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PROVINCETOWN HARBOR PLAN

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September 23, 1997

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I. Summary of the Provincetown Harbor Plan

A. Overview

1. A Plan for the Future of Provincetown Harbor

Provincetown Harbor is an attractive focus of activity for the entire community which surrounds it. The Harbor area is a complex place that requires public attention to ensure appropriate use and a clean environment. The Provincetown Harbor Plan establishes practical steps to meet these goals. This Plan values the present character and activities within the Harbor area. Rather than seeking dramatic changes, the objective of the Plan is to enhance the Harbor through better management and by accomplishing a list of coordinated improvements.

The Plan envisions a future Provincetown Harbor with substantially greater access and a more pleasant character along the waterfront for all of its users. The Plan calls for many small scale improvements, each planned and designed with respect for the special qualities of its particular circumstances and the uses which will be served. Improvements will be achieved in part by:

- Improvements to all town landings and public access points.
- A new set of guidelines and special license review process for harbor-edge properties required to meet Commonwealth of Massachusetts Chapter 91 licensing standards for public access and water-dependent uses. These guidelines are tailored to Provincetown's special circumstances as a waterfront with extensive Commonwealth tidelands largely filled by existing development.

In addition, the Plan includes improvements to the public wharves, bulkheads, boat ramps and support infrastructure for commercial and recreational boating through reconstruction and improvements. Both short-term and long-term actions will continuously add to the safety and amenity of a harbor for all sizes and types of vessels. Among the specific recommendations are:

- Reconstruction of MacMillan Pier to correct deterioration and structural deficiencies and better serve both current and future uses
- Additional support facilities for small-boat commercial fishing
- Improvements to the existing boat ramp and future construction of a new boat ramp on a site to be determined through additional study
- Use of existing land use procedures to protect water-dependent uses, and the investigation of additional measures to help ensure appropriate uses along the waterfront.

The Plan includes several management changes to improve coordination of harbor activities and to make more efficient use of public resources. Specific recommendations of the Plan include:

- Creation of a Harbor Committee to ensure coordination of all aspects of the harbor
- Creation of a special management entity for MacMillan Pier to provide for better management of a reconstructed pier so that it is not a deficit for the town budget

2. Planning Context

Provincetown Harbor is a unique asset for the community, the region, and the Commonwealth. Tucked inside a curling spit of sand at the outermost reaches of Cape Cod, the harbor provides a deep natural anchorage and picturesque setting that has attracted settlers, fishermen, tourists and residents for hundreds of years. Like other harbors, it has mirrored a changing economy. Once a major fishing and commercial port, the harbor edge was historically lined with numerous piers and wharves. Commercial Street along the harbor's edge served a vital marine-oriented economy and its related culture. While it still serves a vital role as a marine harbor, the business of the harbor is now largely related to tourism, which is the predominant economic activity for Provincetown and Cape Cod.

This Plan for Provincetown Harbor establishes a reasoned approach to the future use and management of Provincetown Harbor and its edges. The Plan has been prepared by the Town of Provincetown to address numerous existing problems and to establish consensus about the character and quality of the harbor into the next century. The Plan has been prepared in concert with the requirements for a Municipal Harbor Plan as recognized by the Commonwealth of Massachusetts Office of Coastal Zone Management, to establish a consistent regulatory approach to those lands and waters subject to Commonwealth jurisdiction. The Commonwealth retains specific interests in the future of the harbor for public access and water-dependent uses through M.G.L. Chapter 91 (Public Waterways Act, 1866), and through the implementing regulations (310 CMR 9.00).

The Plan more particularly responds to a specific list of issues raised in a participatory planning process as incorporated into a Scope for the Provincetown Harbor Plan. The Scope of the Plan was prepared by the Harbor Planning Committee, the group designated by the town to create this Plan. The Scope was also reviewed and approved by the Secretary of Executive Office of Environmental Affairs of the Commonwealth of Massachusetts, in keeping with the requirements of the State Municipal Harbor Planning process (301 CMR 23.00).

Five key issue areas have been addressed in this plan, and are reflected in its recommendations:

- Preserving the Harbor's Built and Natural Assets;
- Promoting Commercial Fishing and Aquaculture;
- Providing for Diverse Vessel Use and Needs;
- Assuring Public Access to the Shoreline for Recreation; and
- Planning for Future Harbor Uses.

3. Organization of the Provincetown Harbor Plan

The elements of the Provincetown Harbor Plan have been organized to facilitate review and reference. This initial section of the Plan presents the fundamental goals and

objectives of the plan and summarizes the principal recommendations regarding its future. Section II summarizes the planning process that has been employed to come to the conclusions contained in the Plan. Section III is a synopsis of the research concerning existing conditions that serve as the foundation for understanding the issues that are addressed by the Plan. Section IV recounts a key step in the planning process, during which potential alternative planning directions were studied and from which the conclusions emerged.

Section V incorporates the specific recommendations of this Plan. The recommendations have been organized somewhat differently than the original list of issues, to facilitate comprehensiveness and understanding of the conclusion. The recommendations trace the implications of the Plan for:

- Land Use
- Water Use
- Public Facilities
- Regulatory Framework for Chapter 91
- Long Term Plans

Section V concludes with Summary of Recommended Actions; this is a list of prioritized actions that are intended for specific public actions and expenditures.

Section VI is the Implementation Framework for the Plan. Rather than discussing what the Plan should accomplish, it describes recommendations on how the Plan should be accomplished. The implementation framework is summarized at the end of the section through a matrix that assigns responsibilities for each of the recommendations.

4. Limits of the Planning Area

The planning area used for this Harbor Plan includes all of the land and uses immediately adjacent to the harbor within the town limits, between the Cape Cod National Seashore on the west and the Town of Truro on the east (see Figure 1. Planning Area Map). The Master Plan also includes the waters and harbor bottom for an area that is enclosed by Long Point to the South, the Long Point Dike to the west, the Provincetown waterfront to the north, and a line generally connecting Long Point and the Provincetown/Truro boundary to the east.

B. Planning Framework: Overall Goals and Objectives

The Provincetown Harbor Plan is based on a series of general goals and specific objectives. These goals and objectives are intended to inform every element of the Plan and to reinforce a coherent vision of the future of Provincetown Harbor. The goals and objectives are based on the results of public meetings, discussions, surveys, reports and recommendations that were developed over many years, and for which the Harbor Planning process has served as the focus.

1. Goals

- Provincetown Harbor should consistently be recognized as a unique public asset for which change should be carefully planned and implemented to protect both its environmental and economic role.
- Decisions concerning use of the harbor and its edges should seek to achieve a balance, allowing for multiple uses and seeking compatible relationships among them.
- Marine-dependent uses should generally have priority over other uses for land use and water use.
- Provincetown Harbor is a scenic resource and activity center for tourism and recreation; this role should be protected and enhanced.
- The environmental quality of Provincetown Harbor should be managed, monitored, and maintained to thoroughly protect its role as a natural and clean asset.
- Public access to and along the water's edge should be consistently protected and enhanced.
- Provincetown should strive to improve existing deficiencies in the harbor for all existing uses, without seeking to significantly shift the balance of uses in the short term.
- Responsibilities should be reorganized to improve both the effective management of public facilities and the interests in the harbor.

2. Objectives

- The pattern of development along the Provincetown waterfront is generally appropriate and desirable in terms of density, use, and scale. However, increased provision for both access to the waterfront and access along the water's edge should be reinforced wherever practical.

- Land use impacts on water quality in the harbor should be minimized through correction of existing sewage and surface flow problems and the appropriate provisions in any future developments or improvements.
- Harbor beaches should be maintained to reduce trash and detritus.
- Facilities and support for the commercial fishery should be retained and enhanced through programs and facilities that can be adapted to changing needs of the industry.
- A specific plan should be created for both on-site and off-site public access for properties that are within the special jurisdiction of the M.G.L. Chapter 91.
- The needs of the small boat fishermen should be better accommodated in Provincetown Harbor.
- Provincetown Harbor should have improved access for trailered boats.
- Opportunities for increased aquaculture should be pursued insofar as they do not significantly interfere with existing patterns of use.
- Support facilities, mooring and berthing opportunities, and boat ramp facilities should be enhanced for recreational boaters.
- A pro-active and planned program for maintenance dredging should be implemented.
- MacMillan Pier should be improved to correct existing deficiencies and to serve future uses.
- MacMillan Pier should be managed to continue to serve as the multiple-use hub for public access to the water.
- Town landings and publicly owned land along the waterfront should be improved to provide better access and to accommodate increased public use appropriate to each location.
- Additional public access and amenities should be provided in areas in which they are scarce, including portions of the East End.
- The management of the town's waterfront assets (MacMillan Pier and the mooring fields) should be self-supporting to the greatest extent practical.
- Provincetown should establish a long-term goal of improving its facilities as a boating and cruising destination, by substantially improving the moorage and berthing potential for small boats through a comprehensive approach to breakwater and dredging improvements.

C. Summary of Principal Conclusions and Recommendations

1. Land Use

Land Use Patterns and Regulations

Summary of Key Land Use Actions

- *Incorporate Harbor Plan recommendations into special permit, variance, and similar reviews, including protection of water-dependent uses and limitation of any expansion of commercial parking as a waterfront use consistent with the Chapter 91 guidelines.*
- *Establish a town working committee to consider proactive measures for protecting and enhancing water-dependent uses including representation from appropriate Boards and Committees.*
- *Amend the zoning regulations regarding uses that support water-dependent uses.*
- *Seek funds and establish a process to study measures to protect properties in the FEMA velocity zones.*
- *Provide for continuation of water quality monitoring program. Design a comprehensive stormwater management plan.*
- *Enhance the removal of beach debris by providing additional assignment of maintenance responsibility and funding to the DPW and by providing additional trash receptacles.*
- *Enhance the removal of beach debris by increasing volunteer activities and increasing public awareness.*
- *Include conditions on the removal of beach debris in relevant permitting and licensing criteria.*

In keeping with an overall goal of the Harbor Plan, there are several recommendations concerning the importance of water-dependent uses. This Harbor Plan recognizes that water-dependent uses should have reasonable priority for use of the water's edge as a matter of policy and public right. In part, this is a result of the Commonwealth's public use standards for qualifying land areas, which have been codified in the regulations known as Chapter 91. It is also in the best interest of Provincetown to support water-dependent uses for reasons of economics and the historical character of the community.

Most of the land use recommendations of the Plan are related to the implementation of a program to provide improved conformance with the Chapter 91 protections for water-dependent uses and public access to the waterfront. These recommendations are discussed at greater length in a separate discussion below.

The Plan includes proposed improvements to publicly-owned lands that would increase their potential for accommodating water-dependent uses. These recommendations have been summarized in the discussion of Public Facilities.

During the planning process, a review of existing zoning was undertaken. Current zoning includes provision for water-dependent uses through a Harborfront Regulation that applies to key portions of the central waterfront in which water-dependent uses might be reasonably located. In general, it was concluded that the regulations serve to protect the potential for water-dependent uses. However, the regulation should be revised to accommodate some uses that, although not water-dependent, serve to support water-dependent uses. In particular, facilities that support the recreational boating industry need to be better accommodated in existing zoning.

Environmental Impacts of Land Use

The Plan reinforces the existing town policies towards protection of the harbor as an environmentally sensitive location. The Harbor Plan recognizes the importance of the current program to correct water pollution problems due to outfalls and failed subsurface sewage systems. The Harbor Plan recommends proactive involvement of the town in programs to monitor water quality and to pursue corrective measures to ensure high water quality.

Stormwater Management

Provincetown does not have a comprehensive stormwater management plan at this time. This Harbor Plan recommends that such a plan be developed and that, at the very least, existing water quality and storm sewer data be supplemented with new data to characterize stormwater flow and to assess the potential impact of septic systems on stormwater. In addition, if a stormwater management program is developed, it should include and be based upon a suite of multiple environmental indicators and not just on water quality.

Harbor Beaches

The Plan calls for increased access and amenities for the public as well as useful marine-related improvements along several areas of the beach. The Plan recognizes that different beach areas have different uses. Specific recommendations for access and amenities are included in the sections of the report dealing with Town Landings and Commonwealth Tidelands, and in the section of the Plan that establishes standards for Chapter 91 compliance for qualifying properties and areas.

The Plan also identifies regions where beach erosion presents a problem and suggests preliminary steps to prepare for future beach nourishment in these and other areas. It further calls for an increased maintenance program to remove trash and detritus from the harbor's edge.

2. Water Use

Summary of Water Use Actions

- *Initiate and maintain an active program of aquaculture improvements.*
- *Undertake a reorganized and improved new town mooring anchorage system.*
- *Mark as off-limits for moorage or anchorage any areas requiring protection for water quality and shellfish resource protection.*
- *Designate more precisely all anchorage areas to reduce conflicts with other uses in the harbor.*
- *Set aside five of the town-owned moorings for emergency and storm usage.*
- *Mark wrecks to ensure safety.*
- *Initiate a process for short-term and long-term maintenance dredging.*
- *Secure alternate sources of funds for pump-out facilities.*
- *Communicate to the National Park Service the recommendation that no action be taken by the National Park Service that would reduce or alter the activities recommended by this Water Use Plan.*
- *Maintain commercial fishing facilities and correct deficiencies in the configuration and condition of off-loading facilities through improvements to MacMillan Pier.*
- *Provide for improvements for other commercial boating as part of the MacMillan Pier reconstruction and as part of boat ramp improvements.*
- *Provide for an off-loading dock designed and dedicated for use by small-boat fishermen with appropriate support facilities, including parking.*
- *In the interim, expand the skiff dock and investigate the potential for increasing the number of vessels that can be tied up.*

Commercial Fishing

The Plan reinforces the ongoing importance of commercial fishing in the economic and cultural life of Provincetown. In the short term, the fin fish industry is experiencing substantial stress due to resource supplies and an emerging regulatory structure. As a result, there are shifts in the requirements for both water-side and shore-side facilities. In the long term, requirements remain difficult to predict. As a result, the Plan recommends that commercial fishing facilities be maintained, and existing deficiencies in the configuration and condition of off-loading facilities be improved. In addition, the Plan recommends that MacMillan Wharf be improved to provide for flexibility in its use for large boat commercial fishing, including the potential for expansion.

The small boat commercial fishing industry is substantially under-served in regard to shore-side facilities. The Plan recommends that specific improvements be undertaken to provide substantially improved opportunities for tie-up, off-loading, repair and resupply. In addition, a boat ramp improvement project should be undertaken to allow access to more of the tidal cycle and improved accommodation of trailer parking.

Improvements are also recommended at the West End boat ramp to serve small boat fisherman, including the addition of tie-up floats. Moreover, steps will be taken to increase parking capacity, particularly for trailers, through physical improvements or management measures.

Aquaculture

The Master Plan calls for the general continuation of the existing pattern of shellfish aquaculture, with emphasis on support for programs to resolve pathology problems and to support shellfish propagation and productivity. Potential expansion of shellfish beds should be pursued to the extent that they do not conflict with the lobster fishery. The Harbor Plan also calls for measures to support fin fish aquaculture in appropriate locations.

Other Commercial Boating

The Harbor Plan supports measures that increase the capacity for passenger ferry and excursion boats docking in the harbor. In general, the Plan supports measures that encourage a greater number of arrivals and departures of smaller ferry boats rather than the accommodation of infrequent arrivals of larger ferry vessels. The Harbor Plan also supports measures to substantially improve the shoreside accommodation of cruise ships.

Recreational Boating

The Harbor Plan supports measures that provide increased amenity and safety for recreational boating. These measures should include the provision of appropriately located dinghy docks, showers, laundry facilities, lockers, and other facilities available for the transient boater.

Navigation

The Harbor Plan recommends a series of measures to improve navigability within the harbor. These recommendations include the continued monitoring of shoal areas and maintenance dredging in frequented areas of the Inner Harbor. The Plan also calls for the removal of any mooring floats within the harbor navigation fairways and channels, and the continued monitoring of these locations by the Harbormaster.

3. Public Facilities

Summary of Public Facility Actions

- *Undertake the engineering analysis and design for the reconstruction of MacMillan Pier to correct fundamental problems and to better accommodate existing and future uses as called for in the Water Use elements of the Plan.*
- *Undertake a detailed study to implement a new MacMillan Pier Management entity, in consultation with DEM, DEP and other appropriate state agencies.*
- *Create a new MacMillan Pier Management entity.*
- *Fund and construct MacMillan Pier improvements.*
- *Undertake a planned program of public access and water-dependent capital improvements as listed in the Plan.*
- *Establish a planning process and reach a conclusion on an improved small boat commercial facilities, including the best location, and pursue funding for this improvement.*
- *Establish a planning process and reach a conclusion on public fishing pier locations and pursue funding for this improvement.*
- *Establish a Right-of-Way Committee to confirm and protect existing public access rights.*
- *Establish a planning process and reach a conclusion on a new boat ramp location and pursue funding for this improvement.*

MacMillan Wharf

The Harbor Plan maintains the intention of Provincetown to preserve the multiple-use function of MacMillan Pier. It reinforces the need to reconstruct the Pier to redress its deteriorated condition. The Plan calls for adequate accommodation of pedestrian traffic as well as flexible accommodation of all water-dependent uses that generate adequate income to offset operating costs, and contribute to capital funding of the improvements that may be needed.

Public Landings and other Publicly-owned Lands

The Harbor Plan calls for a list of projects and improvements that would serve to upgrade the public access areas to the waterfront. This list includes improvements in paving, improvements to accommodate vehicle and boat access and improvements to provide public amenities and the like. For all public access points, a new and attractive signage system should be put in place that indicates public access and amenities. This signage system could also be used for public access within properties subject to Chapter 91 public access requirements and agreements as discussed elsewhere.

Funding for improvements may come from a variety of sources . This Plan envisions the use of a dedicated fund—the Harbor Access Gift Fund—administered by the town. The fund would be financed through grant sources, Chapter 91 cash contributions that are channeled to the town, direct town contributions, and other sources.

Other Public Improvements

Other public improvements recommended in the Harbor Plan include access and physical improvements to several areas along the water's edge.

There are few opportunities for public access to the water's edge along significant portions of the Harborfront. This is generally true of the entire East End, beginning approximately at Pearl Street and extending to the Truro line, with several exceptions. The Plan also recognizes that most of the property and improvements south of the Commercial Street right-of-way in this area are located on historic upland, and that public access doctrines that could permit perpendicular access to the water do not apply in many cases. The Plan further recognizes that there are numerous informal access paths and limited private accessways that have been secured through agreements among property owners. The Plan recommends that increased public access be provided in areas where there are current barriers through purchase of easements, agreements, or other actions. Such improvements could be funded, in whole or in part, by the Harbor Fund discussed above.

4. Proposed Local Regulatory Framework for Chapter 91

Summary of Actions Concerning the Regulatory Framework for Chapter 91

- ***Establish Harbor Committee and delegate Planning Board responsibility for local license review.***
- ***Establish memorandum of understanding for specific implementation of the Chapter 91 actions if required in addition to the provisions of this Plan.***
- ***Establish and approve final methodology for determining appropriate on-site and off-site improvements and for calculating cash contributions.***

Massachusetts' principal tool for protection and promotion of active water-dependent uses of its tideland and other waterways is M.G.L. Chapter 91 (Public Waterways Act, 1866). Chapter 91 and the waterways regulations (310 CMR 9.00) are administered by the Division of Wetlands and Waterways of the Massachusetts Department of Environmental Protection. The mechanism for regulation is a license that must be obtained by all property owners or jurisdictions that occupy qualifying locations. The Chapter 91 regulations apply to all of the existing tidal waters below low water mark in Provincetown, and affects certain land and property above this line.

The Provincetown Harbor Plan incorporates special guidelines for Chapter 91 that are particular to Provincetown and allow for appropriate accommodation of site conditions, while fulfilling the public rights to access and use of the waterfront. These guidelines would apply to new Chapter 91 licenses or certain licenses considered as part of an amnesty provision that is intended to provide for pragmatic licensing of qualifying existing properties to which these regulations apply.

These guidelines define a detailed access plan that establishes the extent of public access, amenities or water-dependent use accessories that may need to be provided on qualifying properties. Where appropriate improvements cannot be reasonably accommodated within these properties, the Plan makes provisions for a cash contribution to a locally-administered fund that would support off-site improvements to meet the same public access and use goals.

The Plan includes a prioritized list of public actions that have been established specifically to improve water access. This list should serve as the guide for public improvements to further Chapter 91 regulatory goals on a community-wide basis.

5. Long Term Plans

Summary of Actions Concerning Long Term Plans

- *Authorize the Harbor Committee to continue planning efforts for long-term improvements such as breakwaters and substantial dredging initiatives.*

The Harbor Plan includes a series of long term goals for the Harbor, and outlines a process for studying, reviewing, and implementing these long term improvements. The long term goals of the Harbor Plan include increased protection of the inner harbor mooring areas, expansion of these areas through a dredging program, and the use of dredge material to provide increased beach area in appropriate locations along central waterfront areas that have experienced beach depletion or where private improvements have encroached substantially on available beach areas.

6. Implementation Framework

Provincetown Harbor Committee

The Plan recommends the establishment of a Provincetown Harbor Committee by the town that would provide for coordinated management of the harbor. This Committee would meet regularly and be composed of representatives of key departments, boards with jurisdiction over harbor and water-related activities, and representatives of industries with interests in the management of the waterfront. The Harbor Committee would be responsible for monitoring the implementation of the Harbor Plan and preparing updates. The Committee would provide recommendations concerning changes in the Harbor Regulations and Shellfish Regulations. The Committee would make recommendations on the disbursements of the Harbor Access Fund and on all capital improvements relating to the waterfront other than as provided for elsewhere. The Committee would also be responsible for certain local reviews of Chapter 91 license applications.

MacMillan Pier Management

The Provincetown Harbor Plan recommends the creation of a new management entity to be charged with the redevelopment and future operations of MacMillan Pier. The mission of this entity would be to ensure that the operation of the Pier is no longer a deficit-incurring activity for the town through comprehensive and dedicated management of all associated operating costs and revenues.

Other Existing Departments and Entities

The Plan envisions relatively minor changes in the roles and responsibilities of other existing departments and boards within the town. The Harbormaster would retain all current duties and responsibilities, other than the property and operations management of MacMillan Pier. The Planning Board would be relieved of certain obligations to review

Chapter 91 licenses in favor of the new Harbor Committee. Several departments and entities, including the Town Manager's office would need to participate in ongoing planning and implementation tasks, including participation in the new Harbor Committee, and/or MacMillan Pier management entity.

Chapter 91 Implementation Process

As a Municipal Harbor Plan, the Provincetown Harbor Plan includes a number of specific implementation mechanisms including:

- A specific waterfront improvement plan to guide review and approval of Chapter 91 license applications as provided for in 310 CMR 9.00.
- A mechanism for the funding of off-site improvements through cash contributions for properties which cannot reasonably comply with the revised improvement plan.
- Institution of a locally administered water access fund into which the contributions will be made.
- Institution of a new entity, the Provincetown Harbor Committee, to oversee and monitor the implementation of the plan and its periodic review and amendment.
- Designation of the Harbor Committee as the entity responsible for reviewing local Chapter 91 license applications for consistency with the Provincetown Harbor Plan, and preparation of recommendations to the Commonwealth, either independently or in conjunction with the Planning Board, if necessary.

II. Review of the Planning Process

A. Preparation, Review and Approval Process

The Provincetown Harbor Plan has been prepared by a town-appointed Harbor Planning Committee at the direction of the Board of Selectman of the Town of Provincetown. The Harbor Plan represents the culmination of several years of effort on the part of many participants in the planning process, as summarized below.

The Harbor Plan is intended to fulfill two related needs. The first need is to resolve numerous local issues concerning both land and water use so that Provincetown Harbor can be better managed as a town resource in the future. The second need is to resolve special regulatory issues growing out of the Commonwealth's jurisdiction over qualifying tidelands (historic and current).

The Commonwealth of Massachusetts maintains public access rights to qualifying coastal areas for "fishing, fowling, and navigation" through M.G.L. Chapter 91 (Public Waterways Act, 1866). These rights are currently regulated through the provisions of the

regulations within the Waterways Regulations (310 CMR 9.00, 1990). These regulations create numerous specific requirements for the use and disposition of improvements on certain land and flowed tidal areas within Provincetown. Several of the provisions of the current regulations do not reflect the specific local conditions in Provincetown, nor do they offer alternative methods for meeting the intent of the regulations. An alternative method for establishing locally-appropriated regulations is provided by the state in the form of a Municipal Harbor Plan, which is approved by both the town and the Commonwealth. The special requirements and process for preparation of a Municipal Harbor Plan are specified in a separate but related set of regulations, Review and Approval of Municipal Harbor Plans (301 CMR 23.00, December, 1994).

The town established a special Harbor Planning Committee in the early 1990's to develop a mooring and harbor plan. The mooring plan was completed in 1992 and continues to serve as a working document, as it is annually updated. The Harbor Planning Committee also undertook an extensive effort to survey town residents and harbor users on key issues. This resulted in the publication of a working paper entitled "Issues, Concerns and Opportunities" (September, 1994). The issues discussed in that paper informed the principle goals and objectives of this Harbor Plan. The issues were used to help create the list of key issues that were included in the Scope for this Harbor Plan.

It was decided the Harbor Plan should fulfill the special requirements of a Municipal Harbor Plan consistent with the Commonwealth of Massachusetts Requirements. Coordinating their efforts with the staff of the Office of Coastal Zone Management, the Harbor Planning Committee drafted the Provincetown Harbor Plan Scope in 1995, and submitted it to the Secretary of the Executive Office of Environmental Affairs for approval. The Secretary's approval was issued on December 13, 1995.

The town approved funds for the preparation of the Plan and in December, 1995 issued a Request for Proposals from consultants to assist the Harbor Planning Committee. A consultant team led by Cecil & Rizvi Inc. was selected. This team included the Urban Harbors Institute of the University of Massachusetts and Nucci/Vine Associates.

The preparation of the Harbor Plan was initiated in February 1996. The first steps in the process included interviews with relevant interest groups, agencies, and individuals. A public workshop was held on March 13, 1996, to discuss existing opportunities and constraints, and to help set the goals and objectives for the Harbor Plan. Subsequently, a Findings Report was issued discussing the existing conditions that had been investigated (May 8, 1996). A series of alternative approaches to the planning of the harbor were established through meetings with the Harbor Planning Committee and others. The alternatives were the subject of a public workshop (May 8, 1996) and the alternatives report was subsequently, issued taking advantage of the public input (June 6, 1996). The preferred plan was developed during the summer and early fall of 1996 and included three meetings of the Harbor Planning Committee.

