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The State of Tampa Bay- 1988

Tampa Bay Regional Planning Council (TBRPC)

Agency on Bay Management

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THE STATE OF TAMPA BAY
Nineteen Hundred Eighty Eight
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EXECUTIVE SUMMARY

When the Tampa Bay Regional Planning Council created the Agency on Bay Management, it charged the group with preparing an annual status report on the condition of Tampa Bay, the state's largest open water estuary. Therefore, pursuant to the adopted rules of the Council's Agency on Bay Management, this document represents the third State of the Bay report.

In order to adequately define ongoing activities and conditions within the Bay this report is structured to reflect the state of broad program categories. This text is intended to serve as a reference for future review and as a "measuring stick" for successes and short falls. However, due to the vast number of organizations and agencies involved with the Bay, it is not feasible to cover every topic addressing bay activities.

Land acquisition programs by the three counties bordering Tampa Bay received significant attention in the past year. A joint purchase by Pinellas County and the City of Clearwater for Coopers Point completed a long process to set aside valuable estuarine and upland systems for preservation in Upper Tampa Bay. The Cockroach Bay Islands, located in Hillsborough County on Middle Tampa Bay, has a firm commitment by the county for public purchase, yet will require supporting financial assistance from the state Conservation and Recreational Lands (CARL) program. Another major estuarine ecosystem in need of preservation through public acquisition is the Emerson Point parcel in Manatee County.

Research in the region continued to fill gaps in the understanding of the Tampa Bay system. The City of Tampa Bay Study Group is actively monitoring seagrass regrowth, algae distribution, sediment composition, and bottom filter feeding organisms called ascidians in Hillsborough Bay. The Florida Department of Natural Resources continues to support fisheries habitat research and restoration projects in the Bay, through replanting of native estuarine species. The Agency on Bay Management began development of water quality standards for evaluation of future discharges into the bay, which will maintain water quality sufficient for a healthy balance of fish and wildlife resources.

The Future of Tampa Bay document identified funding as the number one issue affecting the proper management of Tampa Bay. The 1987 Florida Legislature addressed this issue by establishing the Surface Water Improvement and Management (SWIM) Act within the Southwest Florida Water Management District (SWFWMD). The SWIM program has made significant progress in 1988 by developing the Tampa Bay SWIM Plan which identifies priority projects for the SWFWMD to begin restoration and management of the estuary. Projects initiated to date include monitoring of berm removal on Channel "A", aerial photography of the bay system, and contract services for stormwater management and the Tampa Bay hydrological model evaluation.

Review of developments affecting the Tampa Bay estuary included the Sunshine Skyway causeway improvements, 49th Street Bridge, Dunedin Pass dredging application, the proposed Terra Ceia
Isles development and the land use amendment for Tampa Electric Company. Public awareness and concern for the resources occurred in 1988 when the Gardiner, Inc. phosphate plant on Hillsborough Bay had a series of spills of phosphoric fertilizer and acidic stormwater to the bay and Alafia River system.

The Agency on Bay Management is a leading entity supporting the establishment of Tampa Bay into the Environmental Protection Agency's National Estuary Program (NEP). The Governor of Florida formally nominated Tampa Bay in the fall of 1988. The Agency assisted the Southwest Florida Water Management District and Department of Environmental Regulation in the development of the Governor's Nomination Report for EPA to consider designation of the estuary. United States Representatives Gibbons, Young, Bilirakis and Ireland are actively supporting Tampa Bay's inclusion into the EPA program and have suggested legislation identifying the bay as a priority water body for consideration. Eventual designation of Tampa Bay into the National Estuary Program is expected to supplement ongoing management efforts, increase federal involvement, and support recommended improvement strategies.

Legislative initiatives for 1988 included consideration of mangrove trimming standards for Aquatic Preserves, implementation of the Growth Management Act, management of the purse seine fishery for spanish sardines, prohibition of gill netting in E.G. Simmons Park and expansion of the Cockroach Bay Aquatic Preserve. Additionally, the Agency on Bay Management reviewed numerous wastewater discharge permit applications for compliance with the Grizzle-Figg legislation which requires advanced wastewater treatment levels for all municipal discharges to the bay.

As new responsibilities arise, the Agency often creates additional subcommittees to address specific requirements. In 1988 the Task Force on Resource-Based Water Quality Assessment was established to assist in the evaluation of the Tampa Bay hydrological model and to suggest resource-based water quality criteria that will support a healthy balance of living resources in the estuary. The Habitat Restoration Coordinating Committee is assigned the responsibility of facilitating communication between all parties involved with habitat improvements for Tampa Bay.

In summary, the Council's Agency on Bay Management has continued to lead and support major Bay related activities through legislation, development review, intergovernmental coordination, impact assessment and public education in 1988. Management and research efforts expand for the Bay as awareness grows of its significance. The State of the Bay - 1988 document represents the compilation of regional activities and these expanding effort to promote the Tampa Bay estuary.
WEEDON ISLAND STATE PRESERVE

The Florida Department of Natural Resources manages the approximately 625 acre Weedon Island State Preserve, located on Tampa Bay in eastern Pinellas County. This peninsula contains various archaeological and historical resources, as well as valuable estuarine habitat. Weedon Island is also ringed by extensive shallow seagrass meadows, further enhancing the area’s biological productivity.

A preliminary proposal by DNR to change the Preserve’s designation to Recreation and initiate a road paving and construction program met immediate protest from Pinellas County civic and environmental groups, as well as public officials. The Pinellas County Weedon Island Advisory Committee was formed; and they developed a proposal stressing effective management of the archaeological and environmental resources without intensive recreational uses.

The Agency on Bay Management reviewed and supported the Advisory Committee’s recommendation. Likewise, DNR agreed to this scaled-back approach and the retention of the State Preserve designation. Funding for additional activities has been limited. Removal of exotic vegetation, protection of archaeological resources, protection of estuarine plants (especially seagrass) and providing appropriate sanitation facilities continue to be priority needs for the Preserve.

DER WATER QUALITY 205(j) ASSESSMENT

The Florida Department of Environmental Regulation (DER) completed the Tampa Bay Water Quality [205(j)] Assessment in 1988. Six years in preparation, the document’s purpose was to provide a detailed assessment of water quality in the Tampa Bay estuary. The original intent when the program began in 1982 was how much wastewater or sewage could be discharged into the bay and still meet the minimum water quality standards established for the bay. The original Wilson-Grizzle (1980) legislation required such assessments, termed wasteload allocations, to evaluate the ability of a water body to assimilate wastewater effluents.

The first and only draft of the study was released in 1984 and received close evaluation by the Tampa Bay Management Study Commission, the predecessor committee to the Agency on Bay Management, the Tampa Bay Management Study Commission provided a eight
Leading water quality authorities highlighted concerns and recommendations to DER during review of the first draft.

The final report received significant criticism, primarily due to very little difference in results between the draft and final report. The document was reviewed by the full Agency on Bay Management during the June meeting. Results of the study suggested that even cleaning up runoff from streets and farms will not significantly improve water quality in Upper Tampa Bay and most other areas. Additionally, contaminated sediments were determined to provide a major source of the bay's pollution. The assessment utilized water quality data from 1982-83 which does not detail significant changes which have occurred in the bay since then. Finally, a target level for Chlorophyll-a was established as 25 ug/l baywide without sufficient justification or consideration for maintenance of the bay's resources.

The use of the DER Water Quality Assessment for permitting of point source discharges into the bay was identified as a major concern. The questionable assumptions and results can lead to discharges reducing water quality to the minimum level that the water quality standards would allow or necessary for maintenance of bay resources.

Agency members recommended that a new committee be established entitled the ABM Task Force on Resource-Based Water Quality Assessment to address the concerns raised by the completed DER document. The Task Force established during 1988, decided to take several approaches. First, the SWIM program was asked to provide a thorough evaluation of the Tampa Bay hydrodynamic model, evaluations and assumptions used in the DER's Water Quality Assessment. The Task Force was additionally charged with the development of interim water quality standards, which are based upon the living estuarine resources and uses (e.g.: water contact recreation, shellfish harvesting) of the bay.

The completion of the DER Water Quality (205(j)) Assessment did not accomplish its original purpose. However, the Agency on Bay Management and the SWIM program are taking the initiative to evaluate ongoing estuarine conditions.
and management of water quality to promote improvements for the restoration of a balanced, healthy population of resource organisms in the Tampa Bay estuary.

MANATEES

The endangered West Indian manatee (*Trichechus manatus*) occurs throughout the shallow coastal waters of Florida. Boating accidents - both crushing collisions and propeller lacerations are a major cause of mortality. Seven manatee deaths were reported for the Tampa Bay area in the last year; one was a confirmed boating-related mortality. Manatees are especially vulnerable during winter when they congregate near sources of warm water. A manatee sanctuary was created at the Tampa Electric Company Big Bend plant in 1986 and expanded in 1987. TECO’s manatee observation deck and education outreach program at the Big Bend plant have been popular.

A manatee aerial survey is being conducted by the Florida Marine Research Institute. This two-year study has already documented expanding manatee usage of the Big Bend sanctuary. A manatee count of 76 animals on February 29, 1989 is the current record high. Manatees are also found to frequent the mouth of the Little Manatee River, Terra Ceia Bay, the lower Manatee River, the west end of the Courtney Campbell Causeway, the west end of the Gandy Bridge (including Bartow power plant), Coffee Pot Bayou and southeastern St. Petersburg from Big Bayou to Pinellas Point. Observations consistently demonstrate year-round manatee usage of the Bay with a resident bay-wide population of at least 80 individuals. The survey will continue through November 1989.

A boating survey was also initiated for Manatee County in May 1988. The survey is designed to gather detailed information on boating habits within the county, including lower Tampa Bay. Results of the survey will be used to assist planning for future boating needs, as well as for manatee and estuarine habitat protection.

GARDINIER, INC.

An accidental spill of phosphoric fertilizer solution into the Alafia River occurred on May 1, 1988 due to an equipment malfunction. On May 26, 1988 Gardinier, Inc. released contaminated stormwater during attempts to contain the stormwater through construction of a berm. Seepage from Gardinier’s phosphogypsum stack to the Bay was caused by clogged lateral drains on September 23, 1988. On November 23, 1988 contaminated stormwater discharged from a stormwater control pond to Hillsborough Bay.

The Department of Environmental Regulation was joined by the Hillsborough County Environmental Protection Commission in a lawsuit filed against Gardinier as a result of the May, 1988 spills. An agreement has been reached by all parties to the suit for a settlement package totalling $2 million.
from Gardinier in payment for resource damages, civil penalties and investigative expenses. The settlement is contingent upon court approval and acceptance by the Hillsborough County Environmental Protection Commission.

