Curtain Wall as Part of a Comprehensive Flood Protection and Restoration Strategy in South Dade

South Florida Water Management District
Task Force Meeting
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Akintunde Owosina, P.E.
Bureau Chief
Hydrology and Hydraulics
Restoring the Everglades and Florida Bay hinges on increasing water levels in the Everglades National Park while simultaneously managing the resulting seepage.

The Central Everglades Panning Project included installation of a curtain wall as part of the seepage management strategy.

Several studies have identified curtain walls as part of a comprehensive flood protection strategy in South Dade.

A recently completed project funded by the Miami-Dade Limestone Products Association demonstrated the concept.

SFWMD is advancing an initiative to implement a curtain wall project in South Dade.
Flow to Shark River Slough
Flooding Is An Issue Further South
Characteristics of Curtain Walls

- In South Dade, the goal is to improve flood control in areas impacted by elevated water tables.
- The use of a less permeable material placed in the flow path will help manage groundwater.
- Goal is to allow a little higher water level in the natural areas (keeping the water where it is needed) while achieving a little lower water table in the developed areas.

Diagram:
- High water table
- Reduce groundwater effects on flood control
Characteristics of Curtain walls

- Passive groundwater management solution that is typically not operated (switched on and off)
- Non-selective in function as it blocks flows in both directions
- Effective solution to provide flood protection in conjunction with other measures including pumping
- Little to no maintenance and operational costs post construction
Curtain Wall Concept is not New

- Dates back to the 1990s
- Evaluated as part of the SFWMD South Dade Study completed in 2016
Multiple requests from stakeholders, legislators and other interested parties to implement a comprehensive flood protection strategy for South Dade

Request to consider a flood control focused study

Protect property, mitigate flooding concerns of South Dade farmers with a view to sustain broad support for restoration initiatives in the region
Overview of 2018 Assessment of Curtain Wall as Part of a Comprehensive Flood Protection Strategy

Comprehensive study outside the scope of any one ongoing study or project

▪ Provide flood protection to homeowners and agriculture east of ENP

▪ Integrates and functions seamlessly with existing efforts

▪ Preserves existing water supply and salt water intrusion protection

▪ Ensures the continuation of significant investment in managing ecosystem restoration benefits
Scope and Project Conceptualization

Typical cross section showing thickness of the Biscayne Aquifer

(Not to scale)
Initial Curtain Wall Configurations

**South**: including portion of 8.5 SMA

South of S-331 to S-177

27 miles

**North**: Stops after 8.5 SMA

S-335 to 8.5 SMA

19 miles

**Full**: Full extent

S-335 to S-177

31 miles
Key Findings of the 2018 Assessment

- South Wall configuration shows the potential of a well-designed curtain wall to improve flood protection to the residential and agricultural lands in South Dade without adversely impacting conditions in Everglades National Park.
- Assessment of flows to Biscayne Bay highlights the importance of ongoing efforts to send more flows to the Bay now and as restoration projects continue.
- Flood control with passive curtain walls must be paired with operations to ensure desirable flows continue to Biscayne Bay and for Water Supply.
- Design of curtain wall and operations that allow some flows through S-331 South will improve flows through Taylor Slough to eastern Florida Bay.
Goal for 2020:
- Identify key concepts that will support design
- Determine conceptual project for subsequent design and refinement

Data acquisition and site-specific details:
- Collect field data of aquifer characteristics
- Assess canal system connection and conveyance

Planning process:
- Public engagement
2020 Timelines for South Dade Curtain Wall

Schedule:

- Collect aquifer field data: November 2019 – November 2020
- Assess existing canal system: January 2020 – September 2020
- Public engagement: May – November 2020
- Complete planning process: February 2021
Questions

Images from MDPLA Curtain Wall Project Site

sfwmd.gov