The Draft Harbor Plan was completed in November, 1996. It will be the subject of public review and comment, including a public meeting on November 20, 1996. The Draft

Harbor Plan will also be reviewed by the Harbor Planning Committee, the staff of the Office of Coastal Zone Management, and others. Based on the review and comments, a proposed Final Harbor Plan will be formally submitted for final review and approval to the Secretary of the Executive Office of Environmental Affairs. Public notice of a formal review period will occur at that time. Two public hearings have been planned on the Final Harbor Plan. In addition, the town meeting of April 1996 will constitute the required public hearing on the project, and approval by the town will be sought. Subsequently, any comments from the Secretary will be reviewed during a Consultation Session. It is anticipated that final approval of the Harbor Plan by the Secretary will occur late in the winter of 1997.

Two parallel planning efforts have also contributed significantly to the research and conclusions of this Master Plan. The first was a research effort conducted in 1995 by the Waterfront Access Field Project Team from Tufts University. This is a program of the Urban and Environmental Policy Department. The study was conducted at the invitation of the Town of Provincetown by a team of Tufts faculty and students. The purpose of the study was to inventory in detail the existing conditions of waterfront development as it pertains to the Chapter 91 regulations, and to investigate public access options and policy implications. Their extensive documentation and research was a valuable contribution.

A second parallel effort was a special study of MacMillan Pier to examine its role in the regional economy and outline a revitalization approach and business plan for its future. This study was funded by a grant from the Massachusetts Development Finance Agency, and was conducted by a selected consultant team led by Cecil & Rizvi Inc. with FXM Associates Inc. (economics) and Nucci/Vine Associates Inc. (marine engineering). The results of this study have been incorporated into this plan where they are relevant.

B. Participants

The Provincetown Harbor Plan has been prepared through broad participation of many individuals and entities. The following is a partial list of the entities and individuals who have contributed to its preparation and the discussion of the issues and recommendations which have emerged.

Board Selectmen

Jane Antolini
Irene Rabinowitz
Custodio Silva, Jr.
Henry K. Evans
Elizabeth Steele-Jeffers

Harbor Committee

Gwen Billig, Chair
Al Davis
Dana Faris
George Hitchcock
Gordon Peabody
Dianne Thomas

Town Manager

Keith Bergman

Former Assistant Town Manager

David Goode

Marine Superintendent

David Ditacchio

Shellfish Constable

Robert Enos

Shellfish Committee

Mollie Benjamin, Chair

Director of Public Works

Joseph Borgesi, P.E.

Parking Administrator

Ernest Reppucci

Commonwealth of Massachusetts, Executive Office of Environmental Affairs

Trudy Coxe, Secretary

Office of Coastal Zone Management

Margaret Brady, Director
Dennis Ducsik, Tideland Policy
Coordinator
Laurel Rafferty, Harbor Management
Coordinator
Truman Henson, Jr., Cape & Islands
Regional Coordinator

Department of Environmental Protection

Greg Carrafiello

Participants in Interviews and Special Meetings

Candy Collins-Bowden, Chamber of
Commerce
A. Brown, Victory Fisheries, Shellfish
Committee
Robert Burns MacMillan Wharf Boat
Owners Association
P. Clay, Regional Anthropologist,
NMFS
R. DeConti, Director of Conservation,
Center for Coastal Studies.

Ray Duarte, Oceanic Seafood Company.
C. Joyce. Project Manager, Army COE.
Patricia Lemme
S. Murowski
Joy McNulty, Zoning Board of Appeals
Stephan Nofield, former Economic
Coordinator
Thomas Osowski, Assistant
Harbormaster
John Santos, Flyers Marina and Town
Conservation Commission
Alix Ritchie, Representative. to Cape
Cod Commission
L. Spenly, Port Agent for Provincetown

Consultant Team

Cecil & Rizvi, Inc:

Steven Cecil, Project Director
Leslie Bain, Planner
Nancy Coleman, Land Planner

Urban Harbors Institute:

Jack Wiggin, Assistant Director
Chantal Lefebvre, Research Analyst

Nucci/Vine Associates, Inc:

David Vine P.E.
Jean Haggerty

Tufts University Access Field Team

Kristen Bishop
Andrew Hargens
John Hoey
Michael Rotondi

III. Summary of Existing Conditions

A. Overview

The initial product of the Provincetown Harbor planning process was the Findings Report. The forty-three page document served as a basis for the development of alternative approaches to the harbor's future, and provided the framework for developing the Harbor Plan. This Findings Report included not only the mapping of physical conditions, but also the documentation of the regulatory, economic and social context of the harbor. Included in the findings were discussions of physical land and water conditions, the regulatory environment, economic and management conditions, the social and historical setting, and the key issues that had been identified at the public meeting held as part of the planning process. This section of the Provincetown Harbor Plan summarizes and updates relevant portions of the Findings Report to provide a reference for the conclusions and recommendations of the Plan.

B. Physical Water and Land Conditions

1. General Description

The Town of Provincetown is located at the northernmost tip of Cape Cod in southeastern Massachusetts. It is bordered by the Town of Truro to the east, Cape Cod Bay to the south and to the west, and the Atlantic Ocean to the north. The tidal coastline of Provincetown consists of 21.3 miles, most of which lies within the Cape Cod National Seashore. As noted in Section I, the harbor planning area includes all of the land and uses immediately adjacent to the harbor within the town limits, between the Cape Cod National Seashore on the west and the Town of Truro on the east. The Harbor Plan also includes the waters and harbor bottom for an area that is enclosed by Long Point to the South, the Long Point Dike to the west, the Provincetown waterfront to the north, and a line generally connecting Long Point and the Provincetown/Truro boundary to the east.

The water's edge within the planning area represents a long crescent, with varying characteristics. Long Point is built from coastal dunes and is open space that is used recreationally and serves to protect Provincetown Harbor from southerly winds. The Long Point Dike is a continuous stone structure that divides the harbor to the east from marshy tidal flats to the west, and connects Long Point to the western edge of Provincetown, where private and municipal lands meet the Cape Cod National Seashore. Proceeding in an eastern direction, the waterfront is nearly completely developed to the Truro Town line. Commercial Street is a public way that runs parallel to the waterfront for the entire length of the harbor edge. From Stevens Point to the intersection of Commercial and Bradford Streets, a single row of properties generally stretches between the water's edge and Commercial Street. From this point to near its intersection with Berry Lane, Commercial Street approaches the water's edge. From this point to the Truro town line, Commercial Street turns inland. In this area, secondary streets and private

ways often serve multiple properties that stretch between the waterfront and the harbor's edge.

In general, the edges of the water throughout the planning area are intertidal beaches of various widths. Major exceptions include the Long Point Dike and the bulk-headed edge of the Municipal Parking Lot at the Town Center. Numerous smaller bulkheads have been created to extend or protect specific parcels, some of which represent the water's edge at high tide. There is an extended length of stone rip-rap along the shore where Commercial street meets the beach.

Water depths generally follow a shallow gradient from the beaches to deeper water, with two significant exceptions. Consistent currents maintain a deep water channel inside of Long Point. A combination of natural water depths and maintained channels reach towards land at the center of Provincetown, and serve the three principle remaining piers that stretch into the harbor (the Coast Guard Pier, Fisherman's Wharf, and MacMillan Pier). A long stone breakwater protects the inner harbor area, running parallel to the water's edge in an east/west direction.

2. Water Use

There are a variety of harbor water uses including tourism, transportation, recreational uses, fishing, and commercial uses (see Figure 4). Existing Water Use (2 pages)). This study has reviewed pertinent information concerning the following list of the harbor's water uses.

Commercial and recreational fishing	Sailing
Mooring for all types of vessels	Boat storage
Pleasure boating	Diving
Bird watching	Lobstering
Boat repair	Ferries
Commercial charter	Waterfront events
Boat launching	Coast Guard operations
Kayaking	Cruise anchorage areas
Swimming	Seafood off loading
Marinas	Sun bathing
Coastal research	Aquaculture
Parasailing	Jet skiing
Water skiing	Harbor shuttles
Rowing	Beach strolling
Fueling	

The following is a summary of the key uses that were considered in detail during the planning process.

Moorings

There are generally 3 categories of moorings within Provincetown Harbor: (1) individual moorings, (2) rental moorings, and (3) Federal off-shore moorings. The town issues approximately 470 individual moorings annually, a number that has grown steadily. The moorings are located behind the breakwater and throughout the harbor. Rental moorings are those for which any type of fee is charged, including marinas, yacht clubs, hotels, inns and guest houses as part of their facilities. The town issues approximately 160 rental moorings annually. There are 40 federal moorings located off-shore of the harbor which are available for mooring of larger vessels having Federal permission.

Mooring rules and regulations comprise Chapter 2 of the Town of Provincetown Harbor Regulations, adopted in 1991 and subsequently amended. The regulations include provisions for permits and fees, mooring equipment, water quality, enforcement and allocation.

Water-based Transportation

Traditionally, Provincetown was served by both passenger and cargo vessels. While the extension of highways along the entire length of Cape Cod dramatically reduced the dependence of Provincetown on water-based transportation, it is still substantial, and may grow in the future.

There are currently four passenger ferries/excursion boats that serve Provincetown. The Baystate Cruise Company operates an 1,100 passenger vessel between Boston and Provincetown from late spring to the early fall. This boat docks along MacMillan Pier. Fisherman's Wharf hosts two boats that connect Provincetown to Gloucester and Plymouth, with capacities of approximately 250 and 500 passengers respectively. Sea Ventures operates a ferry between Marina Bay in Quincy and Provincetown. There are currently no freight boats serving Provincetown, nor is there a facility that can accommodate freight. There may, however, be a small potential market for this service during the peak tourism season, although its feasibility has not been demonstrated.

Boatyards

There are two boat repair services in the harbor, Flyer's Boatyard and Taves' Boatyard. Flyer's Marina uses two marine railways for launching boats and a fork lift off the dock for smaller boats. There are no travelift structures for boat outhaul located within the harbor. Boat repairs have been on a decline due to the general depletion of the town fishing fleet. There is also a simple piling and beam framework on intertidal bottom just east of MacMillan Pier that is used for occasional tie-ups and repairs at low tide of vessels on an informal basis as a public facility.

Marinas and Private Moorings

The single major marina facility is Provincetown Marina and Moorings, located off of Fisherman's Wharf. Provincetown Marina provides full marina services, with approximately 30 slips and 110 rental moorings. Located on the west end, Flyers Marina

has no slips, but has 50 rental moorings, and provides many marina services. The two mooring facilities each have launch services.

Marine Pump-out Facilities

The town has a 300 gallon pumpout boat servicing the harbor. The boat is provided on an as-called basis through the Harbormaster's office.

Courtesy Float and Dinghy Dock

A small courtesy float is provided by the town along the southerly edge of the Municipal Parking lot. This float serves temporary docking needs of small boat commercial fishing. The courtesy float also serves the short-term needs of recreational boaters. Finally, the courtesy dock serves the occasional landings of cruise ship passengers. The town has a skiff-dinghy dock located on the east side of MacMillan Wharf, which is available to vessels less than 16 feet on a transient basis. Seasonal skiff dock permits are available through the Harbormaster.

Wetland Resources

The Wetlands Conservancy Program is currently updating wetland resources for inland and coastal wetlands of Provincetown. Colored "interim" plan designations were provided for use during the planning process with the understanding that the data is preliminary and should not be used to indicate legal wetland delineations. The Environmental Conditions Map illustrates the general location and relationship of wetland resources to other harbor features.

3. Land Use

The following table and the Existing Land Use map present a breakdown of the land uses in the Provincetown Harbor planning area. The land use data in this Table is from the database maintained by the Cape Cod Commission, which was compiled from the Provincetown Assessor's records.

Table: Summary of Land Use in the Harbor Planning Area

Land Use	Acreage
Single-family residential	13.53
Multi-family residential	16.66
Office and retail trade	6.96
Motels and restaurants	8.99
Storage warehouses and distribution	2.16
Institutional	10.20
Commercial parking lots	.36
Vacant land	2.24

Water-dependent Land Uses Along Provincetown Harbor

There are two areas along Provincetown Harbor which feature water-dependent uses (see Figure 2. Existing Land Use). The first area is located in the “West End” of Provincetown and includes two water-dependent industrial uses: a boatyard and boat storage and the U.S. Coast Guard facilities. The second major area is located near the center of the town and is comprised of a mix of commercial (58%), residential (19%) and mixed use (23%) and includes the water-based activities centered around MacMillan Pier. The major water-dependent activity on shorelands in this area is a working area on the beach where boat repair and boat storage take place.

As in most other areas, the market demand for water-dependent uses is relatively weaker than demand for nonwater-dependent uses, such as residential and retail. As a result, over time higher valued nonwater-dependent uses have tended to displace water-dependent uses. In Provincetown as elsewhere, the space occupied by water-dependent uses has been in decline over the years. A review of historical maps and documents and interviews with Provincetown residents reveals a consistent and substantial long-term decline in the number and variety of businesses and in the amount of waterfront area dedicated to commercial fishing and vessel-related uses (see all town Master Plans and all studies of the commercial fishing industry as noted in the Summary of Sources and Additional Available Information). No data was discovered that would suggest sources of demand for water-dependent economic uses which would justify land values exceeding those established by nonwater-dependent uses for the land which predominates today without substantial public subsidy. Of particular use in this consideration was the *General Economic Base and Micro-Enterprise Feasibility Study*. (McDermott/O'Neill & Associates and The Howell Group. December, 1995.) This study confirmed the predominant role of tourism as the basis for the local economy.

It is important also to take into account the fact that the harborfront of Provincetown is nearly entirely built-out with nonwater-dependent uses that are on small lots. A complete review of assessor's maps and site confirmation of parcel land use was undertaken which confirmed this observation. Under these conditions, land assembly would be extremely difficult for any water-dependent use requiring relatively large and contiguous sites, even if land values were not a dominant factor.

A Provincetown Transportation Center Study was recently completed by Cecil & Rizvi and EarthTech for the Town of Provincetown. The plan was approved at the 1996 Town Meeting. Existing conditions relating to transportation were documented, and a series of recommendations made for improving town-wide circulation, parking and signage. The plan called for improved conditions for each of the transportation modes through better circulation patterns and improved physical accommodations. The plan also includes

proposed enhancements to the townscape. Key elements of the plan relevant to the Harbor Plan include:

- Provincetown Multi-modal Transportation Center - Mass transit buses, shuttle buses and tour buses will be accommodated in a new multi-modal transportation center along a realigned Ryder Street extension, and include provisions for waiting shelters, bicycle racks and storage, and relocated public restrooms.
- Improvements for Marine Uses - The plan recommends substantial improvements for pedestrian access to the piers and floats, retention of key access for commercial boats, as well as the construction of a Harbormaster's office.
- Open Space Improvements - Key open space improvements include new and expanded park space along the waters edge of the Municipal Parking Lot, new landscape and streetscape improvements at Lopes Square, and additional plantings and streetscape improvements in the Municipal Parking Lot and at several intersections.
- Pedestrian Improvements - Improved and widened sidewalks and improved crosswalks would be added in numerous locations, including the intersection of Bradford and Standish Streets, along Standish Street as it approaches the waterfront, and along Ryder Street between Commercial Street and the Municipal Parking Lot, and as part of the Municipal Parking Lot.

4. Marine Structures and Coastal Features

Provincetown Harbor is a natural deep harbor with a mean tidal range of 9.1 feet, and prevailing winds from the south/southwest. The central harbor is defined by the waterside Commercial Street shoreline to the north, the Corps of Engineers Dike to the west and the Long Point Peninsula to the southwest.

The harbor is entered from the west. A stone armored breakwater affords protection from the southeast to MacMillan and Fisherman's Wharves and moorings. Draft behind the breakwater is generally less than 15 feet. In the open harbor waters seaward of the breakwater, a sizable anchorage area has drafts from 20 to 60 feet.

A 300-foot wide Federal Channel extends seaward of the breakwater where it divides into one section to the Coast Guard station and the other to MacMillan Pier.

The historic shoreline apparently was just seaward of Commercial Street until manmade filling extended it to its present location. This shoreline has remained relatively constant over time, but some shoaling has occurred along both ends of the Federal Breakwater and around piers. The Corps of Engineers has done some recent dredging on the east end of the channel.

The longshore drift is generally to the west. Perpendicular beach obstructions generally cause cut-off of drift resulting in mounding in some areas. Structures, such as storm drain outfalls, tend to get sanded in. There is no formal beach maintenance program.

MacMillan Pier

MacMillan Pier is a 1,450 linear foot, concrete deck, timber pile supported pier, owned and operated by the town. This pier serves as the hub of the waterfront. The 950 linear foot causeway is primarily utilized on the west side. Fishing vessels utilize the outer end on the east side, and transient boats generally use the south and west ends. Uses of the pier include the following:

- Berthing is provided for 19 fishing vessels off of 2 finger piers on the east side. The piers were originally designed to accommodate 36 boats.
- Members of the MacMillan Pier Float Owners Association lease 11 float spaces from the town. Floats are owned by individual Association members. Ten are located on the east side and one is on the west side. They provide a variety of summer recreation and sport uses including a significant whale watch fleet.
- There are two private fish off loading facilities where fish is iced and immediately shipped out: Oceanic Seafood Corporation and Cape Cod Bay Fisheries, Inc. These operations occupy one building and their truck trailers park on the Pier.
- Additional off-loading privileges have been extended to an organization of commercial fishing boat operations, the Bayview Fisheries Cooperation Trust.
- The Harbormaster Office occupies a building on the Pier.
- Dockage for ferry and excursion boats.
- The dinghy dock is located on the east side of the Pier.

The Pier also serves as the only means of access to an "out" parcel, which is occupied by a small two-story building on piles and associated floats. The building is occupied by the *Whydah* Museum, which is a tourist destination and displays artifacts from this historic vessel. The floats which surround the parcel serve as a small private marina.

The pier was constructed in 1955 and funded jointly by the town and Commonwealth. It has electric and water service, and two holding tanks. Neither public restrooms nor fueling or boat outhaul facilities are available on the Pier.

The pier is currently in need of structural repairs. There is a State Court order currently in effect restricting vehicular traffic on the pier and requiring a phased program of improvements. As a task in their services for the recent Draft MacMillan Pier Redevelopment and Business Plan (Cecil & Rizvi Inc., 1996) funded by the State, Nucci

Vine Associates Inc. undertook a brief analysis of pile capacities that suggest that the entire pier construction may not be sufficient to support modern truck loads (HS20 loading standards). This limits access to the pier by a variety of truck sizes important to retaining commercial fishing, off-loading, and fish packing operations. In addition, it may be unsafe for fire trucks to be able to safely reach the entire pier and any boats moored along its edge. Subsection 2000-8881 of the Seaport Bond Bill provides \$7,500,000 of currently unfunded authorizations for plans, repairs and improvements to MacMillan Pier

Fisherman's Wharf

Fisherman's Wharf is a 1,400 linear foot concrete deck pier on timber pile. It is privately owned, and provides marina and mooring services. The pier includes several buildings which support the marina, day trip facilities, and the launch service. The owner has applied for additional permits for increased recreational usage.

Coast Guard Pier

This 1,150 foot long pier is constructed of timber piles with a concrete deck, with a wave break at far end. The pier provides berthing for Coast Guard vessels. The Coast Guard also has 5 moorings.

Federal Breakwater

Completed in 1972, this 2,500 linear foot armored stone breakwater has a crest elevation of 15.5 (MLW). Because of the orientation of the breakwater, only limited protection is provided for predominant winds from the southwest.

Federal Rubblestone Dike

The Federal rubblestone dike runs 6,150 linear feet from Stevens Point across to Wood End. It was constructed by the Corps in 1972, and provides a recreational and fishing area for the public.

Town Landings

There are eleven designated public Town Landings: Kendall Lane extension, Washington Avenue extension, Pearl Street extension, Freeman Street extension, Gosnold Street extension, Court Street extension, Atlantic Street extension, Good Templar Place, Franklin Street extension, West Vine Street extension, and West End Boat Ramp. In addition, there are four non-designated landings owned by the town: Kendall Lane, Johnson Street, the extension of Washington Street, and the West End parking lot. The public use of the landings is limited to pedestrian and small boat access to beach (see Figure 6. Location of Public Access Points (2 pages)).

Boat Ramp

The town-owned West End Boat Ramp is restricted by tide and lack of support floats, as well as limited parking. Although it has been considered in the past, the town has not pursued State Public Access Board expansion or repair of the facility to date.

5. Environmental Conditions

Water Quality

The coastal marine waters of Provincetown are classified ‘SA’, according to CMR 314. SA-classified waters are suitable for any high quality water use, including bathing, swimming, and shellfishing. The Massachusetts water quality standards for SA-classified waters are as follows:

Table: Water Quality Criteria and Provincetown Waters

Item	Water Quality Criteria
Dissolved Oxygen	Not less than 6.0 mg/l at unless background conditions are lower.
Temperature	Not to exceed 85 F (29.4 C) with daily mean of 80 F (26.7 C). Rise in temperature due to discharge not to exceed 1.5 F (0.8 C)
pH	6.5 to 8.5 standard units.
Fecal Coliform	In waters approved for shellfishing: not to exceed MPN* 14 col./100 ml; 10% of samples not to exceed a MPN of 43 col./100ml. In waters not designated for shellfishing: not to exceed 200 organisms in any representative set of samples; 10% of samples not to exceed 400 col./100ml.
Fecal Coliform (contd.)	
Solids	Waters must be kept free from floating, suspended, settleable solids in concentrations or combinations that would impair any assigned use to this class, that would cause aesthetically objectionable conditions or that would impair the benthic biota or degrade the chemical composition of the bottom.
Color and Turbidity	Waters must be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class of waters.
Total phosphate	Not to exceed an average of 0.07 mg/l as P during any monthly sampling period.
Ammonia	Not to exceed an average of 0.2 mg/l as nitrogen during any monthly sampling period.
Taste and Odor	Non allowable

The Center for Coastal Studies has been steadily monitoring the water quality in Provincetown’s coastal waters, sampling for dissolved oxygen and fecal coliform

concentrations. There is limited data documenting the state's other water quality criteria in Provincetown.

In 1996, average concentrations of dissolved oxygen demonstrated little variability over the course of the sampling season and were maintained above the state and federal minimum standard of 6.0 mg/l — indicative of a healthy ecosystem. Rapid tidal flushing in the harbor is the predominant physical factor maintaining these oxygen concentrations. The lowest average dissolved oxygen levels in 1996 were recorded at the Provincetown Inn (6.9 mg/l) and the Boatslip (6.6 mg/l). The reasons for the lower concentrations at these sampling stations are unknown.

Although the harbor-wide geometric mean for bacteria concentrations was generally low in 1996, peaks in fecal coliform concentrations, exceeding the state standard of 14 organisms/100ml, were measured at various sampling stations throughout the year. Concentrations in excess of the regulatory standard indicate that the waters should be closed to recreational use and to shellfishing.

The major concerns regarding the quality of harbor waters are septic disposal and debris (see Figure 3. Environmental Conditions (2 pages)). In 1994 a study by a citizens group, Woods Hole Oceanographic Institutes Sea Grant New Initiative Program, and Massachusetts Coastal Zone Management, identified the 6 major contributors as:

- Land Generated Marine Debris, from mishandled garbage;
- Discharge Pipes, mostly from street drains;
- Sewage Discharge, from waterfront septic systems and boats of all sizes;
- Boat Generated Marine Debris, from mishandled garbage;
- Marine Nets and Lines, lost at sea, and deliberately tossed overboard; and
- Public Awareness/Information, (or the lack of) relating to debris impacts, disposal facilities, and the appropriate means of handling garbage in a coastal setting.

In response to the water quality problem caused, in part, by the existing subsurface wastewater disposal systems, the town is in the early stages of preparing a wastewater plan. The scope for a study which will include an assessment of existing conditions, a projection of future wastewater needs, and the development of alternatives to remedy the situation, is currently being prepared for the town by its consultants.

Water in Provincetown is derived from municipal wells. town storm drainage facilities include a series of variable aged piping and catch basin systems. There are currently outfalls that discharge into Provincetown Harbor, contributing to the water quality problems in the harbor.

Sewage/Title V

Provincetown has no municipal sewage collection system. Residences and other users must have on-site subsurface disposal systems. Subsurface sewage disposal is regulated by the State Environmental Code, Title V (310 CMR 15.00), which outlines the minimum requirements for the subsurface disposal of sanitary sewage.

Much of the Commercial Street waterside buildings east of MacMillan Pier are located in portions of FEMA V Zones. Title V has specific requirements for acceptable standards to be met for subsurface system to be sited in V Zones. Many of the existing subsurface systems in these areas would not be acceptable under current Title V standards. Title V enforcement occurs when systems are repaired or existing structures are altered. Water pollution from failing subsurface sewage systems has been a long-time concern in Provincetown, and the town is about to initiate a phased investigation recommending an overall wastewater strategy for the town.

C. Regulatory Environment

1. Jurisdictional Context: Introduction

The waterfront is subject to regulatory authority of the local, state, and federal governments. Through its Zoning By-Law the city regulates uses, density and dimensions of development along the shoreline. It also regulates wetlands through its General Wetlands Ordinance.

The State exercises regulatory authority over the alteration or use of both filled and flowed tidelands under Massachusetts General Laws Chapter 91, the Public Waterways Act. The purpose of this law and the waterways regulations (310 CMR 9.00) adopted to implement the law is to protect the public's interests in the waterways. All existing and new work such as piers, wharves, floats, retaining walls, revetments, pilings, and some waterfront buildings require Chapter 91 authorization.

The federal government, through the U.S. Army Corps of Engineers regulates shorefront activities including dredging and filling in or near coastal waters and structures below the mean high water mark (Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act).

2. Zoning

There are four zoning districts in the Harbor planning study area, the land-side of which is defined as the area south of Commercial Street extending from the rotary at the west end to the convergence of Commercial and Bradford streets at the east end (see Figure 5. Existing Zoning (2 pages)). The four districts are Class B Residential, Class G Residential, Class W Residential, and Class R Commercial.

The following table summarizes the major uses allowed in each of these districts. As is evident from the table, Provincetown's zoning generally follows a conventional cumulative scheme. This scheme specifies that allowed uses in more restrictive zones are carried over through the less restrictive zones. Common concerns with this type of zoning, particularly for the least restrictive district, are potential use conflicts and diminished predictability of future land use. In the case of Provincetown's commercial district, however, the result appears to be a healthy and vibrant mix of uses. For the study area, the Provincetown zoning map reveals a traditional, concentric pattern of progressively more restrictive districts surrounding the downtown core commercial district.

