How SFWMD Manages Levees in South Florida

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The water management system in South Florida is one of the largest in the world, providing flood control and protecting water supply for 8.1 million residents and businesses.

SFWMD has maintained South Florida’s earthen levees since their construction by the USACE in the 1950s & 1960s.

SFWMD Operations and Maintenance staff oversee approx:

- 2,100 miles of canals,
- 2,000 miles of levees/berms,
- 71 pump stations, and
- more than 600 water control structures and 625 project culverts.
Importance of Levees in South Florida

Levees are critical flood control and water supply features in the regional water management system.

Moving water to meet varying conditions utilizing canals and levees is essential to sustaining South Florida's people, economy and our environment.

L-36 Levee near Boca Raton
East Coast Protective Levee

➢ ECPL is 105 miles along the western perimeter of the most populated areas in South Florida, protecting residents and businesses in Palm Beach, Broward and Miami-Dade counties.

➢ Highest priority levee system is the East Coast Protective Levee (ECPL).

➢ Originally constructed by the USACE in the 50’s and transferred to the SFWMD for operations and maintenance.
Over time, land use intensified and rural pastures were developed into high density urban areas.

SFWMD implemented a $30M effort to rehabilitate the ECPL in Palm Beach and Broward Counties.

This included flattening some levee slopes, increasing the levee height in low spots, replacing old structures, removing abandoned structures and minimizing encroachments within the levee prism.

SFWMD certified the ECPL in Broward County in 2014 and in Palm Beach County in 2015 to FEMA.
ECPL
Broward County

Seepage Filter Berm
Maintenance Ramps
Levee Top Restoration
Emergency Stockpiles
ECPL – Palm Beach County

➢ Vegetation clearing and herbicide treatment along the landside levee toe, and removal of encroachments such as abandonment of wells and power pole removals.

➢ Replacement of water control structures and removal of pump stations.

➢ Levee height raised in low spots to prevent overtopping during a 100 year storm event with Category 1 hurricane winds.
C4 Canal Bank Improvement & Flood Protection Berm

➢ C4 Project was launched after storms in 1999 and 2000 that caused localized flooding.

➢ SFWMD is raising the canal bank elevation to meet the 25-year storm event.

➢ This also includes vegetation and encroachment removals to reduce risk and provide a bench for operations and maintenance.
While levees protect communities in South Florida, SFWMD has constructed and maintains levees for Stormwater Treatment Areas that allow the restoration of the Everglades.

Varying in size, configuration and period of operation, STAs are shallow, freshwater marshes divided into treatment cells with interior levees, and water flows managed via pump stations, gates and culverts.
In 2006, the District established an operations and maintenance plan to ensure regular, timely maintenance of the system.

Since 2009, the District has invested approximately $550 million in maintenance work as part of this capital improvement plan.

The agency’s Operations and Maintenance staff conducts inspections at least once a year on levees, canals and berms to prioritize projects necessary for continued operation of the regional system.
Levee Summary

- SFWMD’s levee inventory includes:
  - Levees originally constructed by the USACE and transferred to the local sponsor (SFWMD) for operations and maintenance.
  - Levees originally constructed by the SFWMD and operated and maintained by the SFWMD.

- SFWMD has prioritized its inventory on a risk-based approach. Highest priority levees have had major refurbishments. Major focus in the capital program is in structure replacements and refurbishments within levee systems to reduce risk.

- SFWMD spends approximately $53M per year on repair, rehabilitation, and refurbishment of the flood control system, and has 8 Field Stations that are budgeted for maintenance of levees and structures.
Thank You