The settlement requires payment of $1.5 million to the State’s Pollution Recovery Fund, completion of a restoration project to de-channelize Delaney Creek Canal which is estimated to cost $300,000 (a conservation easement is included over the restored area), and a thorough environmental audit of the operation of the Gardinier facility. The audit is to be conducted by a third party court-approved consultant and is estimated to cost $200,000.

The Hillsborough County Environmental Protection Commission has proposed a Consent Order to Gardinier, Inc. in order to resolve the September and November 1988 discharges. The proposal includes payment of $11,412.50 in settlement plus $2,703.22 in costs to the County’s Pollution Recovery Fund.

The proposed Consent Order will require revegetation and restoration of 0.26 acres of wetlands that were burned by the September discharge. The proposed Consent Order will also require Gardinier to submit their schedule for the accelerated closure of the phosphogypsum stack.

The Department of Environmental Regulation believes that this settlement will bring many benefits to Tampa Bay. The environmental audit is of extreme importance because it will provide the means for Gardinier to operate and maintain its facility in an environmentally sensitive manner, thereby alleviating further threats of impact to the Bay.

**DELANEY CREEK POP-OFF CANAL WETLAND RESTORATION**

The Department of Environmental Regulation’s recent settlement of a lawsuit with Gardinier, Inc. includes a $300,000 restoration project on Delaney Creek Pop-off Canal. Review of historical and current aerial photos, along with site inspections, indicate that extensive spoil berms were placed adjacent to this channelized creek. This portion of the pop-off canal was excavated through an intertidal marine wetland system with spoil placed so as to eliminate a large area of wetlands through direct fill placement. In addition, the spoil placement has impounded or otherwise restricted the existing wetlands adjacent to the creek, reducing their ability to provide natural nutrient and sediment filtration of upland/creek runoff and restricted these wetlands and natural marine systems as productive feeding and nursery areas for the adjacent Bay.

The specific restoration proposal is a composite of three distinct phases. Phase I, the removal of existing fine grained, organically enriched sediments from the existing canal. Excavation from U.S. 41 to the end of the existing canal, is expected to generate approximately 13,000 (in situ) cubic yards of material. This material will be dredged to hard bottoms by hydraulic means and dis-
posed of on an appropriately designed and sited upland disposal site.

Phase II will consist of regrading the existing berms back into the previously excavated canal so as to restore the original Creek meander and reconnect the adjacent wetlands to the Creek floodplain. Phase II will allow preservation of selected trees and intertidal vegetation which have invaded portions of the existing berm, and will re-establish Creek channel meanders similar to those indicated in 1960 aerial photos. Phase II will additionally reconnect existing wetland systems which lie immediately north and south of the spoil berms so as to allow unrestricted tidewater access.

Phase III will consist of a post-construction replanting and monitoring phase to continue until exposed sediments revegetate and stabilize and until the site is revegetated with native marine plant communities.

The restoration area will be planted with herbaceous marine plant species. Preliminary estimates indicate that approximately 3.5 acres of wetlands will be restored, requiring 17,000 planting units. Woody marine species and mangroves will be planted along both north and south shorelines of the re-graded and meandered Creek system. Preliminary estimates indicate that at least 261 mangroves will be installed. Gardiner, Inc. shall guarantee a survival rate of 85 percent for the planted species.

MANAGEMENT OF TAMPA BAY'S PURSE SEINE FISHERY FOR SPANISH SARDINES

Rapidly increasing landings of purse seine Spanish sardines in the Tampa Bay area led to concern that either overfishing might occur or that the distribution and abundance of predator fish would be affected by the removal of forage fish. Florida Spanish sardine landings were less than 1 million lbs per year (lbs/yr) from the 1960's to mid-1970's, three million lbs/yr in the late 1970's to early 1980's, and six million lbs/yr from the mid-1980's. During 1988 the Florida Marine Fisheries Commission (MFC) reviewed the status of Florida's "baitfish" fisheries. Baitfish is a
term commonly used to describe a species complex of small, herring-like fishes (Spanish sardine, thread herring, cigar minnow, menhaden, etc.) that are caught and sold as bait for commercial and recreational fishing. Based on local county government resolutions, testimony, and letters, the MFC decided to specifically address the Tampa Bay purse seine fishery for Spanish sardines.

Concurrent with the MFC deliberations on this issue a technical steering committee of local scientists organized a workshop (September, 1988 in Tampa) to focus research priorities and synthesize useful information concerning baitfish fisheries both in the Gulf of Mexico and Florida.

Information gathered by the MFC indicated that the Tampa Bay Spanish sardine harvest was not sufficient to endanger the Gulf of Mexico stock and by-catch in the fishery did not present an alarming problem. However, there was insufficient information to determine what level of commercial harvesting of this forage fish, responsible for converting microscopic plant and animal life into food for larger predator fish, will also accommodate the needs of recreational fishermen in particular and wildlife in general. In essence, due to the lack of information, the MFC decided to act conservatively and restrict the fishery. The measures taken by the MFC were:

- Establish a 4.1 million pound quota for Spanish sardines taken from the Tampa Bay area (there would be no quota for the rest of the state). The quota is based on the average of 1986, 1987, and 1988 landings. Peak Tampa Bay landings were 5.3 million pounds in 1987.
- Prohibit purse seining for Spanish sardines within Tampa Bay and within 500 yards of Gulf beaches. A preliminary FDNR study suggested that approximately 30% of the landings were harvested in the area of Tampa Bay which is now closed.

Several research projects have been funded with state and federal Marine Fisheries Initiative (MARFIN) monies to help address the key management questions for which there is presently insufficient information to answer. However, additional state funding would be desirable and the Manatee County Board of Commissioners has requested the local legislative delegation to support funding of research on the baitfish resources of Tampa Bay in the 1989 legislature.
Egmont Key Cleanup

At the mouth of Tampa Bay lies 400-acre Egmont Key. Federally owned and protected as a National Wildlife Refuge, the island has a rich history dating to the early 1500s with the first Spanish explorers of Florida’s Gulf Coast. The lighthouse, manned by the Coast Guard, has operated continuously since 1848 and is located at the extreme northern tip. A network of brick roads and deteriorating buildings and fortifications remain from military occupation earlier this century. The Tampa Bay Pilots Association maintains a small compound on the eastern shore of the island.

The beaches and old fortifications of Egmont Key attract crowds of boaters on weekends. Over the years a large amount of trash left by visitors and former residents has accumulated. Unfortunately, the U.S. Fish and Wildlife Service lacks the staffing to properly regulate human activities, or to protect the remnant populations of wildlife that exist there.

In early 1988 Congressman Sam Gibbons established a steering committee to organize a cleanup of Egmont Key. Composed of 25 representatives from federal, city and county agencies, local military units, conservation groups and others, the steering committee’s charge was to: plan cleanup and removal of trash; assist the Fish & Wildlife Service with the posting of boundary signs and restricted areas (unsafe buildings and nesting areas of Threatened species of birds); clear vegetation along some of the roads to allow better access and establish firebreaks; and, publicize the proposal to transfer Egmont Key to the Department of Natural Resources for operation as a state park, which occurred in December 1988.

Bird colonies, sensitive dune communities and boat landing areas were marked prior to the cleanup. Military units cleared brush and moved heavy trash over a 3-day period, then on May
14, 1988 over 500 volunteers from nearly 40 organizations participated in the cleanup. An estimated 30 tons of trash was removed, from plastic cups to old refrigerators. Governor Martinez joined the effort for part of the day.

The effort was supported by the Agency on Bay Management: ABM members served on the steering committee and also participated in the cleanup.

Although a cleanup was important, high tides and future thoughtless visitors will bring more trash to Egmont Key. Smaller scale follow-up efforts are planned to continue the progress made so far. Perhaps of greater significance is the long term goal, strongly supported by ABM, to increase public awareness about Tampa Bay and Egmont Key, and our impacts on the system. Cleanups such as this one are an important element of that effort.

"ALL HANDS ON DECK"
STATEWIDE BEACH CLEANUP

In September 1988, hundreds of Tampa Bay area residents carted trash bags and scoured beaches to aid in "All Hands On Deck," Florida's first statewide shoreline cleanup.

The cleanup of the Tampa Bay region was a cooperative effort between the Agency on Bay Management and the Southwest Florida Water Management District through the Surface Water Improvement and Management (SWIM) program. Nationally, the event was sponsored by the Center for Environmental Education (CEE). The CEE is a Washington, DC based conservation group dedicated to educating the public about the hazards of beach and sea-borne debris to marine life.

Preliminary totals showed that nearly 2,500 volunteers collected more than 50 tons of trash from approximately 300 miles of Tampa Bay area shoreline. Similar cleansups took place in virtually every coastal Florida county. Commonly found items included plastic bags, milk jugs, clothing, aluminum cans, monofilament fishing line, rope, plastic six-pack carriers, and a variety of styrofoam items. More unusual finds included such items as home appliances, diapers, doors, TV antennas, and even a few unused syringes.

Volunteers did not just pick up trash, they inventoried it to record what types of trash were being found. This information will be used in public education campaigns and lobbying efforts by the CEE (now known as the Center for Marine Conservation) and other groups. Similar
efforts have resulted in development of biodegradable plastic six-pack carriers that will break down in the environment within 200 days.

Statewide figures indicate Florida’s cleanup was the largest ever held in the nation. According to Dr. Ed Profitt of the CEE, nearly 10,700 Floridians participating across the state, collecting more than 194 tons of trash along 914 miles of shoreline. Sadly, more than 20 percent of the cleanup sites in Florida produced at least one dead marine animal.

NATIONAL ESTUARY PROGRAM

Established by the Water Quality Act of 1987, the National Estuary Program (NEP) reflects Congress’ growing concern over an extremely valuable and threatened national resource: our nation’s estuaries. The NEP is managed by the Environmental Protection Agency (EPA) and provides technical and financial assistance to identify nationally significant estuaries and develop comprehensive management plans needed to ensure their ecological integrity. Key steps in this program include:

- Defining environmental problems including their probable causes
- Assessing, and where necessary, revising or expanding existing laws, regulations and control programs
- Reviewing and revising designated uses of the estuary and its freshwater tributaries
- Recommending alternate management strategies to improve the estuary, and
- Developing specific action plans including resource commitments and compliance schedules.

Participation in the NEP requires the Governor’s nomination and official designation by the Administrator of EPA. Upon designation, the Administrator convenes a Management Conference consisting of key federal, state and local agency representatives. The Conference is charged with development of a Comprehensive Conservation and Management Plan (CCMP) for the estuary, a process which takes approximately five years.