Table: Major Uses Allowed by Right (Y) or by Special Permit (BA) from the Board of Appeals in the Four Zoning Districts of the Harbor Planning Study Area

(Note: this is a partial listing; see section 1240 of the Provincetown Zoning By-Law).

USES	Res B	Res G	Res W	Com R
RESIDENTIAL				
Single-family, one dw/lot	Y	Y	Y	Y
Two single family dwellings/lot		BA	Y	Y
Three single family dwellings/lot			Y	Y
Two-family dwelling		Y	Y	Y
Two-family dwelling, 3 or more/lot			Y	Y
Multi-family dwellings			Y	Y
Tourist home		Y	Y	Y
BUSINESS				
Business or prof offices				Y
Hotel, motel, inn			Y	Y
Retail sales or service				
neighborhood	BA	BA	BA	Y
art gallery			Y	Y
marine service, boat sales				Y
Restaurant, bar				BA
Parking lots		BA	BA	BA
INDUSTRIAL				
Seafood processing				BA
Boat building, repair, overhaul			Y	Y
Upland boat storage, 1 or 2 boats	Y	Y	Y	Y
Upland boat storage, 3 or more boats			BA	Y
Transportation terminal				Y
INSTITUTIONAL				

Museum			Y	Y
Municipal use	BA	BA	BA	BA
Aquaculture	BA	BA	BA	BA
Artist's studio	BA	BA	Y	Y

Table: Dimensional Requirements for the Four Zoning Districts of the Harbor Planning Study Area

District	Min Lot Area	Min Lot Frontage	Min Front Yard	Min Side Yard	Min Rear Yard	Max Lot Coverage	Max Bldg Height	
							Height in feet ¹	Stories
Res B	8,000 s.f.	50'	30'	15'	20'	40 %	23'/28'/33'	2.5
Res G	5,000 s.f.	50'	20'	6'	15'	40 %	23'/28'/33'	2.5
Res W	5,000 s.f.	50'	20'	6'	10'	40 %	23'/28'/33'	2.5
Com R	5,000 s.f.	50'	10'	5'	10'	40 %	23'/28'/33'	2.5

¹. Building height with: flat, half gable and gambrel roofs/with mansard roof/with hip and gable roofs

Commercial Business and Industrial Development.

According to Section 3000 of the Provincetown Zoning By-Laws, in the Commercial R district, the following requirements apply to new commercial business and/or industrial developments; conversion of existing premises to commercial or industrial use; construction or alteration of premises containing these uses is greater than 50% of the floor area; developments of more than 2,000 square feet of total retail space (interior and exterior) or containing three or more retail, wholesale or service units. Key requirements pertaining to the Harbor Plan include lot coverage (no more than 40% of the total lot area), and green area (a minimum of 30% of every lot regardless of size).

Harbor Setback

Section 1314 of the Provincetown Zoning By-Laws prohibits any structure other than a pier, wharf or other facility requiring waterfront contact to be constructed within 35 horizontal feet of mean high water of any salt water body.

Harborfront Regulation

Section 3600 of the Zoning By-Laws establishes a "Harborfront Area" overlay zone. The Harborfront area is defined as that area which is either more than 195 feet seaward of the northern edge of Commercial Street in the Commercial R district or seaward of the mean high water line, or both. The regulation is designed to give special consideration to water-dependent uses. Uses allowed by right (sec. 3620) in the harborfront area are primarily water-dependent, e.g., marine services, boat sales; boat building, repair, and storage; commercial beach. There are also two categories of special permit uses. Section 3621, passed during the October 1996 Special Town Meeting, allows several types of nonwater-dependent retail and restaurant uses and parking lots by special permit. Section 3630 also allows by special permit, a number of other water-dependent commercial and industrial uses and selected cultural and recreational uses. In approving special permits

under both subsections, the Zoning Board of Appeals must include a determination that the use:

1. interrelates productively with other waterfront activities,
2. makes efficient use of harbor frontage,
3. improves opportunities for visual and pedestrian access; and, in addition, for those uses under subsection 3630:
4. determines that the operating costs of the proposed use would be substantially greater for any but a waterfront location,
5. effect on town's infrastructure to service others, and
6. improves or maintains harbor water quality.

According to the building inspector's office, there have been very few projects reviewed under the provisions of Section 3600 because there has been very little development activity in recent years in the area subject to this section of the regulations.

3. Chapter 91

Massachusetts' principal tool for protection and promotion of active water-dependent uses of its tideland and other waterways is M.G.L. Chapter 91 (Public Waterways Act, 1866). Chapter 91 and the waterways regulations (310 CMR 9.00) are administered by the Division of Wetlands and Waterways of the Massachusetts Department of Environmental Protection.

The Chapter 91 statute was amended in 1983 with new substantive and procedural requirements in order to ensure that tidelands—both presently flowed and formerly flowed tidelands—are utilized only for water-dependent uses or otherwise serve a proper public purpose. Major revisions of the waterways regulations followed in 1990. Key provisions of those amendments promote water-dependent use of the shoreline; preserve and promote public access; and encourage local involvement in Chapter 91 licensing decisions through municipal harbor plans. A companion set of regulations governing the development and approval of municipal harbor plans was also adopted that same year (see below).

With the intent of bringing coastal properties into compliance with Chapter 91, the 1990 revisions of the waterways regulations included an amnesty provision applicable to unlicensed structures or fill in existence and in use since January 1, 1984 (and without any substantial alteration or change in use since that date). Amnesty license applications are subject to the Chapter 91 Waterways Regulations that were in effect prior to October 4, 1990 (the effective date of the 1990 revisions) which are generally less stringent, impose lesser fees, and provide longer terms than those now in effect. The amnesty period expired October 4, 1996.

Activities Subject to Chapter 91

Chapter 91 authorization is required for placement of fill, building of structures, and dredging in areas identified above. Types of structures include: piers, wharves, floats, retaining walls, revetments, pilings, bridges, dams, and waterfront buildings (if on filled lands or over the water). A new license also may be required if there has been a structural change or change in use of a previously licensed structure. The placement of temporary rafts, floats or moorings in the waterway do not require a Chapter 91 license, but must receive an annual permit from the harbormaster (see Provincetown Harbor Regulations).

In general, uses licensed under the waterways program must either be water-dependent or "serve a proper public purpose which provides greater benefit than detriment to the rights of the public in said lands."

Water-dependent Uses

Water-dependent use is defined in §9.12(2) of the Chapter 91 regulations. In general, a water-dependent use is one that requires direct access to or location in tidal or inland waters, and therefore cannot be located away from said waters. A full definition of water-dependent uses can be found in the regulation. The following is a list of water-dependent uses that are likely to apply to Provincetown:

- Marinas, boat basins, channels, storage areas, and other commercial or recreational boating facilities;
- Facilities for fishing, swimming, diving, and other water-based recreational activities;
- Parks, esplanades, boardwalks, and other pedestrian facilities that promote use and enjoyment of the water by the general public and are located at or near the water's edge, including but not limited to any park adjacent to a waterway and created by a public agency;
- Aquariums and other education, research, or training facilities dedicated primarily to marine purposes;
- Aquaculture facilities;
- Beach nourishment;
- Waterborne passenger transportation facilities such as those serving ferries, cruise ships, commuter and excursion boats, and water shuttles and taxis;
- Dredging for navigation channels, boat basins, and other water-dependent purposes and subaqueous disposal of the dredged materials below the low water mark;
- Navigation aids, marine police and fire stations, and other facilities which promote public safety and law enforcement on the waterways;
- Shore protection structures, such as seawalls, bulkheads, revetments, dikes, breakwaters, and any associated full which are necessary either to protect an existing structure from natural erosion or accretion, or to protect, construct, or expand a water-dependent use;
- Flood, water level, or tidal control facilities;
- Discharge pipes, outfalls, tunnels, and diffuser systems for conveyance of stormwater, wastewater, or other effluents to a receiving waterway;

- Marine terminals and related facilities for the transfer between ship and shore, and the storage of bulk materials or other goods transported in waterborne commerce;
- Facilities associated with commercial passenger vessel operations;
- Commercial fishing and fish processing facilities;
- Boatyards, dry docks, and other facilities related to the construction, serving maintenance, repair, or storage of vessels or other marine structures; and
- Other industrial uses or infrastructure facilities which cannot reasonably be located at an inland site.

4. Municipal Harbor Plans

In September 1990 the Secretary of Environmental Affairs adopted regulations for "Review and Approval of Municipal Harbor Plans" (301 CMR 23.00). The regulations established a voluntary procedure by which municipalities could obtain state approval of a municipal harbor plan.

A municipal harbor plan is defined as a document setting forth the community's objectives, standards, and policies for guiding public and private use of the land and water areas of a harbor and an implementation program to achieve the desired plan.

A plan prepared and approved in accordance with these regulations serves to guide EOE agency actions, including the regulatory decisions of the Department of Environmental Protection under M.G.L. Chapter 91. When an approved harbor plan exists, any project seeking a Chapter 91 permit from DEP must be in conformance with that plan. In essence, a municipality with an approved harbor plan utilizes the state regulatory authority to help implement its own objectives.

Through a locally-prepared harbor plan, a municipality has the ability to "substitute" local standards for certain state Chapter 91 requirements such as building height limits and to "amplify" certain discretionary state standards.

The standards that can be substituted by an approved harbor plan apply only to nonwater-dependent uses. Section 9.51(3) establishes minimum standards and limitations on building height, site coverage, waterfront setback, and encroachment into flowed tidelands. Section 9.53(2)(b)-(c) pertains to the provision of interior and exterior public space in a project. Section 9.52(1)(b)(1) is a requirement for a waterfront walkway with a minimum width of 10 feet to be included with any non water-dependent use. In those instances where non water-dependent uses are allowed, this public access requirement exists, as does the ability to modify it through a municipal harbor plan.

The provisions of a municipal harbor plan can also be effective in providing guidance for DEP in applying the numerous *discretionary* requirements of the Chapter 91 regulations to projects under review.

5. Federal Emergency Management Act Regulations

The Federal Emergency Management Agency (FEMA) performed a Flood Insurance Study of the Town of Provincetown in 1983. The study utilized hydrologic and hydraulic analyses to establish Flood Insurance Zones and flood plain management measures for the area. The investigation considered historic flood elevations and estimates of shoreline levels considering stillwater and wave runup for various frequency storms. The major past storms of the area occurred in February 1978, December 1959, August 1954, and September 1938. The February 1978 nor'easter produced water levels higher than any others ever recorded.

The FEMA Flood Zones Map provides a plan of the various Flood Insurance Zones along the harbor as established by this study. The following provides a further description of the zone designation:

- Zone A: Special Flood Hazard Areas inundated by various types of 100-year shallow flooding, determined by approximate methods; no flood elevations shown or flood hazard factors determined.
- Zones A2 & A4: Special Flood Hazard Areas inundated by the 100-year flood, base flood elevations shown, and zones subdivided accordingly.
- Zones V2 and V4: Special Flood Hazard Areas along coasts inundated by the 100-year flood that have additional hazards due to velocity (wave action of 3 foot amplitude or greater); base flood elevations shown are subdivided according to flood hazard factors.
- Zone B: Areas between the Special Flood Hazard Area and the limits of the 500-year floodplain that are protected from the 100-year flood by dike, levee, or other water control structure; also, areas subject to certain types of 100-year shallow flooding where depths are less than 1 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
- Zone C: Areas of minimal flooding.

An evaluation of FEMA zones indicates that only portions of several buildings are in the V Zone to the west of MacMillan Pier. Also, no portion of the V Zone crosses Commercial Street within this area. To the east of MacMillan Pier, essentially all buildings seaward of Commercial Street have some portion within the V Zone. Further, approximately 41,000 linear feet of Commercial Street is located within a V Zone in this area. These conditions have been mapped in the associated figure (see Figure 7. Existing Development within FEMA Velocity Zones); please note that this map is for planning purposes only, and FEMA maps should be directly consulted regarding any individual property.

6. Harbor Regulations

Chapter I: MacMillan Pier Regulations

All the vessels, persons, and vehicles using the pier are governed by these rules and all other laws, by-laws, or court orders from such agencies as the US Coast Guard, the EPA, DEP, the Commonwealth of Massachusetts or the Town of Provincetown.

The Harbormaster has authority and responsibility for daily operation and management of the pier and the adjacent waters, and must be consulted on matters pertaining to the use and operation of the pier. The pier shall be open 24 hours a day for use by licensees, transient vessels and the general public.

MacMillan Pier is primarily for the use and benefit of commercial fishing vessels, commercial passenger vessels, and for the passive enjoyment of the general public. All commercial users of the pier are required to have a license from the town. All other uses (except those enumerated in this section) are prohibited unless expressly authorized by the Board of Selectmen or delegates.

The use of the easterly finger piers is restricted to active, full-time, year-round commercial fishing vessels. Use of the pier by vessels on a transient basis to load and unload gear, supplies, etc. shall be accommodated on a first-come first-serve basis, based on the time-limits set by the Harbormaster.

Passenger vessels may use the pier for loading and unloading of passengers only under agreement with the town and in the specified locations in that agreement. The Licensing Board is responsible for issuing licenses to said vessels.

The pier is open to the public 24 hours a day and pedestrian access is restricted to within the curbed sidewalk along the west side of the pier. Recreational fishing is prohibited except in those areas designated by the Harbormaster. Vehicles on the pier are limited to those actively serving the vessels and businesses on the pier and casual traffic by the general public. No vehicles are allowed to enter, leave, or move within the Outer Tee area while pedestrians are exiting the Boston passenger vessel. The regulations also establish limits on the weight allowed on the pier and on the Outer Tee.

A license or permit from the town is required for permanent berthing of vessels and placement of floats. An annual or semi-annual dockage permit issued by the town is required from commercial fishing vessels that regularly use the pier. These permits are issued based on the approval of the Board of Selectmen or delegates and upon payment of the required fee. Vessels not having a permit may use the pier, but are required to pay a transient vessel fee.

Any seafood off-loading or handling on the pier requires a license issued from the Licensing Board. The Board may designate Transient Seafood Off-loading Space, and issue licenses for the space. Off-loading without a permit is allowed adjacent to a leased docking area on the Finger Piers or in an area designated by the Board. Licensed seafood off-loaders must submit a monthly off-loading report to the Marine Superintendent.

Chapter 2: Mooring Rules and Regulations

A mooring permit is required from the Harbormaster for anyone wishing to moor a vessel or raft in Provincetown Harbor. The permit is not transferable through sale or rental. Rental moorings must have an Army Corps of Engineers Permit as well as a local permit and are restricted to specified areas. No person may discharge oil, gray water, holding tank wastes, spirits, flammable liquids, or other waste into the harbor. Holders of permits for mooring fields of twenty moorings or more must provide adequate services (i.e. boat pump-out, trash etc.). There is a restricted zone defined in the regulations where no rafting, floating dry docks, or barges are allowed.

Chapter 3: Provincetown Harbor:

Vessels are not allowed to be located on public beaches unless with written authorization from the Harbormaster, or on private beaches without written authorization from the property owner. The courtesy float is to be used by non-commercial boaters for a maximum of 15 minutes. The skiff/dinghy dock is available to boats under 16 feet in length, that do not have a steering wheel and that are used to access a properly authorized mooring or transient vessel at anchor. Transients may use this dock free of charge, for up to 7 hours. Seasonal skiff dock permit holders can tie-up around the clock for the season. The Harbor Regulations contain two appendices. The first details the vehicle restrictions on MacMillan Pier. The second outlines the Harbor fee schedules for commercial fishing vessels, float space license, mooring permits, and late fees.

7. Wetlands Regulations

One of the primary responsibilities of the Provincetown Conservation Commission is the administration and enforcement of the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, sec. 40). State Wetlands Regulations at 310 CMR 10.00 serve to clarify and explain provisions of the Act. In addition, Provincetown, like many other Massachusetts communities, has adopted under general Home Rule powers a municipal wetlands by-law, Chapter 12 of the Provincetown General By-Laws “Protection of the Foreshores and Wetlands of the Town.”

The Provincetown by-law follows the procedures and requirements of state Wetlands Act, and differs only in that “recreation” is added as one of the interests to be protected under the municipal by-law. The Conservation Commission has also prepared Applicant Guidelines that provides additional information and explains the purposes and process.

Under the Wetlands Act and the local by-law, the Conservation Commission has authority over projects in or affecting five categories of resource areas: bank, beach, dune, flat, marsh, swamp, freshwater or coastal wetlands which border on the ocean or any estuary, creek, river, stream, pond or lake. The Commission also has jurisdiction for land under water bodies, land subject to tidal action, land subject to coastal storm flowage, and land subject to flooding. Activities within these resources areas subject to jurisdiction include activities that would remove, fill, dredge or alter the resource. The

Commission also has the right of review for activities within a 100-foot buffer zone around wetlands bordering waterbodies, banks, beaches, and dunes.

D. Economic and Management Conditions

1. General

The stark contrast between a year-round population of approximately 3,600 residents and a peak seasonal population of approximately 20,000 to 30,000 strongly conditions the economic and social life of Provincetown. This enormous fluctuation in population mirrors the fluctuation in economic activity, although the year-round population of Provincetown has been slowly increasing over the last three decades.

Two recent studies provided extensive information on the local economy, and served as the base references for the Harbor Plan. These are *Economic Development in Provincetown: An Evolving Plan for Action* (January 1996), prepared by the Town of Provincetown, and a *General Economic Base and Micro-Enterprise Feasibility Study* prepared by McDermott/O'Neill & Associates (December 1995) for the town.

The combination of little economic activity in the winter season with low general income levels, and the relatively high cost of housing, due to its desirability as seasonal accommodation, rank Provincetown near the bottom of Massachusetts towns in terms of overall economic stature. Most of Provincetown's households have low or moderate incomes when judged against federal and state standards.

Employment levels vary considerably during the year, from a low of approximately 1,500 jobs to a peak of around 4,500, reflecting the influx of seasonal visitors and the activities of the businesses that support them. Predictably, the filings for unemployment mirror this pattern.

Retail businesses employ approximately 50% of the year-round local population, most of it linked to the tourism industry. Of the remainder, approximately 25% of the population is in service employment, and 15% in government employment. There is no statistical breakout of fishing industry jobs, but the category in which this occurs represents only 5% of the local year-round employment.

Tourism accounts for 60 to 70 percent of Provincetown's employment, and is growing. These jobs tend to be seasonal, requiring relatively low levels of skills and offering relatively low wages.

The relationship of the harbor plan to the tourist economy is critical. The tourism industry is inherently water-related, either directly or indirectly. Visitors are drawn to this area because of the water, the beaches, the natural beauty and the unique water-based culture of Provincetown. Visitors will come as long as facilities for enjoying these assets are available and functioning well.

The number of visitors that can be accommodated in Provincetown is restricted by the capacity of the basic transportation and circulation systems, which are reaching limits and are unlikely to be expanded in the near future. Daily visitor levels are heavily influenced by the weather. Poor weather in the summer season results in large influxes of visitors, who are less attracted to beach visits or other activities. Any expansion of tourism will be the result of increased competitiveness for “fair weather” visits, and the expansion of visits into the shoulder seasons. It should be noted that whale watching represents a particularly important aspect of the tourism economy.

Generally stated, the economic patterns are stable and will be most effected by underlying changes in the regional economy or in changes in the resources and attractions that lead visitors to Provincetown. At the same time, the town encourages actions which serve to increase year-round employment and are not dependent on tourism in a move toward stabilizing year-round employment.

2. Provincetown Fishing Industry

The Provincetown fishing port is the largest on Cape Cod. Twenty years ago, the fishing industry in Provincetown was thriving. The total number of federally permitted commercial vessels, including all sizes and gear types, has ranged from 34 in 1979, hitting a high of 89 vessels in 1993, and then down to 66 in 1996 (NMFS, April, 1996). The largest boats often are draggers, also known as otter trawlers, and are accountable for most of Provincetown's landings.

The landings over the past twenty years have fluctuated greatly. In 1976, the landings in Provincetown hit a low of 3 million pounds but rebounded by 1980 to reach a high of 24 million pounds. This increase did not continue as seen in the decline in stocks to 14 million pounds by 1984 (Huff, 1985). More recently, between 1991 and 1994, landings have dropped more than 75 percent.

Along with the decline in landings has been a decline in the price of fish in Provincetown. The landed value has decreased from approximately \$11 million in 1980 to less than \$5 million in 1984 (Huff, 1985).

There has also been a change over the past twenty years in the major species caught in Provincetown (and Chatham). Cod has continuously been one of the top three species caught, but has fluctuated from a high of 18,268,294 live pounds in 1980 to a low of 5,150,396 pounds in 1994 (NMFS data request, March 1996). During the mid-1980's, there was a large increase in the harvest of surf clams. This lasted from approximately 1984 to 1987, after which the stocks subsequently declined. The surf clam hit a peak harvest in 1985 with 24.3 million live pounds harvested by Provincetown and Chatham (NMFS, data request, 3/27/96). In more recent years, there has been a shift towards harvesting dogfish, skate, and hake, which were once considered underutilized species.

On January 30, 1997, the New England Fishery Management Council approved regulations limiting gillnet fishing near Cape Cod Bay (January 1 through May 15) and the Great South Channel (April 1 through June 30) to protect right whales. It is now with NMFS to decide whether to accept the proposed regulations. The potential impact of these regulations on the Provincetown fishing industry has not yet been determined.

Provincetown Fishing Fleet: Current Conditions

There are currently 66 federally permitted commercial vessels operating out of Provincetown. These vessels range in size and in the type of gear that they use. Most boats have two to three different gear types. Small boats ranging from 17 to 35 feet account for 32 of the 66 vessels. Approximately 19 of the permitted vessels are large boats (bottom trawlers or draggers), ranging from 36 to 63 feet (NMFS, April 1996). While the fleet fishes throughout the year, the number of vessels fishing is at its peak during the summer months and declines during the winter.

The Provincetown dragger fleet is quite old, with vessels ranging in age from 60 to 100 years. Because of their age and worn condition, they are mostly day boats which stay near shore. They fish in the areas of Nauset Light, Highlands, and to the south and northeast of Stellwagen Bank. They currently fish for yellowtail flounder, gray sole, cod, whiting, lobster, and monkfish (Duarte, personal communication, 3/13/96).

There are also about 40 small boat commercial fishermen engaged in long-lining (6), gillnetting, lobstering (25), shellfishing, and small hook (or jig) boats (3). Long-liners, (tub trawls) generally fish for cod and other groundfish species and, if justified by price, dogfish. Lobster boats, ranging from 25 to 35 feet are active from May to October. Tuna is in local waters in the late summer-early fall. During this period Provincetown Harbor hosts a fleet of perhaps 80 boats that come from points all along the east coast, including many Provincetown fishermen who switch to tuna fishing in the fall.

In 1994, the total landings of the Provincetown and Chatham fleets was 18.8 million pounds (landings and value data for these two ports have been combined by NMFS since 1994). The value of those landing was \$10.5 million dollars (NOAA, NMFS data request, March 1996), which amounts to an approximate 32% decline in landings from 20 years ago—the second lowest landings in 20 years.

A number of fishermen are choosing to sell their vessels due to the decline in stocks. Four boats have been sold from the Provincetown fleet in the past year (Spenly, personal communication, 3/11/96).

There has been an increase in the number of vessels from other ports such as New Bedford utilizing Provincetown Harbor. There may be anywhere from 8 to 20 of these boats in Provincetown at a given time. The boats tend to be newer and larger—80 to 100 feet—and designed to stay out for several days. These vessels are using Provincetown Harbor as a result of the restrictions imposed by the fishery management plan. The vessels are limited to 20 day blocks during which a vessel's catch can not exceed 500

pounds a day or 5 tows. It is not economically viable for boats of this size to travel far offshore for such a small catch or to return to New Bedford to land the fish.

MacMillan Pier has two off-loading facilities (down from as many as five in the past) and Fishermen's Pier has one. The decline in landings resonates to the fish brokers at these off-loading facilities. Fishermen offload at the facility they believe will get them the best price for their catch. The off-loader then either sells the catch to a buyer or processor directly or delivers it to the auction that he believes will bring the best price, usually either in New Bedford, Boston, or New York (Fulton).

The fish are subsequently auctioned-off to the highest bidder, which determines the price per pound that the fisherman will receive, minus the costs of handling and delivery incurred by the off-loader. The auction system allows for large daily fluctuations in the price of fish depending on the size and quality of the catch being auctioned that day. Provincetown has the unfortunate disadvantage of being in a remote location which requires trucking over long distances to get the fish to auction. Therefore, the fishermen often do not have the option of holding their catch for a day or two until the price improves, because the fish will not be fresh by the time they reach auction.

Shellfishing

Provincetown has three designated public shellfishing areas in the harbor, one at Hatches Harbor, and two areas currently in use for private hard shell clam grants. A third growing area for soft shell calms lies in the southwestern portion of the flats. Finally, an Oyster Spatfall Resources Area lies south of the Pearl Street town landing and is used by licensed shellfish growers as a place to collect oyster spat using spat-collection devices. Any oysters thus collected are later transferred to the grower's grant area for growout.

The public harvesting areas are: at the east end, from Allerton Street to the Truro town line; and at the west end, one area lying west of the breakwater, a second to the east of the breakwater. The stretch from Allerton Street to St. Mary of the Harbor Episcopal Church used to be open for public shellfishing but was closed due to a downturn in water quality. This area should be reopened in the future.

The central portion of town from St. Mary's to the Coast Guard Station is closed to shellfishing though numerous shellfish beds are found throughout that stretch. Some of those areas will always be closed to shellfishing due to their proximity to major wharves and piers, in accordance with state and federal regulations. In other instances, clams may be transplanted from these closed areas to public areas, as long as sufficient time is allowed for them to depurate before harvest.

The three public harvest areas are rotated on a three-year basis. Public shellfishers must acquire a town-issued permit generally good from October 2 to April 1, though those

dates are flexible. This license allows the harvest of one ten-quart bucket of clams per week, the clams being either soft- or hard-shelled. Public shellfishing is currently allowed on Fridays and Sundays. Mussels and periwinkles may be harvested year-round without a permit.

The public shellfish areas are usually planted by the Shellfish Warden once a year. Generally, 150 bushels per year of large chowder clams are planted. Some years, the warden and the Shellfish Committee plant seed clams much like commercial growers. When ready for harvest three years later, they are dug-up and relocated to appropriate public digging areas.

Public shellfishing is not permitted in the summer months due to lack of stock. Commercial growers may operate year-round.

The town is currently in negotiation with the state's Division of Marine Fisheries about the sea clam bed that lies off Herring Cove. While this bed was once controlled by the town, it was usurped by state control in 1984. Currently, it is routinely over-harvested by large clam boats from other ports. The town is seeking a more sustainable regulatory scheme, and continued access to the resource for local fishermen.

