



Sarasota County Drainage Project Protects Celery Fields

Full Mitigation Best Practice Story

Sarasota County, Florida



Sarasota, FL – Sightseers in northeastern Sarasota County enjoy a natural bird habitat, walking trails, and scenic overviews in an area once flourishing with stalks of celery. An old machine that used to harvest celery and a series of canals remain as reminders of what local residents still call the celery fields. Even evidence of the annual flooding is gone.

Farmers designed the fields to retain water and nourish the celery crops, but development to the south continually flooded as new building subdivisions increased runoff and decreased the ability of the ground to absorb water. The slight southern slope of the land and the loss of natural turf, due to development, caused flooding when heavy rains fell.

The situation became critical in 1992 when 22 inches of rain fell over three days, and the resulting runoff inundated more than 200 homes in the former celery fields.

According to Kirk Bagley, Sarasota County drainage operations manager, the county not only wanted to find a way to safely reroute the water from the inhabited areas, but also ensuring that when flood waters were moved, they did not flood other homes.

Engineers analyzed the area's flooding patterns and north-south water flows, and then developed a plan to control the water through a series of canals, ponds and mechanical flow devices. They created computer simulations with various flooding conditions and, upon review of the data, the design appeared to stop the damage without flooding other areas.

The county purchased the remaining former celery fields – more than 300 acres of property cut with ditches and framed by a series of canals. The design incorporated the canal infrastructure and added diversion gates, outflow pipes and controls.

After three years of construction on the first two phases of the project, the test came in November and December 1997 when two 100-year events (a level of flooding that has a 1% chance of occurring in any given year) deluged the flood-prone area. The design worked. Nearby homes were spared from flooding.

The county installed automated monitoring stations that allowed staff to watch the water levels remotely. Because of this remote operation, Bagley and his staff can track the amount of water in the canals, measure accrued rainfall, graph results and make appropriate decisions about holding and releasing runoff from the facility and control flow into the system.

To pay for the project, Sarasota County put into place a funding plan often used by cities: the county's water division localized assessments. This way only those residents who benefited from the project paid for it, instead of taxing all county residents.

"We couldn't do what we've done without the basin assessments," Bagley said. "With them we don't have to compete for the county's general fund dollars."

The county supplemented assessments for the \$27 million project with a grant from the Southwest Florida Water Management District and funds from the state of Florida.

The celery fields project contained a hidden bonus for the county. The grass marsh created on the site lured many birds to nest in its high grasses and weeds. People drove for miles to watch the migrations.

A partnership between the county and the Audubon Society developed to enhance the natural bird habitat. Plans for a third phase will increase walking trails, picnic areas, park amenities and natural landscaping. Visitors will find signs that identify birds and plantings amid the pines, salt myrtles, and wax myrtles.

Water brought new life to the celery fields. What started as nourishment for agricultural land became aggravation for flooded homesteads, returned as a natural habitat for birds and became a great place for people to visit and enjoy the view.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region IV**

State: **Florida**

County: **Sarasota County**

City/Community: **Englewood; North Port; Sarasota; Venice**

Key Activity/Project Information

Sector: **Private**

Hazard Type: **Severe Storm; Flooding**

Activity/Project Type: **Acquisition/Buyouts; Building Codes; Flood-proofing**

Activity/Project Start Date: **11/1992**

Activity/Project End Date: **11/1997**

Funding Source: **Local Sources**

Funding Recipient: **Local Government**

Funding Recipient Name: **Sarasota County**

Activity/Project Economic Analysis

Cost: **\$26,795,388.00 (Estimated)**

Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **No**

Value Tested By Disaster? **Unknown**

Repetitive Loss Property? **Yes**

Reference URLs

Reference URL 1: **<http://www.scgov.net/>**

Reference URL 2: **<http://www.floodsmart.gov>**

Main Points

- Former celery fields caused flooding to nearly 200 homes in Sarasota County when heavy Rains Fell
- Engineers analyzed the area's flooding patterns and north-south water flows, and then developed a plan to control the water through a series of canals, ponds and mechanical flow devices.
- The county installed automated monitoring stations that allowed staff to watch the water levels remotely.
- To pay for the project, Sarasota County put into place a funding plan often used by cities: the county's water division localized assessments. This way only those residents who benefited from the project paid for it, instead of taxing all county residents.



Kirk Bagley



Final Outfall Box