station (three 500 cfs primary pumps) adjacent to the S-27 structure to maintain basin discharge levels.
- Raising the elevation of the existing grade around the new pump station to provide surge protection upstream of the coastal structure.
- Installing a living seawall along the C-7 Canal near the W. H. Turner School Property to integrate nature-based features into the flood mitigation solutions.

## Reduction in Conveyance Capacity as Sea Level Rise Continues at S-27 Coastal Structure



\*Flow discharge rates at peak of 2 year storm surge, average over tide cycle, S-27 spillway with design headwater and tailwater.

The total cost for the proposed flood mitigation measures is estimated at \$160 million. The return on investment (in avoided annual property damages) is greater than three and does not include economic damages associated with business disruptions or other impacts to community services.

The projects will reduce flood risks by restoring the basin's flood level of service and enhancing quality of life in the region.