Aquaculture

Provincetown residents have been able to obtain one-and two-acre shellfish grants since 1989. With one exception, all have been located in one of the two grant areas in the west end tidal flats. Growers have encountered large mortality rates as the result of a single-celled organism called QPX (Quahog Parasite Unknown). Research is underway to develop a QPX resistant strain. Meanwhile, growers are in the process of determining what alternate species may be grown in Provincetown Harbor. These may include oysters and soft-shell clams. Oyster spat caught in the Oyster Spatfall Resource Area has grown well thus far following transplantation to shellfish grants in the west end.

Growers believe that other aquaculture opportunities exist in Provincetown Harbor, which has both ample (and barren) tidal flats, potential deep-water sites, and a savvy local work force. Efforts are underway to identify other species that might be profitably grown within Provincetown Harbor.

A pilot project to grow bluefin tuna is currently underway in Provincetown Harbor, a project that well may be beneficial to the future of some residents. Tuna are a high-value species that seem to grow well in an aquaculture situation. Moreover, the market greatly rewards bluefin for having a high fat content, a controllable variable within an aquaculture situation.

It is impossible to foretell exactly what subtidal aquaculture opportunities will present themselves in the future. It is important at this time to recognize these possibilities will indeed present themselves, and to keep options open in terms of harbor usage. Aquaculture is a natural derivative of the town's long-standing fishing heritage.

3. Boat Repair and Maintenance

Boat repair and maintenance activities are severely limited by the availability of facilities. The locational characteristics of Provincetown Harbor support the contention that this activity could be expanded. However, a substantial increase in the scale of operations must occur if meaningful expansion of employment and income are to occur.

4. MacMillan Pier

Owned and managed by the town, MacMillan Pier serves as the focus of activity on the Harbor. The management of the Pier is a responsibility of the Marine Superintendent. The uses on the Pier have been noted elsewhere in this report, and include the economic activities of whale watch and excursion slips, commercial fishing facilities, a dinghy dock, passenger boat docking, and access to the *Whydah* Museum.

A thorough review of the management conditions and regional economic impacts of the Pier were conducted in September 1996 as part of a study funded by the Massachusetts Finance Development Agencies. Draft findings of that study included the following relevant considerations (*Technical Memorandum, FXM Associates, Inc., October 15, 1996*):

- The five main commercial uses on MacMillan Pier are directly responsible for \$4.6 million in annual gross receipts/business sales, producing 181 peak seasonal jobs and 61 year round jobs.
- Whale watch activities generate 66 percent of the total sales, and 53 percent of the seasonal jobs.
- The commercial fishing industry accounts for 87 percent of the year-round jobs directly attributable to pier users.
- The pier is a destination for approximately 300,000 annual users.
- Direct economic effects to the regional economy because of pier activity generates \$26 million annually.
- None of the current uses on MacMillan Pier have realistic relocation options in the outer Cape region.

Despite its importance to the regional and local economy, the operation of MacMillan Pier is not currently self-supporting. On an operational basis, the current and projected short-term operations project an annual operating deficit of approximately \$30,000. In addition, the aging structure requires repairs that are approaching \$100,000 on an annual average basis. Immediate expenditures of approximately \$300,000 are required to simply maintain current operational levels at the Pier.

E. Historic Setting and Social Context

Provincetown's history begins with the very earliest colonial times, when the *Mayflower* arrived in Provincetown Harbor in 1620. In their short stay in Provincetown Harbor, the Mayflower Compact was signed and the first child of the colonists was born. The land was deemed unsuitable for farming, and the pilgrims sailed on to Plymouth.

Fishermen and various residents began to settle on the Lower Cape over the course of the next century, and in 1727, the Town of Provincetown was incorporated. From the earliest years, the harbor was Provincetown's primary asset, a natural harbor that was almost always ice free, and offered good protection from ocean storms.

The fortunes of Provincetown were directly tied to the sea and to its harbor. This brought great periods of prosperity as well as a vulnerability to an undiversified economy. In addition, during times of war, Provincetown was in an exposed position because of the strategic attractiveness of its harbor. During both the Revolutionary War and the War of 1812, British squadrons occupied the harbor and devastated the local economy.

American whaling began in Provincetown before the industry centered in Nantucket. Mackerelling also played a large role in the fishing industry, and during the later part of the 1800's, Provincetown was the meeting place for several hundred schooners of the mackerel fleet. But codfishing was the mainstay of Provincetown. For most of the nineteenth century, great quantities of cod from the Grand Banks were brought to Provincetown.

During the period after the War from 1812 to about 1880, Provincetown grew and prospered with the largest fleet of fishing and whaling ships on Cape Cod. By 1870 Provincetown had eclipsed Nantucket as the largest regional center of Cape Cod and the Islands, with a population of 5,000.

The harbor filled with wharves, reaching out to deep water and providing access for the large number of vessels coming to the harbor as a home or transient port. The waterfront was the meeting place of the fishing vessels and their land-based needs of commerce. Buildings tended to have a business side on the water, and a public side along Commercial Street, a pattern of street side use and water side use that continues in a form that meets current tourist-oriented needs.

Immigrants from Portugal and the Azores, who were excellent seafarers and fishermen, joined the original Yankee settlers during the mid 1800's. Scottish Gaels from Cape Bretton came to Provincetown primarily for the salt fish trade. The mix of these groups and their shared dependence on the sea fostered a unique culture in Provincetown.

Provincetown began to be discovered by groups of summer residents attracted to the beauty of the town, the harbor, and the beaches and the quality of the light. Steamers first

began regular runs between Boston and Provincetown in 1842. Visitors arrived at Railroad Wharf and were delivered to the hotels about town by horse drawn vehicles.

Charles Webster Hawthorne, son of a Maine sea captain, opened his Cape Cod School of Painting in 1899, and the area began to develop a reputation as one of the country's foremost artist colonies. Other intellectuals followed, bringing such well known figures as Eugene O'Neill, John Dos Passos, Edna St. Vincent Millay, and Jack Reed. Writers, actors and painters joined the local community of fishermen, largely during the summer months. To this day, Provincetown remains a broadly and well-recognized arts community.

During the late 1800's, not only had the whaling era largely passed, but the market for dried salt cod had largely shifted to fresh fish. With the extension of the railroad into Provincetown in 1873 fresh fish that had to be reshipped for transport could now be moved by railroad to Boston and New York on beds of ice. The train also brought visitors into town.

Most visitors came to Provincetown by water, and arrived at the harbor. In 1920, the passage required four hours from Boston, and as an indication of the number of passengers arriving in town, the steamer *Dorothy Bradford* would bring 1,275 passengers on a Sunday. These numbers remained fairly steady through the 1950's. But after the completion of the Mid-Cape Highway, the drive from Boston took just over half of the time of a steamer trip, and an increasing number of visitors jammed Provincetown's streets with automobiles. Others arrived in the harbor in pleasure craft. At the turn of this century, New York Yacht Club boats filled Provincetown Harbor on their way to regattas in Marblehead. The demand for pleasure craft moorage remains strong to this day.

The recent decline in the fishing industry can be seen in the current physical make-up of Provincetown Harbor. Only Fisherman's Wharf and MacMillan Pier remain active with fishing vessels. The tourist economy and its seasonal nature have placed increasingly heavy demands on the land side of Provincetown during summer months with heavy traffic and parking needs. The water oriented sides of buildings are now devoted to such tourist-related uses as restaurants, and street-side uses tend to be retail uses directed at the visitor population.

F. Summary of Key Issues Based on Findings

As noted in the introduction to this section of the Plan, the findings of existing conditions were used in part to establish key issues that required both study and resolution as part of the master planning process called for in the Scope for the Plan. The Findings Report was the basis of a presentation at a public forum, and was reviewed by the Harbor Planning Committee. Comments from these presentations and reviews, which formed the basis for the following list of issues, which was used as resource in the creation of a series of Planning Alternatives (Section IV) and in the Recommendations (Section V). The issues are arranged according to the Major Topic Areas for consideration which formed the initial structure for consideration of issues in the Scope for the Harbor Plan.

Key Issues in Preserving the Harbor's Built and Natural Assets

MacMillan Wharf

- Provide a program for regular maintenance.
- Establish funds for necessary capital improvements.
- Establish a source for operational costs.
- Provide adequate load capacity for multiple truck use and heavy loads.
- Improve the docking configuration for the Boston boat.
- Provide adequate width for pedestrian uses.
- Provide for fish unloading and packaging operations.
- Resolve peak season vehicle and pedestrian conflicts.
- Provide for whale watch and charter boat operations.
- Provide adequate berthing for all needs.
- Establish improved management approach.

Navigation

- Maintain sufficient harbor depths in some locations (ends of the breakwater, around the piers).
- Consider configuring harbor depth and boat ramp at Johnson Street.
- Improve protection of the harbor by breakwaters, which is currently insufficient for several wind directions.

Beaches

- Address concerns regarding beach stability and erosion patterns.
- Protect land from southeast and southwest winds where it is not protected by the breakwater.
- Find solutions for land-generated trash and debris.
- Find solutions for waterside-generated trash and debris.

Water Quality

- Protect and improve water quality in the harbor
- Coordinate with town planning for stormwater and sewage improvement planning

Key Issues in Promoting Commercial Fishing and Aquaculture

Commercial Fishing Needs

- Address problems associated with declining fishing stocks.
- Develop shoreside facility support for existing commercial fishing needs.
- Provide flexibility for changes in the commercial fishing industry.
- Resolve conflicts between lobstering operations and mooring and anchorage areas.

Aquaculture

- Establish the potential for aquaculture related to Provincetown Harbor.
- Support the existing shellfish farming program.

Key Issues in Providing for Diverse Vessel Use and Needs

Management

- Reduce conflicts among competing vessel use needs.
- Review and improvement of management structure.
- Provide for diverse vessel uses.
- Provide for improved funding of management functions.
- Provide for the imbalance between non-resident seasonal use and town provision of services.

Recreational Boating Needs

- Provide support facilities for transient boaters (showers, laundry, provisions).
- Provide support for adequate launch service.
- Improve boat ramp access.
- Provide adequate dinghy dock for all of its potential users.

Commercial Boating Needs

- Provide appropriate moorage and berthing locations to support operational needs.
- Improve boat ramp access.
- Improve commercial support facilities.
- Improve access to and adequacy of the dinghy dock.

Assuring Public Access to the Shoreline for Recreation

- Provide access for boat-related recreational uses.
- Provide access for beach use.
- Provide shore and waterside signage indicating town landings.

Key Issues in Planning for Future Harbor Uses

Land Use

- Explore compliance of existing properties with current Chapter 91 regulations.
- Determine appropriateness of current town zoning for harbor edge uses.
- Determine relationship of town zoning to Chapter 91 regulations.

- Establish desirable levels for new development along the waterfront and in the harbor.
- Resolve problems associated with a lack of Chapter 91 licenses for many properties.
- Process and approve costs and uncertainty for existing license applications.
- Establish methods to determine most appropriate uses for the water's edge.

Water Use

- Determine location and extent of moorings.
- Improve management of moorings, including fee anchorage systems.
- Resolve conflicts between mooring fields, anchored vessels, and lobstering operations.

IV. Summary of Planning Alternatives

A. Purpose of the Planning Alternatives

In the course of preparing the master plan for Provincetown Harbor, three alternatives for the harbor's future were developed, each according to a theme with substantially different public policy implications. Each alternative was evaluated thoroughly according to a comprehensive set of impact criteria. Members of the Harbor Planning Committee and representatives of numerous interest groups and town committees were actively involved in the process of studying these alternatives. In many ways the final proposal represents a composite which maximizes the best aspects of the alternatives studied and eliminates the least useful.

The alternatives were specifically constructed to respond to the five issue categories that served as the focus of the planning process:

- Issue Area 1: Preserving the Harbor's Built and Natural Assets
- Issue Area 2: Promoting Commercial Fishing and Aquaculture
- Issue Area 3: Providing for Diverse Vessel Use and Needs
- Issue Area 4: Assuring Public Access to the Shoreline for Recreation
- Issue Area 5: Planning for Future Harbor Uses

The first alternative, "Improve the Existing Conditions," suggests that Provincetown Harbor should be improved through incremental actions to correct existing deficiencies, but does not suggest that there be any significant changes in the pattern or amount of uses that occur within the harbor area.

The second alternative, "Encourage Waterside Potential," is focused on better supporting the water orientation of existing and potential uses. This alternative suggests that priorities be established to encourage substantially reorganized and improved facilities and resources for commercial and recreational use of the harbor and the land beneath its waters.

"Encourage Landside Potential," the third alternative recognizes the special relationship of the harbor to the land-side uses that have evolved in Provincetown and seeks to promote the potential to further support these uses. This alternative explicitly recognizes the importance of tourism to the local economy, and the reliance on an attractive and usable waterfront and harbor. This alternative tends to emphasize public access to the waterfront and water-related uses and recognizes the beach and shoreside as a general public amenity.

Included in the evaluation of each alternative was a detailed assessment of its impacts on Provincetown and its harbor. The categories of evaluation included:

- Environmental impacts
- Physical impacts (changes in existing land and water conditions)
- Economic impacts (cost implications and economic benefit potential)
- Management implications (need for additional management of activities or resources)
- Change in the social and historical context of Provincetown Harbor
- Regulatory implications (need for changes in the existing regulatory context)

B. Summary of the Planning Alternatives

1. Alternative 1: Improve the Existing Conditions

The first alternative is premised on the belief that there are many constituencies and public interests that are currently well-served by the uses of the harbor and its surroundings. It calls for measures to correct existing deficiencies, but does not propose to rearrange or expand any existing use or to introduce new uses.

Alternative 1: Preserving the Harbor's Built and Natural Assets

The first alternative calls for the reconstruction of MacMillan Wharf to the extent necessary to maintain existing operations effectively, as the existing pier is in poor condition. This would entail a modest rearrangement of uses aimed at better serving existing needs, with few plans for changing the uses. This alternative would include the following existing program elements:

- Passenger ferry docking;
- Dinghy dock;
- Commercial fishing boat docking;
- Commercial fishing off-loading operations;
- Harbormaster Office; and
- Excursion boat floats (whale watch, day-trip boats, charter fishing).

Alterations would occur to better serve the small boat commercial fishing fleet. However, rather than seeking a major reconfiguration, an altered program would include:

- Reorganization of the south end of the Pier to better accommodate the docking of pedestrian ferry service by lengthening the docking edge.
- Reorganization and expansion of the pier deck to allow for more efficient off-loading and packing operations, replacing the existing facilities which are in various states of disrepair.
- Expansion of the pier width to better accommodate the peak flows of pedestrians along its length, including adequate accommodation for ticket booths that serve the various excursion operations.
- Construction of a new and permanent Harbormaster's Office to better accommodate the needs of this existing use.
- Increased provisions for commercial boat berthing and operations.

Under this alternative, a regular dredge maintenance program would be established for areas outside of the Federal Channel. As an aid to navigation, the town would maintain strict programs to keep all moorings outside of the Federal Channel areas, and to hold owners responsible for abandoned boats.

This alternative proposes to improve the existing appearance and accessibility of the beaches without significantly encouraging or altering the existing uses. This alternative recognizes that the majority of the Provincetown Harbor beaches are used for sunbathing and occasional swimming and for strolling. There are also segments of the beach which serve as locations for hauling and storing small boats and dinghies. A management program, administered by the town, would involve the implementation of a number of improvements, including a signage program and management measures to improve waste collection and disposal.

In the interest of improving water quality in Provincetown Harbor, the town would maintain and enforce boat pump-out programs. Provincetown Harbor's pump-out facility consists of a 300-gallon pump-out boat that serves all moored boats in the harbor. The town received a Clean Vessel Act (CVA) grant from the state to purchase the boat and to subsidize the costs of operation and maintenance. A funding mechanism needs to be worked-out to support operations and maintenance once grant moneys are no longer available.

"Bucket dumping" of waste water from boats is a related problem. To diminish pollution from bucket dumping, this alternative would recommend that a free disposal tank be provided in a single location for disposing the contents of and for rinsing these portable toilets.

This alternative would also require the town to continue to support and participate in the Provincetown Harbor Water Quality Monitoring Program and other relevant programs.

Alternative 1: Promoting Commercial Fishing and Aquaculture

This alternative does not envision any substantial expansion of facilities for commercial fishing within the harbor. Nevertheless, the changing market, regulatory conditions and the existing inadequacies would lead to a series of recommended improvements. Given the current situation and likely future trends, this alternative envisions a modest expansion in existing docking facilities for the mid- to large-sized boats, and the allocation of convenient mooring spaces for transient commercial fishing.

To redress current inadequacies, this alternative would provide substantially improved facilities for the small boat fishermen in one of two locations. In addition, this alternative would provide improved facilities for the off-loading, packing, and shipping of catch. This would include proper facilities for the docking of trucks, and provisions of appropriate areas for trailers or new structures to house off-loading and related operations.

This alternative would continue and, perhaps, expand the artificial propagation (seeding) of public shellfish areas by the Shellfish Committee. This alternative would seek methods to increase to past levels the number of days per week shellfishing is allowed. Some improvements at the West End boat ramp have also been included in this alternative that might benefit shellfishing.

Alternative 1: Providing for Diverse Vessel Use and Needs

This alternative would not alter the fundamental management structure of MacMillan Wharf or of the harbor. The Harbormaster's Office would be equipped with additional management tools, reporting responsibilities and budgeting procedures to allow for improved oversight of harbor activities for all structures.

Recreational boating needs would primarily be improved by providing a float at the West End boat ramp and dredging a shallow channel to increase the usefulness of this ramp. Other measures would include provisions for off-site parking with appropriate signage as well as support facilities with showers and other amenities for transient recreational boaters at MacMillan Wharf. The actions taken under this alternative for commercial boating needs are largely addressed under other issue areas.

Alternative 1: Assuring Public Access to the Shoreline for Recreation

Under this alternative, the town would work with the State to create a master planned approach to compliance of individual properties to Chapter 91 to produce a coherent and connected public access system to and along the waterfront. However, the current system of individual compliance to Chapter 91 guidelines would be continued.

Alternative 1: Planning for Future Harbor Uses

Under this alternative, no significant changes in land use would be proposed. However, important actions would need to be taken to assure that existing use patterns could be retained in the event of proposals for new construction or total reconstruction after a disaster. Under the current Chapter 91 regulations, there are important restrictions that would not allow certain uses to exist in their present form. Since these standards may be altered through an approved Harbor Plan, this alternative would revise the applicable portions of Chapter 91 to align as much as possible with existing standards. As has been noted elsewhere, landside marine support would be improved through a number of measures.

This alternative would provide for improved management of moorings based on the mapping and review of mooring conditions and would reorganize mooring locations to heighten efficiency. This alternative would also provide for a reorganization of the existing slips and piers at MacMillan Wharf with some expansion for off-loading and improved docking for the ferry. It would provide for temporary slips and off-loading for small boats at one of two potential locations along MacMillan Wharf and a somewhat expanded mooring capacity for mid- to large commercial fishing boats at MacMillan Wharf. Another principal improvement in this would be the West End boat ramp with a float and some dredging.

No action would be proposed regarding the use of breakwaters as part of this alternative.

2. Alternative 2: Encourage Waterside Potential

The second planning alternative sees the harbor as an essential and underutilized asset for commercial and recreational use. As such, it calls for increased access to and from the harbor and maximum commercial opportunities within the harbor waters and along its bottom. This alternative recognizes that there may be conflicts between landside uses and water-related uses and would establish a consistent priority for water-dependent uses whenever such conflicts might arise. It further suggests a concentration of public policy and public expenditures on water-dependent uses of the harbor and its surroundings.

Each alternative is summarized according to the five key issue areas.

Alternative 2: Preserving the Harbor's Built and Natural Assets

This alternative would substantially expand MacMillan Wharf to better accommodate fishing and berthing, off-loading and packing, ferries (including potential freight service), daily excursion boats, pedestrian traffic and other ancillary uses, including a new and permanent Harbormaster's Office. This alternative calls for a major dredging program to support the expansion of mooring fields and the creation of potential breakwaters designed to improve the safety and mooring conditions in the central harbor. Dredging would also be required to support a new small boat facility as discussed elsewhere in this alternative. In addition to this dredging, the maintenance program discussed in Alternative 1 would also be included.

The program for beach maintenance and improvement would be generally the same as in Alternative 1. In addition, this alternative would provide for designated pull-up areas for boat storage and maintenance activities, and staging for fishing/shellfishing-related activities. These designated locations would be linked to accessible town landings. Water quality actions would generally be the same as those described in Alternative 1, as well. However, implementation of a targeted water quality monitoring program associated with the expansion of shellfishing would also be included as part of this alternative.

Alternative 2: Promoting Commercial Fishing and Aquaculture

Under this alternative, a proactive effort would be initiated to support commercial fishing of all types. This initiative would entail expanding the role of the Shellfish Warden to include commercial fishing; increasing facilities and capacity at MacMillan Wharf, improving off-loading, packing, and trucking facilities, and improving a separate small boat commercial facility.

This alternative would also provide for additional value-added activities to maximize the economic return to the local fleet, including arrangements for direct retail sales, small-scale packaging and the like.

Alternative 2 would make aquaculture one of the priority uses of the harbor, reflecting both its considerable potential and role in sustaining and revitalizing the commercial

fishing industry. Aquaculture would benefit from a number of measures described under other Issue Areas. Moreover, a number of specific actions would be taken aimed at expanding and upgrading shellfish habitats as well as increasing the types of shellfish grown. This alternative would support both landside and waterside facilities for aquaculture or mariculture.

Alternative 2: Providing for Diverse Vessel Use and Needs

Alternative 2's expansion of commercial fishing and aquaculture would require an administrative group specifically charged with attracting grants, studies, loans, and administering harbor resources. This would be separate from the fiscal and regulatory enforcement role of the Marine Superintendent and would most likely represent an expansion in role for the Shellfish Warden. Recreational boating would be better accommodated with an expansion of the protected harbor through breakwater development, the expansion of mooring fields that would be associated with dredging programs, and the addition of a float at the West End boat ramp. The creation of the boat launch and support facility for small boat commercial fishermen, as discussed below, would also support the needs of recreational boaters. The other improvements to MacMillan Wharf aimed at meeting recreational boating needs, described under Alternative 1, would also apply under Alternative 2.

Major steps would be taken to support commercial boating needs under this alternative. A key measure would be the creation of a new small boat commercial ramp and support facility. There are several locations that may be feasible for such a facility. Substantial changes and improvements would occur at MacMillan Wharf to support the mid- to large-size fishermen, the excursion boats and the pedestrian ferries as discussed in more detail under Issue Area 1 (MacMillan Wharf). A major new commercial boat service is envisioned, as well. Finally, potential may exist for a small, seasonal truck ferry at MacMillan Wharf, serving the Outer Cape.

Alternative 2: Assuring Public Access to the Shoreline for Recreation

The extent of Commonwealth tidelands in Provincetown presents a unique opportunity to develop and implement a comprehensive and coherent plan for optimum utilization of the harborfront, whether for public access to and along the waterfront, or for improving water-dependent activities. This plan would be implemented through two mechanisms:

- Creation of a dedicated fund to create access improvements, funded by payments from properties which cannot satisfactorily provide on-site compliance with the Chapter 91 standards as part of the licensing process.
- Coordinated implementation of on-site improvements through a master planned approach.

The adopted Provincetown Harbor Plan will serve to guide and coordinate state (Chapter 91) and local (Zoning By-Law, Wetlands, etc.) decision-making to achieve the mutual goals of the state and municipality as reflected in the Plan.

Alternative 2: Planning for Future Harbor Uses

This alternative would take pro-active steps to increase the supply of waterfront land by fill or pier development to support water-related uses, both at MacMillan Wharf and at a

new small boat facility described under other issue areas. Landside marine support would consist of those measures discussed above to provide a new small boat facility and to create expanded facilities and flexibility for off-loading operations at MacMillan Wharf.

Mooring areas would be substantially expanded, and additional mooring location preferences would be given to commercial vessels. A rationalized mooring and anchorage system would also be recommended to increase safety and efficiency and to minimize management requirements. As has been noted in other issue categories, this alternative envisions the substantial expansion of slips and of the pier edge for all commercial users.

As has been described, a new boat ramp would be provided as part of this alternative. In addition, a float would be added to the West End Ramp to better support users of this facility. This alternative envisions the installation of new breakwaters to the east and west of MacMillan Wharf and the central mooring fields that surround it.

3. Alternative 3: Encourage Landside Potential

The third planning alternative sees the harbor as the focus of the town and the many land-side uses that have evolved. This alternative explicitly recognizes that the local economy is strongly linked to tourism and that the harbor and its edge are fundamental assets which could be better protected and enhanced. While water-dependent uses are encouraged, the emphasis is in relation to their support of land-side uses and the economy .

Alternative 3: Preserving the Harbor's Built and Natural Assets

This alternative would substantially expand MacMillan Wharf as a public recreational boating marina. This would be in addition to improvements described under Alternative 1. Additional facilities would bring with them significantly increased operational, management, and maintenance costs.

In addition to this expansion for recreational support, MacMillan Wharf would include the following existing program elements:

- Passenger ferry docking;
- Dinghy dock;
- Commercial fishing boat docking;
- Commercial fishing off-loading operations;
- Harbormaster Office; and
- Excursion boat floats (whale watch, day-trip boats, charter fishing).

This alternative would undertake dredging necessary to support the changes at MacMillan Wharf, for a new recreational and small commercial boat facility and for improved moorage fields. The extent of the dredging would be identical to that envisioned under Alternative 2.

Beach maintenance and access efforts would be the same as those listed in Alternatives 1 and 2, with one significant difference. The dredge material produced from the activities in the central harbor area would be deposited as a broad new beach along the central waterfront of Provincetown. This would substantially recapture the waterfront for a variety of public uses, such as strolling and picnicking, which have been diminished by the erosion of the beach area and the steady encroachment of private development. A number of public improvements such as decks, promenades, boardwalks, look-outs and the like could be programmed for this area.

The same actions as those listed in Alternative 1 would be taken to help assure water quality.

Alternative 3: Promoting Commercial Fishing and Aquaculture

This alternative combines the key actions of Alternative 1 with the potential provision of a dedicated small boat facility in order to meet current and future commercial fishing needs.

Although the small boat facility in this alternative has been primarily geared to the recreational boater, such a facility would serve the small commercial fisherman as well. Aquaculture actions and policies would be the same as those in Alternative 1, which envisions some systematic improvements in the existing circumstances but does not seek to dramatically change or expand the resource or its harvesting.