To date, twelve estuaries have been officially designated under the program, (including Sarasota Bay, Florida) and an additional four areas (including Indian River Lagoon, Florida) have been legis-
lation identifying the bay as a priority water body for consideration. Eventual designation of Tampa Bay into the National Estuary Program is expected to supplement ongoing management efforts, increase federal involvement, and support recommended improvement strategies.

COAST WEEKS 1988

In a continuing effort to promote public awareness of regional environmental resources, the Tampa Bay Regional Planning Council and its Agency on Bay Management promoted the recognition of Coast Weeks - 1988. Coast Weeks, observed between September 17 through October 10, 1988, is a nationwide awareness program to highlight the coastal resources and value to citizens, as well as fish and wildlife.

The Regional Planning Council adopted Resolution 88-5 on September 12, 1988, declaring the coastline as a valuable but threatened resource: the resolution further identified that the Agency on Bay Management is strongly committed to the wise management of the coastline to ensure for all residents that the environmental, recreational and economic value of the coastal zone will be sustained. Resolution 88-5 was further distributed to all local governments in the region to consider for adoption.

The staff of the Agency on Bay Management participated in Coast Week Celebration on October 17, 1988 in Sarasota, Florida. The festival-like event was organized by the Littoral Society and brought together all interested environmental organizations and individuals to share information and increase public awareness of our vital natural resources. Agency staff participated by setting up the Tampa Bay display booth and by distributing bay related information.

TAMPA BAY DAY IN TALLAHASSEE

The Agency on Bay Management provided Florida State Legislators and aides an opportunity to sample fresh Tampa Bay seafood during the May 10, 1988 Tampa Bay Day in Tallahassee. Members and supporters of the Agency
provided the feast and vital information on problems afflicting Tampa Bay with potential solutions.

The Tampa Bay Regional Planning Council and its Agency recognized outstanding support for the Tampa Bay resources by presenting Rep. Sid Martin, Rep. Mary Figg and Rep Peter Rudy Wallace with plaques for their efforts to establish the Surface Water Improvement and Management (SWIM) program and the Grizzle-Figg Act.

Initiatives in 1988 which have supported Tampa Bay management and restoration include: a special seagrass allocation for research; Surface Water Improvement and Management (SWIM) program administered by the Southwest Florida Water Management District; Grizzle-Figg Act requiring advanced wastewater treatment of all discharges entering the bay; and, the Governor's nomination of Tampa Bay into the Environmental Protection Agency (EPA) National Estuary Program.

Tampa Bay Day is a public awareness event and is open to all interested individuals, legislators and aides. In addition to seafood, numerous displays are assembled during Tampa Bay Day to identify on-going bay programs. The Agency on Bay Management also distributes the State of the Bay - 1988 document, which identifies existing conditions and activities for the past year. The mosaic of information provided is intended to furnish the best available information possible for all interested and affected parties to become aware of the importance of the Tampa Bay estuary.
ABM TASK FORCE ON RESOURCE-BASED WATER QUALITY ASSESSMENT

The Task Force on Resource-Based Water Quality Assessment was formed in July 1988 (1) to develop environmental criteria needed to preserve and enhance both the natural resources and functions of Tampa Bay and (2) to establish adequate effluent assessment procedures to assure maintenance of such criteria. This perspective differs from other approaches to effluent assessment that are based either on available effluent treatment technology or measured water quality. The Task Force has met on a frequent, sometimes weekly, schedule and has made noteworthy progress toward completing its assignment. Because Task Force objectives are compatible with those of the Surface Water Improvement and Management (SWIM) plan for Tampa Bay, the Task Force has also served as an advisory group to the Southwest Florida Water Management District's SWIM team.

The Task Force has begun its work with an evaluation of the Florida Department of Environmental Regulation's (DER's) Tampa Bay Water Quality Assessment [205(j)], (see additional background information provided in State of the Environment) released in March, 1988. The purpose of the evaluation is to determine the usefulness of the information contained in this document to serve as a basis for meeting Task Force objectives. As a first step, the Task Force recommended that an independent, high-level scientific review of the DER 205(j) study, and supporting material, be conducted. Upon acceptance of the suggestion by the SWIM program, the Task Force actively participated in both developing the scope of work and evaluating possible contractors who proposed to conduct the review. The SWIM team is presently negotiating with the top ranked firm to accomplish this work in a 6-month period following contract execution.

Recognizing that a wealth of information is undoubtedly available in the scientific literature of the world to help define the tolerance of many plants and
animals to a wide range of environmental parameters, the Task Force next suggested that a search be undertaken to find and compile such data for selected species or populations native to Tampa Bay. The Task Force believes that with sufficient information of this type a set of resource-based environmental criteria can be established which, if met, will protect and enhance the natural functions of Tampa Bay. The process will not be easy, however, because of the inherent complexity of biological systems, synergism between environmental parameters, and the sheer number of species that exist in the bay. Presently, the SWIM team and the Task Force are developing another scope of work to start compiling the necessary information on which to either set criteria or to design data-collection programs to fill knowledge gaps.

The Task Force has also undertaken an analysis of available data with the objective of establishing water-quality target concentration for chlorophyll-a in the major sub-areas of Tampa Bay. Such concentrations will be realistic, achievable, and linked to conditions that permit beneficial functioning of natural bay systems. The product of this analysis will be a well-documented paper defining the position of the Task Force on the subject.

**HILLSBOROUGH BAY**
**SUBMERGED MACROPHYTES,**
**BAY STUDY GROUP**

In the past four decades, Hillsborough Bay has been adversely impacted as a result of rapid urban development. Reductions in seagrass coverage have been attributed, in part, to the decline of water quality. In the past few years, however, water quality has improved and may be related to minor seagrass renewal. This prompted the City of Tampa, Bay Study Group (BSG), to initiate a submerged macrophyte study to compliment other investigations assessing the environmental status of Hillsborough Bay.

Documentation of natural seagrass coverage began in April 1986, with a thorough groundtruthing effort which located and described *Halodule wrightii* (shoalgrass), *Ruppia maritima* (widgeongrass), and an attached benthic alga, *Caulerpa prolifera*. Study sites have been established for each species and are periodically monitored. In June 1987, a series of experiments testing the viability of seagrass transplants were initiated at *Caulerpa* beds along MacDill Peninsula.
several locations throughout Hillsborough Bay.

Although, natural seagrass areal coverage is still relatively limited, results have shown a trend of increasing coverage in Hillsborough Bay. Since 1986, natural H. wrightii coverage has nearly doubled, with most renewal occurring in southeastern Hillsborough Bay. Large R. maritima meadows periodically occur in several Hillsborough Bay locations, however, accurate areal coverage estimates are difficult due to its transient growth characteristics.

Since 1986, C. prolifera has undergone rapid periods of growth that have affected large areas of Hillsborough Bay. Major expanses of C. prolifera grew into areas of northeastern Hillsborough Bay and along Interbay Peninsula, with most of the Interbay Peninsula growth occurring between April and December of 1986. By August 1988, C. prolifera covered nearly 3,000,000 square meters (17%) of Hillsborough Bay subtidal flats at depths of three meters or less.

Major reductions in C. prolifera coverage occurred during the fall of 1988. Examination of C. prolifera study sites indicated at least a 95% reduction in areal coverage along Interbay Peninsula and about a 30% reduction of coverage south of Pendula Point. The September 1988 "25 year" rainfall event, which lowered Hillsborough Bay salinities to 2 ppt in some areas, may have had a detrimental effect on the alga. Total C. prolifera coverage for Hillsborough Bay in January 1989 was estimated at only 600,000 m².
Since June 1987, the BSG, in cooperation with the FDNR and NMFS Tampa Bay Experimental Seagrass Planting Project, has been involved in two seagrass transplanting efforts into Hillsborough Bay. The first transplanting effort removed shoalgrass from the Courtney Campbell road widening project and planted about 900 $H.\ wrightii$ "bare root units" in an intertidal area off of Interbay Peninsula. In addition, nearly 350 $H.\ wrightii$ "sod blocks" were planted by the BSG in eight areas of Hillsborough Bay using the Courtney Campbell source material. In the second transplanting effort, during May of 1988, two subtidal plots were planted in Hillsborough Bay with "bare root units" of $H.\ wrightii$ and *Syringodium filiforme* (manatee grass) using source material from Port Manatee. Both efforts were designed to locate areas of Hillsborough Bay suitable for seagrass transplanting, to establish a source of vegetative material, and to determine if artificially introduced seagrass could generate functional seagrass communities.

$H.\ wrightii$ transplanting has been successful and has provided insight into suitable transplant locales and methodology. In eighteen months, the estimated biomass of introduced $H.\ wrightii$ has doubled while areal coverage increased over 1000%. $S.\ filiforme$ and $H.\ wrightii$ May 1988 transplants will not be evaluated until spring 1989.

The BSG will continue to investigate the status of submerged macrophytes in Hillsborough Bay. In addition, the response of $C.\ prolifera$ to different salinity regimes is currently being investigated in the BSG laboratory. Future studies may include faunal comparisons between introduced versus natural seagrass beds as well as assessing sediment characteristics which may affect seagrass growth.

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**HILLSBOROUGH BAY SEDIMENT RESEARCH**

The City of Tampa, Bay Study Group has conducted and sponsored several sediment studies of Hillsborough Bay since 1983. These include:

1. Determination of the areal coverage of major sediment types.
2. Measurements of oxygen demands and nutrient exchange rates by major sediment types.
3. High resolution seismic reflection studies of mud dominated sediment deposits.

In addition, the first phase of a study to identify controls and processes governing ecologically recent sediment distribution patterns for mud-dominated sediments in Hillsborough Bay, including anthropogenic impacts, has now been...
completed. This project is a cooperative effort between the City of Tampa, Bay Study Group and the University of South Florida, Center for Nearshore Marine Science.

The first phase of this project attempted to determine mud-dominated sediment distribution patterns over the past several thousands of years. Several deep cores were analyzed for standard sedimentologic parameters and also dated by the radiocarbon method. Within the scope of this study, the results suggest that the distribution patterns of the mud-dominated sediments in Hillsborough Bay have remained relatively constant over the past several thousand years. The dominant control of the mud-dominated sediment distribution appears to be bathymetry and the sediments have accumulated in bathymetric depressions at the relatively slow rate of 40 cm/1000 years.

A second phase of this project is planned for the spring of 1989. This phase will include detailed lead-210 and other radioactive isotope dating of the uppermost mud-dominated sediment layer in an attempt to determine anthropogenic impacts on sedimentary processes. The effects of ship channel and port area dredging on sediment deposition rates will receive special emphasis. The just completed phase of the project indicates that bathymetry determines the distribution of the mud-dominated sediments in Hillsborough Bay. Since 1879, however, man has artificially changed the bathymetry of the bay by dredging deep areas, which act as sinks of fine sediments. Today, therefore, much of the fine sediment introduced to or produced within the bay may be transported to the deep channels and port areas by wind and tide generated currents, where it is eventually removed from the bay system by maintenance dredging.

