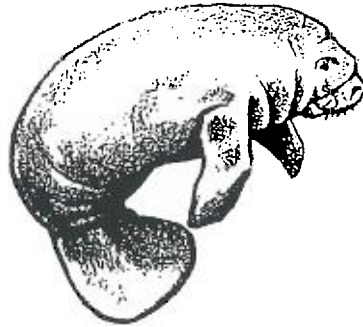


Appendix B
Public Information Documents for Protection
of Marine Mammals

Manatee Protection Program
A PORT CANAVERAL ENVIRONMENTAL
EDUCATION & ENHANCEMENT PROJECT



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TABLE OF CONTENTS

Introduction	1
Goals and Objectives	2
Discussion	3
Background	3
Balance Between the Environment and Economy	4
Methodology	5
Project Funding/Cost Effectiveness	10
Project Results	11
Technology Transfer	11
Conclusion	12
Figure 1 - Port Canaveral Location Map	13
Appendix A - Manatee Awareness Brochure	
Appendix B - Manatee Awareness Newspaper Advertisement	
Appendix C - Manatee Awareness Photographs	
Appendix D - Manatee Education Video	



INTRODUCTION

The manatee (*Trichechus manatus latirostris*) is one of the best-known endangered species in the state of Florida. These animals can be found all along Florida's coast and in associated interior rivers. Brevard County's location along the east-central coast provides optimal weather and habitats for the species to grow and reproduce and, as such, Brevard is the hub of Florida's east coast manatee population.

Located within Brevard County, Port Canaveral is an important area for the survival of these animals. Florida manatees use port waters for playing, resting, feeding, freshwater drinking, reproduction, and as a travel corridor between the Atlantic Ocean and the Indian River Lagoon (see Figure 1). To minimize the risk of injury to the manatees from commercial and recreational activity in the port, the Canaveral Port Authority has voluntarily implemented a Manatee Protection and Education Program which is designed to increase awareness and provide protection for this endangered species.

This program is critical to the long term survival of manatees in Port Canaveral and is a prime example of balancing the need to protect environmental resources with the inevitable economic growth and development of the Port.



GOALS AND OBJECTIVES

The primary goal of the Port Canaveral Manatee Protection and Education Program is to minimize human-related manatee mortality within the port. Toward this end, the plan objectives are directed toward increasing awareness among port users including tenants, commercial shipping interests and recreational boaters in Brevard County. In addition, the port authority has committed to providing structural improvements to the piers to enhance manatee safety and requesting tenants to improve shipboard fenders.

The high levels of commercial vessel and recreational boating activity combined with the significant numbers of manatees using Port Canaveral results in a potentially dangerous environment for the manatee. With the implementation of the port's Manatee Protection and Education Program, deliberate and systematic steps are being taken to minimize future impacts to these endangered species. The ultimate objective of the port's plan is to protect the manatees and help bring the species back from their endangered status.



DISCUSSION

Background

In 1989, Florida's Governor and Cabinet approved recommendations submitted by the Florida Department of Environmental Protection (FDEP) to protect the manatee and its habitat and to increase boating safety in the state's waterways. In these recommendations, thirteen key counties with high levels of manatee mortality, including Brevard County, were identified and mandated to develop comprehensive management plans to reduce manatee mortality and establish boat facility siting policies. In 1993, Brevard County established an ad-hoc committee to formulate a management plan for manatee and boating safety. The committee consisted of 34 members from all municipalities bordering the Indian River Lagoon, a variety of interest groups, and federal and state agencies involved with manatee protection.

Although not under the county's jurisdiction, Port Canaveral elected to participate on the ad-hoc committee and voluntarily entered into an agreement with the Florida Department of Environmental Protection to implement a separate and independent manatee protection and education plan for the port area. The formulation of the port's plan was based on data provided by the agency and an independent study of manatee usage at Port Canaveral funded by the Canaveral Port Authority. The plan components were approved by the Port Canaveral Board of Commissioners in August, 1995 and were implemented in 1996.