Alternative 3: Providing for Diverse Vessel Use and Needs

Alternative 3 would seek to maximize the private sector development and management of tourism-related marine facilities to the greatest extent practical and financially beneficial to the town. This would include private management of aspects of the MacMillan Wharf operations. Feasibility of this management approach would be need to be studied, to assess the relative costs and benefits to the town.

This alternative would propose the creation of a new small boat ramp as a dedicated facility, virtually identical to that proposed under Alternative 2.

In addition to the small boat ramp and supporting facilities, this alternative would also:

- Expand the area of protected harbor through breakwater development as described above.

- Create an attraction for transient boaters with transient slips and support facilities as part of a reconfigured MacMillan Wharf as described above.
- Improve the West End boat ramp with a float.

This alternative combines the key actions of Alternative 1 with the potential provision of a dedicated small boat facility to meet current and future commercial fishing needs as described elsewhere.

Alternative 3: Assuring Public Access to the Shoreline for Recreation

This alternative would take a similar approach to the Chapter 91 licensing process as Alternative 2, but would use this process as a principal mechanism to assure improved public access to the waterfront for recreation. Under this approach, the adopted Provincetown Harbor Plan will serve to guide and coordinate state (Chapter 91) and local (Zoning By-Law, Wetlands, etc.) decision-making to achieve the mutual goals of the state and municipality for waterfront access as reflected in the plan.

Alternative 3: Planning for Future Harbor Uses

As in Alternative 1, this alternative would seek to alter all adjustable Chapter 91 requirements for consistency with existing land use. Landside marine support would be identical to that in Alternative 2, with the exception that efforts would be undertaken to increase the capacity for boatyards, storage and repair in Provincetown.

The expansion of mooring fields is very similar to that presented under Alternative 1, although the layout, location, assignment and management would be oriented to support and encourage recreational boating use of the harbor as its highest priority. This alternative would expand the potential for slips and docking facilities for all transient and perhaps seasonal recreational users at MacMillan Wharf while maintaining existing capacity for commercial users. This alternative would create a new boat ramp that would jointly serve both recreational and commercial users.

New breakwaters would be created, with particular emphasis on actions that would support the activities and locational advantages for recreational users. In general, the locations, systems and cost options would be similar to those described under Alternative 2.

C. Conclusions of the Alternatives Phase

As noted in the introduction to this section, the Planning Alternatives were utilized to explore several potential directions for the future of Provincetown Harbor. The reviews of the alternatives included a workshop, a public forum, and several meetings of the Harbor Planning Committee. The directions chosen by the Harbor Planning Committee were assembled from those elements of each of the alternatives that received favorable technical and public evaluation and which best represented the Goals and Objectives for

the Harbor Plan. The following matrix summarizes key conclusions of the Alternatives phase, which were a basis for the Recommendations (Section V). This summary is organized according to the Major Category Areas that were used constructing and evaluating the alternatives.

Table: Summary of Conclusions and Rationales based on Alternatives

<i>Major Issue Categories</i>	Recommended Direction from Alternatives Evaluation and Discussion
1. Preserving the Harbor's Built and Natural Assets	
MacMillan Wharf	Reconstruct MacMillan Wharf with modest expansion to better serve existing needs (from Alternative 1). This is the only alternative that is likely to be affordable given the high cost of reconstruction, and the lack of reasonable alternatives.
Navigation and Dredging	Undertake dredge programs associated with maintenance and improvements to existing conditions; study large dredge projects only as long term planning option (from all Alternatives). This is the most cost-effective approach, and would not significantly alter the mix and extent of water sheet uses.
Beaches	Improve beach maintenance (from Alternative 1); The expansion of beach areas or major improvement projects were not selected for the short term because of high cost.
Water Quality	Maintain and enforce boat pump-out program, encourage monitoring programs, support closure of all outfalls through implementation of storm water program (from all Alternatives). The general water quality is very high in Provincetown Harbor, and these actions were considered the most appropriate to further protect the quality.
2. Promoting Commercial Fishing and Aquaculture	
Commercial Fishing Needs	Provide for reorganized and improved facilities at MacMillan Pier, and provide improvements for small boat commercial fishing in location(s) to be determined through more detailed study, including improvements at the West End ramp and potential development of a second boat ramp (from all Alternatives).

Aquaculture	Continue support of existing shellfish programs and fish initiatives and provide for improved management (from Alternatives 1 and 3). Recommendations emerged from the assessment that no dramatic change in current practices need be instituted but that an improved management approach to the harbor would be most helpful.
3. Providing for Diverse Vessel Use and Needs	
Management	Improve the existing management structure by creating a new management entity for MacMillan Wharf; provide for new moorage field layout and anchoring system and reduce Harbormaster's responsibilities at MacMillan Pier to allow increased management of other issues. Provide other additional coordination structures within the town (from Alternative 1).
Recreational Boating Needs	Improve the West End boat ramp with a float, provide support facilities for moored and anchored transient boaters on a reconstructed MacMillan Wharf, create a second boat ramp.
Commercial Boating Needs	Provide for reorganized and improved facilities at MacMillan Pier and provide improvements for small boat commercial fishing in location(s) to be determined through more detailed study, including improvements at the West End ramp and potential development of a second boat ramp (from all Alternatives).

4. Assuring Public Access to the Shoreline for Recreation	
	Establish a comprehensive program of public landing improvements and other access opportunities throughout the waterfront. Create a master planned approach to compliance of individual properties to Chapter 91 to produce a coherent and connected public access system to and along the waterfront. Create an access fund with resources from properties unable to reasonably comply with the Chapter 91 requirements. Administer improvements through collaborative effort with the state Office of Coastal Zone Management. Do not attempt to alter underlying zoning or Chapter 91 dimensional regulations (from all Alternatives).
5. Planning for Future Harbor Uses	
Land Use	Provide for no significant changes in land use (from Alternative 1), and protect and extend water-dependent uses through access improvements and other practical actions. This direction was chosen because the waterfront is almost entirely built-out and retains very few opportunities for significant change that is either affordable through public expenditure or practical through regulation.
Landside Marine Support	Improve support facilities for all existing uses at MacMillan Wharf and the Municipal Parking Lot edge. Create new landside support for small boats of all types through landing, boat ramp and other facilities (from all Alternatives).
Water Use: Moorings	Review mooring conditions, reorganize mooring locations to create better use patterns on an incremental basis (from Alternative 1). This alternative would most cost-effectively resolve many existing issues.
Water Use: Slips and Piers	Provide for a reorganization and some expansion of the existing slips and piers at MacMillan Wharf, with some expansion for off-loading and improved docking for the ferry (from all Alternatives).

Water Use: Boat Ramps	Improve the West End Boat Ramp with a float; undertake a site study and create a second ramp (from all Alternatives). This direction was taken to respond to both short-term and long term needs.
Water Use: Breakwaters	Recommend additional breakwaters as a long-term goal and subject of ongoing study (from Alternatives 1 and 2). Although potentially beneficial, the high costs and substantial complexity of this improvement category resulted in the choice of policy direction.

V. Planning Recommendations

This section of the Provincetown Harbor Plan is comprised of a series of both general and specific planning recommendations. The recommendations reflect the strengths of the planning alternatives studied and respond to current conditions at Provincetown Harbor as well as the directions of the town's citizens as expressed in public meetings and through the Harbor Planning Committee. The recommendations address issues of *Land Use*, such as use patterns, environmental impacts of various land uses, and the Harbor beaches. Under a general heading of *Water Use*, the recommendations discuss different kinds of fishing, boating and navigation, as well as water quality. A discussion of *Public Facilities* focuses on the publicly-owned land and facilities, such as MacMillan Wharf. An entire section is also devoted to recommendations concerning *M.G.L. Chapter 91* and its regulations.

The recommendations also take into account *Long Term Plans for the Harbor*, as well as a series of recommended actions for water access. But, to be truly useful, a Plan needs not only to discuss what should be done, but also how a community can take steps to make it happen. Thus, these recommendations also include a section on *Implementation*, which describes a series of *Harbor Management Roles and Responsibilities*, such as the Provincetown Harbor Committee and a Harbor Access Trust, as well as Chapter 91 Implementation.

General recommendations of this plan have been translated into actions that should be taken to accomplish its goals and objectives. Key actions have been summarized at the end of each of the following sections to facilitate review and understanding.

A. Land Use

1. Land Use Patterns

In general, the Provincetown Harbor Plan accepts the existing land use patterns along the water's edge as appropriate for the future of the community. The Plan acknowledges that the mixture of retail, commercial, residential and civic uses that fill most of the waterfront properties should be retained as a vital and appropriate mix. As detailed earlier, there are four zoning districts in the harbor planning area: Class B-residential, Class G-residential, Class W-residential and Class R-commercial. Regions B and D, are zoned Class R-commercial. Though water-dependent commercial and industrial uses are generally encouraged as "as-of-right" uses, less than 10% of the waterfront is occupied by these uses. Because the zoning district allows a broad range of other uses including tourist-related commercial uses such as retail, hotels, and restaurants, the market exerts strong economic forces. Typically, in this situation, it is economically difficult for water-dependent uses to compete for available land. At the same time, the Plan seeks to protect and extend the role of water-dependent uses along the waterfront and enhance views and access to the waterfront where possible.

The Harbor Plan does not recommend any significant changes for any of the zones within the Harbor Planning Area. As the discussion of existing conditions makes clear, the existing zoning for this area is consistently more restrictive in terms of dimensional requirements than the pattern of existing development. Because the pattern and density of development of the downtown was established prior to current zoning regulations, much of the waterfront area is legally nonconforming in terms of the dimensional and, to a lesser extent, the use requirements of the Zoning By-Law. Under Massachusetts statutes and the municipal by-law, nonconforming structures and uses can be maintained and, under certain circumstances, expanded, altered, and changed either by right or by special permit of the Board of Appeals. As a result, there is a strong interest on the part of property owners to retain the existing improvements and to modify them incrementally, often resorting to variances or special permits to allow expansion or reconfiguration of improvements. These modifications lead to a steady expansion of development towards the water's edge, building within zoning setback limits and other small but gradual changes that often are not in keeping with the spirit of the underlying zoning regulations, nor with the goals and objectives of this plan. Narrowing the list of allowed uses (to only those that are water-dependent, for example) or further restricting dimensional standards will only increase the amount of legally nonconforming properties and offer little incentive to redevelop the property in conformity with the by-laws.

To reinforce the underlying goals of the existing zoning and the conclusions of this Plan, its goals, objectives, and recommendations should be incorporated into the criteria for special permit applications and be stringently applied along the waterfront. For example, the special permit criteria of subsections 3621 and 3630 could be strengthened by including provisions such as: 1) use does not displace or diminish an existing water-dependent use, 2) use is part of and complements a water-dependent use on the same parcel, and 3) use is compatible with surrounding water-dependent uses and the waterfront character of the area. The purpose is to make the local by-laws related to use of the harborfront area as consistent as possible with the objectives of this Plan and with the Chapter 91 regulations. This should improve consistency of regulatory decisions and simplify the development approval process.

The Provincetown Harbor Plan has several recommendations in regard to water-dependent uses. The first is to protect and maintain existing water-dependent uses. This objective is a primary concern in the area of the waterfront that retains the greatest concentration of water-dependent uses, in an area that has been designated as "Chapter 91 Region B" as discussed below. The second recommendation is to ensure that new nonwater-dependent development does not impede or interfere with the operations or viability of water-dependent uses. The third is to encourage new water-dependent facilities whenever appropriate in response to expressed need. The fourth recommendation is to increase public access to the waterfront wherever possible. The final recommendation is to disallow new or expanded commercial parking for nonwater-dependent uses consistent with the Chapter 91 regulations.

This plan includes a detailed local approach to the review and licensing of properties within Chapter 91 jurisdiction. This is an important land use tool, and has been described

in detail in a separate discussion below. In addition, the Plan includes detailed recommendations for direct public improvements through investments, enhancements, and expenditures through a dedicated fund for water access improvements that is also detailed below.

The town may wish to pursue additional proactive measures regarding water-dependent uses along the waterfront. In this regard, it is recommended that a working committee be established with representatives from both the proposed Harbor Committee (see below) and the Planning Board to consider additional planning mechanisms to protect and extend water-dependent uses along the waterfront.

The working committee may wish to consider the following mechanisms as part of its considerations. These zoning mechanisms represent various strategies for encouraging and maintaining desired development that have been implemented in other coastal communities and may provide a potential model for Provincetown. In waterfront areas subject to Chapter 91 jurisdiction, all of these local zoning strategies would complement and bolster the Chapter 91 program objectives.

- Create an exclusive water-dependent use district. Such a strategy might be particularly appropriate for the area which contains the highest concentration of water-dependent uses.
- Keep the existing zoning but include criteria to protect and promote water-dependent uses from new development, changes of uses, or modification of uses.
- Prevent interference with existing water-dependent uses. An example of interference would be a use that diminishes public and working access to the beach. In another case, the development of certain types of non water-dependent uses, such as a new residence on an adjacent property, might create a conflict with a boat repair facility. The zoning regulations could include a provision recognizing such a potential incompatibility and prohibit a particular type of use from being established near existing water-dependent uses.
- Prevent reduction of waterfront capacity to accommodate present and future water-dependent uses. Long-term impacts of new development on water-dependent uses should be considered when reviewing permit applications.
- Increase public access whenever appropriate. The local by-laws should reflect the objectives for the waterfront articulated in this Harbor Plan.
- Explore the potential of economic development areas utilizing special tax and other advantages, in part by utilizing mechanisms and potential resources from state programs.

2. FEMA Velocity Zones

As noted in the existing conditions evaluation, there are numerous properties along the Provincetown waterfront that include improvements within "velocity zones" as designated by the Federal Emergency Management Administration. These improvements are at risk in the event of extreme storm conditions. This effects the ability to insure properties, including the availability and the cost of insurance.

It is recommended that the town seek funds from FEMA and/or its Massachusetts equivalent (MEMA) to undertake a study of measures to reduce storm damage risks to existing improvements in FEMA velocity zones. This study should be administered by the Harbor Committee, and should investigate the potential for:

- Providing an information program and potential loan or grant programs that would assist property owners in undertaking improvements to their sites or buildings to decrease the chance for damage.
- Providing engineered improvements such as beach extensions associated with dredging program, sacrificial dunes, or other measures to remove the velocity zone designation from affected properties.

3. Environmental Impacts of Land Use

Sewer outfalls and groundwater are suspected to be significant sources of land-based pollutants to the harbor, which prevent the town from meeting its water quality improvement and protection goals. To date, there is very limited data that documents contaminant levels from either of these sources.

The Plan reinforces the existing town policies towards protection of the harbor as an environmentally sensitive location. The Harbor Plan recognizes the importance of the current program to correct water pollution problems due to outfalls and failed subsurface sewage systems. The Harbor Plan recommends proactive involvement of the town in programs to monitor water quality issues and to pursue corrective measures to ensure high water quality.

A program should be established to eliminate storm sewer outfalls from the harbor, and the planning effort should include representatives from the Harbor Committee (see below). Limiting the flow from outfall pipes is a complex and costly issue. However, cleaning and installing a filter on the catch basin system would be a cost-effective strategy to reduce the flow of debris from outfall pipes on the short run. However, before a catch-basin filter system can be recommended, selected, or installed, more data is required to resolve the types and the sources of pollution into the harbor. Groundwater, outfall pipes and their receiving waters need be tested for bacteria, nutrients, residual trace metals, and petroleum products from automobiles. Such a sampling regime would enable the town to determine the most significant source of pollution and to make the most appropriate and cost-effective pollution abatement decisions.

4. Stormwater Management in Provincetown Harbor

The purpose of the following discussion is to assess the need and to provide general recommendations to improve Provincetown's stormwater management plan as it pertains to the water quality and overall integrity of Provincetown's Harbor.

The water quality in the harbor has been assessed several times over the past decade. And it is continuously monitored for fecal coliform contamination. A complete summary of historical data on water quality can be found in the Wastewater Needs Assessment Report recently published by Stearns and Wheler, LLC, (1997). The most current water quality data, collected and evaluated by The Center for Coastal Studies, is summarized in Chapter III.

For nearly two decades, Provincetown has been investigating the potential benefits and costs of a wastewater management facility that would eliminate the need for subsurface septic systems. The Stearns and Wheler Needs Assessment Report (1997) represents the first of three phases of Provincetown's Wastewater Management Facilities Planning Study.

With regards to stormwater management, a significant conclusion of the Stearns and Wheler Report is the determination that "minimal positive effects to stormwater quality can be expected from a wastewater management plan that removes subsurface disposal systems from the waterfront." The report found that wastewater and stormwater are mutually exclusive sources of pollution, and that the high concentrations of fecal coliform measured in the storm sewer system likely emanate from sources other than septic system leachate. To further this conclusion, the report recommends additional sampling of the stormwater system to characterize stormwater flow and to assess the potential impact of septic systems on stormwater.

It is the recommendation of this Harbor Plan that further investigation is required to accurately assess the impacts of stormwater in Provincetown Harbor and to distinguish between impacts from groundwater seepage and impacts from stormwater runoff. Stearns and Wheler (1997) recommend, at the very least, supplementing existing data with additional sampling of storm sewer systems using the same suite of indicators as Normandeau (1988)—a sampling regime referred to as 'water quality pollutant constituent monitoring.' In addition, they recommend using inorganic leachate indicators to indicate the presence of septic tank effluent (i.e., groundwater intrusion).

Water quality constituent monitoring is only one type of water quality indicator which, in turn, is only one type of indicator of environmental health—there are many others. Other water quality indicators that should be included in a stormwater management plan include toxicity testing, nonpoint source loadings, exceedance frequency monitoring (which is sometimes done in Provincetown), sediment contamination, and human health criteria. Similarly, other types of environmental indicators that should be considered in the design of Provincetown's stormwater management program include physical and

hydrological indicators (e.g., physical habitat monitoring), biological indicators (e.g., marine phytoplankton and macro-invertebrate monitoring), social indicators (e.g., public attitude surveys), programmatic indicators (e.g., number of best management practices in use), and site indicators (e.g., growth and development of the drainage area).

A comprehensive stormwater management program should include multiple indicators, as listed above, selected on the basis that they can (1) provide a *realistic* assessment of the *overall* health of the aquatic system, (2) track general improvements or deteriorations in overall aquatic health, (3) assess and evaluate which components of the program work and which do not, and (4) assess the overall success--or failure--of management efforts. Moreover, the stormwater program has to be based on what is realistically achievable for Provincetown Harbor, as well as for its underlying aquifer.

Additional support of the need for a comprehensive stormwater plan is evident in the fact that even with the widespread and increased use of best management practices across the United States, there is still a consistent relationship between urbanization and degraded water quality (Schueler 1994). So the problem of stormwater contamination cannot and should not be mitigated and managed solely through the use of best available technology or best management practices.

In 1996, the Town of Provincetown, in collaboration with the Center for Coastal Studies, applied for a state grant to further investigate the character and impact of stormwater in Provincetown Harbor but were not awarded the grant. The town was awarded a grant to install a storm drain filter system at the West Vine Street Landing in Fall '97.

5. Harbor Beaches

The beach along Provincetown Harbor has a recreational potential that is not, at present, being fully exploited. Access points are generally limited and ill-defined, supporting facilities and amenities are lacking, and a significant amount of debris is allowed to accumulate which detracts from its attractiveness and utility as a recreational beach.

The Chapter 91 implementation plan for Provincetown Harbor includes provisions that will improve the quality of the publicly accessible beach.

One of the harbor issues identified during the planning process is the concern regarding beach stability and erosion patterns. These factors are relevant to the harbor plan and its recommendations in several ways: the siting of potential future dredge material disposal for beach nourishment, degree of threat to structures and property from coastal storm erosion, and the effect on public access.

Beach nourishment

Draft beach nourishment guidelines have been developed by the Massachusetts Coastal Zone Management Office and Department of Environmental Protection. The draft

guidelines suggest that an understanding of several physical and ecological conditions of an area form the basis for decision-making. These include knowledge of (1) the stability of the shoreline and areas prone to erosion, (2) the direction and rate of the lateral drift, (3) the suitability of the material to be placed and its compatibility with existing sand on the beach to be nourished, and (4) the existence and location of sensitive resources.

While no comprehensive study of this issue was conducted as part of the Harbor Plan, relevant information is available from existing studies. In 1985, the Center for Coastal Studies prepared an *Environmental Assessment of the Benthic Communities and Sediment Transport Processes in Provincetown Harbor* (Mello). The findings of this work were used to inform the 1990 study by the US Army Corps of Engineers associated with the proposed navigation improvements in Provincetown Harbor. The Corps' *Detailed Project Report & Environmental Assessment* presented findings and data supporting hydraulic dredging of the navigation channel and disposal of the dredge material on the beach, above mean low water, in an area to the west of Fisherman's Wharf.

As described in these studies, the shoreline of Provincetown Harbor has been relatively stable for over 150 years. This finding is corroborated by the Massachusetts Shoreline Change Project maps produced by the Massachusetts Coastal Zone Management Office in 1985. The stability of the Provincetown Harbor shoreline is the result of the equilibrium developed by the barrier beach that ends at Long Point. As a result of the adjustment of the shoreline to wave energy, the average annual rate of the westward lateral drift nearly equals the average annual rate of eastward lateral drift, though some net movement of sand occurs to the west. Sand moves along the beach towards the east in the summer due to the prevailing southwesterly waves and then moves towards the west in the winter in response to easterly storms.

Provincetown Harbor tides are semi-diurnal with a mean range of 9.1 feet and a mean spring range of 10.6 feet. Tide currents inside Long Point seldom exceed 0.1 knots and are even weaker near shore and, therefore, have very little affect on sediment transport (Mello, 1985).

Historical shoreline changes in Provincetown Harbor are primarily the result of (1) the direct placement of dredged material on the beach and (2) alteration of wave induced erosion caused by the construction of seawalls along the shore and the Federal breakwater offshore.

The state guidelines for beach nourishment suggest that material used for nourishment should be similar in grain size or slightly coarser to that of the receiving beach. If the grain size of the source material is finer than the grain size of the receiving beach, it is susceptible to higher rates of erosion. In general, the percentage of fine sand in samples from the source material should not exceed the percentage of fine sand in samples from the receiving beach by more than 10 percent (though source material that is 10 to 20 percent greater in fine sand than the receiving area may be considered for beach nourishment). Material containing greater than 10 percent silt/clay and very fine sand is generally unsuitable for beach or dune nourishment. The suitability of source material

containing significant quantities of coarse material is also subject to site specific conditions such as recreational use of the beach.

For the recent dredging project, the Corps sampled and analyzed sediment from the navigation channel. The four samples taken from the area of the navigation channel showed minimal amount of fines; fines averaged 1.95% with a high from one sample of 4.5%. This is well within the standard for judging compatibility and suitability for beach nourishment suggested by the MCZM guidelines.

The proximity and location of sensitive resources such as eelgrass, shellfish, saltmarsh, and endangered species are important site specific factors. The placement of material in the intertidal zone will directly impact organisms living there. Nourishment material that is compatible with the natural beach sediments will, however, promote rapid recolonization. A further consideration is that once beach nourishment material is placed on a beach it is subject to tides and littoral currents. Some amount of sediment will be transported into nearshore waters with the potential to impact sensitive resources down-drift of the disposal site. The selection of nourishment sites should avoid areas with historically high rates of erosion and those that are up-drift of sensitive resource areas.

Preliminary steps that can be taken to prepare for future dredging and beach nourishment projects include:

1. Identifying and mapping erosion “hot spots” and portions of the beach suffering from storm damage. While these are the areas where beach nourishment may be desired, it must be recognized that these areas will continue to erode because of their exposure or the presence of structures.
2. Identifying areas of sensitive resources.
3. Conducting a grain size analysis of the material existing on the beach in various locations. This information will then be available for comparison with dredge material or other source material proposed for beach nourishment.

One final issue connected with the placement of fill or dredged material along the shoreline is that of ownership and control of the land thus created. The Corps of Engineers and the Commonwealth of Massachusetts hold that the placement of material in areas where there are public rights, i.e., areas below the existing or historic high tide line, in no way restricts or extinguishes those public rights. Licenses issued by the Massachusetts Department of Environmental Protection to conduct such activity contain a provision that specifically conditions approval on that basis. The Corps of Engineers expects similar assurances. In the recent maintenance dredging of Provincetown Harbor in which the dredged material was placed on the beach, waivers were obtained from affected property owners acknowledging that any extension of the beach would be public and open to all on an equal basis.

General Strategy for Beach Maintenance

The following strategies are proposed as part of the Harbor Plan to address the problems of beach maintenance. In 1994, the Provincetown Marine Debris Task Force thoroughly studied the issue of marine debris in Provincetown Harbor and issued the report *Strategies to Reduce Marine Debris in Provincetown, Massachusetts*. That report contains numerous recommendations that should be implemented as part of this Harbor Plan.

The general strategy for improving the conditions of the beaches is to decrease the sources of debris and increase its removal from the beach. The major sources of debris are land-generated debris, marine debris and outfall pipes. Land-generated debris is caused by improper disposal of garbage on the beach or by the action of the wind blowing trash onto the beach. Marine debris originating in Provincetown Harbor comes from MacMillan Pier, restaurants and bars located adjacent to the beach and the boat berthing areas; tide and current move the debris onto the beach. After heavy rain or storm a quantity of debris is carried with the flow from outfall pipes and ends up on the beach. Seaweed is another issue that needs to be addressed. It is also likely that significant debris originates outside of the harbor. Such sources should be studied as part of an ongoing maintenance program.

Removal of beach debris should be accomplished through a variety or combination of approaches such as increasing the municipal commitment of public works staff and resources, organizing citizens to take on the responsibilities on a voluntary basis, or including maintenance of the beach as a condition of Chapter 91 permitting.

Decreasing Input from Sources

Because the major sources of land-generated debris are plastic straw and polystyrene food packaging and cups, an effective way to reduce trash on the beach would be to encourage businesses to decrease outdoor use of such materials. In order to facilitate such practice, a public awareness campaign would be useful. In addition, installing trash receptacles in strategic locations on the beach should decrease littering. The garbage receptacles should have lids that automatically close after trash is deposited to limit blow-out of trash during strong winds. Finally, posting of rules should enhance compliance.

A basic strategy for dealing with debris at MacMillan Pier would be to install trash containers at strategic locations on the pier.

Seaweed left to accumulate and decompose on the beach can be unattractive, have an unpleasant smell, and otherwise limit recreational uses. On the other hand, some people find none of the above to be the case and seaweed does play a role in beach and dune stabilization. Most beach maintenance programs do, however, include periodic removal of seaweed from the beach.

Although the amount of debris reaching the beach can be reduced, a successful beach improvement plan will need to rely on voluntary citizen participation and compliance with regulations. Public education directed at visitors to and users of the harbor and beachfront areas is a key element in making these strategies work.