ASCIDIAN INVESTIGATIONS IN HILLSBOROUGH BAY

The City of Tampa, Bay Study Group has observed high numbers of an anural solitary mogulid tunicate, of an unknown ascidian species, dominating some bottom communities of Hillsborough Bay during the winter. Ascidian concentrations have been found in excess of 4000 per meter squared (m⁻²), and lengths have ranged for 0.25mm to 20mm for larvae and adults, respectively. Coincident with these high ascidian concentrations, excellent water clarity has been observed, where the bay bottom is visible through water of 2 to 3m depths. Ascidians can filter large volumes of seawater as part of their food gathering process. Although not found in Hillsborough Bay, Phallusia, an ascidian only a few centimeters long, can reportedly filter 173 liters of water per 24 hours. Therefore, water clarity may be, in part, linked to the filter feeding activities of these organisms. In addition, other solitary ascidians have been observed in Old Tampa Bay, and colonial ascidians have been seen in middle Tampa Bay. To assess the impact of ascidians on the water column in any area of Tampa Bay, however, spatial and tem-
poral distributions, as well as population densities and filtering rates, must be known.

In November 1987, three stations, covering sediment types from mud to sand, were established for monthly sampling in Hillsborough Bay. Sampling frequency is increased to two week intervals when ascidians are present during the winter months. Standard Ekman dredge sediment samples (225cm² area) are sieved through 500um mesh screen and preserved with a 5% formalin-seawater solution to which Rose Bengal is added. Ascidians are counted in duplicate sediment samples for each station. The water quality parameters of temperature, salinity, secchi disk and dissolved oxygen are also measured at each station. In addition, surface and bottom chlorophyll-a water column measurements have been taken since January 1989.

Initial information from this ongoing project should reveal approximate densities and occurrence intervals, and whether or not ascidian densities are related to water clarity. In the future, practical methods to estimate areal coverage of the ascidian populations and techniques to measure filtering rates of these organisms need to be investigated.

FDNR MARINE HABITAT RESEARCH AND RESTORATION PROGRAM

The Florida Department of Natural Resources (FDNR) Marine Research Institute (MRI) administers funds generated by annual $300 Gill-Net License Fees in Pinellas, Pasco, Manatee, Hillsborough, and Sarasota Counties. The commercial fishing industry provided the impetus and supported passage of the license fees by the Florida Legislature to provide financial support for projects related to fisheries habitat research and restoration in the Tampa Bay area. Their continued support for this program is evidenced by the recent addition (1988) of Sarasota County to the Gill-Net License program. Since 1983 $650,000 in license fees have been collected from commercial mullet fishermen. Most of these monies have been allocated to saltmarsh and seagrass planting and research at several sites in Tampa Bay.

The DNR program identified three saltmarsh sites (Pinellas Point, Regatta Point and Hendry Delta) and one seagrass restoration site (Lassing Park) for restoration activities in 1986. The contract for this project was awarded to Mote Marine Laboratory. All plantings were completed by July 1987 and are
being monitored to assess their similarity to natural fisheries habitat through June 1989.

Both DNR and SWFWMD Tampa Bay SWIM Program have collaborated to expand the original scope of saltmarsh plantings at the Hendry Delta. In May of 1987, DNR added 1,200 units of smooth cordgrass (*Spartina alterniflora*), and in April 1988, SWIM provided another 2,000 units. DNR is currently seeking to plant another 2,000 units. DNR is currently negotiating a $300,000 contract with SWFWMD Tampa Bay SWIM Program which would allow planting over a larger area.

In May 1987, DNR entered into a memorandum of Understanding with National Marine Fisheries Service (NMFS) Habitat Research Division to implement experimental seagrass and faunal recolonization studies in Tampa Bay. The first year of funding was provided by a special $200,000 Legislative appropriation through the efforts of State Representative Mary Figg. Experimental plots of shoal grass (*Halodule wrightii*) were planted at five sites in Tampa Bay (Shore Acres, Coffeepot Bayou, Bunces Pass, Skeet Key and MacDill AFB), in July 1987.

DNR was successful in gaining second year support for continued DNR-NMFS seagrass studies from SWFWMD Tampa Bay SWIM Program, in May 1988. During year two, mixed species plantings of shoal grass and manatee grass (*Syringodium filiforme*) were performed at Coffeepot Bayou, Skeet Key, and Green Key. Both Hillsborough Bay seagrass sites and MacDill seagrass sites [MacDill AFB (1987) and Green Key (1988)] have been accomplished in cooperation with the City of Tampa, Bay Study Group. Faunal utilization of transplanted seagrass plots and nearby natural seagrass beds are being monitored by DNR-NMFS through November 1989.

DNR is currently seeking $50,000 in DER Pollution Recovery Trust monies to extend seagrass restoration research at Lassing Park. The FDNR considers this applied research as essential to future management of Tampa Bay seagrass resources.

**HILLSBOROUGH COUNTY ARTIFICIAL REEF PROGRAM**

The completion of the *Future of Tampa Bay* document in 1985 identified numerous issues affecting the Tampa Bay estuary. With the intent to accomplish some of the objectives within the document, the Environmental Protection Commission of Hillsborough County (EPC of HC) requested initiation of a reef program. Hillsborough County Commissioner Jan Platt recommended establishing an artificial reef program to supplement natural systems in the bay. The program received formal approval by EPC of HC in October 1986.

The EPC of HC hired a full time Reef Program Coordinator and initiated public meetings to determine site locations and needs. On March 21, 1987 the first Hillsborough County artificial reef structure was put in place 0.6 miles west of Port Tampa and the Picnic Island fishing pier.

Three sites were permitted in 1987. Two of the sites, the Port Tampa Reef and the Bahia Beach Reef, are in the deeper waters of the Bay (20-24 feet). The third site is at the Ballast Point fishing pier, and is built specifically to improve fishing for the pier fishermen. Reef unit construction began in 1987 on all three sites, and continued through 1988.
Improvements in the water quality in Tampa Bay, as the result of various pollution control activities, has a great effect on marine life in the Bay. Artificial reefs respond very well to these improvements, as do the sea grass and salt marsh environments. This results in the establishment of a positive reinforcing cycle. The seagrasses, salt marshes and reef organisms all help to filter the water and trap sediments and nutrients.

Therefore, activities which encourage the establishment or return of healthy marine life in the Bay are both indicators and facilitators of improved water quality. The artificial reef program should continue to have a significant positive impact on Tampa Bay, and will continue to construct properly sited and designed reefs.

Approximately six more reef sites are planned for the next few years. Work at the Port Tampa and Bahia Beach Reef sites will continue for several years until the optimum ratio of hard to soft bottom is achieved. The main reef units at Ballast Point should be complete within several months.

Reef effectiveness monitoring will continue, including scientific validation of increased productivity, and fishermen surveys. Maintenance of the markers (buoys and day-marks) is an important responsibility, and helps to increase the benefit to fishermen. User pressure and its effect on the reef fish population will be monitored to verify that over-fishing does not take place.
INTERGOVERNMENTAL COORDINATION AND REVIEW

Through the Intergovernmental Coordination and Review (IC&R) process, the Council assesses Federal Assistance and Community Block Development grants; as well as environmental impact statements, feasibility studies, and dredge and fill permit applications for regional significance, where the Council will make recommendations to the permitting agencies. The environmental development review activities require the evaluation of wetland impacts to determine consistency with Council Policy.

The following graphic depicts the number of IC&R reviews accomplished by the Council since 1985 and can be used as an indicator of growth trends in the Tampa Bay Region. Of significance is the 720 percent increase of IC&R reviews by the Council since 1985. The increase of 1988 reviews from the 1987 time frame represented a 12 percent increase.

DEVELOPMENTS OF REGIONAL IMPACT

The Tampa Bay Regional Planning Council, through Chapter 380, F.S. reviews large scale developments in the region to ensure the orderly and balanced growth and development consistent with the protection of the region’s natural resources and to protect the health, safety and quality of life for residents of the region. These large scale projects are termed Developments of Regional Impacts (DRIs). Last year, TBRPC held 23 pre-application conferences, issued 17 DRI final reports and evaluated ten development orders.

1988 DRI Final Reports:
- #97 - St. Petersburg Intown Area
- #157 - Trinity Communities, wide, St. PetersburgPasco County
- #159 - Eastshore Commerce Park,
- #160 - North Palms Village, Hillsborough CountyTampa
- #163 - Cannon Ranch, Pasco County
• #168 - Boca Bahia Park, Hillsborough County
• #169 - McKendree Ranch, Pasco
• #170 - Northwest Regional County Mall, Hillsborough County
• #172 - Bradenton Municipal Marina
• #173 - Tower Property, Expansion, Bradenton Tampa
• #174 - Bay Vista Substantial
• #176 - GATX Terminal Deviation, Pinellas County Expansion, Tampa
• #177 - Rubin ICOT Center,
• #178 - World Mart Center, Pinellas County Tampa
• #179 - Sheraton Sand Key Resort
• #180 - University Business Expansion, Clearwater Center, Tampa
• #182 - GE Auto Auction, Tampa

GE CREDIT AUTO AUCTION

The GE Credit Auto Auction project is an 80 acre site located in the southwest corner of the intersection of US 41 and the Crosstown Expressway, on the north bank of the Palm River. Activities which will occur on the property include vehicle sales, reconditioning and cleaning; administrative and operational functions; vehicle registration, pick-up, delivery and storage; customer parking and security. Build-out of the project is scheduled for completion in the fall of 1989.

Some issues raised during regional and local review were protection of water quality in the Palm River and McKay Bay, the loss of wetlands, inability of the project to meet the City of Tampa Tree and Landscaping Ordinance (approximately 89 percent impervious surface) and the use of potable water for irrigation purposes.

A surface water quality monitoring project is being conducted due to the extensive impervious surface area of the project and the potential for pollution from stormwater runoff containing oils, greases and lead from the auto auction display and parking areas. Protection of water quality in the Palm River and McKay Bay is extremely important since it provides a rearing and developmental area for a number of commercial fish species as well as a feeding area for migrant and overwintering shore birds and waterfowl. One-to-one mitigation for disturbance to wetlands is not being required for this project due to the man-made history and disturbed nature of the wetlands on-site (especially the central cattail marsh area).

ST. PETERSBURG INTOWN AREAWIDE

In 1983, the City of St. Petersburg first proposed to seek approval for a downtown, multi-use development/redevelopment of office, commercial industrial, recreational and public/semi-public facilities proposed for construction in the City's intown area. The proposed development area encompasses 309 acres, including: the central business district of the City; the Suncoast Dome stadium; and, adjacent residential and commercial areas. The City also proposes to expand its marina by 75 boat slips. Expansion of the marina will require a substantial deviation from the original DRI.