Balance Between the Environment and Economy

The port's fundamental purpose and charter is to foster economic development and trade. This commerce and activity creates an inherent threat to the manatees utilizing the area. The Port Canaveral Manatee Protection and Education Program shows that the fundamental difference between economic development and the protection of natural resources can be effectively resolved using good science, open communication and most importantly, education. This program allows for continued economic activity with caution toward the marine mammals utilizing the harbor waters.



Methodology

The key elements of the Port Canaveral Manatee Protection and Education Program include improvements to the port's fendering system, grating of stormwater outfalls to prevent manatees from entering and implementation of an education/awareness program for port users. These elements are essential to successfully reducing the human-related manatee mortality associated with commercial and recreation use of the port and were agreed upon by the FDEP and U.S. Fish and Wildlife Service. The following is a list of the key elements of the Port Canaveral Manatee Protection Plan.

- (1) The port shall develop a wharf repair and replacement schedule within six months of the FDEP approval of the Brevard County Manatee Protection Plan. All docks or bulkheads that are utilized by vessels 100 feet in length or larger and do not presently have three-foot fenders under maximum operational compression should have highest priority.

- (2) All existing bulkheads that dock vessels 100 feet in length or more shall have a minimum of three-foot standoffs under maximum operational compression. Future cargo and cruise terminal berths that are constructed of bulkhead walls shall provide a minimum of four-foot standoff under maximum operational compression. For open pile structures that provide sufficient escape room for manatees, three-foot standoff shall be provided between the hull of the vessel and the nearest pile face.



Due to the unique structural design of the bulkhead wall at the Marginal Wharf which prevents the retrofitting of fenders providing a minimum of three-foot standoff under maximum operational compression, the three-foot fendering requirement does not apply to the existing pier design. Until the redesign of this pier is complete (circa 2015) manatee safety and awareness and line handler training courses shall be emphasized and conducted yearly for users of this pier. The redesign of this pier shall include fenders providing three-foot standoff under maximum operational compression.

- (3) Fender mounting elevations shall not be restricted. However, when technically feasible, the port shall make efforts to minimize the amount of fender area placed below mean high water.
- (4) The Canaveral Port Authority shall be responsible for the maintenance of the fenders. Fenders shall be inspected at least every two years and repairs shall be performed as necessary.
- (5) Fenders on bulkhead wall structures shall be positioned so that the clear space between the fenders does not exceed fifty feet. Fender spacing on open pile structures or isolated breasting dolphins shall not be restricted.



- (6) The Canaveral Port Authority shall request and encourage tenants to use fenders providing three-foot standoff under maximum operational compression between all vessels when moored at the bulkhead, between two rafted vessels, or between a fueling vessel and a receiving vessel.
- (7) New stormwater outfalls shall be designed and placed to minimize adverse impacts to manatees. Existing stormwater outfalls shall be grated to prevent manatees from entering.
- (8) Continue development of the Manatee Protection and Education Plan in coordination with the Florida Department of Environmental Protection.
- (9) Continue Lock Operator manatee education and awareness in coordination with the U.S. Army Corps of Engineers.
- (10) Continue Port Authority manatee education and awareness program for port users including commercial shipping interests, tenants and recreational boaters including development of educational brochures and a video.
- (11) Implement yearly awareness training for all interested parties.



- (12) Consistent with permit requirements, manatee observers shall be posted during dredging, the movement of construction-related workboats, or any other water-based construction activity.

During the formulation of the plan, the port's engineering staff studied the feasibility of using fendering systems which provided 3-4 feet of clearance between vessels and bulkheads during maximum operational compression. It was determined that in certain areas of the port, the use of these fenders was indeed feasible but in other areas it was not. As a result, the FDEP allowed some flexibility for those areas where new fenders could not be installed in the near term. However, it is important to note that all new piers constructed in the recent past, including Cruise Terminal #10 and the new Disney Cruise Line Terminal, have the manatee safe fenders which allow three feet of standoff during maximum operational compression. All piers built in the future will be equipped with similar fenders.