Summary of Land Use Actions

- *Incorporate Harbor Plan recommendations into special permit, variance, and similar reviews, including protection of water dependent uses and limitation of any expansion of commercial parking as a waterfront use consistent with the Chapter 91 guidelines.*
- *Establish a town working committee to consider proactive measures for protecting and enhancing water-dependent uses including representation from appropriate Boards and Commission.*
- *Amend the Harbor Regulations regarding uses that support water-dependent uses.*
- *Seek funds and establish a process to study measures to protect properties in the FEMA velocity zones.*
- *Provide for representation of the Harbor Committee and other relevant harbor interests in the sewer outfall removal program.*
- *Provide for continuation of the water quality monitoring program.*
- *Enhance the removal of beach debris by providing additional assignment of maintenance responsibility and funding to the DPW and additional trash receptacles.*
- *Enhance the removal of beach debris by increasing volunteer activities and increasing public awareness.*
- *Include conditions on the removal of beach debris in relevant permitting and licensing criteria.*

B. Water Use

1. Water Use Plan

The future use of the harbor should be accommodated through a planned process that reduces existing or potential conflicts and protects its economic and scenic value. This Plan recognizes areas of the harbor that have different physical characteristics, attributes, and natural resources that present opportunities or constraints for uses. Among the relevant characteristics are water depth (including tidal variation), water quality, exposure (degree of protection from severe winds and waves), benthic resources (such as crustaceans, bivalve mollusks and eelgrass), distances from shore and to navigable waters, obstructions, and holding ground. In addition, the use and character of upland adjacent to the harbor waters influence the possible and appropriate uses of the water area.

As discussed earlier in the plan, the water area of Provincetown Harbor accommodates a number of activities and uses. These include piers and wharves, berthing and moorage space for commercial and recreational boats, navigation channels and fairways for vessels, lobstering, recreational shellfishing, shellfish aquaculture, sport fishing, swimming, jet skiing, and water skiing. Many of these uses can share the resource compatibly, but others are inherently exclusive or conflicting. Multiple use of the resource is possible because uses vary in terms of spatial and temporal requirements, that is, the degree to which they commit the resource (e.g., seasonal, temporary, intermittent, permanent).

The demand from a variety of uses and the importance of the harbor to the economy and life style of Provincetown justifies planning to manage and optimize the utility of the harbor (see Figure 8. Proposed Water Use Plan (2 pages)). In general, there are relatively few conflicts in the use of the harbor by the existing uses. These conflicts are generally already regulated, and simply require ongoing management and enforcement of the existing Harbor Regulations by the Marine Superintendent.

The following principles should guide the future use of the water area of the harbor:

- Mooring areas should be designated only in those areas where benthic resources will not be damaged.
- Areas requiring protection of water quality to protect plant (eelgrass) and animal (shellfish) resources should be off-limits for overnight transient anchorage and moorings.
- Anchorage areas should be designated more precisely so as to reduce conflicts with other uses in the harbor.

To the extent that these principles are not reflected in the town's Harbor Regulations, appropriate amendments to those regulations should be adopted.

Benthic living resources such as eelgrass and areas of shellfish concentration should be protected through all available means. Maintaining harbor water quality is an important fundamental condition for the health of these resources. The three designated shellfishing areas, the two areas of private hard shell clam grants, and the oyster spatfall resource area should be adequately marked and moorings and anchoring controlled in accordance with the recommendations of this plan. Once eelgrass mapping is finalized, the extent of the resource should be assessed against the mooring plan and adjustments made as appropriate to protect the eelgrass.

It should be noted that the National Park Service has ownership and jurisdiction over land and waters immediately adjacent to the planning area. It is the recommendation of this Plan that no action be taken by the National Park Service that would reduce or alter the activities recommended by this Water Use Plan.

2. Commercial Fishing

The Plan reinforces the ongoing importance of commercial fishing in the economic and cultural life of Provincetown. In the short term, the fin fish industry is experiencing substantial stress due to resource supplies and an emerging regulatory structure. As a result, there are shifts in the requirements for both water-side and shore-side facilities. In the longer term, requirements remain difficult to predict. As a result, the Plan recommends that commercial fishing facilities be maintained and existing deficiencies in the configuration and condition of off-loading facilities be improved. In addition, the Plan recommends that MacMillan Wharf be improved to provide for flexibility in its use for large boat commercial fishing, including the potential for expansion. The specific recommendations in regards to large-boat and off-loading activities are contained in the discussion of MacMillan Wharf below.

In support of small boat commercial fishing, the Harbor Plan calls for an off-loading dock designed and dedicated for use by small-boat fishermen. The dock should be constructed to remain in the water year-round and have electricity, water, winch, and lights available. Present and anticipated future demand justifies it being larger than the existing courtesy float. The recommended location is along the east side of MacMillan Wharf between the commercial slips and the beach. As such, a more complete discussion of the small boat facility is included in the recommendations for public facilities, below. Other possible locations that may be considered are 1) along the MPL bulkhead to the west of MacMillan Wharf, 2) as a new facility extending from the Johnson Street landing and parking lot, or 3) at Court Street through filling, structures and/or dredging.

Associated with the dock, additional facilities in support of small-boat fishermen would be provided, including dedicated parking or at least a dedicated loading/unloading zone and other such support. As part of the rehabilitation of MacMillan Pier, the Harbor Plan calls for the potential creation of support facilities for fishermen that would provide fresh water, restroom facilities, staging area, small lift for off-loading catch and for the exchange of equipment and supplies. Additional parking for cars and trailers should be considered as part of the pier redevelopment plan.

In the interim, the skiff dock, located on the east end of MacMillan Pier, should be expanded, and possibly made available to boats larger than 16 feet. Extending the time of year that it is kept in the harbor should be investigated and implemented, if practical. The potential for increasing the number of vessels that can be tied up should be investigated.

It should be ensured that physical improvement projects in support of small boat fishermen are included in the priorities list for expenditure of the Harbor Access Fund. Priority parking for commercial fishermen/shellfishermen should be provided at designated town landings. The Chapter 91 implementation plan should be used to increase parking opportunities for fishermen.

3. Aquaculture

Aquaculture should be one of the priority uses of the harbor, reflecting both its considerable potential and role in sustaining and revitalizing the commercial fishing industry. Aquaculture will be supported by and benefit from the improved small boat support facilities.

Specific recommended actions include:

- Initiate studies and programs to grow other types of shellfish such as steamers, oysters, mussels, or sea urchins, as well as one or more species of fin fish.
- Continue to work with the Massachusetts Division of Marine Fisheries, Woods Hole Oceanographic Institution, and others to investigate and solve the QPX problem. Investigate the possibility of a different species of quahog that may not be genetically susceptible to the parasite.
- Identify and mark areas of the harbor naturally suited for shellfish and reserve areas and control use of the areas for boat mooring and anchorage.
- Coordinate funding for investments made in improving waterfront facilities with the needs of the shellfishers and the shellfish aquaculture program.
- Continue to investigate the potential utility of the natural oyster spat fall area offshore of the Johnson Street parking lot. Actions should be considered that better mark the perimeter; manage/prohibit incompatible competing uses (e.g., mooring in the area), maximize yield of the area and create a program for grant holders to transplant oyster to habitat suitable for grow-out.

In general, more financial resources should be directed at shellfish propagation (seed and equipment) for recreational shellfishing. At the same time, the seeding program of the public shellfish areas should be upgraded. To the extent possible, efforts should be made to increase to past levels the number of days per week shellfishing is allowed.

4. Other Commercial Boating

Other commercial boating in Provincetown Harbor consists of cruise ship and passenger boat operations and the operation of excursion boats, including the whale watch fleet and party boat operations. The economic benefit of these activities to the town is enormous, and substantial attention and adequate resources should be dedicated to improvements. While it is possible that small scale freight operations could be in demand in the future, accommodation of this use does not warrant current action.

Among the specific recommendations of this Plan regarding other commercial boating are the following:

- Facilities for the excursion boat fleet should be improved, including the provision of a continuous float system for access to the boats and the installation of a common ramp system more appropriate for access by the elderly and handicapped along MacMillan Pier.
- Adequate circulation space for pedestrians should be provided to and from the excursion boats along MacMillan Pier.

- Ticket booth locations should be designated in a manner that will not interfere with pedestrian circulation.
- The potential for increased docking facilities for excursion boats should be provided as part of the MacMillan Pier reconstruction.
- The town should actively pursue and permit agreements with boat operators that provide for multiple destinations and departure times, and provide for increased and improved docking space to accommodate multiple vessels if required. Agreements that restrict the town's ability to serve multiple operations, destinations, or departure schedules should be discouraged.
- A sheltered area to protect departing passengers should be provided as part of the reconstruction of MacMillan Pier.

5. Recreational Boating

Provincetown should take advantage of the opportunity to significantly increase the use of Provincetown Harbor by recreational boaters. This should particularly focus on increasing transient recreational boat use, which brings economic benefits with minimal impacts. In this regard, the Harbor Plan supports measures that provide increased amenity and safety for recreational boating. Recommendations may include replacing bottom tackle and reorganization of vessels according to draft. Hearings would be held on this subject by the Harbor Committee. Other measures are generally discussed in more detail as part of the proposed improvements to public facilities and include:

- Provision of appropriately located dinghy docks, showers, laundry facilities, lockers, and other facilities available to the transient boater.
- Provision of a boat ramp available at all tides and provision for parking within a reasonable distance of the ramp.
- Improvements to West End boat ramp including the provision of floats.
- Provision of improved dinghy tie-ups at various town landings
- Provision of marina facilities for transient and seasonal docking of recreational boats if it can be economically self-supporting.

Regarding this last recommendation, it is apparent that the provision of public marina facilities will necessitate both dredging and the construction of new pier and float structures, probably connected to MacMillan Pier. Based on the current economic factors of cost and probable revenues, it is unlikely that such a facility could be provided without requiring some level of subsidy. However, this could change, particularly if the dredging costs could be absorbed through sources that would not be capitalized by docking

revenues. The potential for this use should be explored in more detail, and future potential for provision of a public marina should be retained.

6. Town Moorings

A study was undertaken of the efficiency of the town mooring system relative to the number of boats that could be moored within the most desirable protected areas within the breakwater. This investigation indicated that the current layout of moorings is generally efficient, in part because many small boat moorings are in locations that "bottom" out at low tide and because of the current density of the moorings.

However, there are substantial management advantages to providing a common anchorage system and rationalizing the mooring distribution to increase safety, remove outdated and non-standard anchors, and improve moorage efficiency in locations where the mooring scopes may be in conflict because of the size of the vessels.

As a result, this Plan recommends that a new anchorage system and public mooring field layout be implemented at the direction of the Marine Superintendent. This program may be undertaken either within one season, or over a period of years. The cost of the anchorage systems should be recovered through appropriate surcharges on mooring fees.

Five of the town-owned moorings should be set aside for emergency and storm usage.

7. Navigation and Dredging

Provincetown Harbor is a natural harbor that nevertheless is subject to shifting bottom conditions in certain areas that are necessary for navigation. The maintenance of the Federal Channel is a responsibility that is managed for access by the Coast Guard. However, a regular maintenance program should be established for areas outside the Federal channel by the town. This program should be created as part of the responsibilities of the proposed Harbor Committee.

The dredging program should provide for regular studies of bottom conditions, seek outside funding to support the program, make recommendations concerning the creation of a dedicated local fund as a match for outside funding, schedule permitting, and generally provide advice and recommendations to the Board of Selectmen on a regular basis. The Harbormaster should be responsible for all dredge permit applications and coordination of harbor operations when dredging occurs.

The Plan also reinforces the responsibility of the Harbormaster to move or remove any bottom-held boat moorings that encroach into or allow encroachment by a vessel into the harbor navigation fairways and channels and the continued monitoring of placement of these moorings by the Harbormaster. In addition, wrecks should be marked to ensure the safety of divers and transient boaters wishing to anchor.

8. Water Quality

Water quality is an area of significant importance with regard to Provincetown Harbor. A key concern in this regard is the proper treatment and disposal of boat sewage. Consequently, the Harbor Plan calls for the continued maintenance and enforcement of the current boat pump-out program.

Boat sewage contains water pollutants such as fecal coliform, alcohol, formaldehyde, zinc, ammonium salts, and chlorine. Boat sewage as well as chemicals used to deodorize and disinfect the sewage degrade water quality. Resource uses most likely to be affected by sewage dumping in Provincetown Harbor are shellfishing, aquaculture, and swimming.

Article 5 of the Provincetown Harbor Regulations makes it illegal to discharge sewage, gray water or holding tank wastes into Provincetown Harbor. The regulation requires the use of dye tablets in vessel MSDs to ensure compliance and encourages use of the boat pump-out facilities.

Provincetown Harbor's pump-out facility consists of a 300-gallon pump-out boat that serves all moored boats in the harbor. The town received a Clean Vessel Act (CVA) grant from the state to purchase the boat and to subsidize the costs of operation and maintenance. Annual O & M funds have been provided by the state and will likely continue at some level as long as CVA funds are available.

According to the State, the number of boats pumped and the volume of effluent removed is relatively high. The Harbormaster reports that compliance with the discharge regulations is high: only one boater was fined during the past year. An education effort that includes informational brochures distributed to boaters and a sign on a buoy advertising the free pump-out service contribute to this success.

A source of funds or a funding mechanism needs to be worked-out to support operations and maintenance once grant moneys are no longer available. This should be a component of any harbor maintenance/improvement fund developed to implement the Harbor Plan. The town should consider the use of some portion of mooring and dockage fees as possible funding sources for the continued operation of the pump-out facilities.

"Bucket dumping" is a related problem. This occurs when boaters use a bucket as a sanitation device and the water as a disposal sink. To diminish pollution from bucket dumping it is recommended that a free disposal tank be provided in a single location for disposing the contents of and rinsing these portable toilets.

Water Use Actions

- *Initiate and maintain an active program of aquaculture improvements.*
- *Undertake a reorganized and improved new town mooring anchorage system.*

- *Areas requiring protection for water quality and shellfish resource protection should be marked as off-limits for moorage or anchorage*
- *Anchorage areas should be designated more precisely so as to reduce conflicts with other uses in the harbor.*
- *Set aside five of the town-owned moorings for emergency and storm usage.*
- *Mark wrecks to ensure safety.*
- *Initiate a process for short-term and long-term maintenance dredging.*
- *Secure alternate sources of funds for pump-out facilities.*
- *Communicate to the National Park Service the recommendation that no action be taken by the National Park Service that would reduce or alter the activities recommended by this Water Use portion of the Harbor Plan.*
- *Maintain commercial fishing facilities and correct deficiencies in the configuration and condition of off-loading facilities through improvements to MacMillan Pier.*
- *Provide for improvements for other commercial boating as part of the MacMillan Pier reconstruction and as part of boat ramp improvements.*
- *Provide for an off-loading dock designed and dedicated for use by small-boat fishermen with appropriate support facilities including parking.*
- *In the interim, expand the skiff dock and investigate the potential for increasing the number of vessels that can be tied up.*

C. Public Facilities

1. MacMillan Wharf

General Recommendation

The condition of MacMillan Pier has been poor and declining for a long period of time. Court restrictions on use of the pier by trucks and for docking under certain wind conditions have been in place since 1981. Built in 1955, the pier requires nearly \$100,000 per year in special maintenance to keep it functional, with concentrated annual expenditures of approximately \$300,000. However, this level of maintenance is only a time-limited solution, and is inadequate to bring the pier to current acceptable performance standards and allow full commercial use of the pier. One of the critical needs that is not satisfactorily met is safe access for trucks which service the fishing operations and supply the whale watch boats. Nor is the current situation acceptable for fuel trucks and trucks supporting pier maintenance.

As a task in their services for the MacMillan Pier Redevelopment and Business Plan that has been funded by the State, Nucci Vine Associates Inc. undertook a brief analysis of

pile capacities that suggest that the entire pier construction may not be sufficient to support modern truck loads (HS20 loading standards). Access to the pier by a variety of truck sizes is important to retaining commercial fishing, off-loading, and fish packing operations. In addition, it is important that emergency vehicles (fire trucks) be able to safely reach the entire pier and any boats moored along its edge. As a result, any reconstruction that would replace the existing pier to support truck loads would require a significantly stronger structure than exists today, including greater total pile bearing capacity. It seems unlikely at this time that the reuse of existing piling would be cost effective.

In short, the pier has long exceeded its useful economic life and is requiring expensive maintenance because of its poor condition.

In addition to the important existing uses that need to be accommodated at the pier, there are several uses that should be located at the pier to provide for unmet needs. Finally, the pier needs to have adequate capacity to accommodate flexibly future needs and changing requirements.

This Plan recommends that the town undertake a comprehensive program to reconstruct the pier to serve both existing and new uses. It is further recommended that the development and operation of the pier be placed within the responsibilities of a new entity created specifically for the pier. This entity would be charged with operating the pier in a financially-self supporting manner, removing the operations as a source of annual deficits that must be funded from other Provincetown resources.

Recommended Uses

Existing and new uses that would be incorporated on and along the pier include the following:

- **Excursion Boats** - The existing floats for whale watch and other excursion boats should be retained and the potential for additional floats should be provided. The access to the boats should be substantially improved through a widened pedestrian walk along the edge of the pier and the creation of a connected float system that allows circulation of passengers at water level. Several access ramps would be constructed to allow a more broad and shallow-sloped access to the boat levels to better serve elderly and handicapped patrons.
- **Passenger Boats** - Improved docking provisions should be provided, including a configuration that would allow simultaneous docking of more than one boat, if required. A canopy should be provided to protect passengers waiting to embark.
- **Small Commercial Fishing Boat Facilities** - The pier would accommodate opportunities for short-term tie-up, off-loading, repair and resupply. This would include several slips, a simple hoist, and space for temporary parking of trucks.

- Commercial Fishing Finger Piers - The existing commercial fishing finger piers appear to be in sound condition and would be retained to serve the large boat fleet.
- Off-Loading and Fish Packing Facilities - The pier would provide for improved off-loading facilities along the pier, and would include new sheds to house the fish packing operations and remove the temporary trucks and ramps that are used today, replacing them with truck loading docks in locations that allow for easy maneuvering of trucks. An off-loading location would also be designated for approved users not employing the services of the fish packing operations leasing space on the pier.
- Recreational Support Facilities - Several temporary tie-up slips should be provided for recreational boaters. These slips would facilitate loading and off-loading of supplies and passengers. Other support facilities should include a small building that houses showers, lockers, telephones, and restrooms for use by recreational boaters and others.
- Courtesy Float/Cruise Ship Tender Dock - The courtesy float along MacMillan Pier should be expanded.
- Skiff/Dinghy Dock - The dinghy dock should be retained and expanded as a use and should be associated with the Recreational Boating Support Facilities.
- Harbormaster's Office - The Harbormaster's Office should continue to be located on the pier and on-site parking should be provided.
- Additional Berthing - Additional berthing may be accomplished for a variety of uses along the East side of the pier by dredging the bottom in this area.

Reconstruction Costs and Resources

Based on a scenario of entire replacement and provision of the uses noted above, the reconstruction budget has been estimated at approximately \$16 million. The need for funding to replace or substantially reconstruct the pier has been recognized for some time. Current unfunded authorizations by the Commonwealth include a total of \$7,500,000. for this purpose. To receive this funding, a local match of 25% or \$2.5 million would need to be provided. Additional funds may be pursued through several sources.

These costs could vary depending upon a number of factors, including the following key factors:

- The pile capacity needs to be field tested to determine actual capacity (rather than typical theoretical capacity). If it is determined that the pile capacities are higher than expected, then savings may occur by reusing some existing piling.
- The layout of the pier could be reconsidered if it is to be entirely or largely reconstructed. Efficiencies may accrue that must be carefully studied.
- The costs are based on standard unit costs that may vary depending upon the final design.
- The program for the pier must be refined prior to final design, which could effect the scope of the project.
- Finally, timing will be important. Slow but steady inflation of construction costs must be matched by budgets as the time frame for construction is extended.
- It should also be noted that no costs have been allocated to support construction of a new sewage treatment system related to pier activities. Solutions to these issues are likely to be related to potential reconstruction of the pier's toilet facilities and may need to be accommodated within the budget for that reconstruction with appropriate sewer connections to support the pier redevelopment, if required.

To finalize the program and costs of MacMillan Wharf, substantial engineering studies needs to be undertaken. Next, the technical drawings and studies need to be prepared to allow the improvements to be bid and constructed. This Plan recommends that the State and town fund the required technical investigations and construction documents as an early phase action. This would include the following elements:

Engineering Feasibility Analysis and Concept Design

- Field testing and analysis of existing pile bearing capacity and determination of any potential for reuse.
- Preparation of survey and geotechnical studies.
- Finalization of the redevelopment program including all relevant vertical and lateral loading criteria, space needs by use and other technical criteria.
- Preparation of alternative layout and engineering design alternatives to cost effectively meet the program and criteria.
- Determination of preferred plan.
- Preparation of a cost estimate and confirmation of the investment and funding program and approach.

Final Design and Bid Documents

- Preparation of Design and Contract Documents through 25%, 75%, and 100% complete.
- Preparation of revised cost estimates.

Permits and Approvals

- Preparation and submittal of all necessary environmental documentation, permits and approvals, including Chapter 91 license and Corps of Engineers permits.

MacMillan Pier Management

Alternative management scenarios were considered as part of the economic analyses recently prepared for MacMillan Pier through the Massachusetts Development Finance Agency. A preliminary pro forma evaluation of future operating revenues and costs based on a reconstructed pier suggests that the pier should be able to be managed with a net annual operating surplus. This stream of income could be capitalized to contribute at least part of the local match for reconstruction of the pier.

This Plan recommends the creation of an entity to undertake the operational management of a reconstructed pier, and to contribute to the financing of the pier reconstruction and/or future pier capital improvements.

It would appear from a preliminary investigation that the new entity might best take the form of an Economic Development and Industrial Corporation (EDIC). This is a local authority for which State enabling legislation is already in place. Governed by a board of directors, the entity would be professionally managed and remain a local entity linked to town government. However, the specific authority delegated to the entity would be intended to ensure efficient management and to eliminate the pier as a source of deficits for continued town funding.

A detailed business plan and organization scheme for the new entity are required. To further this goal, funding of a study has been granted from State sources and has been completed.

2. Town Landings and Commonwealth Tidelands

Public Access Vision Statement

The following goals form the basis for the public access recommendations and actions proposed in the Provincetown Harbor Plan:

- To establish continuous unobstructed public passage along the entire length of the Provincetown Harbor shoreline. This passageway, referred to herein as a “beachwalk,” should be along the dry sand portions of the beach to the maximum extent practicable, using off-beach detours only when absolutely necessary as an alternative to passing over or under existing structures. Such off-beach detours would rejoin the beach as soon as possible.
- To create pedestrian access loops in the downtown area, encouraging and affording convenient movement between commercial activities on Commercial Street and activities on the waterfront.
- To perforate the barrier between Commercial Street and the waterfront by reducing visual obstructions and improving and increasing access between the two. This goal reflects a concern expressed by the Provincetown Historical Commission over the loss of view corridors to the harbor.
- To increase substantially the dry sand area of the beach dedicated to public use by removing undue encroachments that exist as accessories to nonwater-dependent uses.
- To make the beach more attractive and suitable for all water-dependent uses.

The Harbor Plan includes a list of projects and improvements that will serve to upgrade the public access areas to the waterfront. The list of proposed improvements is included in a table below.

Steps to improve or restore views must be made, including stronger enforcement of public access via historic rights-of-way and greater control over the type and amount of construction and activity in the harbor area. As part of this process, the historic and existing town rights to waterfront accessways needs to be confirmed in some cases. There are instances where historic rights-of-way may be useful to establish for potential restoration of access. In other cases, private development may have intruded, perhaps significantly, into the public town landings. As a result, this Plan recommends that Provincetown's Board of Selectmen create a volunteer committee to research historic rights-of-way to the harbor.

For all public access points, a new and attractive signage system should be put in place that indicates public access and amenities. This signage system could also be used for public access within properties subject to Chapter 91 public access requirements and agreements as discussed elsewhere in the Plan.

Trash receptacles should be placed at all town landings and town-owned access points, and bike racks located wherever is feasible.

Funding for improvements may come from a variety of sources. This Plan envisions the use of a dedicated fund administered by the town. The fund would be financed through

grant sources, Chapter 91 tidewater displacement fees that are channeled to the town, direct town contributions, and other sources.

Table: Recommendations for Public Landings and Publicly-owned Lands

Location	Recommendation
Kendall Lane	<ul style="list-style-type: none">• Paving improvements should be undertaken to improve both vehicle and pedestrian access.• This area serves anchorages in the harbor, and dinghy storage is required. A small area of fill should be added to the environs of the landing to create a larger area above high tide that does not restrict the public landing, and a simple post improvement created to facilitate tie-ups.• A bicycle rack should be provided in this location.• Expansion of this right-of-way should be undertaken through a widening by approximately 4 feet to better accommodate dinghy storage and bicycle racks, while maintaining access to the beach.• Signage should be improved to provide a more clear and inviting indication of public access to the waterfront.• Removal of storm sewer outfall pipe.
Washington Avenue	<ul style="list-style-type: none">• View corridor should be improved.• The extent of public ownership and public rights to the land should be confirmed. There have been many incursions into the town landing by private development.• Benches and trash receptacles should be provided.• Simple post improvement to allow for dinghy tie-ups should be provided.

Pearl Street	<ul style="list-style-type: none"> • The storm drain cover should be used as a location for a small deck with benches and other improvements such as a bicycle rack. • Private parking in this area should be regulated so as to not interfere with public access to the waterfront. • A simple post improvement should be added to allow for dinghy tie-ups.
Johnson Street	<ul style="list-style-type: none"> • The possibility of a boat ramp should be explored in this location. • Sidewalk improvements should be provided to the beach in space created by restriping of the parking area to reduce the pavement area dedicated to parking and circulation, without reducing the total number of parking spaces. • A truck access point should be maintained for hauling boats and equipment to and from the beach. • A simple post improvement should be added to allow for dinghy tie-ups.
Municipal Parking Lot	<ul style="list-style-type: none"> • Public access and open space improvements should be undertaken as listed in the Provincetown Transportation Center Plan that has been adopted by the town. This includes additional walkways along the entire perimeter of the pier, provision for landscape improvements, and provision for increased open space improvements along the water's edge. • Improvements should also be undertaken to provide an improved landing area and canopy shelter for cruise ship tenders along the edge of the pier.

