

Indian Beach Sapphire Shores (IBSS) – Prototype Stormwater Treatment Project

The Background

Sarasota Bay is a designated estuary of significance as part of the National Estuary Program as well as a Surface Water Improvement and Management waterbody within the Southwest Florida Water Management District. Approximately 30 percent of the Bay's seagrass meadows were lost between 1880 and 1990 due to pollution and dredging.

Marine habitats were heavily impacted by dredging and filling (associated with navigation projects) and waterfront housing developments. Stormwater and other discharge sources also contributed to the degradation of water quality and the subsequent loss of seagrass meadows. There is a recognized pollution problem in Sarasota Bay, primarily from stormwater runoff. There are also regional fish consumption advisories and documented bottlenose dolphin mortality due to metals. Improvements to water quality over the past 15 years have resulted in some regeneration of seagrasses, but (for example) pollution levels of nitrogen are currently estimated to be 240% of pristine levels with stormwater as the primary pollution source.

The City of Sarasota is an original member of the Sarasota Bay Estuary Program and participates in the current Interlocal Agreement created to implement the Sarasota Bay Comprehensive Conservation and Management Plan. One of the requirements of the Interlocal Agreement for each member is to create and implement an Action Plan to improve their individual waters and watersheds.

The Indian Beach Sapphire Shores (IBSS) neighborhood, located in the northwest portion of the City of Sarasota, has pre-1960's development with 39% impervious surface (based on a recent New College study) with little or no stormwater Best Management Practices that result in non-point pollutant loading to Sarasota Bay. IBSS is a coastal neighborhood, with no homes farther than ½ mile from bay, has a relatively steep grade to bay that increases stormwater velocities, and a section of US 41 drains through neighborhood to Sarasota Bay (directly funneling automobile pollution through the stormwater system to the Bay).

The neighborhood community (including IBSS and New College) is very motivated and many of the homeowners have expressed interest in improving the stormwater runoff from their region. As mentioned previously, New College recently produced a Bay Neighbor project (funded by the National Oceanic and Atmospheric Administration) that included: research to better understand neighborhood-bay connections, educational materials to promote private actions to reduce bay runoff, and a plan to communicate both the process and results beyond IBSS. These factors make the IBSS neighborhood ideal for a coastal community demonstration project for stormwater redevelopment. Information gained from this project could be used to implement similar programs in and beyond Sarasota.

The Solutions

Funds from the Penny Sales Tax will be used for:

- Planning, permitting, and construction of stormwater retrofits or wetlands for stormwater retention and treatment at four locations (based on size of sub-watershed and availability of public land): Bayshore and 40th Street, 47th Street and Bayshore, New College, and Bayshore and Virginia Drive (see attached graphic)
- Creation of bio-swales within the neighborhood on willing homeowners' properties after inspection for belowground utilities
- Removal or modification of some curb and gutter systems to redirect stormwater flow for treatment on lawns using willing homeowners' properties

Project components to be funded by other sources include:

- Education and assessment of changes in behavior
- Monitoring of water quality and biological changes
- Incorporation into City, neighborhood and SBEP websites
- Increasing tree canopy (oaks from local acorns being grown out east for installation in IBSS neighborhood)
- Maintenance of retrofits
- Increased street sweeping

Potential partners include Sarasota County, City of Sarasota, SWFWMD, FDEP, EPA, Florida Yards and Neighborhoods, Sarasota Bay Estuary Program, New College, and the IBSS Homeowners Association.

The Benefits

Regional water quality will be improved by the removal of sediments and nutrients from stormwater currently going into Sarasota Bay without any treatment. The City of Sarasota could use the project as part of implementation of its Action Plan for the SBEP interlocal agreement. This project will also demonstrate to the region the positive impacts that individual neighborhoods (and the citizens living there) can make for the Bay.

The Budget

- The requested funding is \$550,000 from the Penny Sales Tax fund:
 - Stormwater retrofit and wetland creation projects - \$400,000
 - Bio-swale planning and creation - \$75,000
 - Curb and gutter modification - \$75,000

Figure 1. The ten largest sub-basins in the Indian Beach-Sapphire Shores Neighborhood. Outfalls targeted for work are indicated by arrows.

Indian Beach/Sapphire Shores Stormwater Drainage