Mirror Lake and Booker Creek are the only wetlands located in the project area. Development and redevelopment along Booker Creek will be in com-
pliance with the City landscaping ordinance. In compliance with City ordinances, the banks of Booker Creek can be expected to be revegetated with native plant species on development and redevelopment sites. Tampa Bay and Bayboro Harbor are adjacent to the eastern boundary of the Intown area. The majority of the shoreline adjacent to the Intown area is seawalled and maintained by the City of St. Petersburg.

The Master Storm Drainage Plan (MSDP) has recommended numerous construction projects to correct the City’s drainage problems and allow satisfactory performance during a 25-year design storm. By and large, the existing stormwater drainage system adequately handles the drainage requirements of the Intown DRI area. The quantity and distribution of the urban stormwater runoff is not expected to change as a result of Intown redevelopment because the area is mostly impervious at present with little change expected in the future. Through the MSDP, the City is committed to upgrade existing facilities, where needed, to meet their objective to providing adequate control of stormwater runoff.

GATX TERMINALS CORPORATION

GATX Terminals Corporation is expanding its existing GATX Terminal site on Hookers Point in the City of Tampa. The entire 22.58-acre terminal site is owned by the Tampa Port Authority. The proposed expansion of the GATX Terminal will more than double its petroleum storage capacity. The expansion calls for construction of six new petroleum tanks, access drives, a four-bay truck loading rack to replace an existing two-bay loading rack and conversion of four phosphoric acid tanks to jet fuel storage tanks within a fifteen-year build-out period. GATX Terminals Corporation warehouses bulk liquid products for clients requiring interim storage facilities.

The only surface water bodies on the site are several Port of Tampa drainage ditches that discharge to the Cut-D Channel. The site is contiguous to Cut-D Channel, a dredged segment of Hillsborough Bay. Hillsborough Bay is classified as a Class III water body as defined by Chapter 17-3, F.A.C. and is the center of industrial maritime activity in the Tampa Bay Area. No portion of Hillsborough Bay is classified as an Outstanding Florida Water, (OFW) nor is it within the boundaries of an Aquatic Preserve.

The increase in petroleum storage capacity at the terminal facility could also result in adverse impacts to the surface water and groundwater quality in the vicinity of the DRI site, unless proper design, construction and testing of storage tanks, transmission facilities and the proposed wastewater collection system are implemented. Tank and transmission system integrity, tank/pipe leakage, overfills and accidental spills are all areas of concern during operation of the terminal. Even with proper design, construction, testing and operation, natural catastrophes such as storm surge
and winds associated with hurricanes could result in adverse impacts to wildlife, natural resources and water quality in Tampa Bay if containment dikes or tanks fail as a result of storm conditions.

All existing storage tanks are surrounded by six-foot high earthen berms. These areas essentially serve as retention ponds. When excessive volumes of stormwater accumulate, a valve is opened and stormwater is routed to a drainage ditch, and then eventually is discharged into the Hillsborough Bay via the existing NPDES outfall. There will be no new wastewater outfalls; all wastewater will be routed to the closed collection system. Stormwater runoff from impervious surface will be routed to a detention pond with an outfall to Tampa Port Authority drainage ditches per Chapter 17-25, F.A.C. Only stormwater/wastewater at the existing truck rack is currently monitored (for oils and greases) prior to discharge as a condition of the existing NPDES permit.

In addition to the wastewater recovery system, all new impervious construction will comply with the stormwater management regulations in Chapters 40-D4 and 17-25, F.A.C. Stormwater runoff from the proposed access road and new truck loading rack will be detained on-site in grassy swales and appropriately treated prior to any discharge.

COUNCIL WETLAND MANAGEMENT STANDARDS

The Tampa Bay Regional Planning Council currently reviews wetland management and alteration activities through the Development of Regional Impact (DRI) process and the Intergovernmental Coordination and Review (IC&R) process. IC&R reviews include environmental assessments, feasibility studies and dredge and fill applications, in which the Council makes recommendations to the permitting agencies. These development review activity requires the evaluation of wetland impacts with Council policy to determine consistency.

At the request of several Council members, the Agency on Bay Management assigned the Natural Resource Committee to evaluate the current Council policies regarding wetland management practices. To assist the Natural Resource Committee in the evaluation, Council staff requested:

- U.S. Fish and Wildlife
- U.S. Army Corps of Engineers
- Florida Department of Environmental Regulation
- Southwest Florida Water Management District
- Environmental Protection Commission of Hillsborough County

to present wetland management guidelines used by federal, state and local agencies. Representatives from each agency were requested to address three aspects of wetland permitting:

Mangrove Fringe along Tampa Bay
1. Permittability of a project - or what type of projects can be considered for potential wetland impacts.

2. Compensation or mitigation - Once wetlands have been identified for disturbance, what form of compensation or mitigation is used to offset the impacts.

3. Follow-up monitoring or compliance - After the permit has been issued, how do the agencies verify compliance with permit conditions.

Applications for review by the Council - both DRI's and IC&R's - are compared against the Council's policy document entitled The Future of the Region - a Comprehensive Regional Policy Plan. It is anticipated that the Natural Resource Committee will provide recommendations to the full Agency upon resolution of the following objectives:

- Evaluate Council policies - are they enough?
- Develop standards supportive of fish and wildlife resources.
- Develop standards that are not inconsistent with permitting agencies.

Initial recommendations of the committee suggest preservation of the 100 year floodplain to combine protective measures for wetlands, transitional areas, wildlife resources and buffer zones into one management composite. Agency recommendations will be tabulated in a report and provided to the Tampa Bay Regional Planning Council for consideration in the spring of 1989.

OLDSMAR WWTP UPGRADE

The City of Oldsmar, located in the extreme northern corner of Upper (Old) Tampa Bay has been plagued with a problematic wastewater treatment system.

The use of percolation ponds adjacent to the tidal wetlands contiguous with Upper Tampa Bay to treat the wastewater effluent has allowed improperly treated effluent to enter the estuarine system. The percolation ponds have rarely functioned adequately due to overloaded conditions and during extreme rain events, such as Hurricane Elena in 1985, effluent would breach the pond berms and enter the bay.

With the implementation of the Grizzle-Figg Act (1987) requiring Advanced Wastewater Treatment (AWT) levels for all Waste Water Treatment Plants (WWTP) the City of Oldsmar sought to phase out the percolation pond method to treat effluent and proposed the discharge of AWT effluent into Mobbly Bay, an embayment of Upper Tampa Bay.

The Agency on Bay Management received a presentation on the proposed plans to upgrade the Oldsmar WWTP and raised several concerns. First, the discharge of 2.2 million gallons per day (MGD) of effluent into Mobbly Bay would alter existing salinity and circulation patterns in Mobbly Bay. Mobbly Bay is a very shallow embayment containing subtidal seagrass beds and ringed with estuarine marsh and swamp. The location of the proposed discharge would occur in very shallow water, or areas exposed during lower tides. The input of additional nutrients, even at AWT levels, into Mobbly Bay could exacerbate eutrophication problems already experienced in Upper Tampa Bay.
input of 2.2 MGD effluent can further impact natural estuarine systems unable to tolerate freshwater conditions created by the effluent quantities and disposal location.

In addition, numerous Developments of Regional Impact (DRI's) located within Oldsmar City limits are required to take back effluent generated by the development for reuse, as required by the projects' Development Order. Permit applications to upgrade the Oldsmar WWTP did not contain mechanisms to return the AWT effluent for reuse by the developments, primarily for economic reasons.

Since the Florida Department of Environmental Regulation (DER) was prepared to provide a permit for the proposed upgrading project several Agency members [Mr. Robin Lewis (Mangrove Systems, Inc.) and Mr. Tom Reese (Manasota 88)] filed a request for an administrative hearing. The move prevented the City of Oldsmar from receiving a permit until completion of the administrative hearing process.

After extensive negotiations a settlement was reached to discharge Oldsmar AWT effluent into a tidal creek/mangrove swamp leading to Upper Tampa Bay. The revised discharge location will allow the mangrove swamp the opportunity to filter additional nutrients. The mangroves are more capable of adjusting to freshwater inputs and create an additional level of natural effluent treatment. The revisions also saves the city between $100,000 and $200,000 by not relocating the discharge into the bay system.

Finally, the City of Oldsmar intends to evaluate and implement where possible the return of reclaimed water to adjacent DRI's. This will allow the reuse of effluent, thereby reducing the demands on limited potable water supplies, and providing the alternative for the City to use surface water disposal during high rainfall events, when reuse is difficult.

49th STREET BRIDGE

Pinellas County is pursuing the design, permitting and construction of a bridge across Tampa Bay, which links 49th Street on the south to McMullen Booth Road on the north. This project is an important link for improving North-South traffic flow and reducing congestion on other major parallel roadways. It is also expected to result in better air quality through higher traffic speeds and thereby reduced regional auto emissions. From the onset of this project Pinellas County realized there were numerous environmental considerations and therefore is addressing these issues with the highest priority. Through the County's consultant, virtually every environmental aspect of the project is being studied, and
where feasible the impact minimized or compensated.

The protection of 10-13 acres of shoreline wetland areas and seagrass beds will be accomplished through bridge design and construction. Wherever possible, these areas will be spanned by the bridge structure, or if impacted, mitigation will result in no net loss of wetlands. Circulation patterns within this portion of Bay are also being modeled and alternatives analyzed for improving flow.

Recognizing the Aquatic Preserve and Outstanding Florida Waters designation, the County is providing for treatment of the storm-water from the bridge. Although treatment of the runoff is a major project cost, biological and/or filtration treatment will be provided. Addressing bridge-roadway runoff as a non-point discharge is precedent within Florida and perhaps the nation.

The scope of study includes air quality, noise, hazardous materials, soils, and flood plains and threatened and endangered species. To further support the County’s goal of an overall improvements to the bay, other enhancement ideas are being analyzed for possible implementation.

The Agency on Bay Management first became concerned with the potential 49th Street Bridge during development of the Future of Tampa Bay issues document. Recommendations from the Future of Tampa Bay include provisions for the County to seek upland alternatives and if upland alternatives are not available then the final design should include a pier structure without a causeway and required financial and environmental impact statements should be completed.

The Agency received a presentation on the environmental features of the project and recommended revisions to the baseline monitoring program. In addition, members of the Agency are represented on the Environmental Review Committee, established by the County to provide information and receive recommendations on project design. The Agency on Bay Management will continue to evaluate the 49th Street Bridge during significant stages of project design and implementation.