Freeman Street	<ul style="list-style-type: none"> • The extent of the public ownership and the public rights to the land should be confirmed at this landing, as there may have been incursions by private development into the town landing. Any discrepancies should be resolved in a manner that protects the public use of the town landing and enhances its usefulness for water-dependent uses and public access to the waterfront. • Special paving that is attractive for pedestrians and supports heavy vehicles should be provided for the paved areas of the landing connecting to Commercial Street. • Landscaping and benches should be provided in areas not required for vehicle access or other uses. • A simple post improvement should be added to this locations to allow for dinghy tie-ups.
Gosnold Street	<ul style="list-style-type: none"> • Special paving that is attractive for pedestrians and supports vehicle access should be provided for the paved areas of the landing connecting to Commercial Street.
Court Street	<ul style="list-style-type: none"> • The historic firehouse should be relocated to another site within Provincetown in a manner and for a use that is consistent with the preservation of the historic qualities of this building. • The Court Street landing should continue to serve as a landing and have paved access for trucks and vehicles requiring access to boats and equipment. • The remaining area at Court Street not required for water-dependent access should be converted to a park with landscaping, paving, benches, bike racks and other amenities. • A simple post improvement should be added to this location to allow for dinghy tie-ups.
Atlantic Avenue	<ul style="list-style-type: none"> • Special paving that is attractive for pedestrians and supports vehicle access should be provided for the paved areas of the landing connecting to Commercial Street.

Good Templar Lane	<ul style="list-style-type: none"> • Special paving that is attractive for pedestrians and supports vehicle access should be provided for the paved areas of the landing connecting to Commercial Street.
Franklin Street	<ul style="list-style-type: none"> • This area serves anchorages in the harbor, and dinghy storage is required. Subject to negotiation and approval by the Coast Guard, a small area of fill should be added to the environs of the landing on land controlled by the Coast Guard seaward of the existing bulkhead to create a larger area above high tide that does not restrict the public landing and a simple post improvement created to facilitate dinghy tie-ups.
West Vine Street	<ul style="list-style-type: none"> • Special paving that is attractive for pedestrians and supports vehicle access should be provided for the paved areas of the landing connecting to Commercial Street. • A simple post improvement should be added to this locations to allow for dinghy tie-ups.
West End Boat Ramp	<ul style="list-style-type: none"> • Floats should be added to assist arriving and departing boaters. • Preferential parking for commercial fisherman should be implemented for some spaces within the existing parking lot. In addition, limited expansion of the parking lot seaward including some fill and regrading of the beach in this area should be studied, and if feasible, implemented to accommodate increased trailer parking. • Sidewalk improvements should be added to connect the waterfront to Commercial Street. Deck or walkway improvements should be added to the seaward edge of the parking lot, as well.

3. Other Public Improvements

Other public improvements recommended within the Harbor Plan include access and physical improvements to several areas along the water's edge.

There are few opportunities for public access to the water's edge along significant portions of the harborfront. This is generally true of the entire East End, beginning at

approximately Pearl Street and extending to the Truro line, with several exceptions. The Plan also recognizes that most of the properties seaward of Commercial Street in this area do not appear to contain any filled tidelands, so that public access doctrines that could permit perpendicular access to the water generally do not apply. The Plan further recognizes that there are numerous informal access paths and limited private accessways that have been secured through agreements among property owners in this area. The Plan recommends that increased public access be provided within these existing accessways through purchase of easements, property agreements, or other actions. Such improvements could be funded, in whole or in part, by the Harbor Access Fund.

Public fishing opportunities from piers should be provided in the future through public fishing pier improvements located at appropriate town landings or other locations. Specific locations that might be considered include Court Street and at the former location of Rose's Wharf. This could also provide opportunities for handicapped access and enjoyment, as well as increased facility for skiff and dinghy use. The planning for this activity should fall under the auspices of the Harbor Committee, and the Public Access Board should be considered as an appropriate source of funding.

Summary of Public Facility Actions

- *Undertake the engineering analysis and design of the reconstruction of MacMillan Pier to correct fundamental problems and to better accommodate existing and future uses as called for in the Water Use elements of the Plan.*
- *Undertake a detailed study to implement new MacMillan Pier Management entity.*
- *Create a new MacMillan Pier Management entity.*
- *Fund and construct MacMillan Pier improvements.*
- *Undertake a planned program of public access and water-dependent capital improvements as listed in the Plan*
- *Establish a planning process and reach a conclusion on a improved small boat commercial facilities including the best location, and pursue funding for this improvement.*
- *Establish a planning process and reach a conclusion on a public fishing pier location and pursue funding for this improvement.*
- *Establish a Right-of-Way Committee to confirm and protect existing public rights.*
- *Establish a planning process and reach a conclusion on a new boat ramp location, and pursue funding for this improvement.*

D. Regulatory Framework for Waterways Licensing

1. Introduction

Massachusetts' principal tool for protection and promotion of water-dependent uses of its tideland and other waterways is M.G.L. Chapter 91 (Public Waterways Act, 1866). Chapter 91 and the waterways regulations (310 CMR 9.00) are administered by the Waterways Regulation Program of the Massachusetts Department of Environmental Protection (DEP).

The Chapter 91 statute was amended in 1984 with new substantive and procedural requirements to ensure that tidelands—both presently flowed and previously filled—are utilized only for water-dependent uses or otherwise serve a proper public purpose that provides greater public benefit than detriment to the rights of the public in tidelands. Projects involving nonwater-dependent use also are required by the statute to be consistent with CZM Policies.

Major revisions of the waterways regulations followed in October 1990. Key provisions of the new regulations are designed to promote water-dependent use of the shoreline; preserve and promote public access; and encourage local involvement in Chapter 91 licensing decisions through municipal harbor plans, which provide harbor-specific guidance to the regulatory decisions of DEP under Chapter 91. A companion set of regulations (301 CMR 23.00) governing the development and approval of municipal harbor plans was also adopted that same year.

The Chapter 91 regulations stipulate that where a State-approved harbor plan exists, projects requiring a DEP license or permit and subject to the current regulations must conform to the plan (310 CMR 9.34(2)). The municipal harbor plan is used by DEP for guidance which amplifies upon discretionary requirements of the waterways regulations. The regulations also provide that the municipal harbor plan may contain substitute standards for certain use limitations or numerical standards specified in the waterways regulations for nonwater-dependent uses. The alternatives established by the plan must be equally as effective in achieving the objectives of Chapter 91 and the waterways regulations.

There are two different Chapter 91 licensing scenarios in Massachusetts under the waterways regulations of 1990 (as further amended in 1996). There is licensing of certain existing structures and uses under the amnesty provisions (310 CMR 9.28), which apply standards from the regulations in effect prior to 1990. All other projects are governed by a new set of requirements that are more explicit and extensive than the previous version (although based on the same general objectives and regulatory principles). Initially, it is expected that most of the licensing in Provincetown will be done under the standards applicable to amnesty cases.

Regardless of whether DEP applies the new licensing requirements or the previous standards, the Chapter 91 licensing process on Massachusetts tidelands can be summarized in three steps. First, DEP determines on a case-by-case basis which properties need a license and whether they qualify for amnesty (assuming the property owner applied for amnesty). Second, DEP reviews the license application and considers community recommendations obtained during the public comment period, in order to determine whether all applicable requirements and standards have been met and the license should be granted. Third, DEP normally issues the license with a series of conditions, which usually require on-site public improvements to compensate the public for the private use of Commonwealth tidelands. The license also specifies a period of time during which the property owner must complete the project and meet the conditions stipulated in the license.

The recommendations and guidance in this Harbor Plan are the product of direct consultations with CZM and DEP staff, and have been carefully crafted to reflect the principles and standards used consistently by DEP in licensing projects on tidelands. Moreover, the recommendations that follow reflect the town's goals and objectives for the waterfront and comprise a comprehensive and cohesive plan for the proper and optimum use of Provincetown Harbor.

2. Properties Within Chapter 91 Jurisdiction in Provincetown

Chapter 91 applies in tidelands, great ponds, and along certain rivers and streams. Tidelands refer to all land presently or formerly beneath the waters of the ocean, including lands that are always submerged as well as those in the intertidal area, i.e., between the mean high and low water marks. These areas are governed by a concept in property law known as the public trust doctrine, which establishes that all rights in tidelands and the water are held by the state “in trust” for the benefit of the public.

There are two types of tidelands: (1) *Commonwealth tidelands* which are, for most of the Massachusetts coastline, all lands below the historic low water mark extending out three miles to the limit of state jurisdiction. This area is owned by the Commonwealth or held by private persons in accordance with the trust for the benefit of the public. (2) *Private tidelands* are those areas between historic high and historic low water, which are usually privately owned but on which the Commonwealth reserves and protects public rights of fishing, fowling and navigation (and the natural derivatives thereof). The historic high water marks are the farthest landward tide lines which existed “prior to human alteration” by filling, dredging, impoundment or other means (310 CMR 9.02) (see Figure V-1). Thus, Chapter 91 applies to filled as well as flowed tidelands, so that any filled areas, moving inland to the point of the historic high tide line, are subject to jurisdiction.

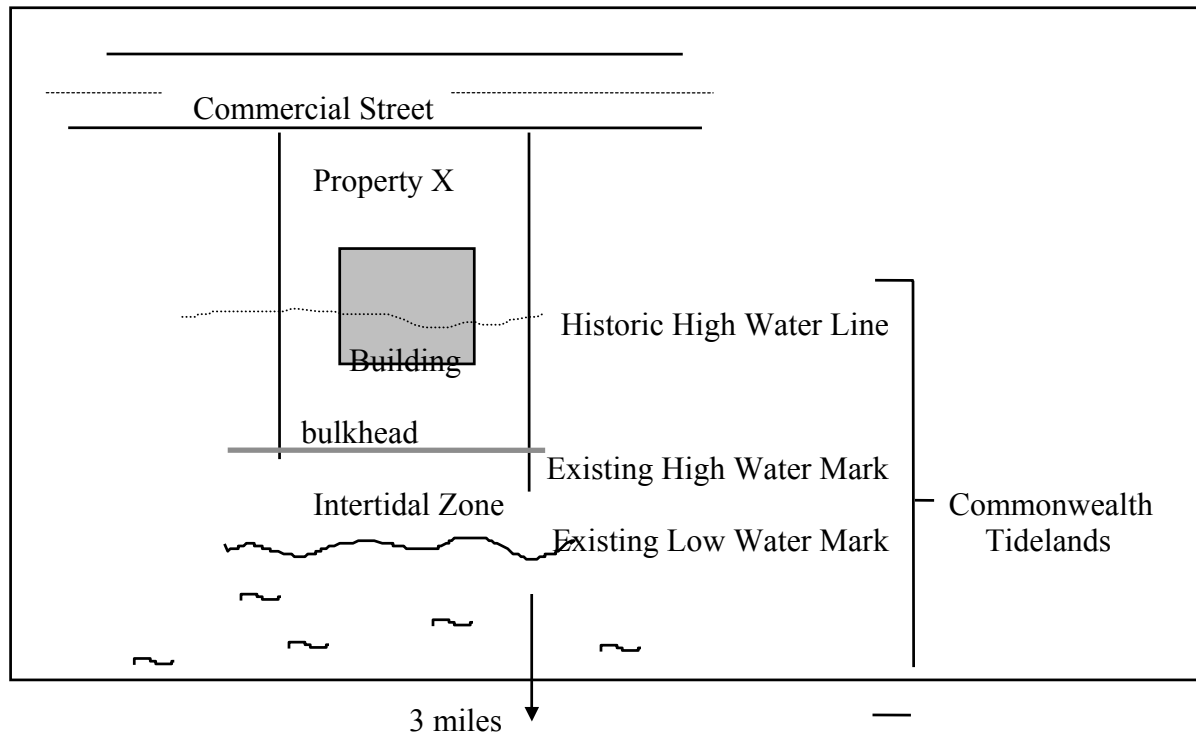
In Provincetown, the distinction between private and Commonwealth tidelands is somewhat different than in other communities. The area of Provincetown east of Howland Street was formerly part of Truro. As in other coastal towns in Massachusetts, the colonial government of Truro granted owners of upland property ownership rights to the intertidal area adjacent to their property area (the private tidelands), subject to easements guaranteeing the public rights of fishing, fowling and navigation. The area to the west of Howland Street was known as the Province Lands. The Provincetown charter of 1727 did not provide the new town with authority to grant land to its settlers. St. 1893, s. 470 (presently found in M.G.L. c. 91, s.25) divided the Province Lands into two parts. The “town” is the coast west of Howland Street and the “wild lands” is the area to the northeast of Howland Street. On the “town” side of the former Province Lands, private ownership of property is limited to the area landward of the historic mean high water mark. So, west of Howland Street, land seaward of the historic mean high water mark is Commonwealth tidelands.

For planning purposes, the location of the historic high water mark as of 1848 has been delineated on maps prepared under contract to the Department of Environmental Protection¹. The map was presented at a public information meeting in Provincetown on September 4, 1996. DEP will use the mapped line as the presumptive line of jurisdiction in its determinations of which structures and uses along the shoreline of Provincetown Harbor require Chapter 91 licensing. A transcription of the DEP Map is provided for reference purposes (see Figure 12. Provincetown Historic Tidelands (3 pages)); the

¹ Cite Schooled Report, April 12, 1996

original map should be referred to concerning questions or issues on specific properties. Based on the DEP map, the Plan identifies the existing structures and uses that appear to be located on filled Commonwealth tidelands and other tidelands subject to jurisdiction of the waterways licensing program (see Appendix A).

Figure V-1. Example property schematic illustrating location of Commonwealth tidelands on Province Lands.



If a property owner's parcel of land occupies all or a portion of Commonwealth tidelands, then the owner is, in fact, occupying land in which the public has rights to use for "fishing, fowling, navigation...and all other lawful activities, including swimming, strolling, and other recreational activities". §9.35(3)(b). In particular, if this land is used for any buildings, decks, piers, bulkheads, yards, or any other type of enclosed areas that are off-limits to the public, then the property owner is effectively privatizing trust lands that would otherwise be available for public use and enjoyment.

Chapter 91 authorization is generally required for any fill, structure or use not previously authorized in areas identified above, including any changes of use and structural alterations. Types of structures include: piers, wharves, floats, retaining walls, revetments, pilings, bridges, dams, and waterfront buildings (if on filled lands or over the water). In Provincetown, there are a number of properties where structures and uses occupy filled Commonwealth tidelands without complete and proper authorization.

Moreover, most of these properties are being used for nonwater-dependent purposes. Owners of such properties are required by Massachusetts's law to obtain licenses to ensure that their nonwater-dependent structures and uses of Commonwealth tidelands meet the requirements of Chapter 91.

In order to achieve fully the goals of the Provincetown Harbor Plan regarding public use of Commonwealth tidelands, this Plan strongly encourages DEP to notify all property owners who appear to have unauthorized structures or uses on tidelands, but have not filed amnesty applications. The number of such property owners appears to be approximately 82, and the parcels in question are identified in Appendix A. It should be noted that on several of these parcels the primary structures lie landward of the historic high water mark, and the filled tidelands thus are devoted to exterior uses only (e.g., private recreational activities accessory to a residential dwelling). Since many of these exterior accessory uses take place on the beach itself, it is particularly important for DEP to license such uses to ensure conformance with the public benefit recommendations of the Plan.

The Plan also calls on DEP to give priority attention to compliance and enforcement matters, in close cooperation with the Harbor Committee and other relevant town officials (harbormaster, building inspector, conservation agent, etc...). In particular, arrangements should be made (including appropriate training) to enable town personnel to effectively carry-out a monitoring and reporting function. The ongoing participation of these officials will help to ensure full compliance with applicable conditions of existing licenses and to identify new changes of use and structural alterations (including minor project modifications) that should be brought to the attention of DEP.

3. Licensing under the Amnesty Standards of the Waterways Regulations

With the intent of bringing properties on tidelands into compliance with Chapter 91, the 1990 revisions of the waterways regulations included an amnesty provision (310 CMR 9.28) applicable to unlicensed structures or fill in existence and in use since January 1, 1984 (and without any unauthorized substantial structural alteration or change in use since that date). Amnesty license applications are subject to substantive requirements that were in effect prior to October 4, 1990 (the effective date of the 1990 revisions), which included less specific standards, lesser fees, and (for water-dependent projects) longer license terms than those now in effect. The period during which an amnesty license application could be submitted to DEP expired October 4, 1996.

There is a significant amount of existing nonwater-dependent development along Provincetown Harbor that requires Chapter 91 licensing. It is expected that much of this licensing will be done under the amnesty provisions of the waterways regulations. Prior to the close of the amnesty period, DEP had received 196 amnesty applications, 87 of which were for properties between the Provincetown Inn and Howland Street (the zone of Commonwealth tidelands).

Applications for amnesty licenses are reviewed for compliance with the waterways standards in effect prior to 1990, which included (among other things) a basic requirement that a project... “does not interfere with or abridge any rights of the public...or the Commonwealth in tidelands [and] has public benefit which outweighs public detriment if the project is located on or over the Commonwealth tidelands.” (§9.07(2))². The special emphasis on protecting the public interest in Commonwealth tidelands was further articulated in the following provision (§9.22(4)):

The Department shall protect the Commonwealth tidelands, and any project that is harmful to the public ownership of the Commonwealth tidelands or that would significantly impair the value of those tidelands to the public shall not be allowed.

In applying this standard, the regulations stipulated that the Department should consider such factors as “the extent to which the project blocks the public view of the coast and the oceans...[and] the degree to which it affects public access to the water from the shore or from the water to the shore” (§9.22(5)). Also worthy of note is the related provision stating that “the Department shall not license any project in or over Commonwealth tidelands if it would have a significant adverse effect on a public recreational facility” (§9.22(6)).

A review of license decisions for nonwater-dependent projects in Provincetown issued by DEP between 1984 and 1990 reveals that the agency interpreted these provisions in a consistent manner, and in accordance with the basic goals expressed by the legislature in the 1984 amendments to the statute. In these licensing decisions in Provincetown, as elsewhere, DEP sought continuous public access along the shoreline, physical access improvements, inclusion of some water-based amenity, and a financial contribution if it was not possible to adequately fulfill Chapter 91 goals through on-site improvements. So, DEP’s decisions on nonwater-dependent use applications prior to 1990 were, in practice, quite similar to the review DEP now conducts on these uses under the current regulations.

4. Licensing Under the 1990 Standards of the Waterways Regulations

Projects subject to the 1990 standards include (1) projects involving structural alteration or change of use and (2) existing development that does not qualify for amnesty either because (a) there have been substantial unauthorized changes in use or structural alterations on the site since 1984 or (b) the applicant did not file an application during the amnesty period, which closed October 4, 1996.

The waterways regulations contain several core provisions that are essential to the control of nonwater-dependent uses of Commonwealth tidelands in Provincetown Harbor. These are:

² The citations in this section refer to provisions of the waterways regulations in effect between September 15, 1978, and October 3, 1990.

The project shall preserve any rights held by the Commonwealth in trust for the public to use tidelands...for lawful purposes...[Specifically], the project shall not interfere with public rights of navigation...public rights of free passage over and through the water...public rights associated with a common landing, public easement, or other historical legal form of public access from the land to the water that may exist on or adjacent to the project site...public rights of fishing, fowling, and the natural derivatives thereof...[and on Commonwealth tidelands] all other lawful activities including swimming, strolling, and other recreational activities...(§9.35)

A nonwater-dependent use project that includes fill or structures on any tidelands shall not unreasonably diminish the capacity of such lands to accommodate water-dependent use. (§9.51)

A nonwater-dependent use project that includes fill or structures on any tidelands shall devote a reasonable portion of such lands to water-dependent use including public access in the exercise of public rights in such lands. (§9.52)

A nonwater-dependent use project that includes fill or structures on Commonwealth tidelands... must promote public use and enjoyment of such lands to a degree that is fully commensurate with the proprietary rights of the Commonwealth therein, and which ensures that private advantages of use are not primary, but merely incidental to the achievement of public purposes. (§9.53)

All nonwater-dependent use projects consisting of infrastructure facilities on tidelands...shall take reasonable measures to provide open spaces for active or passive recreation at or near the water's edge, wherever appropriate. (§9.55)

Associated with each of these core provisions are a number of discretionary requirements, several of which are of primary relevance to Provincetown and are thus amplified upon by the recommendations of this plan. The specific discretionary requirements on which the Plan provides guidance for DEP application are listed below.

§9.35(2)(c) Access to Town Landings. *“The project shall not significantly interfere with public rights associated with a common landing, public easement, or other historic rights associated with a common landing, public easement other historic legal form of access from the land to the water that may exist on or adjacent to the project site.”*

§9.35(5) Management of Areas Accessible to the Public.

(b) “Any project required to provide public access facilities...shall encourage public patronage of such facilities by placing and maintaining adequate signage at all entryways and at other appropriate locations on the site...”

(c) “No gates, fences, or other structures may be placed on any areas open to public access in a manner that would impede or discourage the free flow of pedestrian movement...”

§9.52(1)(a) Utilization of Shoreline for Water-Dependent Purposes. *“In the event that the project site includes a water-dependent use zone, the project shall include...facilities that generate water-dependent activity...”*

§9.52(1)(b) Utilization of Shoreline for Water-Dependent Purposes.

(1) “In the event that the project site includes a water-dependent use zone, the project shall include...walkways and related facilities along the entire length of the water-dependent use zone...”

(2) “In the event that the project site includes a water-dependent use zone, the project shall include...appropriate connecting walkways that allow pedestrians to approach the shoreline walkways from public ways or other public access facilities to which any tidelands on the project site are adjacent.

§9.53(2) Activation of Commonwealth Tidelands for Public Use.

(a) “...[the project shall include] at least one facility [that] promotes water-based public activity...”

(b) “...the project shall include exterior open spaces for active or passive public recreation...[which] shall be located at or near the water to the maximum reasonable extent [and shall include] open space amenities such as lighting and seating facilities, restrooms and trash receptacles...”

(d) “...the project shall include a management plan for all on-site facilities offering water-related benefits to the public...”

(e) “...in the event that water-related public benefits which can reasonably be provided onsite are not appropriate or sufficient, the Department may consider measures funded or otherwise taken by the applicant to provide such benefits elsewhere in the harbor or otherwise in the vicinity of the project site.”

§9.55 Standards for Nonwater-Dependent Infrastructure Facilities.

(1) “[Infrastructure facilities] shall include mitigation and/or compensation measures as deemed appropriate by the Department to ensure that all feasible measures are taken to avoid or minimize detriments to the water-related interests of the public.”

(2) “[Infrastructure facilities] shall take reasonable measures to provide open spaces for passive recreation at or near the water’s edge, wherever appropriate.”

It should be noted that the Harbor Planning Committee has determined that there is no need to recommend substitutions for the standards of the waterways regulations. A parcel-by-parcel assessment, based on extensive field work to evaluate existing conditions, indicates that in almost all cases the provisions of the Harbor Plan will not be less restrictive than the corresponding provisions of the waterways regulations. The Plan recognizes that there may be isolated cases where compliance with the applicable use limitations (e.g., ground floor facility of public accommodation requirement) of the 1990 regulations would create a substantial hardship for the continuation of a use or structure

existing as of January 1, 1984. In such situations, the variance procedure set forth at 310 CMR §9.21 is considered by this plan to be an adequate forum to address the hardship issue.

5. Effect of Plan on Pending and Future License Applications

Section E below provides specific guidance to DEP in amplification of the above referenced Chapter 91 licensing standards to achieve the goals and objectives of the Provincetown Harbor Plan. Specifically, that section provides guidance to DEP in applying both the standards applicable to existing structures and uses eligible for an amnesty license as well as the 1990 standards governing all other projects requiring Chapter 91 authorization from DEP. In both cases, it is the understanding of the Harbor Committee—the municipal body with lead responsibility for plan implementation—that DEP will adhere to the greatest reasonable extent to the guidance specified in the Plan, which amplifies the discretionary requirements identified in sections 3 and 4 above. It is the further understanding of the Committee that, in accordance with 310 CMR 9.34(2), DEP will require conformance with all applicable recommendations of the approved Harbor Plan in the case of all waterways license applications submitted subsequent to the effective date of Plan approval, as well as to pending applications for which the public comment period has not expired.

E. Guidance to DEP for Chapter 91 Licensing in Provincetown Harbor

1. Objectives

The following objectives for providing access to and along the shoreline in Provincetown Harbor form the basis of the Chapter 91 licensing requirements and recommendations presented in this harbor plan:

1. provide continuous public passage along the Provincetown Harbor shoreline, to the maximum extent practicable within normally dry areas immediately landward of the high water mark;
2. create more public open space on Provincetown Harbor by eliminating undue encroachments on the dry sand beach areas by shorefront property owners, and in some cases by providing public access to the seaward perimeter of existing hard surface structures;
3. make the Provincetown shoreline more approachable for the general public by eliminating undue encroachment on town landings, and by providing more pedestrian accessways and view corridors from Commercial Street to the waterfront; and
4. provide appropriate on-site access-related or water-dependent improvements and/or contributions to the Provincetown Harbor Access Gift Fund for off-site harbor improvements.

This section includes specific provisions to guide the Chapter 91 licensing process in Provincetown. These customized guidelines are intended to ensure that the licensing process is equitable and purposeful and that the goals for licensing outlined above are met. In addition, the Provincetown guidelines parallel the conventional DEP approach to licensing by giving first priority to on-site public benefits, seeking off-site public benefits only where on-site improvements are insufficient or not feasible. Accordingly, for properties presumed to lie within jurisdiction, the Plan first identifies general and specific on-site benefits to be provided as a condition of DEP licenses, to ensure that the uses of Commonwealth tidelands reflect the proper public purposes expressed by the Town. Secondly, the Plan presents a method for determining the extent to which compensation to the public should take the form of monetary payment to a Town fund to be used for access-related improvements elsewhere on the Harbor. The guidance of the Plan is intended to apply to all existing and new development that will be licensed under the waterways regulations, including the amnesty provisions.

2. On-site Public Benefit Requirements

Public Open Space

A fundamental goal of this licensing program is to preserve and enhance the amount of public open space³ at the immediate waterfront, to the maximum reasonable extent. To achieve this goal, waterfront property owners will be required at a minimum to dedicate as public open space all unobstructed dry sand areas lying 15 feet or more from the seaward sides of all existing buildings for nonwater-dependent use. “Unobstructed” means not occupied at the time of plan approval by piers, decks, bulkheads, paved surfaces, or other permanent structures. These dedicated beach areas must be kept free of debris or other objects that would significantly detract from public use and enjoyment or would present a danger to public health and safety. In addition, mounded septic systems should be allowed on the beach only as a last resort (i.e., where sewer tie-in or other waste disposal alternatives are not technically feasible), and if authorized by DEP the space occupied by such structures should not be credited as public open space.