The mounting elevation of the fenders was also a concern to the Save the Manatee Club because it was believed that manatees could be caught between the fender and vessel if any portion of the fender was under water. The port, however, was not able to commit to a specific fendering height because of individual ship requirements. As a result, a compromise agreement was reached which specified that the port would make efforts



where technically feasible to place the fenders above mean high water. This consideration has now been incorporated into the design of all piers.

Other concerns about fendering included the maintenance, spacing of fenders on the piers, and spacing of fenders between moored vessels. To address these concerns, the port agreed to be responsible for maintenance and inspections of fenders on a regular basis, to place fenders no more than fifty feet apart on bulkhead walls, and to work with tenants to ensure three-foot fenders between moored vessels. These agreements have been implemented through design practice, the regular performance of fender inspections, and the distribution of information to tenants requesting their use of three-foot fenders.

The FDEP was especially concerned about the potential for small and mid-sized manatees to get caught in the various stormwater outfall pipes around the port. Many of the outfalls are under water at high tide and pose a danger to unsuspecting manatees as the tide goes out. The Canaveral Port Authority, recognizing the historical problems associated with manatee mortality caused by outfall structures in other areas of the county, agreed to grate the structures which posed the greatest threats. A list of potentially dangerous outfalls has been compiled by the port's environmental staff and the grating design to fit individual outfalls is in progress. Approximately 12 outfalls will be grated through this effort.



One of the most crucial elements of the plan is the provision for education to increase awareness among port users regarding manatee safety. To properly implement the education program, brochures (Appendix A) and a video (Appendix D) were produced and distributed to over 200 port tenants, 50 commercial shipping companies and to recreational boating associations in Brevard County. Seminars have been conducted for interested parties and all construction contractors involved in water-based construction activities are required to attend a one-hour course on manatee safety. In addition, commercial shipping interests and Port Authority employees are offered annual training in manatee awareness. The course was designed with approval from the Florida Department of Environmental Protection and the U.S. Fish and Wildlife Service. The number of people reached through this effort are approximately 5,000. The targeted groups (port tenants, commercial shipping interest and recreational boaters) were chosen because they are the user groups with the greatest potential to adversely impact manatees at Port Canaveral. Newspaper advertisements (Appendix B) have also been published during high use periods to advise port users about manatees in the area.

Project Funding/Cost Effectiveness

The development of the Manatee Protection Plan was the result of a two year effort between the FDEP, the U.S. Fish and Wildlife Service, and the Canaveral Port Authority. The plan's implementation was funded entirely by the Canaveral Port Authority and the production and dissemination of the



brochures and video was performed solely by port authority personnel. In addition, the training seminars are performed at the Port by Port Authority personnel. The high level of involvement and voluntary effort on behalf of the port authority has resulted in a distinctive and highly successful program. The brochure and video made it possible to reach a large number of port users in a cost effective manner in a short period of time. In addition, information about manatee usage of Port Canaveral is disseminated by word-of-mouth at local functions attended by the port's environmental staff.

Project Results

The program has been successful in that many port tenants and users have implemented the manatee safety suggestions outlined in the brochure and video. Awareness about manatees in Port Canaveral has increased dramatically and no human-related mortalities attributed to shipping impacts were recorded in the port during 1996.

Transferability of Technology to Port Industry

This protection program can be used as a prototype by all ports in the manatee's natural habitat range.



CONCLUSION

The voluntary effort extended by the Canaveral Port Authority to protect the Florida Manatee and to educate ports users about their presence has resulted in a successful program. All areas or activities in the port which pose a potential threat to the safety of the manatee have been mitigated resulting in the minimization of adverse impacts to this species. As awareness about the manatees movements within the port increases, so too will the number of port users who watch for them and take action to avoid them.

The Canaveral Port Authority believes that the implementation of endangered species programs such as this will help protect the affected species and ultimately benefit mankind by their long term survival.