DUNEDIN PASS DREDGE AND FILL PERMIT APPLICATION

Dunedin Pass, formerly known as Big Pass, separates the barrier islands of Clearwater Island and Caladesi Island. Dunedin Pass was historically a stable inlet with sufficient tidal energy to keep it open, although inlet migration was occurring in a northward direction. A gradual erosion of the stability of this pass occurred with the increase in construction activities in St. Joseph Sound and opening of Hurricane Pass in 1921. Although the northward migration of sand increased as a result of induced changes in the hydrodynamics of the system, prior to Hurricane Elena in 1985, the channel through Dunedin Pass was of

Dunedin Pass after Closing in the Summer of 1988
sufficient depth to provide access for most small motor boats and sailing vessels. After the passage of Hurricane Elena, the shoaling of Dunedin Pass has accelerated and now progressed to complete closure of the former inlet in the summer of 1988.

In September 1984, the Pinellas County Board of County Commissioners applied to FDER for permission to dredge a new opening in Dunedin Pass and dredge the connecting navigation channels. Based on extensive environmental and hydrological reviews of this proposal, a variety of local environmental and citizen groups, and several state agencies, including the Agency of Bay Management, recommended that FDER deny the permit.

The FDER concurred with the denial recommendation, based upon an abundance of (sometimes conflicting) information presented by both proponents and opponents involving the following issues: 1) the public interest test for projects within Outstanding Florida Waters (OFW); 2) anticipated success of the project due to the unknown stability of the pass; 3) compliance with the OFW water quality criteria; 4) projected improvements in the water quality of St. Joseph Sound; 5) impacts to estuarine and marine productivity; 6) impacts to endangered, threatened and of special concern species and their supporting habitats, and; 7) justification of need.

In a broader sense, the closure of Dunedin Pass from the dynamic physical forces that continually shape our coastal environments has produced an intensive debate over potential conflicts between users of the resource. Supporters of reopening the pass argue that its closing prohibited some recreational boaters from direct access to the Gulf of Mexico and may have exacerbated erosive forces south of the pass. Opponents of the dredging project argue that the issues of protection of wetland functions and values, fisheries resources, compliance with water quality criteria are more important goals. Further, protection of endangered species has become an issue, since closure of the pass produced the correct combination of minimal public access, suitable nesting and beach resting areas, and productive tidal and subtidal habitats that provide optimal habitat for several species of threatened shorebirds, including the southeastern snowy plover, piping plover, least tern and roseate tern.

It appears that this project affords no compromise. Because the Pinellas County Board of County Commissioners has formally appealed the FDER decision, the balancing of prospective uses and users of Dunedin Pass will most likely occur during the administrative hearing process.

**TERRA CEIA ISLES DEVELOPMENT**

The Natural Resource Committee of the Agency reviewed the most recent Terra Ceia Isles proposal and recommended to the Executive Steering Committee of the Agency on Bay Management that it support Manatee County's proposed land use designation of one unit per acre for the Terra Ceia Isles development. The Executive Steering Committee transmitted their support to the Manatee County Commission Chairman, Mr. Edward Chance.

The applicant (Florida Federal) had submitted to the Manatee County Commission and the Manatee County Planning Commission, revised conceptual and preliminary designs for the 1600 acre piece of property in northwestern Manatee County. Of the 1600 acres...
within the development, only 1301 acres are above the mean high water line (MHWL), and only approximately 680 acres are above the DER jurisdictional line. The property is entirely surrounded by the Terra Ceia Aquatic Preserve and is also designated as an Outstanding Florida Water. This area contains the only open approved shellfish harvesting area east of the Sunshine Skyway Bridge. The parcel contains extensive pristine estuarine wetlands, barrier beach communities, ponds and tidal tributaries, all of which create a highly productive area by providing a mosaic of habitats. Frog Creek (Terra Ceia River) was classified as in a "natural condition" in a 1986 report by TBRPC, due to its relatively undisturbed nature and vital habitat components to the Tampa Bay ecosystem.

The Agency reiterated its support of one unit per acre, when the full Agency voted unanimously to resubmit a letter stating its concerns about the area to the succeeding Chairman of the Manatee County Commission, Ms. Patricia Glass. It further cautioned that even this reduced density might create excessive impacts to this environmentally sensitive area.

On February 28, 1989, the Manatee County Planning Commission voted 4:1 to approve the conceptual plans on Terra Ceia Isles with the conditions that the density be lowered to one dwelling unit per acre, that the golf course be eliminated and that the 34 stipulations put forth by the planning department be included.

**SUNSHINE SKYWAY CAUSEWAY IMPROVEMENTS**

As a part of the completion of the Sunshine Skyway Bridge project, the Florida Department of Transportation has designed and requested permits for the construction of interchanges north and south of the Sunshine Skyway Bridge. New modifications to the Sunshine Skyway causeway will provide access to the proposed fishing piers to be constructed from the old bridge trestles and to other recreational areas adjacent to the new limited access roadway. Construction of these interchanges will involve filling of a total of 15.97 acres of high marsh, intertidal marsh, and bay bottom including a very limited amount of sea grass beds.

In implementing the new mitigation rule, the Department of Environmental Regulation has required the Department of Transportation to provide replacement of wetlands to be lost on a habitat by habitat basis. As a result, the mitigation plans proposed by the FDOT, and accepted by the FDER, includes a mix of planting high marsh along roadway embankments, removal of brazilian peppers and replacement with a smooth cord.
grass marsh, protection of potential sea
grass areas with a breakwater, removal of a
depositional spit southeast of the causeway
and the filling of approximately five acres
of an old borrow pit with demolishing rub­
ble originally intended for placement as
part of submerged reefs adjacent to the
proposed fishing piers. The total mitiga­
tion area is 33.16 acres.

In reviewing the proposed mitigation
program the Agency on Bay Management
raised strong objections to the filling of sub­
merged pits presently used as fishing areas
and to the use of construction rubble pre­
viously planned for reef creation for that
purpose. In addition, the Agency raised
questions about the excavation of the sandy
spit which is currently used by shore birds
and fishermen. Largely as a result of the
issues raised by the Agency the permit for
the northern interchange does not include
additional filling of submerged borrow pits,
thus ensuring that there will be sufficient
rubble available to construct the artificial
reefs adjacent to the fishing piers accentual
as originally planned.

In a development late in the year it was
announced that, due to severe financial
shortages at the FDOT, the demolition of
the existing Skyway Bridge would be
delayed and the development of the fishing
piers from the old bridge trestles was being
put on hold indefinitely. The Agency will
continue to follow the overall development
to ensure that the greatest possible overall
recreational and habitat value is achieved
as part of the overall project.

TAMPA INTERSTATE STUDY

The Florida Department of Transportation
is currently completing a two year
master plan study for thirty-five miles of the
interstate system. The analysis around
Tampa includes I-75/275 from State Road
54 in Pasco County to the Howard
Frankland Bridge and I-4 from
downtown Tampa to it's intersection
with I-75 west of Brandon. This study has
involved analysis of hundreds of alterna­
tive improvements, numerous meetings
of various advisory groups and three
major public meetings. The recommenda­
dations which have resulted from this
study include the addition of a four road­
way system through the urbanized areas,
additional traffic lanes on the two road­
way system, construction of reserved
lanes for high occupancy vehicles, reloca­
tion of interchanges, and numerous other
improvements aimed at providing ade­
quate roadway access into the 21st cen­
tury.

While this project does not include
facilities directly in Tampa Bay these
roadways do cross a number of water
ways in the watershed of the Bay, includ­
ing the Hillsborough River, the Tampa
Bypass Canal, and Cypress Creek. The
key concern related to this project in
regard to Tampa Bay are potential impacts on storm water quality and the opportunity to provide storm water treatment for existing portions of the interstate system. These issues will be addressed more fully in the next stage of the study process where individual sections of the overall study area are subjected to a drainage master plan and preliminary design and environmental analysis.

The Agency on Bay Management anticipates reviewing the environmental documents developed as an integral part of this effort to ensure that adequate cost effective steps are taken to protect water quality within the watershed. Given the urbanized nature of the corridor through which the interstate passes, the provision of stormwater retention facilities is expected to involve significant issues of community dislocation and land acquisition.

TECO LAND USE AMENDMENT

A presentation was made to the Environmental Impact/Natural Resource Committees and forwarded to the Executive Steering Committee in September 1988, regarding the land use requests by TECO and recommendation by the Planning Commission (Tampa-Hillsborough County), to designate over 3000 acres in South Hillsborough County from RURAL to EPGF (Electrical Power Generating Facility). The proposed land use category would allow for an electric power generating facility or agricultural land use only within the designated area. At that meeting, it was decided to withhold judgement on the acceptability of a power plant at a site which included over 2000 acres of environmentally sensitive lands adjacent to Cockroach Bay.

During the October meeting, the Full Agency on Bay Management approved a letter to the Hillsborough County Board of County Commissioners identifying that the site was inappropriate for a power generating facility, due to the environmental significance of the area and potential impacts the power plant could create. On December 13, 1988, members of the Agency reiterated the concerns to the Board of County Commissioners at a Community Workshop conducted by the Board. As a formal request for a change to the Future Land Use Map, the recommendations were reviewed by Hillsborough County staff to be considered at the Public Hearing to be conducted by the Board in January, 1989.

Concerns expressed by ABM included the following:

(1)The area is one of the most environmentally significant and pristine parcels remaining in private ownership on Tampa Bay. The property is located within and between Cockroach Creek and Piney Point Creek, two of three tributaries classified in "natural condition" by the Tampa Bay Regional Planning Council (1986) in Hillsborough County.

(2)The tracts are currently being considered for acquisition under the Hillsborough County Environmental Land Acquisition and Protection
(ELAPP) and received a priority ranking of tenth on the list.

(3) The wetland areas are part of the Cockroach Bay Aquatic Preserve, which is classified as an Outstanding Florida Water (OFW) and receives a Class II water designation requiring additional protection.

In conclusion, before any change in land use designation is considered and approved, the Agency requested additional opportunities for review of future activities on the TECO/Reeder properties to prevent any negative impacts to this vital ecological component of the Tampa Bay estuarine system. Members of ABM met with County staff to express these and additional concerns in late December 1988.
STATE OF BAY LEGISLATION

MANGROVE TRIMMING WITHIN AQUATIC PRESERVES

The Board of Trustees of the Internal Improvement Trust Fund considered on April 21, 1987 information regarding numerous requests from property owners wishing to legally trim mangroves in Aquatic Preserves. These requests prompted Aquatic Preserve staff to provide possible modifications to the current policy of prohibiting mangrove trimming within preserves. The information was considered by the Board of Trustees, and became the subject of the public workshops held around the state in July of 1988.