As an additional incentive to provide public open spaces of particular utility in Provincetown, any space dedicated to commercial fishermen for parking or to public accessways from the shoreline to the street will be given extra credit as a public open space benefit. Also note that additional on-site open space not identified in this plan may be required on any property as determined by DEP on a case-by-case basis, in accordance with applicable standards of the waterways regulations.

Perpendicular Accessways

³ For purposes of this Plan the term “public open space” generally means exterior spaces (i.e., those not within the footprint of buildings or other structures) that are dedicated to active or passive public recreation, conservation of natural resources, or public water-dependent activity, and any accessory uses thereto.

Another key goal of the Plan is to make the harbor significantly more approachable from the land side. To begin with, the Plan requires that applicants for licensing whose property abuts town landings or other historic public rights of way must submit evidence (e.g., title search, survey) as part of the application to ensure that the property is not encroaching on such public accessways. In some cases, these also would be appropriate locations for providing access amenities such as benches, trash receptacles, etc.

The Plan also identifies several properties where perpendicular accessways connecting Commercial Street to the waterfront will be established for general public use.⁴ Many of these accessways are located outside the central commercial area, along portions of the harbor where town landings are widely spaced or non-existent. The site-specific position and configuration of these accessways is such that the Harbor Planning Committee believes that public passage will not be incompatible with existing private activities occurring on the respective properties. In fact, in some cases the accessways are presently open (via limited easements or informal permission) for foot traffic by occupants of landward homes and commercial establishments, and appropriate measures (such as landscaping buffers) have already been taken to minimize intrusions on the privacy of the waterfront property owner. Although the volume of activity on these accessways may be expected to increase somewhat when opened to the public-at-large, the number of accessways is large enough that no one property seems likely to experience a disproportionately high increase in pedestrian traffic.

To further lessen the possibility of user-owner conflict, the Harbor Plan recommends that any perpendicular accessway located on a property zoned for residential use be open to the public from dawn to dusk only. Moreover, licenses issued by DEP on these properties should specifically authorize the licensee to manage public use of the accessway by adopting reasonable rules (subject to prior review and written approval by DEP) as are necessary to protect public health and safety and private property, and to discourage trespass and other unlawful activity by users of the area intended for public passage. Finally, each license should contain a statement to the effect that the exercise of free public passage within these accessways shall be considered a permitted use to which the limited liability provisions of M.G.L. c.21 sec.17c shall apply on behalf of the property owner in question.

Beachwalk

In order to establish continuous lateral passage along the Provincetown Harbor shoreline above the high water mark, the Plan establishes a designated “beachwalk”—defined as the ten (10) foot wide zone running adjacent to and immediately landward of the high

⁴ In order to establish meaningful connections to the harbor, these accessways must be made available to the public across the full extent of any property owned or otherwise controlled by a license applicant between Commercial Street and the waterfront. Any accessway segment not located on filled tidelands should be credited directly to the project as an open space benefit, and should be given the same weight (for purposes of computing the project’s contribution to the Harbor Access Fund in accordance with Appendix C) as is given to the segment that is located on the project site as defined by DEP.

water mark. In many cases, this area will be entirely free of structural encroachment; but in some locations there are existing structures (piers, seawalls, bulkheads, decks, etc...) within the beachwalk that impede or prevent lateral access, forcing pedestrian passage into the intertidal zone (or blocking it entirely when the tide is in).

To enhance public use and enjoyment of the beachwalk, the Plan requires that measures be taken to ensure that people walking along the shoreline will be able to get over, under, or around any structure that extends into the beachwalk area. Specifically, the Plan requires that wherever possible pedestrians should be able to pass UNDER such structures with at least five (5) foot vertical clearance at the high water mark or AROUND the seaward edge of the structure with at least five (5) feet of unobstructed dry sand width. If neither of these criteria can be met, passage must be provided either by stairs OVER the structure or, as a last resort, by UPLAND (i.e., off-beach) ACCESSWAYS located at the shortest reasonable distance landward of the high water mark.

To ensure ongoing preservation of access within the beachwalk in erosional circumstances, licenses for both new and existing structures for nonwater-dependent use on the beach should include a condition that triggers a reevaluation of the situation to determine if alternative access measures are needed, should the beachwalk area migrate landward (and become obstructed as a result) subsequent to the issuance of the license.

Physical Improvements for Pedestrian Access and/or Water-dependent Use

Appendix B identifies properties where physical improvements for public access must be provided— e.g., stairs, benches, lighting, landscaping and constructed walkways. The Appendix also identifies properties where fences, snow fences, walls, defunct septic systems, and other structures affect visual or physical access to or along the waterfront and requires that such structures be modified or eliminated. In addition, the plan identifies properties where water-dependent physical improvements should be targeted. Examples of site-specific water-dependent improvements include: construction and maintenance of public dinghy docks and dinghy tie-up posts, and the dedication of space for dinghy storage and parking for small boat fishers.

Moreover, the Plan requires development of three specific mini-loops along the central commercial waterfront, to enhance lateral connections and further facilitate public pedestrian movement onto the beach from Commercial Street. These mini-loops will be created by establishing interconnected walkways along the perimeter of existing hard surface structures (i.e., bulkheads, parking lots and decks) on specific abutting properties already used as facilities of public accommodation (e.g., one mini-loop connects the perimeter of the aquarium, US Post Office, Seaman's Bank and Old Reliable Fish House). These connecting walkways are also specified as locations for providing access amenities such as benches, trash receptacles, etc.

In addition to specific improvements listed for a particular property, DEP should refer to the general types of improvements that are recommended in this plan on a region-by-region basis. These improvements are negotiable on a case-by-case basis, based on their merits and on their conformity to this Plan. In some cases the recommendations are unique to each region, and there are some recommendations that apply along the entire waterfront. For example, a universal problem is that points of access to the waterfront and the location of public access related facilities are difficult for residents and visitors to identify and locate in Provincetown because of inadequate signage. Accordingly, for every region the Plan proposes that the Town develop and employ a uniform signage system that clearly identifies all public access opportunities. In addition, all accessways from Commercial Street to the waterfront should be marked with adequate signage on both the landward and seaward sides of the accessway.

3. Off-site Public Benefit Requirements (Contributions To the Harbor Access Gift Fund)

Although the general premise for obtaining a Chapter 91 license is that a property owner will be expected to provide public open space and related physical improvements, in certain situations the feasibility of providing such benefits on the project site is limited and may even be impossible. In such cases where the on-site public benefits are insufficient to compensate for the detriments to public rights on Commonwealth tidelands, DEP has traditionally sought alternative benefits in the form of monetary contributions to fund the provision of off-site benefits elsewhere in the harbor, preferably in a nearby location. Since this situation is likely to occur in Provincetown, the Provincetown Board of Selectman established the Harbor Access Gift Fund on August 26, 1996. The purpose of the fund is “to receive Chapter 91 public benefit mitigation funds and other donations, the proceeds of which shall be used without further appropriation to enhance the public’s access and use and enjoyment of the shoreline and waters of Provincetown Harbor, including but not limited to maintenance and improvements of town landings and other public properties for water dependent use.”

In order to determine whether a contribution to the Harbor Access Fund will be required as a condition of a license, the Plan has developed a methodology that involves a relatively simple set of computations. The details of this methodology are set forth in Appendix C. The licensee has the option of making a lump sum contribution to the Fund or making annual payments amortized over 30 years, which is the standard license term for nonwater-dependent use projects. In addition, upon recommendation of the Harbor Committee, an alternative payment schedule involving partial deferments may be authorized in unusual cases.

DEP is responsible for determining the contribution in accordance with the Appendix C methodology and will require payment as a condition of licensing. The town is responsible for collecting the moneys and administering the Harbor Access Gift Fund, into which all collections will be deposited. As part of this collection program, the Town may create liens against the property for overdue accounts, so that title to the property cannot be passed until the lien is satisfied. Also, DEP’s enforcement powers may be

useful if the town has difficulty with overdue payments. Licenses should include a condition stating that non-payment over a specified time period (maybe three (3) years) will be grounds for enforcement action (including penalties and possible license revocation).

4. Additional Amplifications of Discretionary Requirements

The following amplifications are applicable to all properties, including those that fall under the amnesty program. As noted in 310 CMR 9.10, “for purposes of authorizing projects under the amnesty program, the applicable procedural rules found at 310 CMR 9.11-9.30 of [the 1990 regulations] shall be in effect...”

§9.16(2)(c) Tidewater Displacement Fee. *“Except as provided in 310 CMR 9.16(4), prior to issuance of a license for any fill or structure that will displace tidewaters below the high water mark, the applicant, or his/her heirs or assignees responsible for such displacement, shall, at the discretion of [DEP]....[consider] a contribution to a special fund or other program managed by a public agency or non-profit organization in order to directly provide public harbor improvements.”*

The Provincetown Harbor Plan requires that tidewater displacement fees levied by DEP be paid directly to the Provincetown Harbor Access Fund, as described in Section 6(a)(2) of this Plan.

§9.22(1) Maintenance and Repair of Fill and Structures. *“No application for license or license amendment shall be required for [maintenance and repair] activity. Maintenance and repair include...restoration to the original license specifications of licensed fill or structures that have been damaged by catastrophic events, provided that no change in use occurs and that...in the case of flood-related damage, the cost of such restoration does not exceed 50 percent of the cost of total replacement according to the original license specifications...”*

The Provincetown Harbor Plan calls for a strict enforcement of this requirement and for close coordination between DEP and the Provincetown Building Inspector, to determine when further licensing is required for structures that have been damaged beyond the 50% replacement cost limit.

§9.22(3) Minor Project Modifications. *“The licensee may undertake minor modifications to a license project without filling an application for license or license amendment. Such modifications are limited to...No such modifications shall be undertaken until the licensee has submitted written notice to the Department describing the proposed work in sufficient detail with reference to any relevant license plans, for the Department to determine compliance with the above conditions.”*

The Provincetown Harbor Plan calls for strict enforcement of this requirement and for DEP to provide the Harbor Committee with opportunity to review and comment upon any written notice of proposed minor project modification.

F. Long Term Plans

The Harbor Plan includes a series of long term goals for the Harbor, and outlines a process for studying, reviewing, and implementing these long term improvements through the creation of a standing Harbor Commission. The long term goals of the Harbor Plan include increased protection of the inner Harbor mooring areas, expansion of these areas through a dredging program, and the use of dredge material to provide increased beach area in appropriate locations along central waterfront areas that have experience beach depletion or where private improvements have encroached substantially on available beach areas.

This long term visions could include the installation of new breakwaters to the east and west of MacMillan Wharf and the central mooring fields that surround it. This alternative recognizes the substantial reaches that exist to the east and west of the pier and mooring areas, which leave smaller boats relatively unprotected under certain storm and high wind conditions. This is a substantial shortcoming of the Harbor that could be corrected, although at significant cost.

Breakwater construction could consist of stone, a floating structure, or wave screen. The stone solution would be the most effective in breaking up larger waves, but would be the most expensive in terms of initial costs. Wave screens could be provided as part of smaller structures and are appropriate for the shallow water conditions in much of the harbor. However, maintenance costs of this type of structure are relatively high, and these structures have somewhat limited effectiveness in high wave conditions. Floating breakwaters are essentially comprised of two heavy-duty concrete floats connected to planking sandwiched between them. Normally, floats are approximately 16 to 20 feet wide. Anchorage is by bottom anchors, potentially of the helix type, and heavy chain. There is some possibility that this type of float could also serve to support finger piers, if appropriate connections were made to either a new or existing pier.

Typical costs for breakwaters have been estimated as follows:

	<u>East Side Breakwater</u>	<u>West Side Breakwater</u>
Stone Structure	\$5,400,000	\$4,800,000
Floating Breakwater	\$1,900,000	\$1,200,000

G. Summary of Recommended Actions for Water Access and Enhancing Water-Dependent Uses

The following list is a summary of the recommended actions for increasing public access and enhancing water dependent uses as contained in this Plan. The purpose of this list is to guide public actions and expenditures. The public actions should include review and approval of proposed projects through Chapter 91 licensing or local variances and special permits. This list should also be used to prioritize allocation of funds and the pursuit of

grants or special expenditures from the Town, the Commonwealth, or Federal sources. This list should also serve as the basis of expenditures from the Waterfront Access Fund. It is intended that those actions listed as "high" priority would be undertaken first and in preference to other actions, unless specific funding sources or other opportunities present themselves in a manner that would preclude action on an higher priority action.

This list should be reviewed and updated annually.

1. High Priority Actions

- Reconstruct MacMillan Pier to correct existing deficiencies and provide for additional needs.
- Construct a new boat ramp, probably at Johnson Street.
- Provide for small commercial fishing boat facilities.
- Improve pedestrian access to excursion boats (whale watch fleet, etc.).
- Provide floats West End boat ramp.
- Initiate beach maintenance programs.
- Undertake recommendations for Johnson Street Landing (see Sec. V.C.2).
- Undertake recommendations for Freeman Street Landing (see Sec. V.C.2).
- Undertake recommendations for Gosnold Street Landing (see Sec. V.C.2).
- Implement a new public access signage and information system.

2. Medium Priority Actions

- Improve pedestrian access, waiting canopy, and ramps for cruise ship landing.
- Undertake recommendations for Court Street Landing (see Sec. V.C.2).
- Undertake recommendations for Municipal Parking Lot (see Sec. V.C.2).
- Undertake recommendations for Kendall Lane Landing (see Sec. V.C.2).

3. Long Term Actions

- Undertake additional improvements at the West End landing including seaward expansion of the parking area to provide for boat trailer and fishing-related parking
- Undertake recommendations for Pearl Street Landing (see Sec. V.C.2).
- Undertake recommendations for Atlantic Street Landing (see Sec. V.C.2).
- Undertake recommendations for Good Templar Street Landing (see Sec. V.C.2).
- Undertake recommendations for Franklin Street Landing (see Sec. V.C.2).
- Undertake recommendations for Vine Street Landing (see Sec. V.C.2).
- Purchase or obtain additional access rights-of-way.

VI. Implementation Framework

A. Harbor Management Roles and Responsibilities

The following discussion summarizes the principle recommendations of the Provincetown Harbor Plan in regards to the reallocation of responsibilities for the harbor and its edges consistent with the goals and conclusions of the Plan.

1. Provincetown Harbor Committee

The creation of a standing Harbor Committee is recommended to be the municipal body with lead responsibility for implementing the Harbor Plan and providing a forum to enable for its coordinated management. The responsibilities of the Provincetown Harbor Committee would include:

- Coordinated management of the Provincetown Harbor.
- Regular meetings to provide for coordination on all harbor elements and activities.
- Participation in pre-application consultation meetings with DEP to provide preliminary guidance on standards of the harbor plan to be met by a project in accordance with 310 CMR 9.11(1)(a).
- Provision to DEP with written recommendation as to a proposed project's conformance with the Harbor Plan in accordance with 310 CMR 9.34(2).
- Creation and adoption of a prioritized list for expenditures consistent with the Harbor Plan to ensure that expenditures are for appropriate purposes and are properly sequenced, to be funded through the Harbor Access Fund and direct town expenditures.
- Approval of projects for funding through the Harbor Access Fund.
- Maintenance of the annually updated list of other recommended actions for harbor improvements.
- Preparation of annual recommendations concerning changes in the Harbor Regulations or Shellfish Regulations.
- Recommendations concerning updates and revisions in the Harbor Plan.
- Preparation and management of an organized strategy for both maintenance dredging and beach nourishment, including scheduling of projects and permits and identification of funds.

The membership of the Committee would include the Harbormaster, MacMillan Pier Manager, and Shellfish Warden as ex-officio members, as well as representatives of fishing industry, excursion boats, recreational boating, and citizens.

In implementing the Harbor Plan, procedures will be developed for DEP and the municipality to use in coordinating review and decisions on Chapter 91 applications. These procedures will address DEP's forwarding of notices and applications to the municipality, the holding of local public hearings, municipal comments on the application, requests for extension of time for review and the like.

2. Harbor Access Fund

On August 26, 1996, the Provincetown Board of Selectmen established a Harbor Access Gift Fund "to receive Chapter 91 public benefit mitigation funds and other donations, the proceeds of which shall be used without further appropriation to enhance the public's access and use and enjoyment of the shoreline and waters of Provincetown Harbor, including but not limited to maintenance and improvements of town landings and other public properties for water dependent use."

All cash contributions collected as a condition of Chapter 91 licensing will be deposited in this Harbor Access Fund along with any other funds from grants, gifts, and other sources. These funds are to be used for purposes consistent with the Harbor Plan and expenditures made in accordance with a priorities plan adopted and revised from time to time by the Harbor Management Commission. Funds will be used to purchase available land for public access to the Harbor, make improvements to existing accessways and to construct new or improved waterside facilities in support of commercial fishermen and recreational boating.

3. Provincetown Historic Rights-of-Way Committee

Provincetown's Board of Selectmen should create a volunteer committee to research historic rights-of-way to the harbor. These rights-of-way could provide important additional accessways to the water. Membership should be open to anyone in the community with an interest in serving, but the committee would benefit from having an attorney, title abstractor or surveyor, long time residents of the town, and members of the Historical Commission. The committee's task is to research public records to rediscover and document forgotten public ways.

The Massachusetts Coastal Zone Management Office's publication *Preserving Historic Rights of Way to the Sea: A Practical Handbook for Reclaiming Public Access in Massachusetts* (1996) is a thorough guide to the process and sources of information.

4. MacMillan Pier Management Entity

Management and financial responsibility for the operations of the MacMillan Pier should in the future be undertaken by a distinct public entity through a lease of the pier from the town. This entity would be administered by an appointed board and would likely be created within a structure which is the same or similar to an Economic Development and Industrial Corporation. This entity would specifically be responsible for:

- Management of all ongoing operations on MacMillan Wharf including all operating costs and receipt of all revenues through a full-time professional manager.
- Negotiation of all sub-leases and setting and collection of all fees directly associated with the use of the pier.
- Contribution to the initial capital investment through bonding or other means.
- Preparation of annual reports to the Board of Selectmen, including fee schedules.
- Preparation of annual recommendations concerning changes in the Harbor Regulations as they apply to MacMillan Pier.

Membership on the Board of Directors could be a combination of local and State representatives, given the large investment that will be required in this facility from State sources. The Board composition would be established statutorily and would be appointed by the town.

5. Other Existing Departments and Entities

Marine Superintendent (Harbormaster)

The responsibilities of the Marine Superintendent should remain the same as currently defined except for removal of management responsibilities for MacMillan Pier. Enforcement of regulations at the pier would remain the responsibility of the Marine Superintendent, however. Under state statutes the Harbormaster has the following authorities, which are part of the job description of the Provincetown's Marine Superintendent:

- To enforce the rules and regulations for motorboats and other vessels (M.G.L. C. 90B)
- To authorize by permit the mooring on a temporary basis of floats or rafts held by anchors or bottom moorings, within the jurisdiction of the town and, further, to remove such floats or rafts installed without permission (M.G.L. C. 91, sec. 10A)

- To station vessels and make rules for and to direct the anchoring of vessels in the harbor and, as necessary, to direct the berthing of vessels at public piers and wharves (M.G.L. C. 102).

Planning Board and Zoning Board of Appeals

As recommended in this Plan, the Planning Board or Zoning Board of Appeals would no longer be responsible for the review and local recommendations concerning Chapter 91 licensing, through the delegation of the authority to the Harbor Committee. However, a new procedure should be instituted that would make local approvals and hearing requirements more understandable to applicants. Specifically, a checklist of local approvals should be provided to all applicants for any local land use decisions that lists the jurisdictions and basic requirements of each decision, including submittal requirements, time frames, mandated public hearings and the like.

B. Chapter 91 Licensing Implementation

At the local level, the Harbor Committee should have the primary municipal role for projects seeking a license or permit from DEP. The Harbor Committee is to be included in the list of recipients of the notice of license or permit application sent by DEP. As outlined earlier, the Harbor Committee will then:

- Participate in pre-application consultation meetings with DEP to provide preliminary guidance on the standards of the Harbor Plan to be met by a project in accordance with 310 CMR 9.11 (1)(a);
- Coordinate and participate in public hearings held by DEP in Provincetown;
- Provide DEP with a written recommendation as to a proposed project's conformance with the Harbor Plan in accordance with 310 CMR 9.34 (2);
- As necessary, submit a petition to intervene on behalf of the municipality to become a party in any adjudicatory hearing on the license.

As recommended by the Plan, the Harbor Committee should be delegated the authority assigned to the Planning Board by 310 CMR 9.13 (5)(a) to hold a public hearing on Chapter 91 applications. The Harbor Committee should also be delegated the authority to prepare and submit the written recommendation on license applications to be considered by DEP in its decision on the license in accordance with 310 CMR 9.13(5)(b) and (c).

Procedures should be instituted among the land use boards and officials in Provincetown to improve coordination of decision-making. For all projects in or affecting the harbor and requiring local approval, the Harbor Committee should have the opportunity to provide comments on the project's consistency with the Harbor Plan.

The Harbor Committee should also carry out a monitoring and reporting function in close cooperation with DEP. This effort will help ensure full compliance with applicable conditions of existing licenses as well as identify new changes of use and structural alterations (including minor project modifications) that should be brought to the attention of DEP.

Other related responsibilities of the Harbor Committee include updating and revising the Harbor Plan as necessary. It is also responsible for creating, adopting, and periodically revising, a list of priority projects consistent with the Harbor Plan. The Harbor Committee will approve expenditures in accordance with the priorities list.

C. Summary Matrix of Roles and Responsibilities

The following matrix summarizes key actions required to implement the Harbor Plan recommendations, identifies those with responsibility in implementing the recommendations, and identifies a time frame within which implementation should be initiated.

<input type="checkbox"/> Categories and Recommendations		Required Actions	Responsibilities <i>Primary Responsibility in bold</i>	Time Frame
	Land Use Recommendations			
1.	Incorporate Harbor Plan recommendations into special permit, variance, and similar reviews	Zoning ordinance amendment	Town Meeting Harbor Committee to draft refined regulations Planning Board review	1998
2.	Establish a working committee to consider proactive measures for protecting and enhancing water-dependent uses	Establish committee charge and time-frame	Board of Selectman Planning Board Harbor Committee	1998
3.	Seek funds and establish process to study measures to protect properties in the FEMA velocity zones	Seek funding sources and initiate studies	Harbor Committee Town Manager	1998
4.	Establish a sewer outfall removal program	Direction from the Board of Selectmen	Board of Selectman Harbor Committee	1997
5.	Request county aid to establish a water quality monitoring program	No change from existing policy and practice	Wastewater Committee	ongoing
6.	Removal of beach debris: Provide additional assignment of maintenance responsibility and funding to the DPW, additional trash receptacles	Work assignments and additional funding	Department of Public Works Board of Selectmen	1997
7.	Removal of beach debris: Increase volunteer activities and increase awareness	Sponsor larger program	Harbor Committee	1997

8.	Removal of beach debris: Permitting and licensing criteria	Include as a condition on various permits and approvals	Harbor Committee, Zoning Board of Appeals, Planning Board	1997
	Water Use Recommendations			
1.	Initiate and maintain program of aquaculture improvements	Establish priorities and implement recommendations	Shellfish Constable Board of Selectmen Harbor Committee Shellfish Committee	1997 and later
2.	Undertake new town mooring system including allocation of five spaces for emergency and storm-related use	Establish mooring technology, contract for mooring layout plan, establish fee structure and implementation timetable	Marine Superintendent Board of Selectmen Harbor Committee	initiate in 1997
3.	Initiate process for short-term and long-term maintenance dredging	Fund engineering studies, seek resources, implement the plan	Harbor Committee Board of Selectman Barnstable County Dredge Committee representative State Agencies	1997 or later
4.	Secure alternate sources of funds for pump-out facilities	Investigate funding sources and establish plan in advance of the end of the current grant sources	Harbor Committee Marine Superintendent Board of Selectmen Town Manager	end of grant period

5.	Protect water quality and shellfish resource from anchorage and mooring, and mark wrecks	Mark as off-limits for moorage or anchorage areas requiring protection	Marine Superintendent	1997
6.	Reduce conflicts between anchorages and other uses in the harbor	Anchorage areas should be designated more precisely	Marine Superintendent	1997
7.	<i>Communicate to the National Park Service the recommendation that no action be taken to reduce or alter the activities recommended by this Water Use Plan</i>	Forward plan with letter	Board of Selectmen Town Manager	1997
8.	<i>Provide for interim improvements to the dinghy dock</i>	Provide for year-round use and expansion	Marine Superintendent Board of Selectmen Town Manager Harbor Committee	1997
	Public Facility Recommendations			
1.	Undertake the engineering analysis and design of the reconstruction of MacMillan Pier	Approve funding and initiate process	Commonwealth of Massachusetts, Town Meeting	1997
2.	Undertake detailed study to implement new MacMillan Pier Management entity	Establish funding, participate in the planning process	Massachusetts Development and Finance Agency, Seaport Advisory Council, Harbor Committee	1997
3.	Create new MacMillan Pier Management entity	Provide for incorporation or other procedural steps, approve mechanism through Town Meeting	Town Meeting Board of Selectmen	1997

4.	Fund and Construct MacMillan Pier improvements	Provide for State bond source funds, local matching funds and financing mechanisms, other sources	Commonwealth of Massachusetts MacMillan Pier Management Entity, Town Meeting, Others	1998+
5.	Undertake planned program of public access and water-dependent capital improvements including small boat commercial facilities and other specific recommendations of this Plan	Create implementation framework as recommended in the Harbor Plan	Harbor Committee Board of Selectmen Town Manager Department of Public Works	1997+
6.	Establish Right-of-Way Committee	Create mission statement and establish structure	Board of Selectmen	1997
7.	Establish a planning process and pursue funding for this improvement.	Establish study as task for the Harbor Committee.	Harbor Committee	1999
	Regulatory Framework for Chapter 91			
1.	Establish Harbor Committee and delegate Planning Board responsibility for local license review	Finalize procedural requirements	Town Meeting	1997
2.	Establish memorandum of understanding for specific implementation of the Chapter 91 recommendations if required in addition to the provisions of this Plan	Finalize specific review procedures and criteria, if required	Massachusetts Office of Coastal Zone Management, Town of Provincetown Harbor Committee	1997
3.	Establish and approve final fee structure for exclusion fee	Establish fees	Massachusetts Office of Coastal Zone Management	1997

	Long Term Plans			
1.	Continue planning process regarding certain long term opportunities such as major breakwater and dredging programs	Establish this as a regular agenda item of the Harbor Committee	Town Meeting Board of Selectmen Harbor Committee	1997+

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