The Regional Waterway Management System

A Tool for Balancing Coastal Resource Use and Protection

The West Coast Inland Navigation District is a special taxing district, comprising Manatee, Sarasota, Charlotte, and Lee counties, serving an estimated 1.1 million citizens. The District helps plan and implement waterway projects that promote safe navigation and the enjoyment of water-based activities, such as boating, fishing, and beach recreation.

Florida Sea Grant provides people, tools, and science to help promote and make wise use of our coastal and marine resources. The primary goal of Florida Sea Grant is to provide a sustainable economy and environment, which it advances through a statewide, university-based research, education, and extension partnership of state and federal agencies, businesses, and citizens.

The Regional Waterway Management System is an interagency planning and implementation system for intertidal management and stewardship. The department administers regulatory programs and issues permits for air, water, and waste management. It oversees the state’s land and water conservation program, Florida Forever, and manages the Florida Park Service.

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The Florida Department of Environmental Protection is the lead agency and administrator for intertidal management and stewardship. The department administers regulatory programs and issues permits for air, water, and waste management. It oversees the state’s land and water conservation program, Florida Forever, and manages the Florida Park Service.

Lee, Manatee, and Sarasota counties participated in the design and implementation of the Regional Waterway Management System. The West Coast Inland Navigation District can provide contact information for each county.

Management Decisions Based on Sound Science

Data Collection

Determining the accuracy of tidal corrections is important in navigation and sound science.

GIS - Geographic Information System

A geographic information system (GIS) is a computer program used to collect, store, analyze, map, and distribute spatial data-data that can be represented in two-dimensional or even three-dimensional images. A GIS maps features as points (such as buoys and signs), lines (includes waterway channels and roads), and areas (such as aquatic preserves and seagrass beds). Most importantly, the GIS captures and preserves relationships between the mapped features and the characteristics or attributes of those features. For example, a GIS could indicate how much a boat restriction hinders the passage of boats. A GIS displays various kinds of data as separate layers on a computer monitor. It also can show tabular information about features selected on the map. Most examples include distribution of booms by facility type, locations and messages of official and private signs, and presence of unusual deep-draft vessels that may affect channel maintenance decisions. The GIS facilitates data queries and analyses to answer unforeseen questions as they arise.

For the Regional Waterway Management System, specialized GIS routines analyze the route of each boat from its birth to deep, open water, considering the starting position, depth measured in various channel segments along the waterway, and the time the boat is considered to reach deep, open water (usually the Intracoastal Waterway or the Gulf of Mexico).

The computer screens to the left show some of the data available to citizens, managers, and policymakers. The top view shows many signs in this part of the Caloosahatchee River, including menage notices and navigation aids. Numbers 1 and 2 are waterway segments coded to indicate Area of restriction. The degree of restriction is a measure of how much a boat is hindered by shallow channel segments. The vessel, a channel segment, may hinder the passage of boats. (Vegetation on land appears red, a characteristic of aerial photographs made with false-color infrared film.) In the bottom view, a close-up view to those selected booms (yellow dots) is visible in the attribute data table, the region shown is where U.S. 41 crosses Phillips Creek, in Sarasota.

The upper view shows GIS data layers mapped and displayed on the computer monitor. The lower image displays characteristics for selected booms.
Florida's waters are among our nation's most popular for recreational boating. While the state's population increased by 64% between 1980 and 2000, recreational boat registrations increased by 82% statewide and by 97% in southwest Florida (Collier, Lee, Charlotte, Sarasota, and Manatee counties; quickfacts.census.gov). The population is projected to increase by another 23% over the next 20 years, and boating growth should follow suit. Resource managers and policymakers must balance the phenomenal growth of the boating population with the protection of natural systems. The West Coast Inland Navigation District, member counties, and Florida Sea Grant together devise and apply science-based tools and procedures to manage and sustain our coastal waterways.

Florida's bays, estuaries, and rivers are vulnerable to pressures, not only from increased boating, but also from the associated spread of commercial and residential developments. Problems include declining water quality, stressed habitat conditions, and on-the-water congestion. Ironically, as waterfront development and the boat population escalate, public access to coastal resources steadily decreases due to changing economic priorities. The challenge to users, resource managers, elected officials, and planners is how to sustain and protect our environment without isolating people from nature. Can we continue to use coastal waters and preserve the natural environment as needed to maintain the economic vitality of coastal communities for generations to come? Solving this problem will require effective tools.

This document describes one such tool, already proven and ready now for further application: the Regional Waterway Management System (RWMS). The RWMS helps planners and policymakers identify, evaluate, and prioritize channel maintenance and improvement needs. A detailed, comparative analysis of water depth and boat draft relations provides a comprehensive, regional overview of channel conditions and the geographic distribution and severity of existing restrictions to safe navigation. This science-based system allows an unbiased, objective approach to waterway management.
The Regional Waterway Management System (RWMS) is a comprehensive system designed to manage and protect Florida's waterways. It provides a systematic approach to maintain waterways for public use, ensuring accessibility and safety for boaters and other water-based activities. The RWMS emphasizes the importance of efficient and effective waterway management to reduce costs, protect the environment, and enhance public access.

**General Permitting: For the Environment and the Taxpayer**

The RWMS is governed by the Florida Sea Grant and the West Coast Inland Navigation District (WCIND), which oversee the permitting process for waterway projects. The General Permitting process is intended to preserve and increase access to Florida's waterways, protect the environment, and ensure regulatory efficiency. The RWMS provides guidance on how to apply for permits, the types of projects that are eligible, and the steps involved in the permitting process. It also includes information on the benefits of permitting, such as reduced environmental impact, improved safety, and increased access for boaters.

**Public Waterways: A Regional Approach or Case-by-Case?**

Public waterways are defined as those that serve multiple purposes and are accessible to the public. The RWMS distinguishes between public and private waterways, with public waterways being managed by the RWMS. Public waterways are critical for the economy, environment, and quality of life in Florida, and the RWMS provides a framework for managing these resources to support their continued use.

**Technical Manual**

The Technical Manual provides detailed information on the RWMS, including its objectives, procedures, and guidelines for operations. It is designed to assist those involved in waterway management in understanding the RWMS and implementing its principles effectively. The manual covers a wide range of topics, from data collection and analysis to permitting and regulatory processes.

**Further Information**

For more information, please visit the Florida Sea Grant website or the RWMS website. These resources provide comprehensive information on the RWMS, its operations, and the benefits it offers to the public and the environment.