The Agency on Bay Management in a letter to the Executive Director of the Department of Natural Resources recommended that any attempt to modify the rule governing mangrove trimming in Aquatic Preserves be carefully weighed to consider the purposes of the Aquatic Preserves as special areas. The Agency particularly stressed its concern with the implementation of the rules that allow mangrove trimming, and view this as a danger to the integrity of the Aquatic Preserves.

The results of the public workshops and presentations by the Bureau of Aquatic Preserves mangrove specialist, Jim Beever, have been delivered to Mr. Gardner and to has Cabinet aids. The Board of Trustees have yet to consider this agenda item.

PORT MANATEE SPOIL ISLAND LAND USE DESIGNATION

The Port Manatee Spoil Island was created through open water disposal of excavated bay-bottom material in the 1970's, when the entrance channel to Port Manatee was dredged. The island is located to the southwest of the port channel and is approximately 70 acres in size. The island presently has no structure and is not connected to the mainland.

In 1988 Manatee County began its process to revise its Comprehensive Land Use Plan to comply with Florida 1985 Growth Management Legislation. A part of this process consisted of developing a detailed land use map for all of Manatee County.
Florida Land Design and Engineering, Inc., the land use plan consultant for Manatee County, recommended the Port Manatee Spoil Island be designated on the land use map as Conservation, a designation reserved for the primary purpose of preservation of natural resources. The Manatee County Board of County Commissioners initially accepted this recommendation.

The Manatee Port Authority objected to the Conservation designation on the grounds that the spoil island was artificially created, it currently has low plant and animal species diversity and it was proposed by the Port Authority as a site for future port expansion.

After reviewing the issue, the Agency on Bay Management voted unanimously at its June 9, 1988 meeting to recommend to the Manatee County Board of County Commissioners that the spoil island be designated Conservation because of its potential for habitat restoration and its inappropriateness for use in expansion of Port Manatee.

The Manatee County Board of County Commissioners voted in June, 1988 to establish the Conservation designation on the spoil island. On November 23, 1988, the Manatee Comprehensive Land Use Plan was submitted to the Florida Department of Community Affairs for review.

**DER’S ANTIDEGRADEATION RULE REVISIONS**

On September 24, 1987, Region IV of the U.S. EPA notified the Florida Department of Environmental Regulation (DER) that portions of DER’s water quality standards were being disapproved as part of the triennial review process. The specific portions of DER’s water quality standards which were disapproved were DER’s definition of chronic toxicity and its antidegradation policies. Pursuant to 33 USC 1313(a), DER had 90 days from September 24, 1987 to correct these deficiencies or EPA would be required by the federal Clean Water Act to promulgate such standards for Florida. Neither DER nor EPA acted in the appropriate timetables and ManaSota-88, Inc. sued the EPA in the Federal District Court in Tampa for failure to perform a nondiscretionary duty.

After the filing of this suit DER began rulemaking in 1987 and has held three workshops to date. Both ManaSota-88, Inc. and DER’s Director of the Division of Environmental Programs, Howard Rhodes, made special presentations to the 1988 Agency on Bay Management on the antidegradation policies and results of the workshops.

Issues of concern to the Agency are the proposals to (1) create multiple classifications of Outstanding Florida Waters (OFW), with all of the OFW waters in the bay area being the lowest category (i.e. locally significant OFWs), (2) the failure to designate Outstanding National Resources Waters (ONRW),
and the failure to bring noncompliance waterbodies back in to compliance with applicable water quality standards. Most of Old Tampa Bay, Hillsborough Bay and Boca Ciega Bay are in this category. The ONRW designation would eliminate the permitting exceptions which exist in the OFW rule and would preclude use of the Grizzle-Figg statute in ONRW waters.

DER currently has deleted its locally significant OFW proposal and has proposed the designation of 3 ONRW statewide, these being Big Cypress Preserve, Everglades National Park and Biscayne Bay National Park. ManaSota-88, Inc. contends all OFWs are ONRWs because the OFW definition is the same as the ONRW definition.

DER has made no rulemaking efforts on the noncompliance waters issue. No date has been set for DER to take final action on the proposed rulemaking it has started. To date, the federal lawsuit is still pending with the Court having denied EPA’s partial Motion to Dismiss and denied the Motion to Intervene of the Florida Electric Power Coordinating Group.

IMPLEMENTATION OF THE GROWTH MANAGEMENT ACT

In June 1985, the Florida legislature took an historic step by passing the Growth Management Act. The legislation included a new State Comprehensive Plan, guidelines for the preparation and adoption of regional and local government comprehensive plans and coastal protection and Development of Regional Impact reforms. This action opened up a new era of integrated planning for the State of Florida.

Each step in this integrated planning process is more specific and carries more responsibility than the one preceding. The State Comprehensive Plan defines the general areas of concern for the State of Florida. The Comprehensive Regional Policy Plans specify the manner in which those areas of concern apply to the regions and establish a general policy direction to be taken in addressing the issues. The Local Government Comprehensive Plans are very specific and contain goals, objectives and policies addressing those issues which apply directly to each community and establishing standards for the provision of services and the protection of existing resources.

The implications of the Growth Management Act on Tampa Bay could be significant. The Act seeks to ensure that growth pays for the impacts it creates. Further, it assigns the responsibility of monitoring and regulating growth to those who permit it. As portions of Tampa Bay are designated Outstanding Florida Waters, local governments, in cooperation with various state agencies, will be obligated to ensure that no development or activity is permitted which would further degrade water quality in the Bay. By adopting policies which takes positive steps to protect and improve water quality and other natural resources, local governments could provide the as-
surance of a healthier environment for Florida's future.

**GRIZZLE-FIGG (AWT) ACT**

Since the 1987 Florida Legislature passed revisions to Chapter 403, Florida Statutes (better known as the Grizzle-Figg Bill), the Southwest District Office of the Department of Environmental Regulation has implemented a plan to assure that all existing facilities meet the provisions of the legislation by October 1, 1990 and that all newly constructed facilities meet the standards as they are built.

Initially a total of 33 systems were notified that they would have to comply with the provisions of the Bill and were requested to provide a schedule as to what steps would be taken to meet the October 1, 1990 deadline. All Waste Water Treatment Plant systems have submitted schedules which indicate that compliance will be achieved.

Of the original systems, three with a combined capacity in excess of 34.5 million gallons per day (mgd), have eliminated their surface discharge entirely. New construction permits or "Intent to Issue" determinations have been made for a total volume of 71.5 mgd of advanced treated reclaimed water in the area.

Several of the larger systems that have submitted applications for discharge have committed to reuse of reclaimed water and some have extensive reuse systems that provide reclaimed water to golf courses, green area, industrial reuse, etc.

Recommendations on water quality standards for Tampa Bay in the future will be considered as part of the Southwest Florida Water Management District's SWIM studies on Tampa Bay.

**GILL NETTING PROHIBITED IN E.G. SIMMONS PARK**

On January 20, 1988 the Hillsborough County Board of County Commissioners voted to propose an amendment to the Florida Administrative Code Rules to prohibit gill netting inside the bulkhead of E.G. Simmons Park. The Commission voted unanimously in favor of this proposal which was supported by the Tampa Chapter of the
Florida Conservation Association (FCA).

The Florida Marine Fisheries Commission approved the proposal on July 19, 1988. The proposal was subsequently approved by Governor Martinez and became effective on October 1, 1988.

Looking North over E. G. Simmons Park

The proposal to ban gill netting in the Park was based on complaints of numerous recreational fishermen that it was unfair to allow commercial netters to make commercial use of a public resource. The County Commission found that the FCA-backed proposal would eliminate user conflicts between recreational fishermen and commercial fishermen. The new rule prohibits any commercial gill netting within the Park.

EXPANSION OF THE COCKROACH BAY AQUATIC PRESERVE

Tampa Bay Group of the Sierra Club, along with a number of other environmental groups continued and succeeded in their lobbying efforts to get the boundaries of the Cockroach Bay Aquatic Preserve expanded in 1988. Bills sponsored by Florida Senator Malcolm Beard and Representative Spud Clements were passed during the 1988 session and increased the scope of the boundaries that were set when the preserve was originally designated in 1976.

As described in the management plan for the preserve, expansion of the boundaries was needed to correct artificial delineations of natural systems within and surrounding the preserve. The change will help eliminate ecological inconsistencies in preserve management.

Expansion of the Cockroach Bay Aquatic Preserve included:

- The western boundary of the preserve was extended 1,500 feet further into Tampa Bay to include all the seagrass beds that exist outside the current western boundary.
- The north boundary was extended to include the North Bank of the Little Manatee River.
- The east boundary was extended up to the mangrove islands, salt marshes, freshwater wetlands and associated waters from the mean high water line, to encompass the Little Manatee River State Recreation Area at U.S. 301.
The increased protection of the preserve was accomplished with the support of the Tampa Bay Regional Planning Council and its Agency on Bay Management, the Hillsborough Legislative Delegation and the Tampa Port Authority.
STATE OF THE SWIM PROGRAM

AGENCY ADVISORY COUNCIL FOR SWIM

The State of Florida passed the Surface Water Improvement and Management (SWIM) Act at the end of the 1987 legislative session. Heralded as one of the most important pieces of environmental legislation in recent years, the Act was to initiate the restoration and protection of surface water bodies on a state-wide basis. The legislation mandated that the state's five Water Management Districts would be the agencies to implement the bill with the Department of Environmental Regulation as the State's overview agency.

The SWIM legislation noted that the Water Management Districts should consider the appointment of advisory councils for the surface water bodies identified as priorities. The Southwest Florida Water Management District requested that the Executive Steering Committee of the Tampa Bay Regional Planning Council’s Agency on Bay Management act as its Advisory Council for the Tampa Bay Priority water body. The District recognized the collective experience and expertise of the assembled members and the history of the Agency in dealing with bay management issues. This Advisory function will aid the District in the design, planning and implementation of programs and projects through the SWIM Program.

CABBAGE HEAD BAYOU RESTORATION

Cabbage Head Bayou was impounded by berms from the construction of Channel "A", a 4.6 mile long (although only 1.2 miles affects wetland areas) drainage canal built in the late 1950s and early 1960s to relieve flooding in northwest Hillsborough County. An opportunity to improve the bayou presented itself when the Florida Department of Transportation (DOT) needed a mitigation area to make up for environmental damage caused by the expansion of the Courtney Campbell Causeway. As part of the planned mitigation, DOT will remove a portion of the eastern berm.

