

Summary: Erickson Consulting Engineers, Inc., (ECE) was commissioned by Sarasota County to provide civil and coastal engineering services for design, engineering, permitting, and construction documents for a new stormwater discharge pipeline. ECE conducted all planning, design, permitting and engineering services for the directional drilling, diffuser and anchoring system for a new pipeline that will re-route the existing stormwater discharge to a deep water location approximately 2,400 ft into the Gulf of Mexico. The project will alleviate the County's flooding problems and periodic water quality violations at a top Florida tourist beach on Siesta Key. The work included offshore directional drilling, and a stormwater discharge pipeline, diffuser and anchoring system. Design changes were made to a retention pond, pump station, discharge filtering and UV treatment system.



Location: Siesta Key, Sarasota, Florida

Key Project Elements:

- Jet Probe Investigation
- Core Borings and Geotechnical Analysis
- Benthic Survey
- Hydrographic Survey
- Avoidance of Impacts to Existing Wetlands and Other Surface Waters
- Multi-Media Filter and UV Disinfection System Design
- Estimation of Quantities, Costs, and Construction Schedules
- Coastal Construction Control Line Permitting
- State and Federal Environmental Resource Permitting
- Coastal Vegetation Conservation Plans (Removal and Replacement)
- Sediment QA/QC Plan and Turbidity Control Plan
- Grading and Site Drainage Plans
- Pump Station Design
- Special Permitting Coordination Between Local, State and Federal Agencies
- Sarasota County Coastal Setback Variance
- Directional Drill Construction Techniques for a Length of 2,400 ft
- Preparation of Construction Plans and Specifications

Sarasota County collected water samples on a monthly basis and after major rainfall events within the vicinity of this outfall. These samples are available in the County's "Water Quality Sampling, Analysis, and Reporting Procedures Manual". This data served as the basis for the treatment system design to remove suspended particles and harmful bacteria prior to discharge to the Gulf. This facility serves an approximate 60-acre drainage basin and is designed for water quality treatment. The treatment levels provided at this facility are substantial compared to the State of Florida stormwater runoff treatment requirements.

Challenges: Stormwater discharge pipelines are not common to Southwest Florida, creating unique permitting challenges for the project. ECE coordinated closely between the Florida Department of Environmental Protection, the Southwest Florida Water Management District and the Army Corps of Engineers to facilitate the regulatory process of this pipeline permit.

Schedule/Budget: The project budget and schedule were adjusted to address additional permitting efforts required with Sarasota County, as well as additional coordination between SWFWMD and FDEP.