Breaching the berm will not compromise the engineered capacities of the canal, and will provide a needed source of tidal flushing to Cabbage Head Bayou. Work has already begun to improve the upland habitat of the berm by removing exotic vegetation and replacing it with native species.
Through SWIM, the District has also begun monitoring water quality in these impounded areas and in a nearby control area for physio-chemical and biological parameters (benthic organism, fishes, seagrasses, etc.). Monitoring will continue for one year after the breaching, and will provide a year of background data and a year of data after berm excavation is completed. Through this work, the District anticipates being able to demonstrate both the physical and biological improvements, if any, made by restoring tidal flushing to impounded areas. Projects such as this will also provide technical information needed to apply similar restoration techniques to other impounded areas around the bay.

Cooperation has not been limited to the District and DOT, however. A local chapter of the National Audubon Society has volunteered to help as well. Audubon members are conducting an avifauna study of the area to provide data on bird usage before and after fishing is restored.

**DELANEY CREEK POP-OFF CANAL RESTORATION**

The Delaney Creek Pop-Off Canal is a half-mile long, 100 foot wide drainage canal built through an extensive marsh on the eastern shoreline of Hillsborough Bay. Hillsborough County originally constructed the canal in the 1960s, and essentially straightened a previously meandering tidal tributary to Hillsborough Bay. The resulting berms impounded marshes associated with the historic oxbows of the stream. The intent of the SWIM project is to remove portions of the 3 to 8 foot high berms (to restore freshwater and tidal flow to the marshes), replace the marsh vegetation, and re-establish the meandering character of the stream.

Water quality improvements are anticipated from restored freshwater flow and tidal action to approximately 17 acres of impounded marshes. This flow also provide an opportunity to "polish" stormwater before its discharge to the bay. Between five and ten acres of salt-marsh habitat lost during canal construction will be restored through this project as well.

The Delaney Creek Pop-Off canal is located on property owned by Gardinier, Inc., a major phosphate processing firm. Gardinier has cooperated fully with the District on this project. The company has agreed to establish an expansive, permanent conservation easement around the project site. DER and Hillsborough County have also been involved in this project, coordinating it with other local efforts in this area to gain the greatest possible environmental benefit. In addition, local chapters of the National Audubon Society are conducting avifauna surveys at this site.

**TAMPA BAY SWIM PLAN**

A comprehensive Tampa Bay Surface Water Improvement and Management (SWIM) Plan -- the product of nearly a year of meetings, workshops and hearings -- became official with its adoption by the Southwest Florida Water Management District Governing Board at the August 30 meeting in Brooksville. The SWIM legislation, passed in 1987, mandated preparation of the plan. Tampa Bay is the District's top priority for cleanup under the SWIM program.

To seek additional technical in-put into the process, the SWIM program requested a committee of the Agency on Bay Management be established to assist with development of the plan for Tampa Bay. The special committee of the Agency met on a regular basis to offer recommendations and review drafts of the plan.
In addition, a series of public workshops throughout the bay area helped fine-tune this blueprint for the bay's restoration. Organizations and individuals came forward to raise their concerns, which were addressed in the final document. Governing Board member Charles Black presided over a public hearing on August 16, to wrap up commentary on the proposed plan. The SWIM plan was approved by the full Governing Board of August 30, then was sent to the Florida Department of Environmental Regulation the next day.

The DER reviewed it for completeness and consistency with the goals of the legislation, then granted its approval of the plan. This opens the door for the continuing implementation of measures to restore and protect Tampa Bay. Some bay enhancement projects already are in place in some areas of the bay. Several of these are discussed in detail elsewhere in the State of the Bay report.
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CARL PROGRAM ACQUISITION OF EMERSON POINT

The year 1988 witnessed several major steps forward in the drive to have Emerson Point acquired under the Conservation And Recreational Land (CARL) program. People for Emerson Point (PEP), a citizens organization, conducted a massive public information campaign which resulted in 78.6% of Manatee County voters approving a bond referendum to raise approximately 2 million dollars to buy Emerson Point. The total purchase price is estimated to exceed 6 million dollars. In December, 1988, the CARL committee voted to place Emerson Point on the state’s priority list for acquisition and ranked it as number 15 of 84 projects. State Representative "Toby" Holland was instrumental in organizing public support throughout the CARL program selection process.

The Emerson Point site consists of approximately 360 acres of almost pristine wildlife habitat and includes significant archaeological sites. The current effort to acquire the site was initiated by the Manatee County Land Acquisition Technical Advisory Committee which had recommended to the Board of Commissioners that acquisition of Emerson Point should be a top priority. Throughout the Emerson Point acquisition process the Agency on Bay Management has expressed its support of the project to local governments and the CARL Committee. ABM members also were directly involved in collecting and disseminating technical information concerning the project.

PINELLAS COUNTY PARK AND ENDANGERED LAND PURCHASES

In November 1986, Pinellas County residents voted and approved overwhelmingly the referendum to increase by one half mill ad valorem (property) taxes for the purchase of endangered and County park lands. Pinellas County developed a priority ranking of available sites and proceeded to purchase selected sites in 1988, which included the following:

Boca Ciega Bay Tract

This 170 acre tract was purchased in December of 1987. This property has both wetland and upland communities representative of Pinellas County. The wetland areas consist of an extensive mangrove shoreline, oyster bars, grass flats, and extensive salt barren/salt marsh. The tract also supports an active...
blue heron rookery. The approximately 112 acres of upland, which contains pine flatwoods, scrub oak, and wax myrtle, will be used to develop a major regional park facility. This site will also be used for a wetlands enhancement project to provide additional estuarine habitat and public awareness, and is co-sponsored by the SWIM program, the Department of Environmental Regulation, and Pinellas County.

Joe’s Creek Nature Preserve
This tract is made up of four major parcels and include:

- Meritcare purchase of 85.45 acres acquired in December, 1987 (34 acres of upland)
- Meritcare Donation of 27.55 acres acquired in December, 1987 (mostly wetland)
- Northside Baptist purchase of 21.56 acres acquired in November, 1988 (9.2 acres of upland) adjacent on the east to the Meritcare property.
- Ferrell purchase of 47.82 acres acquired in December, 1988 (26 acres of Upland) to the north of and across Joe’s Creek from the Northside Baptist purchase.

The Meritcare purchase and Northside Baptist purchase are properties within the protection zone for an active bald eagles nest. These properties will be maintained as a protected nature preserve. The Farrell property will potentially be developed into a recreation area, with boardwalks for visitors to the preserve. Portions of the Meritcare property may also be made accessible for passive recreation through the use of boardwalks and overlook areas.

 Portions of all of these tracts may be used for enhancement projects using Florida Department of Environmental Regulations Pollution Recovery Trust Fund monies in conjunction with Pinellas County efforts.

Wall Springs
This land assembly of 32.07 acres has been purchased over the period from February to June of 1988. An additional 13 acres are yet to be purchased. When purchases are complete, these properties will be contiguous to 20 acres already owned by the County. Together these will form a county park of approximately 65 acres. The park will potentially include picnic areas, nature walks and
water activities. The property contains pine walks and water activities. Natural resources on-site include pine flatwoods, live oak scrub, mangrove forest, salt marsh, and submerged grass beds. Another unique feature is a freshwater spring with an associated small lake. The site also provides a diversity of habitats for extensive bird populations. These include wading and shore birds as well as woodland species. An active osprey nest occurs in one part of the site.

**Indian Rocks Beach Access**

This purchase of 1.57 acres was completed in January, 1989. The buildings on the site are currently being cleared and the site will eventually be developed into a beach access park.

**Cooper's Point**

Cooper's Point included the acquisition of 136 acres of predominant mangrove forest and coastal wetlands and was a joint venture between the County and the City of Clearwater. The County retains an undivided two-thirds interest in the property and thus, can protect it from development. The City is responsible for maintenance of the property and will develop it for passive recreation only, such as boardwalks and nature trails.

**Ozona**

This purchase of 5.3 acres is expected to be completed in March 1989. It contains about 3 acres of upland with the remainder tidally influenced wetland. This property provides some of the last remaining natural wildlife habitat in this small community and will be retained in its natural state for passive recreational use only.

**HILLSBOROUGH COUNTY ENVIRONMENTAL LANDS ACQUISITION AND PRESERVATION PROGRAM**

To respond to this need for environmentally sensitive land acquisition the Hillsborough County Parks Department established a committee to oversee creation of a public referendum to collect a quarter mill ad valorem (property) tax over a four-year period.

Hillsborough County defined environmental lands as those lands which shall have as their purpose the conservation and protection of environmentally unique, irreplaceable and valued ecological resources. The primary purpose of acquiring such lands shall be for resource protection, but all lands shall be open for public use and enjoyment to the extent that the County finds such use compatible with the conservation and protection of these lands.

Recent acquisitions under the Hillsborough County Environmental Lands Acquisition Program (ELAPP) include:
The Isles of Cockroach Bay

This site is approximately 350 acres including approximately 75 islands from the Little Manatee River to Cockroach Bay and the associated shoreline, ranked number one on the ELAPP priority list for acquisition. The State Conservation and Recreation Lands Program had listed this project as a potential acquisition on the 1988 priority list. The State recently re-ranked the projects lowering the Isles of Cockroach Bay below the total funding level. The project is now in a position where joint funding by the State and County is a possibility.

The Little Manatee River

This property is approximately 1,789 acres which includes the shoreline and various uplands of the Little Manatee River between Highway 301 and Highway 41, ranked number two for public purchase. The Trust for Public Land, a private, non-profit agency, is preparing a project plan to address the numerous tracts of land. This project is anticipated to be lengthy due to the complexity of multiple land owners and scale of the acquisition.

Buckhorn Creek

This site encompasses approximately 146 acres located South of Bloomingdale Avenue, west of Highway 301, and east of Highway 41, ranked number three. Buckhorn Creek discharges to the lower Alafia River.

Lithia Springs/Lithia Addition

The property 204 acres more or less and is located at the west end of Lithia Springs Road, two miles off County Road 640, ranked number five and thirteen. The South West Florida Water Management District has expressed interest in a joint acquisition through their Save Our Rivers Program. Property owners have been contacted and are willing to discuss the matter further.

McKay Bay

The property is approximately 68 acres and is located on the shoreline of McKay Bay in the extreme northeast section of Hillsborough Bay. The county Real Estate Department has requested an appraisal of the site. The owners appear willing to sell at a reasonable price. Upon obtaining appraisals a recommendation will be made to the Board of County Commissioners.

Florida College

This site encompasses approximately 231 acres on the east bank of the Hillsborough River, upstream of River Hills Park in Temple Terrace, ranked number fourteen. The County Real Estate Department has obtained an appraisal for the 85 acre Bolding Tract which they will review through the ELAPP Advisory Committee. Additionally, the 130 acre tract owned by Florida College is under option to a developer who has agreed, in principal, to the establishment of a conservation easement.

In addition to these specific developments, the Real Estate Department has developed aerial photographs with boundaries and ownership overlays, in preparation for obtaining surveys and appraisals for all sites involving possible acquisition.
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